

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

Mr. Don Kelly, Plant Manager
Southdown, Inc. dba
Florida Mining and Materials
Post Office Box 6
Brooksville, Florida 34605-0006


DER File No. AC 27-240349
Hernando County

Enclosed is Permit Number AC 27-240349 to allow continuous utilization of whole tires as a supplement to the current fuels in the No. 1 cement kiln at the Southdown, Inc./Florida Mining and Materials facility in Brooksville, Hernando County, Florida. This permit is issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (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 Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

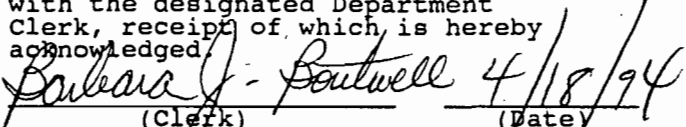

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 4/18/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.


(Clerk) 4/18/94 (Date)

Copies furnished to:

B. Thomas, SW District
J. Harper, EPA
J. Bunyak, NPS
C. Hetrick, HCBCC
D. Beason, Esq., DEP
A. Lue, P.E., SI
J. Kooqler, Ph.D., P.E., K&A
D. Buff, P.E., KBN
A. Cleveland, Esq., OHF&C
L. Sellers, Jr., Esq., H&K
D. Dee, Esq., CFWES&C

Is your RETURN ADDRESS completed on the reverse side?

- SENDER:**
- Complete items 1 and/or 2 for additional services.
 - Complete items 3, and 4a & b.
 - Print your name and address on the reverse of this form so that we can return this card to you.
 - Attach this form to the front of the mailpiece, or on the back if space does not permit.
 - Write "Return Receipt Requested" on the mailpiece below the article number.
 - The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address.
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
 Mr. Don Kelly
 Plant Manager
 Southdown, Inc. dba
 Florida Mining and Materials
 P. O. Box 6
 Brooksville, FL 34605-0006

4a. Article Number
 P 872 563 631

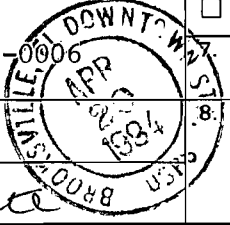
4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
 4-20-94

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Barbara Tate



PS Form 3811, December 1991 ☆U.S. GPO: 1992-323-402 **DOMESTIC RETURN RECEIPT**

P 872 563 631

Thank you for using Return Receipt Service.



Receipt for Certified Mail
 No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to Mr. Don Kelly, FM&M	
Street and No. P. O. Box 6	
P.O., State and ZIP Code Brooksville, FL 34605-0006	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date Mailed: 4-18-94 Permit: AC 27-240349	

PS Form 3800, JUNE 1991

Final Determination

Southdown, Inc./dba Florida Mining & Materials

Hernando County

AC 27-240349

The construction permit request package has been reviewed by the Department. Public Notice of the Department's Intent to Issue was published in The Tampa Tribune on February 12, 1994. The proposed modification was distributed on January 20, 1994, and available for public inspection at the Department's Southwest District office and Bureau of Air Regulation office and the Hernando County Government Center Planning office.

There were no comments received during the public notice period. However, issues were commented on and received from Dr. John B. Koogler, P.E. and consultant for Florida Mining & Materials, and from Mr. C. Anthony Cleveland, Esq., attorney representing Hernando County. Since the consequences of the issues commented on are mutually agreeable to both parties and the Department, and the effect is inconsequential to the emissions review performed, then there is no requirement to reissue an Intent package or renotece. Therefore, the following comments are addressed below as they were submitted and the Department's responses (Re:) follow (any changes agreed to that will be made to the permit will be in bold print):

A. Dr. John B. Koogler's letter received February 2, 1994, via FAX (hard copy received February 4, 1994):

1. The proposed total emission rate for carbon monoxide (CO) is incorrect, which occurred when adding the baseline emission rate and the proposed emission rate increase (31.6 lbs/hr + 22.4 lbs/hr = 51.0 lbs/hr; it should have been 54.0 lbs/hr).

Re: There is no problem with the adjustment from any baseline emission rate since the proposed increase (i.e., 22.4 x 8760 = 98.1 TPY) is independent of the baseline rate.

2. The letter requested an 8-hour averaging time for CO and that compliance be demonstrated initially and once every five years for permit renewal.

Re: The averaging time is satisfactory as long as the compliance test is conducted for three 8-hour periods or by a CO continuous emissions monitor (CEM) that is installed and operated in accordance with the regulations governing CEMs. Since the emission rate increase of 22.4 lbs/hr (98.1 TPY) makes a source a synthetic minor source, verification will be required annually.

3. Two editorial changes were requested, one to Specific Condition No. 10 and one to Specific Condition No. 13, which are:

Specific Condition No. 10: Begin the condition with "If there is any change in the method of operation"; and,

Specific Condition No. 13: Insert the following: "Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase"

Re: The requests are acceptable and the following will be changed:

Specific Conditions: Nos. 10 and 13:

FROM:

10. Any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation.

13. Pursuant to Rule 17-212.400(2)(g), F.A.C., any net increase in potential emissions of +1.9 tons/yr of CO above the maximum allowable/potential emissions of 223.4 tons/yr while utilizing/firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +98.1 tons/yr while utilizing/firing WTDF with coal.

TO:

10. **If there is** any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation.

13. Pursuant to Rule 17-212.400(2)(g), F.A.C., **if there is** any net increase in potential emissions of +1.9 tons/yr of CO above the maximum allowable/potential emissions of 223.4 tons/yr while utilizing/ firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +98.1 tons/yr while utilizing/firing WTDF with coal.

Final Determination
FM&M: AC 27-240349
Page 3

4. The Expiration Date is acceptable.

Re: Based on the circumstances, the Expiration Date will be changed:

FROM: June 30, 1994

TO: December 31, 1994

B. Dr. John B. Koogler's MEMORANDUM dated March 23, 1994, and received April 1, 1994, via FAX:

1. The requested baseline actual emissions rate is to be the average of the test results during the years 1992 and 1993, which are:

$$(38.2 \text{ lbs/hr} + 31.6 \text{ lbs/hr})/2 = 34.9 \text{ lbs/hr}$$

Re: This is acceptable and consistent with Rule 17-212.200(2), Florida Administrative Code (F.A.C.). This request and response does change the baseline actual emissions rate that was discussed in A.1. above (i.e., 31.6 lbs/hr to 34.9 lbs/hr).

2. The requested CO emissions rate increase is 22.8 lbs/hr (@ 8760 = 99.9 TPY; previous was 22.4 lbs/hr @ 8760 hrs = 98.1 TPY); and, the allowable emissions rate is:

$$34.9 \text{ lbs/hr} + 22.8 \text{ lbs/hr} = \underline{57.7 \text{ lbs/hr}}$$

Re: The request is acceptable and does not require any additional emissions review or public noticing (i.e., change from 98.1 TPY to 99.9 TPY; significant emissions rate change is 100.0 TPY for CO). Based on the hours of operation during the years 1992 and 1993, which are 7558 hrs/yr and 7887 hrs/yr, respectively, the average actual annual baseline emissions rate and the total annual CO allowable emissions limitation are calculated:

$$\begin{aligned} 1992: & (38.2 \text{ lbs/hr} \times 7558 \text{ hrs}/1992)/2000 \text{ lbs/ton} = 144.4 \text{ tons} \\ 1993: & (31.6 \text{ lbs/hr} \times 7887 \text{ hrs}/1993)/2000 \text{ lbs/ton} = 124.6 \text{ tons} \end{aligned}$$

$$(144.4 \text{ tons}/1992 + 124.6 \text{ tons}/1993)/2 = 134.5 \text{ tons avg. actual annual baseline emissions rate}$$

$$134.5 \text{ tons} + 99.9 \text{ tons} = \underline{234.4 \text{ tons}}, \text{ annual allowable limitation}$$

Final Determination
FM&M: AC 27-240349
Page 4

As was imposed before, any change in CO emissions by 0.1 TPY will impose PSD new source review in accordance with Rule 17-212.400(2)(g), F.A.C.

Therefore, the following will be changed:

Specific Conditions: Nos. 12 and 13:

FROM:

12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 51 lbs/hr, 223.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.

13. Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase in potential emissions of +1.9 tons/yr of CO above the maximum allowable/potential emissions of 223.4 tons/yr while utilizing/ firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +98.1 tons/yr while utilizing/firing WTDF with coal.

TO:

12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 57.7 lbs/hr, 234.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.

13. Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase in potential emissions of +0.1 tons/yr of CO above the maximum allowable/potential emissions of 234.4 tons/yr while utilizing/ firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +99.9 tons/yr while utilizing/firing WTDF with coal.

C. Mr. C. Anthony Cleveland's letter with enclosure received April 12, 1994.

1. Additional language, which has been agreed to by Hernando County and FM&M representatives, is proposed to be added to Specific Condition No. 10.

Re: The Department agrees to add the additional language and the change is:

Specific Condition No. 10:

FROM:

10. If there is any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation.

TO:

10. If there is any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation. Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification to this permit. If the WTDF feed mechanism is to be physically modified in this manner, a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and, prior to any modification, determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary, and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. FM&M shall bear the burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June, 1993.

D. MEMORANDUM from John Koogler to Dave Buff, dated March 28, 1994 (enclosure to C. Anthony Cleveland's letter dated April 12, 1994).

1. The comment regards the final allowable hourly emissions rate of 57.7 lbs/hr.

Re: This issue was discussed previously in B.1 and 2. above.

Final Determination
FM&M: AC 27-240349
Page 6

2. The request is to accept the 57.7 lbs/hr as a 1-hour average standard, with compliance being demonstrated by three 1-hour test runs.

Re: This request is acceptable and the following will be changed:

Specific Condition No. 12:

FROM:

12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 57.7 lbs/hr, 234.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.

TO:

12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 57.7 lbs/hr (1-hour average), 234.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.

E. Attachments to be incorporated:

- o Dr. John B. Koogler's letter received February 2, 1994, via FAX (hard copy received February 4, 1994).
- o Dr. John B. Koogler's MEMORANDUM dated March 23, 1994, and received April 1, 1994, via FAX:
- o Mr. C. Anthony Cleveland's letter with Enclosure received April 12, 1994.
- o MEMORANDUM from John Koogler to Dave Buff, dated March 28, 1994 (Enclosure to C. Anthony Cleveland's letter dated April 12, 1994).

Therefore, it is recommended that the construction permit, No. AC 27-240349, be issued as drafted, with the above changes and Attachments incorporated.



Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:
Southdown, Inc. dba
Florida Mining & Materials
Post Office Box 6
Brooksville, Fl 34605-0006

Permit Number: AC 27-240349
Expiration Date: December 31, 1994
County: Hernando
Latitude/Longitude: 28°38'34"N
82°28'25"W
Project: No. 1 Cement Kiln
Modification

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.); Florida Administrative Code (F.A.C.) Chapters 17-2, 17-210 thru 17-297, and 17-4; and, 40 CFR (July 1, 1992 version). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the modification of the No. 1 cement kiln to allow continuous utilization/firing of whole tires as a supplemental fuel to coal. The maximum utilization/firing rate is 20.0% of the total Btu heat input, or 2.14 tons per hour. The kiln's primary fuel is coal and supplemented with a blended re-refined used oil called Flolite. The facility is located in Brooksville, Hernando County, Florida. The UTM coordinates are Zone 17, 356.0 km East and 3169.9 km North.

The Source Industrial Code: 3241 Cement Manufacturing

The Source Classification Code numbers are:

- o 3-05-006-06 Cement Mfg-Dry Process Tons Cement Produced
- o 3-90-002-01 Bitum. Coal-Cement Kiln Tons Burned
- o 3-90-012-99 Solid Waste-General Tons Burned

The source shall be modified 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. Dr. John B. Koogler's Memorandum with Attachments received 6/22/93.
2. Dr. John B. Koogler's letter and with Enclosures received 7/30/93.
3. Dr. John B. Koogler's letter with Attachments received 8/18/93.
4. Mr. C. Anthony Cleveland's letter with Enclosures received 9/16/93.
5. Dr. John B. Koogler's letter received 10/14/93.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

Attachments cont.:

6. Mr. David A. Buff's letter received 10/19/93, via FAX.
7. Mr. C. Anthony Cleveland's letter received 10/26/93.
8. Mr. Don Kelly's letter with Enclosure and processing fee received 10/26/93.
9. Dr. John B. Koogler's FAX cover form with Attachment received 1/14/94.
10. 40 CFR (July 1, 1992 version).
11. Ms. Jewell A. Harper's letter dated April 4, 1990.
12. Intent to Issue package dated January 19, 1994.
13. Public Notice verification received February 22, 1994.
14. Dr. John B. Koogler's letter received February 2, 1994, via FAX (hard copy received February 4, 1994).
15. Dr. John B. Koogler's MEMORANDUM dated March 23, 1994, and received April 1, 1994, via FAX:
16. Mr. C. Anthony Cleveland's letter with Enclosure received April 12, 1994.
17. MEMORANDUM from John Koogler to Dave Buff, dated March 28, 1994 (Enclosure to C. Anthony Cleveland's letter dated April 12, 1994).
18. Final Determination dated April 14, 1994.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these 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), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither 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 is not 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

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

GENERAL CONDITIONS:

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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sample or monitor 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 provide the Department with the following information:

- a. A description of and cause of non-compliance; and,
- b. The period of noncompliance, including 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.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for 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 involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

11. This permit is transferable only upon Department approval in accordance with F.A.C. Rules 17-4.120 and 17-30.300, 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit constitutes compliance with:
a. New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart F, Portland Cement Plants;

14. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

GENERAL CONDITIONS:

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 dates 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 corrected promptly.

SPECIFIC CONDITIONS:

1. Construction permit No. AC 27-186923 and all associated documents and conditions are incorporated by reference.

2. Amendments to construction permit No. AC 27-186923 signed June 25, 1991, October 8, 1991, and March 31, 1992, and all associated documents and conditions are incorporated by reference.

3. Operation Permit No. AO 27-213207 and all associated documents and conditions are incorporated by reference.

4. In the No. 1 cement kiln, continuous whole tire-derived fuel (WTDF) utilization/firing shall be allowed (i.e., 8760 hrs/yr operation).

5. The No. 1 cement kiln's maximum utilization/firing rate of WTDF shall not exceed 20.0 percent of the total Btu heat input, or 2.14 tons per hour.

6. The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly; and, the records shall be kept on file for a minimum of two years.

7. The quantity of all deliveries of WTDF shall be documented and kept on record/file for a minimum of two years.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

SPECIFIC CONDITIONS:

8. WTDF may be introduced into the No. 1 cement kiln only at a point at the base of the preheater (i.e., kiln exit).

9. WTDF firing in the No. 1 cement kiln shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400°F for one hour. The operating temperature shall be measured at the cement kiln exit.

10. If there is any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation. Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification to this permit. If the WTDF feed mechanism is to be physically modified in this manner, a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and, prior to any modification, determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary, and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. FM&M shall bear the burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June, 1993.

11. Objectionable odors shall not be allowed off the facility's property in accordance with F.A.C. Rule 17-296.320.

12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 57.7 lbs/hr (1-hour average), 234.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.

13. Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase in potential emissions of +0.1 tons/yr of CO above the maximum allowable/potential emissions of 234.4 tons/yr while utilizing/ firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +99.9 tons/yr while utilizing/firing WTDF with coal.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: December 31, 1994

SPECIFIC CONDITIONS:

14. An annual compliance test for CO while utilizing/firing WTDF with coal shall be conducted using EPA Reference Method 10, in accordance with Rule 17-297.400((10), F.A.C., and 40 CFR part 60, Appendix A (July 1, 1992 version).

15. The cement kiln and its associated equipment are subject to the applicable provisions of F.A.C. Rules 17-210.650: Circumvention; 17-210.700: Excess Emissions; and, 17-4.130: Plant Operations-Problems.

16. An annual operation report (AOR) shall be submitted to the Department's Southwest District office by March 1 reporting the No. 1 cement kiln's total amount, by weight, of the WTDF utilized/fired during the previous year.

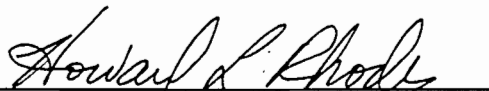
17. Daily sampling of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Rogers's letter to Dr. John Koogler, dated January 12, 1994 (Attachment #9).

18. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 17-4.090, F.A.C.).

19. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the permittee shall submit the appropriate application form, fee, certification that construction was completed and noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (Rules 17-4.055 and 17-210.350, F.A.C.).

Issued this 15 day
of April, 1994

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Howard L. Rhodes
Director

Division of Air Resources Management

ATTACHMENTS 1 - 18

Available Upon Request

Florida Department of
Environmental Protection

Memorandum

TO: Howard L. Rhodes
FROM: Clair Fancy *CAF*
DATE: April 14, 1994
SUBJECT: Approval of Construction Permit
AC 27-240349: No. 1 Cement Kiln
Southdown, Inc./dba Florida Mining & Materials

Attached for your approval and signature is a construction permit prepared by the Bureau of Air Regulation for the above referenced company to allow continuous utilization of whole tires in the No. 1 cement kiln as a supplement to coal, which has been the primary fuel.

Southdown, Inc./dba Florida Mining & Materials is a major existing facility that produces cement from raw materials. The No. 1 cement kiln normally fires coal to provide heat to dry the raw materials fed into the kiln. This modification will allow the company to supplement coal with tires as a fuel; in addition, it will allow the removal of some of the various tire storage sites in Florida. The facility is located off U.S. Highway 98 northwest of Brooksville, Hernando County, Florida.

There were no comments received during the public notice period. However, comments were received and have been addressed. Changes made to the proposed permit were not substantive and had no effect on the emissions review requirements.

I recommend your approval and signature.

CHF/BM/rbm

Check Sheet

Company Name: Florida Mining and Mtls Cross References:

Permit Number: AC 29-240349 AC 27-169666

PSD Number: AC 27-173474

Permit Engineer: AC 27-186923

PSDFL-12413

Application:

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

HIFE
Hernando

Intent:

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT Determination
- Unsigned Permit
- Correspondence with:
 - EPA
 - Park Services
 - Other
- Proof of Publication
 - Petitions - (Related to extensions, hearings, etc.)
 - Waiver of Department Action
 - Other

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other

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

Folder Name: Florida Mining and Materials

Permit(s) Numbered:

AC 29 -240349

Documents:

<u>Period during which document was received</u>	<u>Detailed Description</u>
--	-----------------------------

- | | |
|--------------|---|
| 30 July 1993 | 1. SUMMARY OF PARTICULATE MATTER, SULFUR DIOXIDE, TOTAL HYDROCARBONS, CARBON MONOXIDE, HYDROGEN CHLORIDE, SPECIATED VOLATILE ORGANICS, METALS, DIOXINS/FURANS AND VISIBLE EMISSION MEASUREMENTS UNDER BASELINE AND COAL/TDF FIRING CONDITIONS |
|--------------|---|

KILN NO. 1 MAY 4-5, 1993; JUNE 8-9, 1993

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

HERNANDO COUNTY,

Petitioner,

vs.

OGC CASE NO. 94-0403

FLORIDA MINING & MATERIALS,
and
STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION,

Respondents.

ORDER GRANTING REQUEST FOR EXTENSION
OF TIME TO FILE PETITION FOR HEARING

This cause has come before the Florida Department of Environmental Protection (Department) on receipt of a request made by Petitioner Hernando County under rule 17-103.070 of the Florida Administrative Code to grant an extension of time to file a petition for an administrative hearing on Application No. AC27-240349. See Exhibit 1.

Although Counsel for Petitioner has not discussed this request with counsel for the Respondent State of Florida Department of Environmental Protection, the Department has no objection to it. Therefore,

IT IS ORDERED:

The request for an extension of time to file a petition for administrative proceeding is granted. Petitioner shall have until March 7, 1994, to file a petition in this matter. Filing shall be complete on receipt by the Office of General Counsel, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION)

1. *Bruce Mitchell*

2.

3. *Air*

4.

RECEIVED

MAR 4 1994

Bureau of
Air Regulation

FROM: *Holly Burnham*

DATE *3-4-94*

PHONE

DONE AND ORDERED on this 9th day of February 1994 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


KENNETH J. PLANTE
General Counsel

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 488-9314

CERTIFICATE OF SERVICE


I CERTIFY that a true copy of the foregoing was mailed to:

C. Anthony Cleveland
OERTEL, HOFFMAN, FERNANDEZ,
& COLE
2700 Blair Stone Road
Suite C
Tallahassee, Florida 32301

David Dee
CARLTON, FIELDS, WARD
EMMANUEL, SMITH & CUTLER
215 South Monroe Street
Suite 500
Tallahassee, Florida 32302

on this 10th day of February 1994.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


W. DOUGLAS BEASON
Assistant General Counsel

2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 488-9730

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

HERNANDO COUNTY,
Petitioner,

vs.

OGC CASE NO. 94-0403

FLORIDA MINING & MATERIALS,
and
STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION,

Respondents.

RECEIVED

APR 08 1994

Bureau of
Air Regulation

RECEIVED

APR 08 1994

Bureau of
Air Regulation

**ORDER GRANTING SECOND REQUEST FOR EXTENSION
OF TIME TO FILE PETITION FOR HEARING**

This cause has come before the Florida Department of Environmental Protection (Department) on receipt of a request made by Petitioner Hernando County under rule 17-103.070 of the Florida Administrative Code to grant an extension of time to file a petition for an administrative hearing on Application No. AC27-240349. See Exhibit 1.

Counsel for Petitioner has discussed this request with counsel for the Respondent State of Florida Department of Environmental Protection, the Department has no objection to it. Therefore,

IT IS ORDERED:

The request for an extension of time to file a petition for administrative proceeding is granted. Petitioner shall have until April 29, 1994, to file a petition in this matter. Filing shall be complete on receipt by the Office of General Counsel, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION)

1. Bruce Mitchell
- 2.
3. Air
- 4.

FROM: Doug Beason

DATE 4/8

PHONE

DONE AND ORDERED on this 6th day of April 1994 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


KENNETH J. PLANTE
General Counsel

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 488-9314

CERTIFICATE OF SERVICE

I CERTIFY that a true copy of the foregoing was mailed to:

C. Anthony Cleveland
OERTEL, HOFFMAN, FERNANDEZ,
& COLE
2700 Blair Stone Road
Suite C
Tallahassee, Florida 32301

David Dee
CARLTON, FIELDS, WARD
EMMANUEL, SMITH & CUTLER
215 South Monroe Street
Suite 500
Tallahassee, Florida 32302

on this 6th day of April 1994.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION


W. DOUGLAS BEASON
Assistant General Counsel

2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 488-9730

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

HERNANDO COUNTY,

Petitioner,

vs.

OGC FILE NO.: 94-0403

STATE OF FLORIDA, DEPARTMENT OF
ENVIRONMENTAL PROTECTION, and
FLORIDA MINING & MATERIALS,

Respondents.

MOTION FOR EXTENSION OF TIME

Pursuant to Rule 17-103.070, Fla. Admin. Code, Hernando County requests an extension of time in which to file a petition for formal administrative proceedings. In support thereof, Hernando County states as follows:

1. On January 20, 1994, Hernando County received a copy of the Department's Intent to Issue and Proposed Construction Permit which would allow Florida Mining & Materials to utilize whole tires as a supplemental permitted fuel (AC 27-240349).

2. Hernando County has been informed that Florida Mining & Materials is seeking to modify certain provisions of the proposed construction permit. In order to allow Hernando County to review the changes proposed by Florida Mining & Materials and to further allow review of the proposed construction permit for consistency with respect to language proposed jointly by Hernando County and Florida Mining & Materials, an extension of time to March 7, 1994, to file a petition for formal administrative proceedings was granted by the Department at Hernando County's request.

3. Hernando County and Florida Mining & Materials have reached a tentative agreement which will resolve any outstanding

issues and which will be provided to the Department for insertion in the final permit. Accordingly, Hernando County requests a further extension of time to March 21, 1994. Hernando County believes that this will provide an opportunity to finalize its agreement with Florida Mining & Materials and avoid the need for any formal administrative proceedings.

4. Douglas Beason, Department counsel, and counsel for Florida Mining & Materials have no objection to this request.

WHEREFORE, Hernando County respectfully requests that the Department enter an order granting an extension of time in which to file a petition for formal administrative proceedings with respect to DEP File No. AC 27-240349 to and ~~including~~ March 21, 1994.

Respectfully submitted this 7th day of March, 1994.

OERTEL, HOFFMAN, FERNANDEZ
& COLE, P.A.
Post Office Box 6507
Tallahassee, FL 32314-6507
(904) 877-0099

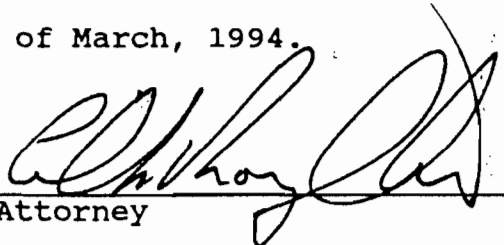

C. ANTHONY CLEVELAND
Fla. Bar ID No. 217859

Attorneys for HERNANDO COUNTY

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that the original and one copy of the foregoing have been filed by Hand-Delivery with the AGENCY CLERK, Office of General Counsel, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and that true copies have been furnished by Hand-Delivery to W. DOUGLAS BEASON, Assistant General Counsel, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400;

and by U. S. Mail to DAVID ~~DYE~~, P. O. Drawer 190, Tallahassee,
Florida 32302-0190, this 7~~th~~ day of March, 1994.



Attorney

CAC/dg/1579
C:\Work1\1579Ext9.CAC



Brooksville Cement

A Southdown Company

February 17, 1994

Mr. C.H. Fancy, P.E.
FL Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Southdown, Inc. d/b/a Florida Mining & Materials
Publication of Notice Of Intent to Issue
#AC27-240349

Dear Mr. Fancy:

Florida Department of Environmental Protection's "Notice of Intent to Issue" construction permit, No. AC27-240349, to allow continuous utilization of whole tires as a supplement to the current permitted fuels in Southdown, Inc. d/b/a Florida Mining & Material's (FM&M) No. 1 cement kiln, has been published in the Hernando, Pasco and Citrus County sections of The Tampa Tribune. The Notice of Intent was received on January 22, 1994 and published on February 12, 1994. This fulfills the FDEP's requirement to publish the "Notice of Intent to Issue" within the thirty (30) day time period.

A copy of this Notice and affidavit are attached.

If further action is required in regards to issuance of this Permit, please do not hesitate to contact me at (904) 796-7241.

Sincerely,

Don B. Kelly,
Plant Manager

DBK/sd
Attachment
RR# P 128 451 038

RECEIVED

FFR 2 2 1994

Bureau of
Air Regulation

cc: B. Mitchell
G. Ranyak, NPS
C. Pedrick, HCBCC
D. Beason, OGC
Southdown, Inc.

G. Harper, EPA
G. Cleveland, DHF&C
Z. Sellers, H&K

P.O. Box 6 • Brooksville, Florida 34605-0006
(904) 796-7241 • Fax: (904) 754-9836

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE IN PASCO/HERNANDO/CITRUS

in the matter of

NOTICE OF INTENT TO ISSUE

was published in said newspaper in the issues of

FEBRUARY 12, 1994

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough 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.

Sworn to and subscribed before me, this 15 day of FEBRUARY, 1994 A.D.

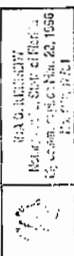
Personally Known or Produced Identification
Type of Identification Produced

(SEAL) [Signature]

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE
Florida Mining & Materials
AC 27-240249
The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Southdowns, Inc./Dba Florida Mining & Materials (FMM&M) a construction permit, No. AC 27-240249, authorizing continuous utilization/firing of whole fires in the facility's No. 1 cement kiln, as detailed in the request for permit. The Department is issuing this intent to issue for the reasons stated below and in the proposed construction permit.
The applicant, FMM&M, Post Office Box 4, Brooksville, Florida 34605-0004, submitted a request on October 12, 1993, and the processing fee on October 26, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to utilize whole fires as a supplemental fuel on a continuous basis in the facility's No. 1 cement kiln. FMM&M requests a maximum utilization/firing rate of 20.0% of the total BTU heat input, or 2.14 tons per hour. The No. 1 cement kiln was permitted under the construction permit, No. AC 27-184922, and is not permitted to fire whole fires in accordance with the referenced permit.
Based on the emissions test results (Baseline versus whole fire fuel conditions) conducted May 4-5, 1993 and June 8-9, 1993, actual pollutant emissions of total carbon monoxide (CO) increased by an average of 17.5 lbs/hr (0-76.4 TPY net increase @ 8760 hrs/yr operation). NOTE: The PSD significant emission rate is 100 TPY (see Table 312.400-2, Florida Administrative Code (F.A.C.)). Since there is no specific source emission limiting standard for CO contained in the Department's regulations nor in the federal New Source Performance Standards, then the proposed construction permit will establish a federally enforceable allowable/potential CO emissions limitation of 223.4 TPY for the No. 1 cement kiln and, for PSD new source review (NSR) tracking purposes, a projected potential emissions level for CO of +98.1 TPY (@22.4 lbs/hr and 8760 hrs/yr). Note: any future increase of allowable/potential CO emissions of +1.9 TPY (i.e., 223.4 TPY + 223.4 + 1.9) will result in a NSR emissions review, pursuant to Rule 312.

312.400-2, F.A.C. in accordance with Rule 312.400-2, F.A.C. The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida.
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 (F.S.). 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 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, F.S.
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's substantial interests are affected by 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;
(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 respect 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 of 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 business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:
Department of Environmental Protection, Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400
Department of Environmental Protection, Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-9218
Hernando County Board of County Commission, 20 North Main Street, Room 440, Brooksville, Florida 34601
Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.
2/12/94
BV1451



THE TAMPA TRIBUNE

Published Daily

Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE IN PASCO/HERNANDO/CITRUS

in the matter of _____

NOTICE OF INTENT TO ISSUE

was published in said newspaper in the issues of _____

FEBRUARY 12, 1994

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough 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.

Sworn to and subscribed before me, this 15 day of FEBRUARY, A.D. 1994

Personally Known or Produced Identification _____

Type of Identification Produced _____

(SEAL)

Ima Kennedy

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION
NOTICE OF INTENT TO ISSUE
Florida Mining & Materials
AC 27-240349

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Southdown, Inc./dba Florida Mining & Materials (FM&M), a construction permit, No. AC 27-240349, authorizing continuous utilization/firing of whole tires in the facility's No. 1 cement kiln, as detailed in the request for permit. The Department is issuing this intent to issue for the reasons stated below and in the proposed construction permit.

The applicant, FM&M, Post Office Box 6, Brooksville, Florida 34605-0006, submitted a request on October 12, 1993, and the processing fee on October 26, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to utilize/fire whole tires as a supplemental fuel on a continuous basis in the facility's No. 1 cement kiln. FM&M requests a maximum utilization/firing rate of 20.0% of the total BTU heat input, or 2.14 tons per hour. The No. 1 cement kiln was permitted under the construction permit, No. AC 27-186923, and is not permitted to fire whole tires in accordance with the referenced permit.

Based on the emissions test results (baseline versus whole tire fuel conditions) conducted May 4-5, 1993 and June 8-9, 1993, actual pollutant emissions of total carbon monoxide (CO) increased by an average of 17.5 lbs/hr (a +76.6 TPY net increase @ 8760 hrs/yr operation; NOTE: the PSD significant emission rate is 100 TPY (see Table 212.400-2, Florida Administrative Code (F.A.C.)). Since there is no specific source emission limiting standard for CO contained in the Department's regulations nor in the federal New Source Performance Standards, then the proposed construction permit will establish a federally enforceable allowable/potential CO emissions limitation of 223.4 TPY for the No. 1 cement kiln; and, for PSD new source review (NSR) tracking purposes, a projected potential emissions level for CO of +98.1 TPY @ 22.4 lbs/hr and 8760 hrs/yr. Note, any future increase of allowable/potential CO emissions of +1.9 TPY (i.e., 225.3 TPY = 223.4 + 1.9) will result in a NSR emissions review requirement pursuant to Rule 17-

212.400(5), F.A.C., in accordance with Rule 17-212.400(2)(g), F.A.C.

The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida.

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 (F.S.). 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 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, F.S.

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;
- (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 business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

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

Department of Environmental Protection, Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218

Hernando County Board of County Commission, 20 North Main Street, Room 460, Brooksville, Florida 34601

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination. BV1451 2/12/94

INA S. KENNEDY
Notary Public, State of Florida
My comm. expires Mar. 22, 1996
No. C2187731



Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

FAX TRANSMITTAL SHEET

TO: John Koogler

DATE: 4-12-94 PHONE: 904-377-7158

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 3

FROM: Bruce Mitchell

DIVISION OF AIR RESOURCES MANAGEMENT

COMMENTS: comments related to FMD M's TDF proposal.

PHONE: 904-921-9506

FAX NUMBER: 904/922-6979

If there are any problems with this fax transmittal, please call the above phone number.

Printed on recycled paper.

MESSAGE CONFIRMATION

APR-12-'94 TUE 16:20

TERM ID:

F-9999

TEL NO:

NO.	DATE	ST. TIME	TOTAL TIME	ID	DEPT CODE	OK	NG
135	04-12	16:18	00°01'52	904 377 7158		03	00



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

PROJECT _____

FAX TRANSMITTAL FORM

TO: Bruce Mitchell
FDER - Tallahassee

FROM: John Koozler

SENT BY: _____

DATE: 3/10/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 1 pages PLUS this one.

REMARKS: Bruce:

Kiln #1 CO data for FM & M.
When reviewing the CO data
please realize that Kiln #1 &
Kiln #2 are identical Kilns.
For this reason I believe there
is some justification for combining
the two data sets to establish
a CO baseline emission rate for
Kiln #1. Please call after your
reviewed Thank

TABLE 13
CARBON MONOXIDE DATA REVIEW

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA

MAY 5 AND JUNE 9, 1993

Kiln 1 Baseline Data (No TDF)

Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)
1	02/28/92	Coal	144	40.1 37.5 40.7
1	02/28/92	Coal/Flolite	144	32.6 37.5 40.7
			Set Average	38.2
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8
			Set Average	31.8
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5
			Set Average	31.4

Average all non-TDF data = 32.9
 Standard deviation = 3.7
 98.1 tpy average increase
 = $98.1 \times 2000/8760$ = 22.4
 Adjusted average
 = $32.9 + 22.4$ = 55.3
 95th Percentile
 = $58.2 + 1.96 (3.7)$ = 62.6 lb/hr

CARBON MONOXIDE DATA REVIEW

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA

Baseline Data (No TDF)

Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)
1	02/28/92	Coal	144	40.1 37.5 40.7
1	02/28/92	Coal/Floolite	144	32.6 37.5 40.7
2	03/24/92	Coal	139	38.6 40.7 41.4
2	02/10/93	Coal	139	41.6 47.3 41.8
2	01/25/94	Coal	142	52.0 43.2 60.1
			Set Average	40.4
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8
			Set Average	31.8
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5
			Set Average	31.4

Average all non-TDF data = 35.8
 Standard deviation = 6.9
 98.1 tpy average increase
 = $98.1 \times 2000/8760$ = 22.4
 Adjusted average
 = $35.8 + 22.4$ = 58.2
 95th Percentile
 = $58.2 + 1.96 (6.9)$ = 71.7 lb/hr



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
 4014 NW THIRTEENTH STREET
 GAINESVILLE, FLORIDA 32609
 904/377-5822 • FAX 377-7158

PROJECT 521-92-01

FAX TRANSMITTAL FORM

RECEIVED

TO: BRUCE MITCHELL
DEP

JAN 14 1994

Bureau of
Air Regulation

FROM: JOHN KOGLER

SENT BY: _____

DATE: 1/14/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 4 pages PLUS this one.

REMARKS: BRUCE

Please review attached Thallium test method used by FHM and comparative test results. FHM method is used daily by plant personnel to control Thallium to ~ 1.0% level (10,000 ppm). Comparative tests show FHM method to provide conservatively low results. Call after you've had an opportunity to review

[Handwritten signature]



Brooksville Cement

A Southdown Company

January 12, 1994

Dr. John Koogler
Koogler & Associates
4014 NW Thirteenth Street
Gainesville, Florida 32609

RE: Thallium Concentration Monitoring and Analysis Procedure

Dear Dr. Koogler:

This letter is in response to your recent request for details of the monitoring and analysis procedure which is followed in controlling Thallium concentration at the Southdown's Brooksville Cement Plant.

As you know, the Thallium concentration is in the Kiln/Mill Baghouse dust. We monitor the concentration of Thallium in this dust on a daily basis and as we see the concentration increase we remove a portion of the dust from the system and dispose of it in an authorized landfill. The removal is generally done on a day when the Raw Mill is down and the baghouse load is at minimum level, which conversely brings the Thallium concentration in the dust to maximum level. This allows us to remove maximum Thallium from the system with minimum dust disposal.

Immediately upon taking the Raw Mill down, we start to take samples of the baghouse dust every hour. These samples are analyzed by XRF and the indicated concentration is recorded. When concentration level reaches approximately .8% we begin to load a tanker truck with the dust. We continue to monitor the concentration as the truck is being loaded and the final dust sample is taken at the end of the loading operation. The indicated concentration at the end of the truck loading will generally be in the 0.3% to 0.4% range. We average the first and last samples that went into the truck for the average concentration of the load. The normal average will be approximately 0.5% to 0.6% on the truck load of 14 to 16 tons of dust.

All dust samples are collected and analyzed in accordance to the following procedure:

1. A representative dust sample is retrieved from the baghouse dust conveying system through sample ports and placed in a clean sample vial for transport to the laboratory.

Southdown, Inc.

P.O. Box 6 • Brooksville, Florida 34605-0006
19041 796-7241 • Fax: 19041 754-9836

2. Sample vial is clearly labeled with all pertinent identification and given to laboratory technician.
3. Approximately 8 grams of dust is placed in a clean stainless steel die and compressed at 54,000 p.s.i. for 60 seconds.
4. The sample is removed from the die and is now in the form of a pellet approximately 31 mm in diameter and 5 mm thick. The pellet is also labeled and is now ready for analysis.
5. Analysis is performed by X-ray Fluorescence (XRF). XRF machine energy is set at 100 micro-amps and 25 KV for Thallium analysis.
6. Prior to sample analysis an aluminum/copper drift standard is run to correct for any variation in the X-ray analyzer. This is basically a calibration procedure which insures that the X-ray instrument is aligned as it was when the Thallium XRF analysis curve was originally established.
7. After the drift procedure is completed, a laboratory prepared kiln dust standard with a known concentration of Thallium is also analyzed to further verify instrument accuracy.
8. At this point the kiln mill baghouse dust sample pellet is placed in the sample chamber of the X-ray Fluorescence instrument. Once a vacuum is achieved in the sample chamber the sample is analyzed by means of XRF for 50 seconds.
9. Analysis results are printed out via computer interface with X-Ray instrument, documented and filed for future reference.

To further verify the accuracy of our Thallium analysis method, two Kiln/Mill baghouse dust samples were sent to an independent laboratory for analysis in late December, 1993. Thornton Laboratories of Tampa, Florida was used in this instance.

Thallium concentrations were reported as follows:

	<u>Brooksville Cement Laboratory</u>	<u>Thornton Laboratory</u>
Sample "A"	5521 ppm	4450 ppm
Sample "B"	9354 ppm	7230 ppm

It should be noted that if Thornton Lab's results are more accurate than Brooksville's, which we do not believe to be the case, then we are actually controlling concentrations at even lower and safer levels than we are claiming.

Sincerely,

Bob Rogers

Bob Rogers
Production Manager

01/14/94 11:28
JAN-14-94 FRI 11:54

904 377 7158
BROOKSVILLE CEMENT

KOGLER & ASSOC. --- FDER TALL
FAX NO. 9047549836

004/005
F.U.C



THORNTON LABORATORIES, INC.
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

1145 EAST CASS STREET, TAMPA, FLORIDA 33602
P.O. BOX 2880, TAMPA, FLORIDA 33601-2880
HRS# B4147 HRS# E84100, E84324

TELEPHONE (813) 223-9702
FAX (813) 223-9332

3-Jan-1994
Page 1

Report For: Florida Mining
PO Box 6
Brooksville Fl 34298

Sample Identification:

Kiln Mill Baghouse Dust attn: Marty Davidson
Thallium Sample "A" (12/22/93)

Date Received: 23-Dec-1993

Laboratory Number: 894375

CERTIFICATE OF ANALYSIS

Method	Parameter	Result	Units
EPA 7840	Thallium (Tl), Total	4450	mg/Kg

THORNTON LABORATORIES, INC.
Ann Russo



THORNTON LABORATORIES, INC.
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

1145 EAST CASS STREET, TAMPA, FLORIDA 33602
P.O. BOX 2880, TAMPA, FLORIDA 33601-2880
HRS# 84147 HRS# E84100, E84324

TELEPHONE (813) 223-9702
FAX (813) 223-9332

3-Jan-1994
Page 1

Report For: Florida Mining
PO Box 6
Brooksville Fl 34298

Sample Identification:

Kiln Mill Baghouse Dust attn: Marty Davidson
Thallium Sample "B" (12/22/93)

Date Received: 23-Dec-1993

Laboratory Number: 894376

CERTIFICATE OF ANALYSIS

Method	Parameter	Result	Units
EPA 7840	Thallium (Tl), Total	7230	mg/Kg

THORNTON LABORATORIES, INC.
Ann Russo

Post-It™ brand fax transmittal memo 7671 # of pages = 2

To: John Koogler	From: Bob Rogers
Co.	Co.
Dept.	Phone #
	Fax #

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
PATRICIA A. RENOVITCH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS
TIMOTHY P. ATKINSON

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

NORMAN H. HORTON, JR.
OF COUNSEL

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

J. P. SUBRAMANI, Ph. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

VIA HAND-DELIVERY

RECEIVED

October 26, 1993

OCT 26 1993

Mr. Clair Fancy
Bureau of Air Quality Management
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Division of Air
Resources Management

Re: Southdown, Inc. d/b/a Florida Mining and Materials
Permit Amendments to Allow the use of
Tire Derived Fuel

Dear Mr. Fancy:

On October 12, 1993, Southdown, Inc., d/b/a Florida Mining and Materials ("FMM") submitted to the Department its letter request seeking authorization to utilize tire derived fuel at its Brooksville facility. Hernando County had previously provided to FMM and the Department the report of its consultants, KBN Engineering and Applied Sciences, Inc. (KBN). This report concluded that the use of tire derived fuel by FMM would be appropriate if the permit included six conditions recommended by KBN.

FMM, in its letter of October 12, 1993, accepted all of KBN's conditions except for condition number 5 which dealt with potential changes to the tire feed mechanism. Subsequent to the test burn a question has also arisen concerning the presence of thallium in FMM cement kilns. On October 19, 1993, the Hernando County Board of County Commissioners reviewed the FMM request for permit modification, the KBN report, and the thallium issue. At that time both FMM and Hernando County agreed that a modification to KBN's proposed condition 5 and the inclusion of an additional condition addressing thallium would resolve these issues.

Accordingly, Hernando County has no objection to the issuance of a permit amendment allowing the use of tire derived fuel in FMM Cement Kiln No. 1 if conditioned as proposed by KBN, and as further modified below:

Mr. Clair Fancy
October 26, 1993
Page 2

Condition 5, as proposed by KBN Engineering in its September, 1993, report will be modified to provide as follows:

This permit is valid only for the specific WTDF feed mechanism used during the test burn of WTDF/coal. Any physical modification to the WTDF feed mechanism which involves a change to the feed rate, the point of introduction or the double air lock system will require a modification of this permit, and a clear point of entry will be provided for Hernando County and other substantially affected parties. If the WTDF feed mechanism is to be physically modified, a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and determine if further information or stack testing is required in order to determine if such modifications will result in an increase in actual emissions, and it shall be FMM's burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June, 1993. (New language underlined.)

An additional condition regarding thallium, which will provide as follows, will be included in the permit:

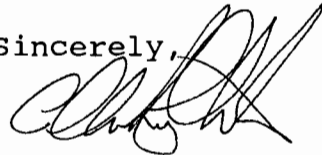
To ensure that thallium emission levels will not exceed ambient no-threat levels, daily sampling of the baghouse dust for each kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%.

As previously stated, FMM and the County have agreed on these specific conditions, and request that they be included in the proposed permit.

Mr. Clair Fancy
October 26, 1993
Page 3

Please give me a telephone call if you have any questions regarding this letter or if I can be of further assistance in this regard.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Anthony Cleveland', written over the word 'Sincerely,'.

C. Anthony Cleveland

CAC/dg/1579
C:\Work1\FancyLtr.CAC

xc: Mr. Charles Hetrick
David Dee, Esquire

Best Available Copy

Post-It™ brand fax transmittal memo 7671		# of pages → 2
To <i>Claire Nancy</i>	From <i>Segundo</i>	
Co.	Co. <i>Fernandez</i>	
Dept.	Phone #	
Fax # <i>922-6979</i>	Fax #	

October 18, 1993

Mr. Segundo Fernandez
 Oertel, Hoffman, Fernandez and Cole, P.A.
 2700 Blair Stone Road, Suite C
 Tallahassee, FL 32301

Re: Thallium Issue at Florida Mining & Materials

Dear Mr. Fernandez:

Based on my conversation with you last week, KBN has investigated the issue regarding thallium in regards to the Florida Mining & Materials (FMM) whole tire-derived fuel (WTDF) test burn. I have spoken to John Koogler and he has relayed the following information to me:

- 1) Thallium content in coal.
- 2) Ambient impact analysis of thallium due to FMM cement plant.

We have reviewed these materials, and have conducted our own in-house investigation of the thallium content of both coal and tires. Based on these analysis, we offer the following observations:

- 1) FMM did not test for thallium emissions from Kiln No. 1 during the WTDF test burn. According to Dr. Koogler, they have never tested for thallium emissions from the kilns at FMM.
- 2) The thallium content of bituminous coal is low, with an average of about 0.2 ppm, with the highest values being about 1 ppm. This concentration is much lower than some other metals in coal which are of more concern, such as arsenic (5 ppm avg.), chromium (20 ppm avg.), and lead (7 ppm). During the test burn, emissions of these metals from Kiln No. 1 at FMM were below detectable levels.
- 3) No data has been located concerning the thallium content of waste tires. Various references and articles were researched, and the Scrap Tire Management Council in Washington, D.C., was contacted. Dr. Koogler was also questioned. None of these sources could locate any information related to the thallium content of tires.
- 4) KBN is attempting to contact Goodyear or Firestone to obtain information on thallium in tires. In the absence of such data, the following analogy can be made. The concentrations of arsenic, chromium, and lead, as well as other trace metals, in waste tires has been found to be lower than concentrations in coal. By analogy, it is likely that the thallium content of waste tires is also lower than that of coal. There is no reason to suspect that high levels of thallium exists in tires, based on the available information. Assuming this to be correct, the burning waste tires should not result in higher emissions than burning of coal in the cement kiln. Therefore, our conclusions concerning the FMM test burn would not change from that presented in KBN's final report dated September, 1993.

Best Available Copy

Mr. S. Fernandez
October 18, 1993
Page 2

5) In regard to the potential ambient impact of thallium emissions ^{from} the FMM cement plant, Dr. Koogler's modeling information was reviewed. His analysis demonstrates that with PM emissions of up to 100 lb/hr from the facility (reflective of total permitted PM emissions) and assuming a 1% thallium concentration in the PM, the FDEP ambient no-threat levels (NTLs) would not be exceeded. Dr. Koogler indicated that FMM now monitors the thallium content of the kiln dust collected in the baghouse, and when the concentration reaches 1% (10,000 ppm), they remove a portion of the kiln dust instead of recycling it back into the kiln. The thallium content of the kiln dust apparently increases with time as the kiln dust is recycled back into the system. Dr. Koogler did not mention the frequency of monitoring, or how often the kiln dust is wasted.

Our analysis of the modeling results further shows that the 24-hour ambient NTL of $0.24 \mu\text{g}/\text{m}^3$ could be exceeded if the thallium concentration in the PM emissions reached 1.5%. Therefore, it seems important to insure the thallium content of the kiln dust does not exceed 1.5% on a daily basis.

Please call if you have any questions concerning this matter

Sincerely,

David A. Buff, M.E., P.E.
Principal Engineer

10/20

Bruce -

Tony Cleveland call me yesterday and wanted me to react to this letter. I told him that we would look into this thallium upon our review. I looked in the CAA list of 189 and did not see it listed. I told Tony that those were the pollutants that we would be looking into in the future.

~~lead~~ widely distributed poisonous metallic element ^{that resembles} ~~which~~ used chiefly in the form of lead compounds in photoelectric cells or as a pesticide

10-20-93
Zathy
wiles - 3:10
2:40

Tl	204.37 (at. wt.)	81 (at. #)
Pb	207.2 (at. wt.)	82 (at. #)

P.S. Hope you feel better soon -

1.5 ~~lb~~ in the cement kiln dust by nonce recirculation dust [1.0, pm, FMIM plants bleed off to avoid RCRA 1990]

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

TIMOTHY P. ATKINSON
M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
PATRICIA A. RENOVITCH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

NORMAN H. HORTON, JR.
OF COUNSEL

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

J. P. SUBRAMANI, PH. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

April 12, 1994

RECEIVED

Mr. Bruce Mitchell
Bureau of Air Regulation
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED APR 12 1994

APR 12 1994

Bureau of
Air Regulation

Bureau of
Air Regulation

Dear Mr. Mitchell:

Hernando County and Florida Mining and Material have agreed to the following language being added to Specific Condition Number 10 of the draft permit:

Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system may require a modification to this permit. If the WTDF feed mechanism is to be physically modified in this manner a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and prior to any modification determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. FM&M shall bear the burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June 1993.

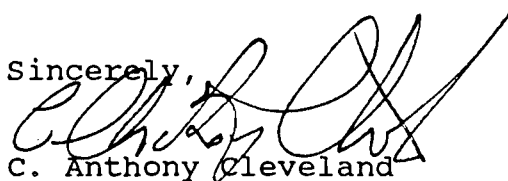
With regard to the issue of CO emission testing, Hernando County agrees with the testing procedure outlined in John Koogler's memorandum of March 28, 1994, to David Buff. I enclose a copy of

Mr. Bruce Mitchell
April 12, 1994
Page 2

this memorandum. It is my understanding that compliance testing for CO will be required on an annual basis by the permit. It is my further understanding that you agree with annual testing and that this provision will also appear in the permit to be issued by the Department.

Thank you very much for your assistance in regard to this matter. Please give me a telephone call if you have any questions or if I can provide you with any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Anthony Cleveland', written over the typed name.

C. Anthony Cleveland

CAC/dg/1579
C:\Work1\Mitch4Lt.CAC

Encl. a/s

xc: David Dee, Esq.

MEMORANDUM

VIA FAX

TO: Dave Buff
FROM: John Koogler
DATE: March 28, 1994
SUBJECT: Carbon Monoxide Limit for the
Florida Mining & Materials Kiln No. 1
While Using Tire Derived Fuel

RECEIVED

APR 12 1994

Bureau of
Air Regulation

I talked with Bruce Mitchell regarding the carbon monoxide emission limit for Kiln No. 1 at Florida Mining and Materials (FM&M) while the kiln was utilizing TDF as a fuel supplement. Bruce has arrived at a baseline emission rate of 34.9 pounds per hour (see attached for derivation). To this, he has added a 22.8 pounds per hour increase (99.9 tons per year annualized) and arrived at an emission limit of 57.7 pounds per hour (somehow Bruce arrived at 57.8 pounds per hour). I spoke with Bruce at some length regarding the averaging time and an acceptable method of demonstrating compliance. Bruce stated he did not care what averaging time was selected; 1-hour, 8-hours, 24-hours, etc., but whatever averaging time was selected, compliance would be demonstrated by three test runs over the selected averaging period. In other words; if FM&M selected an 8-hour averaging period, the Department would require three 8-hour test runs for compliance. Bruce stated that this has been the position taken by John Brown and others and, hence, the position he would follow.

I discussed this matter with FM&M personnel and it has been decided to select a 1-hour averaging time for the 57.7 pounds per hour limit, with compliance being demonstrated by three 1-hour test runs. In selecting this averaging period, we recognized that there were periods of time during the compliance test conducted on June 8, 1993, when the carbon monoxide limit exceeded 57.7 pounds per hour and also times when the average of three successive 1-hour emission rates exceeded 57.7 pounds per hour. As pointed out in our report comparing emission rates under baseline and TDF firing conditions (pages 26-31), it is our opinion that the carbon monoxide emission rates measured on June 8, 1993, were the result of a minor upset in kiln operations. The carbon monoxide emission rates measured on June 9, 1993, also while TDF was used as a fuel supplement, are well below 57.7 pounds per hour and are consistent with emission rates measured on Kilns 1 and 2 when the kilns were fired with coal and/or coal and Flolite. We are confident that FM&M can comply with the 57.7 pounds per hour (1-hour average) carbon monoxide emission limits except under upset conditions. Certainly, over an annual period, the increase in carbon monoxide emissions as a result of burning tire derived fuel will be much less than 100 tons per year.

Give me a call with your comments on this matter when you get back into the office. We need to get this matter resolved this week.



CARBON MONOXIDE DATA REVIEW
 FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 5 AND JUNE 9, 1993

3/23/94

Baseline Data - (No TDF)					Coal/TDF Data						
Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	Kiln Number	Test Date	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)			
1	02/28/92	Coal	144	40.1 37.5 40.7	1	06/08/93	140-142	64.2 67.9 32.9			
1	02/28/92	Coal/Floalite	144	32.6 37.5 40.7				46.2 52.4 80.9			
2	03/24/92	Coal	139	38.6 40.7 41.4				55.5 43.9 44.8			
2	02/10/93	Coal	139	41.6 47.3 41.8				90.5 71.3 68.8			
			Set Average	40.0			Set Average	56.6			
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8	1	06/09/93	101-143	56.1 47.9 37.7 44.6 39.6 39.9 35.1 39.2 38.6 39.7 34.6 44.2			
			Set Average	31.8						Set Average	41.5
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5							
			Set Average	31.4							

39.4

36.9

38.2 - 1992 avg

31.8

31.4

31.6 - 1993 avg

1992-93 Avg

= (38.2 + 31.6) / 2

= 34.9 lb/hr

Max Increase

= 99.9 tpy x 2000 / 8760

= 22.8 lb/hr

Proposed Emission Rate

= 34.9 + 22.8

= 57.7 lb/hr

MEMORANDUM

VIA FAX

TO: Don Kelly
Anetha Lue
David Dee

FROM: John Koogler

DATE: March 23, 1994

SUBJECT: TDF Carbon Monoxide Limit
and "Modification" Condition

*FM&M proposes
1-hr avg limit.
Dave Buff indicated
concurrency 4/1/94
3 1-hour test
runs for
compliance*

I received a phone call from Bruce Mitchell during which time Bruce stated that he has finalized his position regarding the carbon monoxide emission limit for Kiln No. 1. Bruce stated that to establish a baseline carbon monoxide emission rate for Kiln No. 1, he would take the average of the 1992 test data of 38.2 pounds per hour (see attached data summary) and the average of the 1993 baseline test data of 31.6 pounds per hour and average these two averages to obtain a two-year average of 34.9 pounds per hour. Bruce stated that this is the rationale that the Department has used in several cases to establish a baseline emission rate, and hence, the rationale that he would use to establish the carbon monoxide baseline emission rate for Kiln No. 1.

To the baseline emission rate of 34.9 pounds per hour, Bruce proposed to add 22.8 pounds per hour (99.9 tons per year, annualized). This would result in a maximum carbon monoxide emission rate for Kiln No. 1 of 57.7 pounds per hour. Bruce stated that it made no difference to him whether FM&M interpreted this emission rate to be a 1-hour average or an 8-hour average emission rate.

I spoke with Dave Buff regarding Bruce's position on this date (March 23, 1994). Dave suggested, based on a condition he had seen in another permit, that the 57.7 pounds per hour be accepted as a 24-hour average emission limit with compliance to be demonstrated by three 2-hour compliance tests. I am trying to get back in touch with Bruce Mitchell to see if this type of limit and method of compliance demonstration is acceptable with him.

Bruce - this is most point now

JAC 4/1/94

On the matter of the specific condition related to modification, I am proposing the following wording based upon comments by David Dee.

Any physical modification to the WTDF feed mechanism that results in an increased feed rate, or a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification to this permit. A description of such modifications shall be submitted to FDEP and HCBC. FDEP and HCBC shall have 90 days to review this information and determine if further information or stack testing is required in order to determine if such modifications will result in an increase in actual emissions, and it shall be FM&M's burden to provide reasonable assurance that such modifications will not affect the conclusions derived from the test burn of May and June 1993.

I will be out of the office Thursday and Friday (March 24 and 25). I will be in phone contact with my office during this period, however.

CARBON MONOXIDE DATA REVIEW
 FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 5 AND JUNE 9, 1993

3/23/94

Baseline Data - (No TDF)					Coal/TDF Data				
Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	Kiln Number	Test Date	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	
1	02/28/92	Coal	144	40.1 37.5 40.7	1	06/08/93	140-142	64.2 67.9 32.9	
1	02/28/92	Coal/Flolite	144	32.6 37.5 40.7					
2	03/24/92	Coal	139	38.6 40.7 41.4					
2	02/10/93	Coal	139	41.6 47.3 41.8				56.1 47.9 37.7 44.6 39.6 39.9 35.1 39.2 38.6 39.7 34.8 44.2	
			Set Average	40.0			Set Average	56.6	
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8	1	06/09/93	101-143	56.1 47.9 37.7 44.6 39.6 39.9 35.1 39.2 38.6 39.7 34.8 44.2	
			Set Average	31.8			Set Average	41.5	
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5					
			Set Average	31.4					

39.4

36.9

38.2 - 1992 avg

31.8

31.4

31.6 - 1993 avg

1992-93 Avg

= (38.2 + 31.6) / 2

= 34.9 lb/hr

Max Increase

= 99.9 tpy x 2000 / 8760

= 22.8 lb/hr

Proposed Emission Rate

= 34.9 + 22.8

= 57.7 lb/hr

I N T E R O F F I C E M E M O R A N D U M

Date: 07-Feb-1994 09:22am ES
From: Holly Burnaman TAL
BURNAMAN H
Dept: Office General Counsel
Tel No: 904/488-9730
SUNCOM:

TO: Patty Adams TAL

(ADAMS_P)

Subject: RE: Florida Mining and Materials

I found the package thanks!!

I N T E R O F F I C E M E M O R A N D U M

Date: 07-Feb-1994 08:32am ES
From: Holly Burnaman TAL
BURNAMAN_H
Dept: Office General Counsel
Tel No: 904/488-9730
SUNCOM:

TO: Duane Revell TPA (REVELL_D @ A1 @ TPA1)
TO: Patty Adams TAL (ADAMS_P)
TO: Jim McDonald TPA (MCDONALD_J @ A1 @ TPA1)

Subject: Florida Mining and Materials

On February 3, 1994, we received a Motion for Extension of Time from Hernando County, a third party, challenging the Intent to Issue for Florida Mining and Materials permit No. AC27-240349. Jim, can I please get a copy of the Intent?

I N T E R O F F I C E M E M O R A N D U M

Date: 07-Feb-1994 08:32am ES
From: Holly Burnaman TAL
BURNAMAN H
Dept: Office General Counsel
Tel No: 904/488-9730
SUNCOM:

TO: Duane Revell TPA (REVELL_D @ A1 @ TPA1)
TO: Patty Adams TAL (ADAMS_P)
TO: Jim McDonald TPA (MCDONALD_J @ A1 @ TPA1)

Subject: Florida Mining and Materials

On February 3, 1994, we received a Motion for Extension of Time from Hernando County, a third party, challenging the Intent to Issue for Florida Mining and Materials permit No. AC27-240349. Jim, can I please get a copy of the Intent?

0530010

CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER, P. A.

ATTORNEYS AT LAW

ONE HARBOUR PLACE P.O. BOX 3239 TAMPA, FLORIDA 33601 (813) 223-7000 FAX (813) 229-4133	FIRSTATE TOWER P.O. BOX 1171 ORLANDO, FLORIDA 32802 (407) 849-0300 FAX (407) 648-9099	HARBOURVIEW BUILDING P.O. BOX 12426 PENSACOLA, FLORIDA 32582 (904) 434-0142 FAX (904) 434-5366	FIRST FLORIDA BANK BUILDING P.O. DRAWER 190 TALLHASSEE, FLORIDA 32302 (904) 224-1585 FAX (904) 222-0398	ESPERANTE P.O. BOX 150 WEST PALM BEACH, FLORIDA 33402 (407) 659-7070 FAX (407) 659-7368	BARNETT TOWER P.O. BOX 2861 ST. PETERSBURG, FLORIDA 33731 (813) 821-7000 FAX (813) 822-3768
--	---	--	---	---	---

PLEASE REPLY TO :

February 4, 1994

Tallahassee
RECEIVED

FEB 07 1994

Bureau of
Air Regulation

Bruce Mitchell
Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399

Re: Florida Mining & Materials
Permit AC27-240349

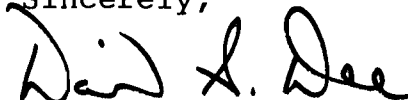
Dear Bruce:

Southdown, Inc., is doing business as Florida Mining & Materials (FMM) and it operates two dry cement kilns at its Brooksville cement plant in Hernando County, Florida. This firm has been assisting Southdown with its efforts to obtain the necessary DEP permits and approvals for the use of tire derived fuel. Nonetheless, the Department inadvertently omitted us from the list of people to receive copies of the draft permit modification for Southdown. Please make a note in your file to show that we are counsel of record for Southdown and, therefore, we would like to receive copies of any correspondence concerning this project.

Parenthetically, the Department sent a copy of the permit modification to Mr. Larry Sellers of the Holland & Knight law firm and he then sent it to me. Mr. Sellers represents Florida Crushed Stone, not Southdown.

Thank you for your assistance.

Sincerely,



David S. Dee

cc: Don Kelly
John Koogler
Larry Sellers
Tony Cleveland



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-93-03

February 1, 1994

RECEIVED

FEB 04 1994

**Bureau of
Air Regulation**

VIA FAX

Mr. Bruce Mitchell
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Florida Mining & Materials
Permit AC27-240349
Comments on Proposed Permit to Allow
Allow the Use of TDF in the FM&M
No. 1 Cement Kiln.

Dear Mr. Mitchell:

I would like to offer the following comments on Permit AC27-240349 that the Department intends to issue to Southdown, Inc., DBA Florida Mining & Materials, authorizing the continuous use of TDF in the company's No. 1 cement kiln. In general, we find the permit conditions acceptable. However, there are a few details that we request be amended.

First, Specific Condition No. 12 of the proposed permit limits carbon monoxide emissions to 51 pounds per hour and 223.4 tons per year. These are limits that we requested to avoid the New Source Review Requirements. The derivation of these emission limits was presented in my letter to Mr. Clair Fancy dated October 12, 1993 (copy attached). On page 2 of that letter, I state:

"... FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase of carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year."

It is apparent that if you add the 31.6 pounds per hour emission rate measured during the baseline test and the requested 22.4 pounds per hour increase, the resulting emission rate will be 54.0 pounds per hour (not 51.0 pounds per hour). On an annual basis, the carbon monoxide emission rate corresponding to 54.0 pounds per hour will be 236.5 tons per year

(rather than 223.4 tons per year). Correcting this mathematical error will not result in any increase in actual carbon monoxide emissions but will require that the limits in Specific Condition No. 12 be amended to 54.0 pounds per hour and 236.5 tons per year for carbon monoxide. Also, the annual carbon monoxide emission rate referenced in Specific Condition No. 13 should also be corrected to 236.5 tons per year, and to be consistent with the revised carbon monoxide emission limits, page 1 of 3 of the Notice of Intent to Issue should be amended to reflect the corrected annual carbon monoxide emission rate.

We would also like to request that the hourly carbon monoxide emission rate of 54.0 pounds per hour be an 8-hour average emission limit. This request is made because of fluctuations in the carbon monoxide emission rates. These fluctuations were demonstrated during the TDF test period. Attached is a summary of the 2-hour average carbon monoxide emission rates measured both during the baseline and TDF test periods. It will be noted that during the TDF test period, there were three 2-hour periods when the carbon monoxide emission rate exceed 54.0 pounds per hour. The averaging of this emission rate over an eight hour period will allow FM&M to average out some of the short-term peak carbon monoxide levels which often occur during the operation of a Portland cement plant. This requested change in the averaging period will not result in an increase in annual emissions and is not expected to have any significant affect on ambient carbon monoxide concentrations.

Regarding Specific Condition No. 14, the compliance testing requirement for carbon monoxide, we would request that this condition be a condition of the construction permit and be required by the operating permit only in the year that the operating permit is to be renewed. In our opinion, this testing requirement will adequately demonstrate compliance with the proposed carbon monoxide emission limit.

There are two editorial changes that I would like to suggest. The first applies to Specific Condition No. 10. It seems it would be more appropriate if the condition read:

"If there is any change in the method of operation"

This change will make the condition grammatically correct. A similar change is suggested in Specific Condition No. 13 where the suggested wording is:

"Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase"

Again, this suggested change will make the condition more grammatically correct.



Mr. Bruce Mitchell
Florida Department of
Environmental Protection

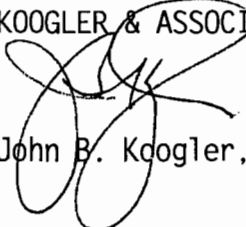
February 1, 1994
Page 3

One other matter that we discussed was the expiration date of the permit. The proposed permit is to expire June 30, 1994 and FM&M has no problem with this date. The compliance test, including that required by Specific Condition No. 14, will be conducted during the month of February 1994 and the Certificate of Completion of Construction will be submitted shortly thereafter. Based on this schedule, the Department should have adequate time to issue an operating permit prior to the June 30, 1994, expiration date.

I appreciate your review of these matters and will be more than happy to answer any questions or provide any additional information should it be required.

Very truly yours,

KOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Don Kelly
Ms. Anetha Lue
Mr. David Dee





KOOGLER & ASSOCIATES

ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

October 12, 1993

RECEIVED

OCT 15 1993

**Division of Air
Resources Management**

VIA FAX AND MAIL

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

Subject: Hernando County-AP
Southdown, Inc. dba Florida Mining
and Materials
Permit Amendment to Allow the Use
of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln; or up to 2.14 tons of TDF per hour.

The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions* and *Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8760 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.

$$51 = 31.6 + 22.4$$

236.5



FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit." It is our opinion that this proposed condition is unnecessary and unwarranted.

FM&M has considered physical changes to the tire feed system but, as discussed with Mr. Bruce Mitchell of your staff, the physical changes will not constitute a "modification" as defined by Department rule because there will be no change in emissions (Rule 17-212.200(46), FAC). Any feed system used by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheater through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and this is the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point nor the manner in which the TDF is introduced nor the type of mechanism used to introduce the WTDF. There is no reason, therefore, to believe that any equipment change within these constraints will affect emissions. Hence, such changes should not require an amendment to the permit for the kiln.

There are no modifications or changes requested to the No. 1 kiln permits, other than those that have been addressed herein.

A check in the amount of \$4,500 will be provided by Southdown under separate cover. This is the fee required for a non-PSD permit review when the emission rate increase is in the range of 50-100 tons per year.

We appreciate your consideration of this matter and will be happy to provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Don Kelly, FM&M
Ms. Anetha Lue, Southdown
Mr. David Dee, Carlton et al



TABLE 12
 COMPARISON OF CARBON MONOXIDE EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	28.10	66.08
2	30.73	39.91
3	31.21	66.63
4	33.56	49.7
5	36.24	47.63
6	31.17	70.04
7	30.9	52
8	33.06	41.16
9	29.9	39.76
10	30.32	37.11
11	30.97	39.13
12	31.56	39.51
Mean	31.48	49.06
S var	4.19	146.81
n	12.00	12.00
Pooled est	8.69	
t stat.	4.96	
t' (95% C.I.)	1.717	
Difference is significant		

2hr avg

↑
*2-hour average
 emission rates*



KOUGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

PROJECT 521-93-03

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Kougler

SENT BY: Wendy

DATE: 2/2/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 7 pages PLUS this one.

REMARKS:

cc: B. Thomas
G. Herper EPA
G. Bumpak, NPS
J. Cleveland
C. Netrick, Hernandez Co

Best Available Copy



KOUGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

PROJECT 521-93-03

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Kougler

SENT BY: Wendy

DATE: 2/2/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 7 pages PLUS this one.

REMARKS: ²⁻²⁻⁹⁴ give FAX and copies to distribute

EPA, NPS, SWD, Hernando Co & DHFC
spoke w John Brown about comments - to address
in the Final Determination - NOT Reissue;
called Wendy and advised that we do not
intend to reissue the "Intent" pkg



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-93-03

February 1, 1994

VIA FAX

Mr. Bruce Mitchell
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Florida Mining & Materials
Permit AC27-240349
Comments on Proposed Permit to Allow
Allow the Use of TDF in the FM&M
No. 1 Cement Kiln

Dear Mr. Mitchell:

I would like to offer the following comments on Permit AC27-240349 that the Department intends to issue to Southdown, Inc., DBA Florida Mining & Materials, authorizing the continuous use of TDF in the company's No. 1 cement kiln. In general, we find the permit conditions acceptable. However, there are a few details that we request be amended:

First, Specific Condition No. 12 of the proposed permit limits carbon monoxide emissions to 51 pounds per hour and 223.4 tons per year. These are limits that we requested to avoid the New Source Review Requirements. The derivation of these emission limits was presented in my letter to Mr. Clair Fancy dated October 12, 1993 (copy attached). On page 2 of that letter, I state:

"... FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase of carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year."

It is apparent that if you add the 31.6 pounds per hour emission rate measured during the baseline test and the requested 22.4 pounds per hour increase, the resulting emission rate will be 54.0 pounds per hour (not 51.0 pounds per hour). On an annual basis, the carbon monoxide emission rate corresponding to 54.0 pounds per hour will be 236.5 tons per year

Mr. Bruce Mitchell
Florida Department of
Environmental Protection

February 1, 1994
Page 2

(rather than 223.4 tons per year). Correcting this mathematical error will not result in any increase in actual carbon monoxide emissions but will require that the limits in Specific Condition No. 12 be amended to 54.0 pounds per hour and 236.5 tons per year for carbon monoxide. Also, the annual carbon monoxide emission rate referenced in Specific Condition No. 13 should also be corrected to 236.5 tons per year, and to be consistent with the revised carbon monoxide emission limits, page 1 of 3 of the Notice of Intent to Issue should be amended to reflect the corrected annual carbon monoxide emission rate.

We would also like to request that the hourly carbon monoxide emission rate of 54.0 pounds per hour be an 8-hour average emission limit. This request is made because of fluctuations in the carbon monoxide emission rates. These fluctuations were demonstrated during the TDF test period. Attached is a summary of the 2-hour average carbon monoxide emission rates measured both during the baseline and TDF test periods. It will be noted that during the TDF test period, there were three 2-hour periods when the carbon monoxide emission rate exceed 54.0 pounds per hour. The averaging of this emission rate over an eight hour period will allow FM&M to average out some of the short-term peak carbon monoxide levels which often occur during the operation of a Portland cement plant. This requested change in the averaging period will not result in an increase in annual emissions and is not expected to have any significant affect on ambient carbon monoxide concentrations.

Regarding Specific Condition No. 14, the compliance testing requirement for carbon monoxide, we would request that this condition be a condition of the construction permit and be required by the operating permit only in the year that the operating permit is to be renewed. In our opinion, this testing requirement will adequately demonstrate compliance with the proposed carbon monoxide emission limit.

There are two editorial changes that I would like to suggest. The first applies to Specific Condition No. 10. It seems it would be more appropriate if the condition read:

"If there is any change in the method of operation"

This change will make the condition grammatically correct. A similar change is suggested in Specific Condition No. 13 where the suggested wording is:

"Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase"

Again, this suggested change will make the condition more grammatically correct.



Mr. Bruce Mitchell
Florida Department of
Environmental Protection

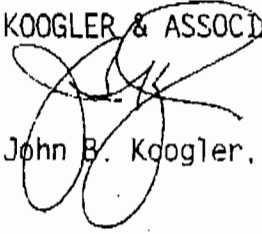
February 1, 1994
Page 3

One other matter that we discussed was the expiration date of the permit. The proposed permit is to expire June 30, 1994 and FM&M has no problem with this date. The compliance test, including that required by Specific Condition No. 14, will be conducted during the month of February 1994 and the Certificate of Completion of Construction will be submitted shortly thereafter. Based on this schedule, the Department should have adequate time to issue an operating permit prior to the June 30, 1994, expiration date.

I appreciate your review of these matters and will be more than happy to answer any questions or provide any additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Don Kelly
Ms. Anetha Lue
Mr. David Dee





RECEIVED
 OCT 15 1993
 Division of Air
 Resources Management

KA 521-92-01
 October 12, 1993

VIA FAX AND MAIL

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

Subject: Hernando County-AP
 Southdown, Inc. dba Florida Mining
 and Materials
 Permit Amendment to Allow the Use
 of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln or up to 2.14 tons of TDF per hour.

Best Available Copy

The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions and Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 — 236.5 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8760 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.



Best Available Copy

FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit," It is our opinion that this proposed condition is unnecessary and unwarranted.

FM&M has considered physical changes to the tire feed system but, as discussed with Mr. Bruce Mitchell of your staff, the physical changes will not constitute a "modification" as defined by Department rule because there will be no change in emissions (Rule 17-212.200(46), FAC). Any feed system used by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheater through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and this is the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point nor the manner in which the TDF is introduced nor the type of mechanism used to introduce the WTDF. There is no reason, therefore, to believe that any equipment change within these constraints will affect emissions. Hence, such changes should not require an amendment to the permit for the kiln.

There are no modifications or changes requested to the No. 1 kiln permits, other than those that have been addressed herein.

A check in the amount of \$4,500 will be provided by Southdown under separate cover. This is the fee required for a non-PSD permit review when the emission rate increase is in the range of 50-100 tons per year.

We appreciate your consideration of this matter and will be happy to provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES



John B. Koogler, Ph.D., P.E.

JBK:wa

- c: Mr. Bruce Mitchell, FDEP, Tallahassee
- Mr. Don Kelly, FM&M
- Ms. Anetha Lue, Southdown
- Mr. David Dee, Carlton et al



Best Available Copy

TABLE 12 COMPARISON OF CARBON MONOXIDE EMISSION RATES BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA
MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	28.10	66.08
2	30.73	38.91
3	31.21	66.63
4	33.56	49.7
5	36.24	47.63
6	31.17	70.04
7	30.9	52
8	33.06	41.16
9	29.9	39.76
10	30.32	37.11
11	30.97	39.13
12	31.56	39.51
Mean	31.48	49.06
S var	4.19	146.81
n	12.00	12.00
Pooled est	8.69	
t stat.	4.96	
t' (95% C.I.)	1.717	
Difference is significant		

66.08
 66.63
 70.04
 2hr avg

2-hour average
 emission rates



Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

January 19, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly
Plant Manager
Southdown, Inc. dba
Florida Mining & Materials
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

Re: Request for Authorization to Utilize/Fire Whole Tires
Continuously in the Facility's No. 1 Cement Kiln
AC 27-240349

Attached is one copy of the proposed construction permit to allow continuous utilization of whole tires as a supplement to the current permitted fuels in Southdown, Inc. /dba Florida Mining & Materials's (FM&M) No. 1 cement kiln. FM&M proposes a utilization/feed rate of 20.0% of the total Btu heat input, or 2.14 tons per hour. The No. 1 cement kiln was permitted under the construction permit, No. AC 27-186923, and is not permitted to utilize/fire whole tires in accordance with the referenced permit.

If there are any questions, please call Mr. Bruce Mitchell at (904)488-1344 or submit any written comments you wish to have considered concerning the Department's proposed action to me.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/BM/rbm

Attachments

c: B. Thomas, SW District
J. Bunyak, NPS
C. Hetrick, HCBCC
D. Beason, Esq., DEP
A. Lue, P.E., SI
J. Koogler, Ph.D., P.E., K&A
J. Harper, EPA
D. Buff, P.E., KBN
A. Cleveland, Esq., OHF&C
L. Sellers, Jr., Esq., H&K

P 872 562 595



Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form 3800, JUNE 1991

Sent to Mr. Don Kelly, Southdown, In	
Street and No. P. O. Box 6	
P.O., State, and ZIP Code Brooksville, FL 34605-0006	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date Mailed: 1-20-94 Permit: AC 27-240349	

Thank you for using Return Receipt Service.

<p>SENDER:</p> <ul style="list-style-type: none"> • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered. 	<p>I also wish to receive the following services (for an extra fee):</p> <p>1. <input type="checkbox"/> Addressee's Address</p> <p>2. <input type="checkbox"/> Restricted Delivery</p> <p>Consult postmaster for fee.</p> <p>4a. Article Number P 872 562 595</p> <p>4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>7. Date of Delivery 1-25-90</p> <p>8. Addressee's Address (Only if requested and fee is paid)</p>
<p>3. Article Addressed to: Mr. Don Kelly Plant Manager Southdown, Inc dba Florida Mining and Materials Post Office Box 6 Brooksville, FL 34605-0006</p>	
<p>5. Signature (Addressee)</p>	
<p>6. Signature (Agent) <i>Barbara Tate</i></p>	

DOMESTIC RETURN RECEIPT

PS Form 3811, December 1991 *U.S. GPO: 1982-323-402

Is your RETURN ADDRESS completed on the reverse side?

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of
Application for Permit by:

Florida Mining & Materials
P. O. Box 6
Brooksville, Florida 34605-0006

DEP File No. AC 27-240349

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Southdown, Inc. /dba Florida Mining & Materials (FM&M) a construction permit, No. AC 27-240349, authorizing continuous utilization of whole tires in the facility's No. 1 cement kiln, as detailed in the request for a construction permit specified above. The Department is issuing this Intent to Issue for the reasons stated below and in the attached proposed construction permit.

The applicant, FM&M, submitted a request on October 12, 1993, and the processing fee on October 26, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to utilize/fire whole tires on a continuous basis in the facility's No. 1 cement kiln. FM&M requests a maximum utilization/firing rate of 20.0% of the total Btu heat input, or 2.14 tons per hour. The No. 1 cement kiln was permitted under the construction permit, No. AC 27-186923, and is not permitted to utilize/fire whole tires in accordance with the referenced permit.

The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes (F.S.); Florida Administrative Code (F.A.C.) Chapters 17-210 and 17-4; and, 40 CFR (July 1, 1992 version). The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed activity.

Pursuant to Section 403.815, F.S., and 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 a 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's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, 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 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, F.S. 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, F.S.

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 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 PROTECTION



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

B. Thomas, SW District	D. Beason, Esq., DEP
J. Koogler, Ph.D., P.E., K&A	C. Hetrick, HCBCC
J. Harper, EPA	A. Lue, P.E., SI
J. Bunyak, NPS	A. Cleveland, Esq., OHF&C
L. Sellers, Jr., Esq., H&K	D. Buff, P.E., KBN

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 1/20/94.

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.

Barbara J. Boutwell 1/20/94
Clerk Date

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

Florida Mining & Materials

AC 27-240349

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Southdown, Inc. /dba Florida Mining & Materials (FM&M), a construction permit, No. AC 27-240349, authorizing continuous utilization/firing of whole tires in the facility's No. 1 cement kiln, as detailed in the request for permit. The Department is issuing this Intent to Issue for the reasons stated below and in the proposed construction permit.

The applicant, FM&M, Post Office Box 6, Brooksville, Florida 34605-0006, submitted a request on October 12, 1993, and the processing fee on October 26, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to utilize/fire whole tires as a supplemental fuel on a continuous basis in the facility's No. 1 cement kiln. FM&M requests a maximum utilization/firing rate of 20.0% of the total BTU heat input, or 2.14 tons per hour. The No. 1 cement kiln was permitted under the construction permit, No. AC 27-186923, and is not permitted to fire whole tires in accordance with the referenced permit.

Based on the emissions test results (baseline versus whole tire fuel conditions) conducted May 4-5, 1993 and June 8-9, 1993, actual pollutant emissions of total carbon monoxide (CO) increased by an average of 17.5 lbs/hr [a +76.6 TPY net increase @ 8760 hrs/yr operation; Note: the PSD significant emission rate is 100 TPY (see Table 212.400-2, Florida Administrative Code (F.A.C.))]. Since there is no specific source emission limiting standard for CO contained in the Department's regulations nor in the federal New Source Performance Standards, then the proposed construction permit will establish a federally enforceable allowable/potential CO emissions limitation of 223.4 TPY for the No. 1 cement kiln; and, for PSD new source review (NSR) tracking purposes, a projected potential emissions level for CO of +98.1 TPY (@ 22.4 lbs/hr and 8760 hrs/yr). Note, any future increase of allowable/potential CO emissions of +1.9 TPY (i.e., 225.3 TPY = 223.4 + 1.9) will result in a NSR emissions review requirement pursuant to Rule 17-212.400(5), F.A.C., in accordance with Rule 17-212.400(2)(g), F.A.C.

The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida.

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 (F.S.). 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 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, F.S.

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 business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

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

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Hernando County Board of County Commission
20 North Main Street, Room 460
Brooksville, Florida 34601

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

Attachment Section

1. Dr. John B. Koogler's Memorandum with Attachments received 6/22/93.
2. Dr. John B. Koogler's letter and with Enclosures received 7/30/93.
3. Dr. John B. Koogler's letter with Attachments received 8/18/93.
4. Mr. C. Anthony Cleveland's letter with Enclosures received 9/16/93.
5. Dr. John B. Koogler's letter received 10/14/93.
6. Mr. David A. Buff's letter received 10/19/93, via FAX.
7. Mr. C. Anthony Cleveland's letter received 10/26/93.
8. Mr. Don Kelly's letter with Enclosure and processing fee received 10/26/93.
9. Dr. John B. Koogler's FAX cover form with Attachment received 1/14/94.
10. 40 CFR (July 1, 1992 version).
11. Ms. Jewell A. Harper's letter dated April 4, 1990.
12. Intent to Issue package dated May 29, 1992.
13. Public Notice verification received <Date>.
14. Final Determination dated <Date>.



Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc. dba
Florida Mining & Materials
Post Office Box 6
Brooksville, Fl 34605-0006

Permit Number: AC 27-240349
Expiration Date: June 30, 1994
County: Hernando
Latitude/Longitude: 28°38'34"N
82°28'25"W

Project: No. 1 Cement Kiln
Modification

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.); Florida Administrative Code (F.A.C.) Chapters 17-2, 17-210 thru 17-297, and 17-4; and, 40 CFR (July 1, 1992 version). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the modification of the No. 1 cement kiln to allow continuous utilization/firing of whole tires as a supplemental fuel to coal. The maximum utilization/firing rate is 20.0% of the total Btu heat input, or 2.14 tons per hour. The kiln's primary fuel is coal and supplemented with a blended re-refined used oil called Flolite. The facility is located in Brooksville, Hernando County, Florida. The UTM coordinates are Zone 17, 356.0 km East and 3169.9 km North.

The Source Industrial Code: 3241 Cement Manufacturing

The Source Classification Code numbers are:

- o 3-05-006-06 Cement Mfg-Dry Process Tons Cement Produced
- o 3-90-002-01 Bitum. Coal-Cement Kiln Tons Burned
- o 3-90-012-99 Solid Waste-General Tons Burned

The source shall be modified 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. Dr. John B. Koogler's Memorandum with Attachments received 6/22/93.
2. Dr. John B. Koogler's letter and with Enclosures received 7/30/93.
3. Dr. John B. Koogler's letter with Attachments received 8/18/93.
4. Mr. C. Anthony Cleveland's letter with Enclosures received 9/16/93.
5. Dr. John B. Koogler's letter received 10/14/93.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

Attachments cont.:

6. Mr. David A. Buff's letter received 10/19/93, via FAX.
7. Mr. C. Anthony Cleveland's letter received 10/26/93.
8. Mr. Don Kelly's letter with Enclosure and processing fee received 10/26/93.
9. Dr. John B. Koogler's FAX cover form with Attachment received 1/14/94.
10. 40 CFR (July 1, 1992 version).
11. Ms. Jewell A. Harper's letter dated April 4, 1990.
12. Intent to Issue package dated January 19, 1994.
13. Public Notice verification received <Date>.
14. Final Determination dated <Date>.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these 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), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

GENERAL CONDITIONS:

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sample or monitor 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 provide the Department with the following information:

- a. A description of and cause of non-compliance; and,
- b. The period of noncompliance, including 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 for revocation of this permit.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

GENERAL CONDITIONS:

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 involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

11. This permit is transferable only upon Department approval in accordance with F.A.C. Rules 17-4.120 and 17-30.300, 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit constitutes compliance with:
a. New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart F, Portland Cement Plants;

14. The permittee shall comply with the following:
a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

GENERAL CONDITIONS:

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 dates 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 corrected promptly.

SPECIFIC CONDITIONS:

1. Construction permit No. AC 27-186923 and all associated documents and conditions are incorporated by reference.
2. Amendments to construction permit No. AC 27-186923 signed June 25, 1991, October 8, 1991, and March 31, 1992, and all associated documents and conditions are incorporated by reference.
3. Operation Permit No. AO 27-213207 and all associated documents and conditions are incorporated by reference.
4. In the No. 1 cement kiln, continuous whole tire-derived fuel (WTDF) utilization/firing shall be allowed (i.e., 8760 hrs/yr operation).
5. The No. 1 cement kiln's maximum utilization/firing rate of WTDF shall not exceed 20.0 percent of the total Btu heat input, or 2.14 tons per hour.
6. The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly; and, the records shall be kept on file for a minimum of two years.
7. The quantity of all deliveries of WTDF shall be documented and kept on record/file for a minimum of two years.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

SPECIFIC CONDITIONS:

8. WTDF may be introduced into the No. 1 cement kiln only at a point at the base of the preheater (i.e., kiln exit).
9. WTDF firing in the No. 1 cement kiln shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400°F for one hour. The operating temperature shall be measured at the cement kiln exit.
10. Any change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) Rule 17-210.200, Definitions-Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation.
11. Objectionable odors shall not be allowed off the facility's property in accordance with F.A.C. Rule 17-296.320.
12. While utilizing/firing WTDF with coal, the maximum allowable/potential carbon monoxide (CO) emissions shall not exceed 51 lbs/hr, 223.4 tons/yr, which was requested by the permittee to avoid new source review (NSR) requirements pursuant to Rules 17-212.400(2)(d) and (g) and 17-212.400(5), F.A.C.
13. Pursuant to Rule 17-212.400(2)(g), F.A.C., any net increase in potential emissions of +1.9 tons/yr of CO above the maximum allowable/potential emissions of 223.4 tons/yr while utilizing/firing WTDF with coal, the No. 1 cement kiln will be subject to NSR in accordance with Rule 17-212.400(5), F.A.C. For PSD tracking purposes, the net potential CO emissions are +98.1 tons/yr while utilizing/firing WTDF with coal.
14. An annual compliance test for CO while utilizing/firing WTDF with coal shall be conducted using EPA Reference Method 10, in accordance with Rule 17-297.400((10), F.A.C., and 40 CFR part 60, Appendix A (July 1, 1992 version).
15. The cement kiln and its associated equipment are subject to the applicable provisions of F.A.C. Rules 17-210.650: Circumvention; 17-210.700: Excess Emissions; and, 17-4.130: Plant Operations-Problems.
16. An annual operation report (AOR) shall be submitted to the Department's Southwest District office by March 1 reporting the No. 1 cement kiln's total amount, by weight, of the WTDF utilized/fired during the previous year.

PERMITTEE:
Southdown, Inc. dba/FM&M

Permit Number: AC 27-240349
Expiration Date: June 30, 1994

SPECIFIC CONDITIONS:

17. Daily sampling of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Rogers's letter to Dr. John Koogler, dated January 12, 1994 (Attachment #9).

18. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 17-4.090, F.A.C.).

19. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the permittee shall submit the appropriate application form, fee, certification that construction was completed and noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (Rules 17-4.055 and 17-210.350, F.A.C.).

Issued this _____ day
of _____, 1994

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION**

Howard L. Rhodes
Director
Division of Air Resources Management

ATTACHMENT 11



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

APR 4 1990

4APT-AEB

RECEIVED

APR 09 1990

DER-BAQM

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

RE: Florida Crushed Stone (PSD-FL-091)

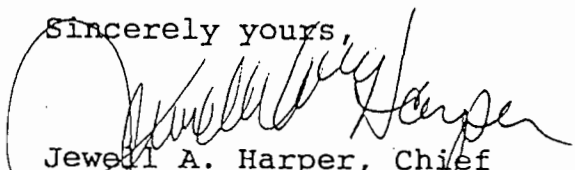
Dear Mr. Fancy:

This is to acknowledge receipt of your letter dated March 15, 1990, transmitting a request by Florida Crushed Stone to amend their prevention of significant deterioration (PSD) permit to allow the burning of tire derived fuel (TDF) in their cement kiln. The current permit for the source limits the fuel of the kiln to coal only. As discussed between Mr. Bruce Mitchell of your staff and Mr. Gregg Worley of my staff on March 30, 1990, we have the following comments.

Under the scenario presented by the source, the switch to the use of TDF in the kiln would not constitute a major modification for the purposes of PSD provided that the increase in pollutants due to the fuel switch did not exceed significant emissions increase levels. It is important to note that the change in emissions must be evaluated from "old actual" to "new allowable" emissions. The old actual emissions must be based on the previous two years of operating data unless some other period is deemed to be more representative of normal operating conditions. The new allowable emissions will be those emissions which are reflected in the amended permit. Also, it was noted that the list of pollutants to be tested did not include benzene. Since benzene is a pollutant regulated under the Clean Air Act for which a significant emissions rate has not been established, any increase of emissions of benzene would subject the source to PSD.

Thank you for the opportunity to review and comment on this package. If you have any further questions or comments, please do not hesitate to contact Mr. Gregg Worley of my staff at 404/347-2864.

Sincerely yours,


Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division



Brooksville Cement

A Southdown Company

#4500 pd.
10-26-93
Receipt. 180887

AC 27-240349

RECEIVED

NOV 02 1993

Division of Air
Resources Management

RECEIVED
DER - MAIL ROOM
1993 OCT 26 PM 1:55

October 22, 1993

0000862

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

April → June → Nov. 03
Correspondence

RE: Hernando County-AP
Southdown, Inc. dba Florida Mining & Materials
Permit Amendment to Allow the Use
of Tire Derived Fuel

Dear Mr. Fancy:

In reference to Mr. John Koogler's letter to you dated October 12, 1993, enclosed please find a check in the amount of \$4,500. This is the fee required to amend permit numbers AC27-186923 and AO27-213207.

If you have any questions or comments, please do not hesitate to call me.

Sincerely,

Don Kelly
Plant Manager

DK/sd

cc: B. Mitchell
B. Thomas, SW Dist.
K. Fells, Hernando Co.
L. Netrick, Hernando Co.
J. Cleveland, OHFC

Southdown, Inc.
P.O. Box 6 • Brooksville, Florida 34605-0006
(904) 796-7241 • Fax: (904) 754-9836



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

October 12, 1993

RECEIVED

OCT 15 1993

Division of Air
Resources Management

VIA FAX AND MAIL

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

Subject: Hernando County-AP
Southdown, Inc. dba Florida Mining
and Materials
Permit Amendment to Allow the Use
of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln; or up to 2.14 tons of TDF per hour.

The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions* and *Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8760 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.



FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit," It is our opinion that this proposed condition is unnecessary and unwarranted.

FM&M has considered physical changes to the tire feed system but, as discussed with Mr. Bruce Mitchell of your staff, the physical changes will not constitute a "modification" as defined by Department rule because there will be no change in emissions (Rule 17-212.200(46), FAC). Any feed system used by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheater through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and this is the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point nor the manner in which the TDF is introduced nor the type of mechanism used to introduce the WTDF. There is no reason, therefore, to believe that any equipment change within these constraints will affect emissions. Hence, such changes should not require an amendment to the permit for the kiln.

There are no modifications or changes requested to the No. 1 kiln permits, other than those that have been addressed herein.

A check in the amount of \$4,500 will be provided by Southdown under separate cover. This is the fee required for a non-PSD permit review when the emission rate increase is in the range of 50-100 tons per year.

We appreciate your consideration of this matter and will be happy to provide additional information should it be required.

Very truly yours,

KOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Don Kelly, FM&M
Ms. Anetha Lue, Southdown
Mr. David Dee, Carlton et al



PM
10-13-93
Gainesville, FL



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

October 12, 1993

RECEIVED

OCT 14 1993

**Division of Air
Resources Management**

VIA FAX AND MAIL

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

Subject: Hernando County-AP
Southdown, Inc. dba Florida Mining
and Materials
Permit Amendment to Allow the Use
of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln; or up to 2.14 tons of TDF per hour.

The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions* and *Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8760 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.



FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit," It is our opinion that this proposed condition is unnecessary and unwarranted.

FM&M has considered physical changes to the tire feed system but, as discussed with Mr. Bruce Mitchell of your staff, the physical changes will not constitute a "modification" as defined by Department rule because there will be no change in emissions (Rule 17-212.200(46), FAC). Any feed system used by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheater through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and this is the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point nor the manner in which the TDF is introduced nor the type of mechanism used to introduce the WTDF. There is no reason, therefore, to believe that any equipment change within these constraints will affect emissions. Hence, such changes should not require an amendment to the permit for the kiln.

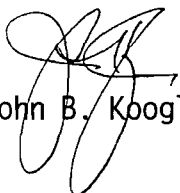
There are no modifications or changes requested to the No. 1 kiln permits, other than those that have been addressed herein.

A check in the amount of \$4,500 will be provided by Southdown under separate cover. This is the fee required for a non-PSD permit review when the emission rate increase is in the range of 50-100 tons per year.

We appreciate your consideration of this matter and will be happy to provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Don Kelly, FM&M
Ms. Anetha Lue, Southdown
Mr. David Dee, Carlton et al





KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTIETH STREET
GAINESVILLE, FLORIDA 32609
352/377-7158

RECEIVED
OCT 15 1993

FAX TRANSMITTAL FORM

Division of Air
Quality Management

TO: Bruce Mitchell

FROM: James Kogler

PROJECT: 521-92-01

SENT BY: Wanda

DATE: 10/13/93

FAX PHONE: 904-377-7158

The text being transmitted consists of 3 pages PLUS
this one.

REMARKS: Southdown will be
sending the check under
separate cover.

D R A F T

KA 521-92-01

October 8, 1993

Mr. John Brown
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Hernando County-AP
Southdown, Inc. dba Florida Mining
and Materials
Permit Modification to Allow the
Use of Tire Derived Fuel

Dear Mr. Brown:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. This letter addresses a request for a minor modification to the appropriate air permits issued to FM&M for the operation of the No. 1 cement kiln allowing the use of tire derived fuel (TDF) as a fuel supplement in the No. 1 kiln.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-219207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to the referenced air operating permit allowing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF at a maximum firing rate of 20 percent of the total heat input

to the kiln or 2.14 tons of TDF per hour.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27 186923 is coal with a sulfur content of 1.0 percent. FMM is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement, for kiln preheating and during kiln idle times.

The emission measurements conducted to evaluate TDF were conducted during the periods May 4-5, 1993, and June 8-9, 1993. The results of these tests have been reported to the Department and have been reviewed by Hernando County. The comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln and further demonstrated that, for the most part, the use of TDF to provide up to 20 percent of the heat input to the No. 1 Kiln had no affect on emissions from the kiln. The testing did indicate possible slight increases in the emission rates of some non-regulated organic and inorganic constituents and a possible carbon monoxide emission rate increase. The measured carbon monoxide

emission rate averaged 49.1 pounds per hour during the two day period in June 1993 when TDF was used as a fuel supplement. This averaged was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test period in May 1993 when the kiln was fired with 100 percent coal. The possible 17.5 pounds per hour carbon monoxide increase, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not significant as defined in Rule 17-212.400, FAC. The referenced rule defines carbon monoxide emission rate measures of 100 tons per year or more (22.8 pounds per hour for 8760 hours per year) as significant.

For purposes of the minor modifications requested by this letter, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln for PSD tracking purposes of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase will result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated 8760 hours per year. This increase, while still not significant, will take into consideration fluctuations in the carbon monoxide emission rates as measured during the June 8, 1993, test period. The annual carbon monoxide emission rate from Kiln No. 1 for PSD tracking purposes will be 223.4 tons per year.

FM&M agrees to the conditions suggested in the report prepared on behalf of Hernando County with the exception to the suggestion that, "Any physical modification to the WTDF feed mechanism will require a

modification to this permit, ...". FM&M has considered some physical changes to the tire feed system but, as I discussed with Mr. Bruce Mitchell of your staff, the physical changes will not be a modification as defined by Department rule (no change in emissions) and should therefore not require a permit modification. Whatever feed system is finally decided upon by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheated through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point at which the TDF is introduced or the type of mechanism used to introduce the TDF. Thus, the equipment change will not affect emissions and hence, should not require a modification to any kiln permit.

There are no other modifications or changes requested to the No. 1 kiln permits. Please review this request for modification and advise us of the permit fee required for the modification. We appreciate your consideration of this matter and will provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Don Kelly, FM&M
Ms. Anetha Lue, Southdown
Mr. David Dee, Carleton et al

Best Available Copy



KOUGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 - FAX 377-7158

10-8-93
@5:30
Spoke D Wendy -
edited #1 para. to
reflect "mod. to existing
#1 kin" vs mod. permit
and fee is \$4500.00
(250 < 100TPY) OK

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Kougler

PROJECT: 521-92-02

SENT BY: Therby

DATE: 10/8/93

FAX PHONE: 904-377-7158

The text being transmitted consists of 4 pages PLUS this one.

REMARKS: For your review and comments

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
PATRICIA A. RENOVITCH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

NORMAN H. HORTON, JR.
OF COUNSEL

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

J. P. SUBRAMANI, PH. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

VIA HAND-DELIVERY

RECEIVED

September 16, 1993

SEP 16 1993

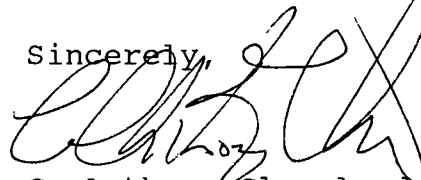
Mr. Bruce Mitchell
Bureau of Air Regulation
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Division of Air
Resources Management

Dear Bruce:

KBN Engineering and Applied Sciences, Inc., has issued its report regarding the proposal of Florida Mining and Materials to utilize whole tire-derived fuel at its Brooksville, Florida facility. A copy of this report has been provided to Koogler and Associates, consultants for Florida Mining and Material. This morning, John Koogler telephoned me and asked that our office supply you with a copy of this report, which I enclose. Please give me a telephone call if you have any questions regarding it.

Sincerely,



C. Anthony Cleveland

CAC/dg/
C:\Work1\MitchLtr.CAC

Encl. a/s

**WHOLE TIRE-DERIVED FUEL
TEST BURN
FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA**

Prepared For:

**Hernando County Board of County Commissioners
20 North Main Street
Brooksville, Florida 34601**

Prepared By:

**KBN Engineering and Applied Sciences, Inc.
1034 NW 57th Street
Gainesville, Florida 32605**

**September 1993
13076B1/R1**

TABLE OF CONTENTS
(Page 1 of 2)

LIST OF TABLES	iii
LIST OF FIGURES	iii
1.0 INTRODUCTION	1-1
2.0 OVERVIEW OF TEST PROGRAM	2-1
3.0 BASELINE AND WTDF TESTING	3-1
3.1 <u>BASELINE TESTING</u>	3-1
3.1.1 PLANT OPERATING CONDITIONS	3-1
3.1.2 STACK TEST PROCEDURES	3-3
3.1.3 BASELINE EMISSION TEST RESULTS	3-3
3.2 <u>WHOLE TIRE-DERIVED FUEL (WTDF) TESTING</u>	3-3
3.2.1 MAINTENANCE AND REPAIRS PERFORMED ON KILN NO. 1	3-3
3.2.2 PLANT OPERATING CONDITIONS DURING WTDF TESTING	3-5
3.2.3 STACK TEST PROCEDURES	3-6
3.2.4 WTDF/COAL EMISSION TEST RESULTS	3-7
4.0 COMPARISON OF EMISSIONS DURING BASELINE AND WTDF FIRING CONDITIONS	4-1
4.1 <u>STACK TESTING RESULTS</u>	4-1
4.2 <u>CEMENT KILN OPERATION DURING TEST PERIOD</u>	4-4
4.2.1 CLINKER QUALITY	4-5
4.2.2 KILN EXIT TEMPERATURE	4-5
4.2.3 BAGHOUSE OPERATING TEMPERATURE	4-8
5.0 AIR QUALITY MODELING ANALYSIS	5-1
6.0 CONCLUSIONS AND RECOMMENDATIONS	6-1
REFERENCES	REF-1

TABLE OF CONTENTS
(Page 2 of 2)

APPENDICES

APPENDIX A--STATISTICAL ANALYSIS OF EMISSION TEST RESULTS
APPENDIX B--CORRESPONDENCE
APPENDIX C--AIR CONSULTING & ENGINEERING, INC. FIELD REPORT

LIST OF TABLES

2-1	Summary of WTDF Test Burn Program; Kiln No. 1 at FMM	2-2
3-1	Summary of Kiln No. 1 Operating Data During Emission Testing	3-2
3-2	Summary of Emission Test Results for Baseline and WTDF/Coal Firing Conditions for Kiln No. 1 at Florida Mining & Materials	3-4
4-1	Comparison of Emission Test Results for Baseline and WTDF/Coal Firing Conditions for Kiln No. 1 and Florida Mining and Materials	4-2
4-2	Significance Test of Stack Test Results for Kiln No. 1 at Florida Mining & Materials: Carbon Monoxide	4-3
5-1	Maximum Air Quality Impacts for Kiln No. 1 at Florida Mining & Materials	5-2

LIST OF FIGURES

4-1	Clinker C_3S : Baseline versus TDF Burning	4-6
4-2	Kiln Exit Temperature: Baseline versus TDF Burning	4-7
4-3	Baghouse Temperature: Baseline versus TDF Burning	4-9

1.0 INTRODUCTION

Southdown, Inc., doing business as Florida Mining and Materials (FMM), has undergone a whole tire-derived fuel (WTDF) test burn program at its Brooksville cement plant. The purpose of the test burn was to determine conclusively if the firing of up to 20 percent WTDF in Kiln No. 1 at the cement plant would cause an increase in the emissions of any regulated air pollutant. The test burn was conducted during May and June 1993.

The Hernando County Board of County Commissioners (HCBC), having the responsibility of protecting the interests of the citizens of Hernando County, has maintained involvement in FMM's activities to utilize waste tires as a supplemental fuel in their cement plant. In March 1993, HCBC contracted with KBN Engineering and Applied Sciences, Inc. (KBN), to serve as a consultant to the county to evaluate the WTDF test burn. The scope of services to be provided by KBN included: 1) witness all activities during the test burn period to determine if proper and adequate data are collected, 2) review of the data and results of the test burn to ascertain beyond a reasonable doubt that burning WTDF can occur without an increase in allowable emissions, and 3) provide a final report to HCBC concerning the adequacy of the test burn.

This report is a final report which addresses the adequacy of the test burn to demonstrate if an increase in emissions of any regulated pollutant will occur under WTDF firing conditions. An overview of the test program is presented in Section 2.0. Baseline and WTDF firing test results are presented in Section 3.0. A comparison of the baseline and WTDF firing results is presented in Section 4.0. Results of an air quality impact analysis conducted for emissions from Kiln No. 1 at the FMM cement plant are discussed in Section 5.0. Summary and conclusions of the TDF test program are presented in Section 6.0.

2.0 OVERVIEW OF TEST PROGRAM

The overall test program to demonstrate the feasibility and acceptability of WTDF firing in Kiln No. 1 at FMM was conducted over a period beginning on March 29, 1993, and ending on June 9, 1993. The testing period is summarized in Table 2-1. The first 30 days of the testing period was devoted to firing up to 20 percent WTDF and coal in the cement kiln to test kiln operation as well as the WTDF feed system. This 30-day period was followed by a 5-day period of 100 percent coal firing prior to the baseline emission tests. Baseline testing, with no WTDF being fired in the kiln, was conducted on May 4 and 5, 1993. A 5-day period to fire WTDF/coal in the cement kiln prior to WTDF emissions testing was initiated on May 6 and continued until May 13, at which time the cement kiln was shut down due to operational problems. The kiln was brought back on line on May 21 utilizing fuel oil and then 100 percent coal and continued to operate on coal until June 3, when WTDF/coal firing resumed. WTDF/coal firing continued through June 9, and emission testing for WTDF firing was conducted during June 8 and 9, 1993.

During the baseline and WTDF/coal firing emission testing, the test methods set forth in the approved test protocol were utilized. All methods used were the U.S. Environmental Protection Agency (EPA) reference methods as specified in the Code of Federal Regulations (CFR), Title 40, Part 60. Manual stack testing was performed for the following during each test:

- Particulate matter (PM)
- Dioxins/furans
- Hydrogen chloride (HCl)
- Metals: Arsenic (As)
- Chromium (Cr)
- Lead (Pb)
- Mercury (Hg)
- Zinc (Zn)
- Iron (Fe)
- Aluminum (Al)

Speciated volatile organic compounds:

- Acetone
- Benzene
- Bromomethane
- Carbon disulfide

Table 2-1. Summary of WTDF Test Burn Program; Kiln No. 1 at FMM

Period	Activity
03/29/93 to 04/26/93	Initial period for test firing of WTDF/coal.
04/27/93 to 05/03/93	100 percent coal firing.
05/04/93 to 05/05/93	Baseline emissions testing utilizing 100 percent coal.
05/06/93 to 05/12/93	WTDF/coal firing.
05/13/93 to 05/20/93	Kiln shut down for repairs and maintenance.
05/21/93 to 06/02/93	Kiln brought back on-line; 100 percent coal firing.
06/03/93 to 06/07/93	WTDF/coal firing.
06/08/93 to 06/09/93	WTDF/coal firing emissions testing.

Chlorobenzene
Ethylbenzene
Hexane
1,1,1-trichloroethane
Styrene
Toluene
Trichloroethylene
Xylene

Additional Pollutants:

Ammonia
Barium
Calcium
Magnesium
Sodium
Potassium

Each of these measurements were obtained during a total of three runs in each of the baseline and WTDF/coal firing emission test periods. The duration of each run was approximately 2 hours.

Continuous pollutant measurements were also performed for nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur dioxide (SO₂) during the baseline and WTDF/coal test periods. These measurements were performed continuously for two 12-hour periods (a total of approximately 24 hours) in the baseline and WTDF/coal firing emission test periods.

All emission measurements were made at the main stack exhaust for Kiln No. 1 at the FMM cement plant.

Several plant operating parameters were measured continuously throughout the entire testing period. These included cement plant operating parameters, and continuous stack measurements of opacity which are obtained by the plant using an in-stack monitor.

Based upon the testing program, Koogler & Associates (K&A) prepared emission test reports as well as a summary report comparing the baseline and WTDF/coal firing results. The summary

report concluded that the test data demonstrated that the use of up to 20 percent WTDF in Kiln No. 1 has no effect upon emissions from the kiln. An air quality screening analysis was also performed separately by K&A, which addressed the predicted ambient impacts of toxic pollutants from Kiln No. 1. This analysis concluded that impacts of all air toxics will be well below the Florida Department of Environmental Regulation's (FDER's) established no-threat levels (NTLs).

3.0 BASELINE AND WTDF TESTING

3.1 BASELINE TESTING

3.1.1 PLANT OPERATING CONDITIONS

The baseline testing, utilizing 100 percent coal to fire Kiln No. 1, was conducted on May 4 and 5, 1993. Kiln No. 1 was operating normally during the baseline test period. Prior to the baseline testing, Kiln No. 1 had been operating for 5 days with coal providing 100 percent of the heat input to the kiln. This assured that all plant operating parameters and emission test results would be representative of 100 percent coal firing. Following the conclusion of baseline testing on May 5, 1993, firing of up to 20 percent WTDF in the kiln was begun, ending the baseline test period.

Based on review of the plant operating data, baseline testing was conducted with Kiln No. 1 operating at or near its maximum operating rates. Plant operating data during the baseline testing are summarized in Table 3-1. The cement kiln averaged 140.5 tons per hour (TPH) feed rate, which represents 97 percent of the maximum permitted feed rate of 145 TPH. Heat input to the kiln averaged 212 million British thermal units per hour (MMBtu/hr), which is 71 percent of the maximum heat input of 300 MMBtu/hr. Coal feed rate to the kiln averaged 8.4 TPH, compared to a maximum firing rate of 12.0 TPH. Although the heat input rate to the kiln averaged only 71 percent of the maximum permitted heat input rate, the normal heat input to the kiln is stated to be in the range of 240 to 260 MMBtu/hr. The kiln was operating at about 85 percent of this normal heat input rate.

During the baseline testing period, FMM plant personnel were very cooperative in answering questions raised by KBN staff, in providing explanations to plant operations, conducting equipment inspections, and providing any other information requested by KBN staff during the baseline test period. Complete access to the plant control room was provided at all times, so that plant operations could be monitored. Hourly logs and computer printouts of plant operating data were witnessed being generated in the control room, and later provided to KBN for inspection. The WTDF feed system and monitoring equipment, coal feed systems, and clinker production systems were all inspected during the baseline testing.

Based on discussions with plant operating personnel, and a review of the plant operating data, Kiln No. 1 at FMM was operating normally during the baseline test period.

Table 3-1. Summary of Kiln No. 1 Operating Data During Emission Testing

Parameter	Permitted or Maximum Rate	Baseline Conditions (05/04/93 to 05/05/93)		TDF/Coal Firing (06/08/93 to 06/09/93)	
		Test Average	Percent of Maximum	Test Average	Percent of Maximum
Cement Plant					
Heat Input (MMBtu/hr)	300	212	71	234	78
Coal Feed (TPH)	12/9.6 ^a	8.4	70	7.5	78
WTDF Feed (TPH)	0/2.14 ^a	—	—	1.57	73
WTDF Heat Input (MMBtu/hr)	60	—	—	50.8	85
(% of total)	—	—	—	21.7	—
Kiln Feed (TPH)	145	140.5	97	136.7	94
Preheater Exit					
Temperature (°F)	—	755	—	756	—
Kiln Exit					
Temperature (°F)	—	1,632	—	1,741	—
Oxygen (%)	—	1.2	—	3.4	—
Burning Zone Temp (°F)	—	2,650	—	2,600	—
Bag House Inlet					
Temperature (°F)	—	240	—	245	—
Stack Opacity (%)					
	—	4.0	—	3.6	—
Gas Flow (dscfm)					
	—	187,236	—	175,902	—

Note: NR = not reported on hourly basis.

^a For 100 percent coal and 20 percent TDF/coal firing, respectively.

3.1.2 STACK TEST PROCEDURES

KBN personnel were on-site during the baseline stack testing and witnessed K&A's testing procedures. Review of the stack test procedures employed by K&A indicate that proper procedures were followed during the stack testing. During the first day of baseline testing, representatives of Air Consulting & Engineering, Inc. (ACE), under subcontract to KBN, were on-site to witness the stack testing and to conduct concurrent testing of NO_x, CO, VOC, and O₂. The results of this testing were in very close agreement with K&A's monitored values, providing additional credibility to the K&A test procedures. ACE's field report on their on-site activities is contained in Appendix C.

3.1.3 BASELINE EMISSION TEST RESULTS

Baseline emission test results are summarized in Table 3-2. The only pollutant for which an allowable emission rate has been set in the operating permit for the kiln is PM. PM emissions averaged 7.05 lb/hr and were well below the allowable PM emission rate 36.0 lb/hr for the kiln. There is no allowable emission rate for other pollutants from Kiln No. 1. NO_x emissions averaged 198 lb/hr, while CO emissions averaged 31.6 lb/hr and total hydrocarbons (THC) averaged 3.4 lb/hr. Mercury emissions averaged 0.013 lb/hr. Emissions of SO₂ were less than 1.9 lb/hr, and lead emissions averaged less than 0.008 lb/hr.

Emissions of all non-criteria pollutants were below 1.3 lb/hr, except for ammonia. Ammonia emissions averaged 19.71 lb/hr. Emissions of all speciated VOC were also very low, less than 0.06 lb/hr.

Individual measurements for the baseline test runs can be found in Appendix A, or in the K&A test reports.

3.2 WHOLE TIRE-DERIVED FUEL (WTDF) TESTING

3.2.1 MAINTENANCE AND REPAIRS PERFORMED ON KILN NO. 1

Baseline testing on Kiln No. 1 at FMM utilizing 100 percent coal as fuel was conducted on May 4-5, 1993, while WTDF testing using up to 20 percent WTDF as fuel to the kiln was conducted on June 8-9, 1993. Due to operational problems with the kiln, the WTDF test was first delayed and then was postponed as the kiln was shut down for repairs and maintenance on May 13. Kiln No. 1 was restarted on May 21 after the preheater/kiln/cooler system underwent

Table 3-2. Summary of Emission Test Results for Baseline and WTDF/Coal Firing Conditions for Kiln No. 1 at Florida Mining & Materials

Pollutant	Baseline Conditions (100% Coal)		WTDF/Coal Firing		Test for Significant Change
	Number of Observations	Average (lb/hr)	Number of Observations	Average (lb/hr)	
<u>Criteria Pollutants</u>					
Particulate Matter	3	7.05	3	9.14	No Significant Change
Nitrogen Oxide	12	198.09	12	188.38	No Significant Change
Sulfur Dioxide	12	<1.85 ^a	12	<0.78 ^a	Below Detectable Limit
Lead	3	<0.00781 ^b	3	<0.00201 ^a	Below Detectable Limit
Total Hydrocarbon	12	3.36	12	3.26	No Significant Change
Carbon Monoxide	12	31.62	12	49.09	Significant Change
<u>Non-Criteria Pollutants</u>					
Hydrogen Chloride	3	0.443	3	<0.35 ^b	No Significant Change
Arsenic	3	<0.001737 ^a	3	<0.0014 ^a	Below Detectable Limit
Chromium	3	<0.00202 ^a	3	<0.00287 ^a	Below Detectable Limit
Zinc	3	0.0058	3	0.01026	Significant Change
Mercury	3	0.013	3	<0.00036 ^a	No Significant Change
Dioxin/Furan	3	— ^a	3	— ^a	Below Detectable Limit
Ammonia	3	19.71	3	10.77	No Significant Change
Iron	3	0.183	3	0.123	No Significant Change
Aluminum	3	0.103	3	0.103	No Significant Change
Barium	3	<0.03 ^a	3	0.057	Significant Change
Calcium	3	1.26	3	0.753	No Significant Change
Magnesium	3	0.09	3	0.08	No Significant Change
<u>Volatile Organic Compounds</u>					
Acetone	6	<4.3E-05 ^a	6	0.0210	Significant Change
Benzene	6	0.058	6	0.0412	No Significant Change
Bromomethane	6	<0.00027 ^b	6	0.00127	Significant Change
Carbon Disulfide	6	<0.0039 ^b	6	0.00575	No Significant Change
Chlorobenzene	6	0.016	6	0.0126	No Significant Change
Ethylbenzene	6	0.0058	6	0.00553	No Significant Change
n-Hexane	6	0.005	6	0.0023	No Significant Change
Toluene	6	0.0492	6	0.034	No Significant Change
1,1,1-Trichloroethane	6	<2.2E-05 ^a	6	<2.2E-05 ^a	Below Detectable Limit
Trichlorethene	6	<2.2E-05 ^a	6	<2.2E-05 ^a	Below Detectable Limit
Styrene	6	0.0267	6	0.0113	No Significant Change
m-p-Xylene	6	0.0172	6	0.0112	No Significant Change
o-Xylene	6	0.0069	6	0.00445	No Significant Change

Notes:

^a All observations were below the detection limit.^b Many observations were below the detection limit.

maintenance and repair. The kiln then continued to operate until June 2, when a short outage was experienced. Kiln 1 resumed operation on June 2, and WTDF firing began the morning of June 3. This schedule provided 5 days of WTDF firing prior to the WTDF testing period, as required by the test protocol.

Based on the course of events between the baseline and WTDF testing, there were several areas of concern related to the acceptability of the overall testing program. The first concern is that the baseline testing will have been conducted approximately 1 month prior to the WTDF testing, and that significant differences in raw feed composition, coal quality, and other operational parameters could make it difficult to compare baseline emissions to WTDF emissions on the same basis. The second concern was that the repairs and maintenance performed on Kiln No. 1 will have altered the air emissions associated with the kiln.

Based on these concerns, FMM was requested to provide information regarding kiln operational parameters during the baseline and WTDF testing in order to determine if parameters were sufficiently similar as to not jeopardize the comparison of test results. In addition, FMM was requested to provide a listing of the repairs and/or maintenance performed on Kiln No. 1 and a description of each, whether these were planned maintenance items or unplanned items, and the affects that each would have on kiln/preheater operation and associated air emissions. Subsequent to this request, FMM provided the requested information.

Based on the information and documentation provided by FMM, KBN concluded that the plant operating parameters from the baseline and WTDF test burns indicates no significant differences in plant operation for the two test periods. Furthermore, FMM plant personnel have stated that the repairs and maintenance activities performed on the Kiln No. 1 system should not have affected kiln operation. Based upon this analysis, it was concluded that the baseline and WTDF test burns were conducted under similar operating conditions, and the plant operations were suitable for determining if the utilization of WTDF in Kiln No. 1 results in an increase in emissions to the atmosphere. A copy of KBN's analysis and conclusions related to this issue are contained in Attachment B.

3.2.2 PLANT OPERATING CONDITIONS DURING WTDF TESTING

The WTDF/coal testing, utilizing up to 2.14 TPH WTDF or 20 percent WTDF on a heat input basis to fire the cement kiln, with remaining heat input supplied from coal, was conducted during

the period June 8 and 9, 1993. Prior to the WTDF testing, the cement kiln had been operating for approximately 5 days on WTDF/coal, with WTDF supplying approximately 20 percent of the heat input to the kiln. This assured that all plant operating parameters and emission test results would be representative of WTDF/coal firing.

Based on review of the plant operating data, WTDF/coal firing testing was conducted with the CPL plants operating at or near their maximum operating rates. Kiln feed averaged 136.7 TPH, which is 94 percent of the maximum permitted feed rate of 145 TPH. Heat input to the kiln averaged 234 MMBtu/hr, which is 78 percent of the maximum heat input of 300 MMBtu/hr. Coal feed rate to the kiln averaged 7.5 TPH, compared to a maximum firing rate of 9.6 TPH when firing WTDF/coal.

The WTDF feed rate to the kiln averaged 1.57 TPH, which is 73 percent of the maximum permitted rate of 2.14 TPH for WTDF firing. It is noted that WTDF firing is computer controlled, and by means of an automated weigh scale/feeder, the weight of WTDF introduced to the kiln can be controlled and monitored.

As during the baseline testing, FMM plant personnel were very cooperative in answering questions raised by KBN staff and providing other information during the WTDF/coal emission testing. Plant operations were explained and demonstrated, operations were witnessed, and other information requested by KBN staff were provided. Complete access to the plant control room was provided at all times, so that plant operations could be monitored. Hourly logs of plant operating data were witnessed being generated in the control room. These were later provided to KBN for review. The WTDF feed system and monitoring equipment, coal feed systems, and clinker production facilities were all inspected during the WTDF/coal firing testing.

Based on discussions with plant operating personnel, and a review of the plant operating data, Kiln No. 1 was operating normally during the WTDF/coal test period.

3.2.3 STACK TEST PROCEDURES

KBN personnel were on-site during the WTDF/coal testing and witnessed K&A's stack testing procedures. These procedures were found to be proper and conducted according to the reference methods. K&A personnel answered questions and allowed witnessing of the testing throughout the period.

3.2.4 WTDF/COAL EMISSION TEST RESULTS

WTDF/coal firing emission test results are summarized in Table 3-2. PM emissions averaged 9.1 lb/hr and were well below the allowable PM emission rate 36 lb/hr for the kiln. There is no allowable emission rate for other pollutants from Kiln No. 1. NO_x emissions averaged 188.4 lb/hr, while CO emissions averaged 49.1 lb/hr and THC averaged 3.3 lb/hr. SO₂, lead, and mercury emissions averaged less than the detectable limit for these pollutants.

Emissions of all non-criteria pollutants were below 0.8 lb/hr, except for ammonia. Ammonia emissions averaged 10.8 lb/hr. Emissions of all speciated VOC were also very low, less than 0.05 lb/hr.

Individual measurements for the WTDF/coal test runs can be found in Appendix A and in the K&A test reports.

Two unannounced site visits to the FMM plant were conducted when WTDF was being fired in Kiln No. 1. These visits were conducted on May 8, 1993, and May 11, 1993. During the May 8 visit, WTDF firing was normal, but the kiln experienced operating problems due to a clinker cooler drive problem. The kiln was shut down at approximately 12 noon to repair this problem. No operating problems with Kiln No. 1 or with WTDF firing were indicated by the FMM operating personnel during the May 11 visit. During both unannounced visits, the WTDF tire feed system and operating logs were witnessed to verify proper operation. Operations in the control room appeared normal, based on control room personnel actions and instrument readings.

4.0 COMPARISON OF EMISSIONS DURING BASELINE AND WTDF FIRING CONDITIONS

4.1 STACK TESTING RESULTS

A comparison of baseline emission test results and emission test results when firing WTDF/coal in Kiln No. 1 is presented in Table 4-1. In order to determine if a change in emissions occurred due to WTDF firing in the kiln, a statistical analysis was performed on the data according to 40 CFR 60, Appendix C, Determination of Emission Rate Change. This method allows comparison of the "before" and "after" emission rates to determine, based on a 95 percent confidence interval, if an increase in emissions to the atmosphere has occurred.

As indicated in Table 4-1, the average emission rates for four pollutants were determined to have increased with WTDF firing, based on the Appendix C method. These pollutants are CO, zinc, acetone, and bromomethane. For several pollutants (SO₂, lead, arsenic, chromium, 1,1,1-trichloroethane and trichloroethene), all or most test values were below the minimum detectable limit (MDL) of the sampling method for both baseline and WTDF firing conditions. For the pollutants PM and carbon disulfide, although higher emissions were measured for WTDF/coal firing conditions, the increase was not statistically significant.

For all other pollutants, the test data show a decrease in emissions when firing WTDF/coal as compared to 100 percent coal firing.

In the case of CO, comparison of the baseline and WTDF/coal firing emissions indicates a significant increase in CO emissions when firing WTDF. However, K&A has presented additional CO test data from FMM to support a claim that the CO emissions from the FMM plant are variable, and comparison of two sets of tests may not be indicative of overall emission levels (reference K&A letter to KBN dated August 13, 1993). The additional CO test data, as well as the data from the recent WTDF test burn, are presented in Table 4-2. K&A states that this data demonstrate that CO emissions from the kiln can be significantly different when operating under the same conditions, that there are significant fluctuations in emissions from cement plants resulting from operating factors, and that use of WTDF does not result in increased CO emissions.

Table 4-1. Comparison of Emission Test Results for Baseline and WTDF/Coal Firing Conditions for Kiln No. 1 at Florida Mining and Materials

Pollutant	Average Emission Rate (lb/hr)		Change		Test for Significant Change
	Baseline Conditions (100% Coal)	WTDF/Coal Firing	(lb/hr)	Percent	
<u>Criteria Pollutants</u>					
Particulate Matter	7.05	9.14	2.09	29.6%	No Significant Change
Nitrogen Oxide	198.09	188.38	-9.71	-4.9%	No Significant Change
Sulfur Dioxide	<1.85 ^a	<0.78 ^a	--	--	Below Detectable Limit
Lead	<0.00781 ^b	<0.00201 ^a	--	--	Below Detectable Limit
Total Hydrocarbon	3.36	3.26	-0.10	-3.0%	No Significant Change
Carbon Monoxide	31.62	49.09	17.47	55.2%	Significant Change
<u>Non-Criteria Pollutants</u>					
Hydrogen Chloride	0.443	<0.35 ^b	-0.093	-21.0%	No Significant Change
Arsenic	<0.001737 ^a	<0.0014 ^a	--	--	Below Detectable Limit
Chromium	<0.00202 ^a	<0.00287 ^a	--	--	Below Detectable Limit
Zinc	0.0058	0.01026	0.00446	76.9%	Significant Change
Mercury	0.013	<0.00036 ^a	-0.01264	-97.2%	No Significant Change
Dioxin/Furan	-- ^a	-- ^a	--	--	Below Detectable Limit
Ammonia	19.71	10.77	-8.94	-45.4%	No Significant Change
Iron	0.183	0.123	-0.06	-32.8%	No Significant Change
Aluminum	0.103	0.103	0	0.0%	No Significant Change
Barium	<0.03 ^a	0.057	0.027	90.0%	Significant Change
Calcium	1.26	0.753	-0.507	-40.2%	No Significant Change
Magnesium	-0.09	0.08	-0.01	-11.1%	No Significant Change
<u>Volatile Organic Compounds</u>					
Acetone	<4.3E-05 ^a	0.0210	0.021	48837%	Significant Change
Benzene	0.058	0.0412	-0.0168	-29.0%	No Significant Change
Bromomethane	<0.00027 ^b	0.00127	0.0013	370.4%	Significant Change
Carbon Disulfide	<0.0039 ^b	0.00575	0.00548	140.5%	No Significant Change
Chlorobenzene	0.016	0.0126	-0.0034	-21.2%	No Significant Change
Ethylbenzene	0.0058	0.00553	-0.00027	-4.7%	No Significant Change
n-Hexane	0.005	0.0023	-0.0027	-54.0%	No Significant Change
Toluene	0.0492	0.034	-0.0152	-30.9%	No Significant Change
1,1,1-Trichloroethane	<2.2E-05 ^a	<2.2E-05 ^a	--	--	Below Detectable Limit
Trichlorethene	<2.2E-05 ^a	<2.2E-05 ^a	--	--	Below Detectable Limit
Styrene	0.0267	0.0113	-0.0154	-57.7%	No Significant Change
m-\p-Xylene	0.0172	0.0112	-0.006	-34.9%	No Significant Change
o-Xylene	0.0069	0.00445	-0.00245	-35.5%	No Significant Change

Notes:

^a All observations were below the detectable limit.^b Many observations were below the detectable limit.

Table 4-2. Significance Test of Stack Test Results for Kiln No. 1 at Florida Mining & Materials: Carbon Monoxide

	Kiln Number	Fuel Type	CO emission lb/hr		Kiln Number	Fuel Type	CO emission lb/hr
<u>BASELINE CO EMISSIONS (lb/hr)</u>				<u>WTDF CONDITIONS CO EMISSIONS (lb/hr)</u>			
February 28, 1992	1	Coal	40.1	June 8th, 1993	1	Coal/TDF	64.2
			37.5				67.9
			40.7				32.9
February 28, 1992	1	Coal/Flolite	32.6				46.2
			37.5				52.4
			40.7				80.9
March 24, 1992	2	Coal	38.6				55.5
			40.7				43.9
			41.4				44.8
February 10, 1993	2	Coal	41.6				50.5
			47.3				71.3
			41.8				68.8
May 4, 1993	1	Coal	27.0	June 9th, 1993	1	Coal/TDF	56.1
			29.2				47.9
			31.5				37.7
			30.0				44.6
			32.0				39.6
			30.4				39.9
			32.8				35.1
			34.3				39.2
			35.1				38.6
			37.4				39.7
			33.5				34.8
			28.8				44.2
May 5, 1993	1	Coal	33.8				
			28.0				
			30.7				
			35.3				
			29.1				
			30.7				
			32.3				
			32.3				
			32.9				
			29.0				
			30.7				
			32.5				
Statistical summary				Statistical summary			
Average (lbs/hr)			34.44	Average (lbs/hr)			49.03
Standard deviation			4.912	Standard deviation			13.089
N			36	N			24
<u>Test for Significance</u>							
Pooled Standard Deviation (Sp)			9.083				
Degrees of Freedom			58				
Is Test Applicable (WTDF avg > Baseline avg)?			YES				
Test Statistic (t')			6.10				
t Table value			1.672				
Is Change Significant? ^a			YES				

Notes:

^a Change is significant only if the average emission is increased and the test statistic is greater than the Table t-value.

Although these arguments may be valid, primary weight must be given to the analysis of the test data according to the EPA Appendix C method. This analysis is also presented in Table 4-2, and shows that, at the 95 percent confidence level, WTDF/coal firing results in an increase in CO emissions to the atmosphere. It is therefore concluded that WTDF firing results in increased CO emissions from Kiln No. 1.

Based on the test data from the test burn, the baseline CO emissions averaged 31.6 lb/hr and the WTDF/coal emissions averaged 49.1 lb/hr. This represents an increase of 17.5 lb/hr in actual CO emissions. Based on operating 8,760 hr/yr, this hourly increase would translate to an annual increase of 76.7 TPY.

Emissions of zinc were found to increase by 77 percent when firing WTDF/coal. Average baseline emissions were 0.0058 lb/hr whereas average WTDF/coal emissions were 0.0103 lb/hr. This result is expected because WTDF has a higher zinc content than coal. Emissions of barium were also found to increase, from less than 0.03 lb/hr to 0.057 lb/hr for WTDF/coal firing.

Emissions of two speciated VOCs were also found to increase due to WTDF/coal firing: acetone and bromomethane. However, these emissions are low—0.021 lb/hr for acetone and 0.0013 lb/hr for bromomethane.

Another indication of the potential air emissions associated with WTDF versus coal firing can be ascertained from fuel analysis data. Comparison of the coal and WTDF fuel analysis data obtained during the baseline and WTDF/coal testing shows WTDF to be lower in concentrations of chloride, arsenic, mercury, lead, and chromium compared to coal (refer to Appendix A). Only zinc was higher in WTDF compared to coal, which explains the higher zinc emissions when firing WTDF/coal compared to 100 percent coal firing.

4.2 CEMENT KILN OPERATION DURING TEST PERIOD

Several plant operating parameters were recorded for Kiln No. 1 during the test burn period. The period included 2 days of baseline operating conditions, i.e., with the kiln firing 100 percent coal, and 2 days of WTDF/coal firing.

4.2.1 CLINKER QUALITY

An important cement plant operating parameter is that of clinker quality. Clinker quality must be kept within certain specifications to insure a suitable finished cement product is produced. However, there is some additional flexibility in the process because blend silos are used to blend clinker which may be slightly out of specification in order to achieve the desired characteristics.

FMM obtained clinker quality analysis once a shift during the testing period. The primary indicator of the quality of the clinker is tricalcium silicate (C_3S). According to FMM plant specifications, Kiln No. 1 is used to produce Ashtow (DOT approved) cement, and the C_3S content of the cement must be less than 56%. Three blend silos are used to make this final product. A good clinker product would have a C_3S content generally between 60 and 70 percent. The finished cement product is generally maintained between 50 and 56 percent C_3S . FMM attempts to maintain clinker quality within these ranges on a daily (24-hr) average basis. Individual clinker or finished cement samples having C_3S values outside these ranges do not necessarily translate to a poor quality clinker or product. Blend silos within the finish mill allow off-specification material to be stored and blended with materials of higher or lower C_3S contents. However, a long-term trend of high or low C_3S values would indicate a potential problem.

The 8-hour composite clinker C_3S values for the 4-day test burn period are presented graphically in Figure 4-1. The baseline and WTDF/coal firing conditions are delineated by different symbols in the figure. Review of these figure indicates that clinker C_3S content was similar during both baseline conditions and WTDF/coal firing conditions. All values are in the 60 to 70 percent C_3S range. This indicates that acceptable clinker was being produced throughout the test period, including WTDF/coal firing periods. FMM personnel confirmed this observation during the testing periods, and KBN personnel witnessed clinker being conveyed and stored in the clinker silos, indicating suitable clinker being produced.

4.2.2 KILN EXIT TEMPERATURE

The temperature at the cement kiln exit (i.e., where raw feed is introduced into the kiln from the preheater) is an indicator of cement kiln operation. This parameter can be examined to determine if WTDF/coal firing adversely affects kiln operation. The recorded values of this parameter for

4-6

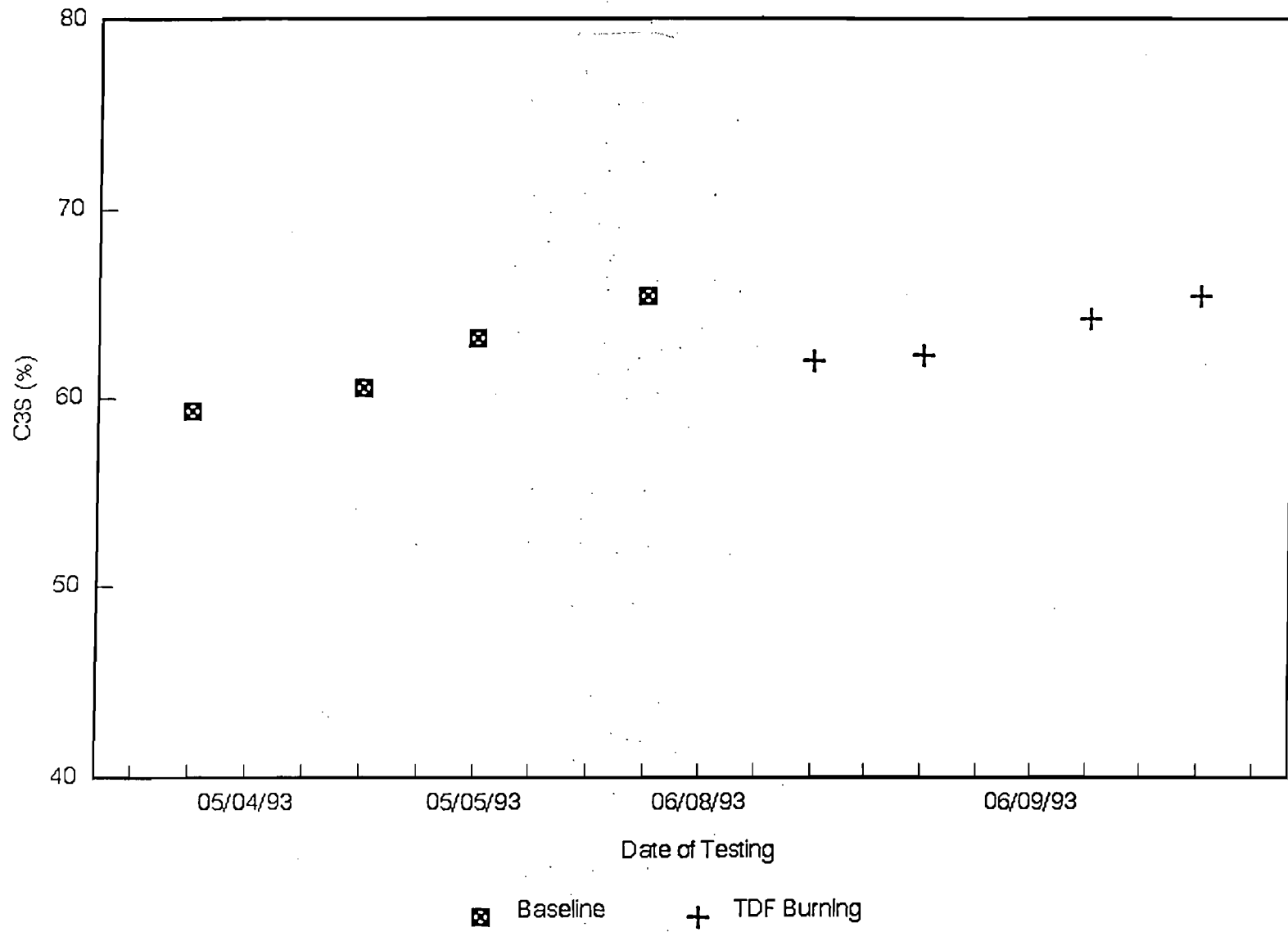


Figure 4-1
Clinker C3S: Baseline versus TDF Burning



4-7

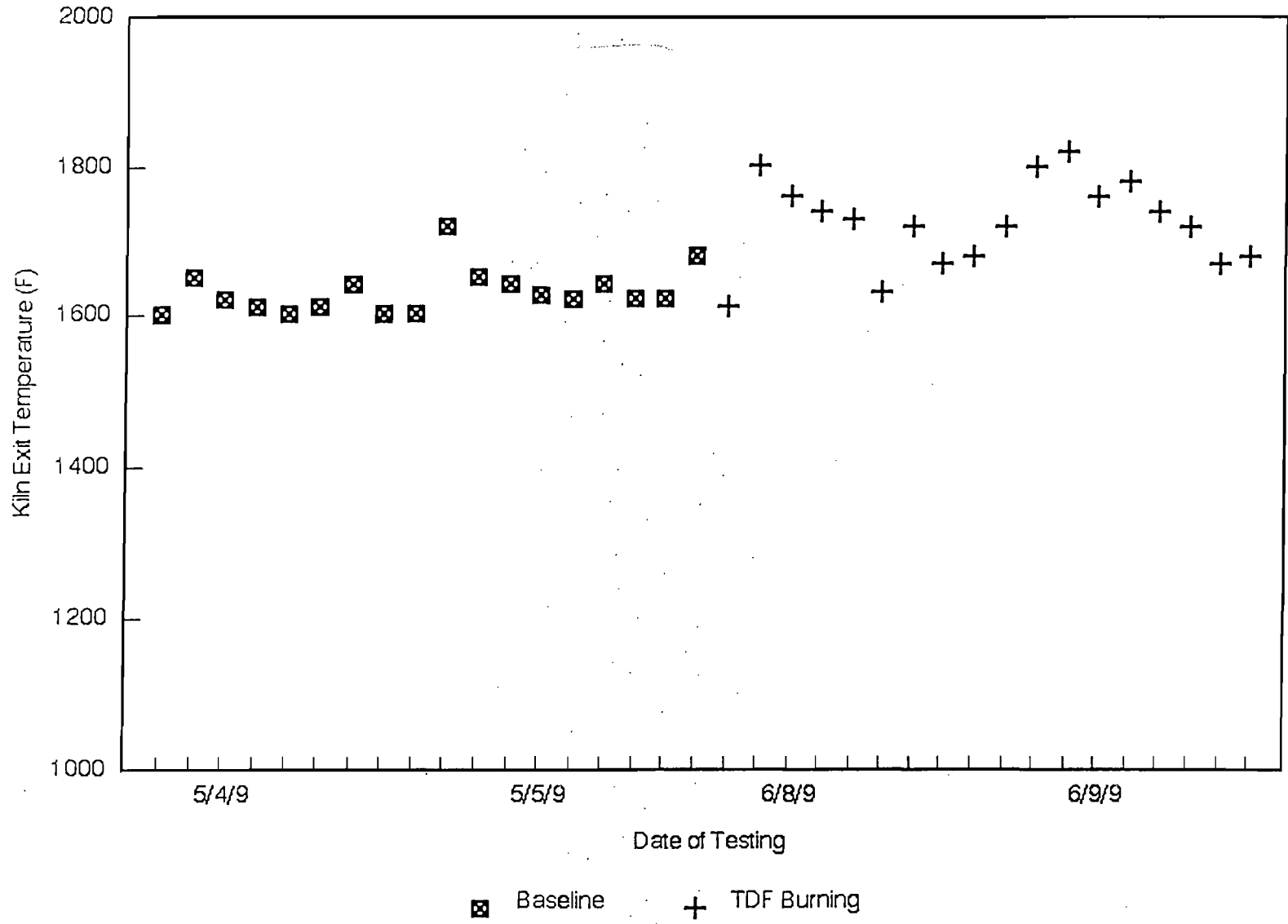


Figure 4-2
Kiln Exit Temperature: Baseline versus TDF Burning

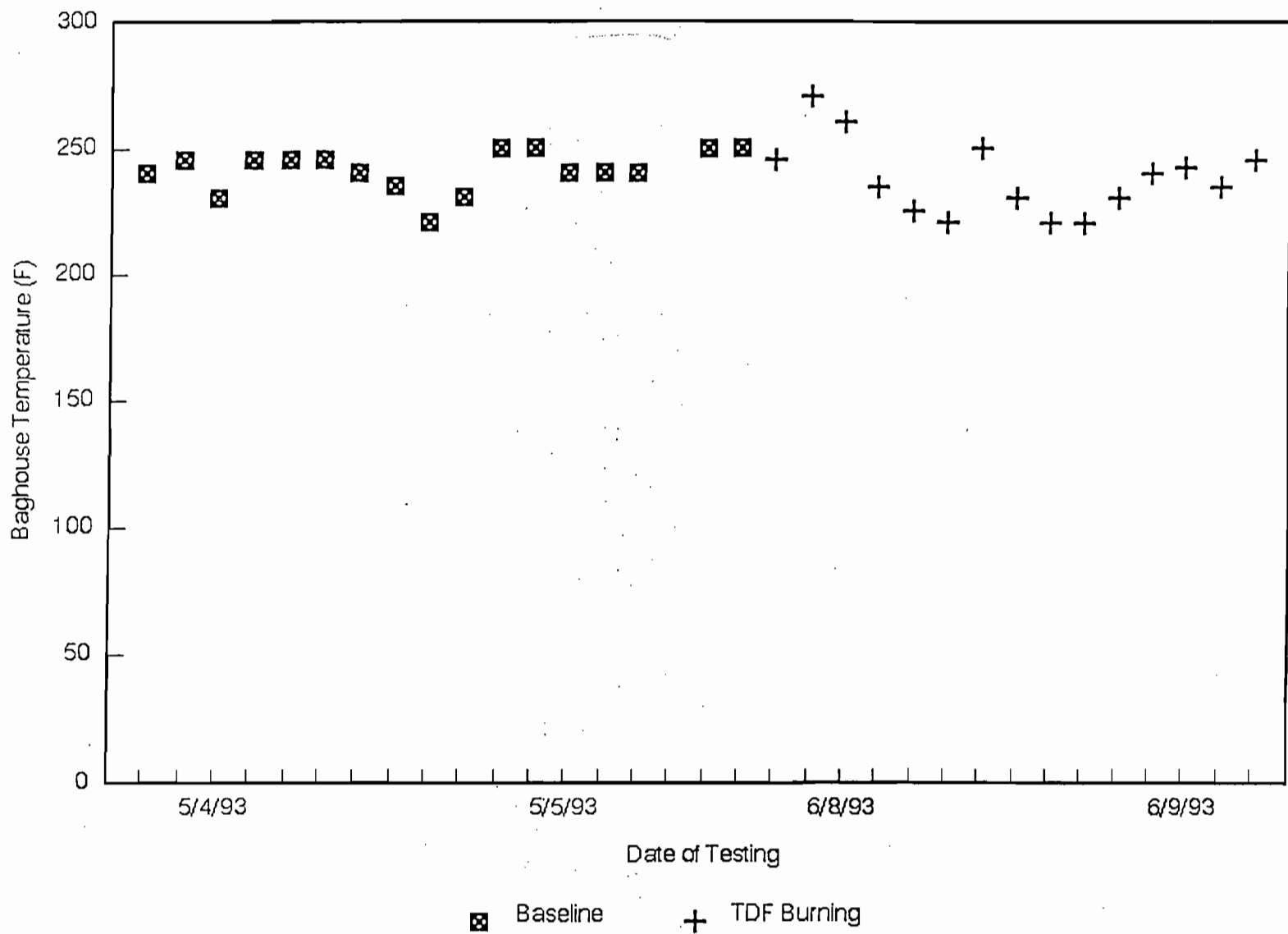


the 4-day test period are shown graphically in Figure 4-2. Kiln exit temperature is shown to be vary between about 1,600°F and 1,700°F during the baseline test period. During the WTDF/coal test period, kiln exit temperatures are somewhat higher, between 1,600°F and 1,800°F. Although not a large difference, this is an expected result due to the WTDF firing, in which the WTDF is introduced to the kiln at the base of the preheater, which coincides with the kiln exit. Since the WTDF is being combusted in this area, local temperatures are higher than during 100 percent coal firing. Therefore, it is concluded that the kiln exit temperatures during baseline and WTDF/coal test periods are consistent.

4.2.3 BAGHOUSE OPERATING TEMPERATURE

The cement kiln baghouse at FMM controls PM emissions from the kiln exhaust gases. The exhaust gases first pass through the preheater and raw mill before passing through the baghouse and then exiting through the stack. The temperature at which the baghouse operates is an indicator of cement kiln operation and emissions. Emissions of certain volatile trace metals, such as mercury, are affected by baghouse operating temperature. As baghouse temperature decreases, more of these volatile metals will condense out onto the fine fly ash particles, and then be captured in the baghouse, thus decreasing the emissions of these metals. This parameter can be examined to ascertain if WTDF/coal firing adversely affects kiln operation. The recorded values of this parameter for the 4-day test period are shown graphically in Figure 4-3.

As shown in the figure, baghouse operating temperatures remained nearly constant throughout the baseline and WTDF/coal test periods. Temperature varied between about 220°F and 270°F. No difference is seen between the baseline and WTDF operating conditions.



4-9

Figure 4-3
Baghouse Temperature: Baseline versus TDF Burning



5.0 AIR QUALITY MODELING ANALYSIS

K&A performed an air quality modeling analysis which evaluated the potential impacts of the air emissions from Kiln No. 1. The emission rate for each pollutant used in the analysis was the higher of the average emission rate during baseline conditions or during WTDF/coal firing emissions. Based on this analysis, it was demonstrated that the potential impacts of each pollutant were well below the respective FDER annual ambient air quality standard or no-threat level (NTL).

However, K&A did not evaluate these impacts against the FDER 8-hour or 24-hour standards and NTLs. In order to provide an assessment of impacts of air emissions for all pertinent averaging times, analysis were performed to determine the short-term impacts. The results of this analysis, along with the annual modeling results, are presented in Table 5-1. The ambient standard or NTL is shown for comparison.

As shown in Table 5-1, all predicted 8-hour maximum impacts are less than 5 percent of the respective standard/NTL, all predicted 24-hour impacts are less than 10 percent of the standard/NTL, and all annual impacts are less than 25 percent of the respective standard/NTL.

KBN has reviewed the K&A report and finds that the modeling analysis was performed in an appropriate manner, and has verified the results of the analysis. Based on the modeling results, it is concluded that emissions due to WTDF/coal firing in Kiln No. 1, if conducted in a manner consistent with the test burn program, will not cause a threat to the health and welfare of the citizens of Hernando County.

Table 5-1. Maximum Air Quality Impacts from Kiln No. 1 at Florida Mining & Materials

	Maximum Emission Rate (lb/hr)	8-Hour Average			24-Hour Average			Annual Average		
		Impact ($\mu\text{g}/\text{m}^3$)	AAQS/NTL ($\mu\text{g}/\text{m}^3$)	% of Standard	Impact ($\mu\text{g}/\text{m}^3$)	AAQS/NTL ($\mu\text{g}/\text{m}^3$)	% of of Standard	Impact ($\mu\text{g}/\text{m}^3$)	AAQS/NTL ($\mu\text{g}/\text{m}^3$)	% of Standard
<u>Criteria Pollutants</u>										
Particulate Matter	9.14	2.45	--	--	1.37	150	0.9%	0.062	50	0.1%
Nitrogen Oxide	198.1	53.16	--	--	29.70	--	--	1.35	100	1.5%
Sulfur Dioxide	2 ^a	0.54	--	--	0.30	260	0.1%	0.014	60	0.02%
Lead	0.00781	0.0021	0.5	0.4%	0.0012	0.12	1.0%	0.000053	0.09	0.1%
Total Hydrocarbon	3.36	0.90	--	--	0.50	--	--	0.02	--	--
Carbon Monoxide	49.1	13.2	10000	0.2%	7.3	--	--	0.33	--	--
<u>Non-Criteria Pollutants</u>										
Hydrogen Chloride	0.44	0.12	75	0.2%	0.066	18	0.4%	0.0030	7	0.04%
Arsenic	0.00174	0.00047	2	0.02%	0.00026	0.48	0.1%	0.000012	0.00023	5.1%
Chromium (Total)	0.00287	0.00077	0.5	0.2%	0.00043	1.2	0.04%	0.000020	1,000	0.00%
Zinc	0.01026	0.0028	--	--	0.0015	--	--	0.000070	--	--
Mercury	0.01299	0.0035	0.5	0.7%	0.0019	0.12	1.6%	0.000088	0.3	0.03%
Dioxin/Furan	--	0	--	--	0	--	--	0	2.2E-08	0.00%
Ammonia	19.71	5.29	170	3.1%	2.96	40.80	7.2%	0.13	100	0.1%
Iron	0.183	0.049	10	0.5%	0.027	2.4	1.1%	0.0012	--	--
Aluminum	0.103	0.028	100	0.03%	0.015	24	0.1%	0.00070	--	--
Barium	0.057	0.015	5	0.3%	0.0085	1.2	0.7%	0.00039	50	0.00%
Calcium	1.26	0.34	--	--	0.19	--	--	0.0086	--	--
Magnesium	0.09	0.02	50	0.05%	0.013	1.2	1.1%	0.00061	0.4	0.2%
<u>Volatile Organic Compounds</u>										
Acetone	0.021	0.0056	35600	0.00%	0.0031	8544	0.00%	0.00014	--	--
Benzene	0.058	0.016	30	0.05%	0.0087	72	0.01%	0.00039	0.12	0.3%
Bromomethane	0.0013	0.00035	190	0.00%	0.00019	45.6	0.00%	8.8E-06	0.8	0.00%
Carbon Disulfide	0.0057	0.0015	310	0.00%	0.00085	74.4	0.00%	0.000039	200	0.00%
Chlorobenzene	0.016	0.0043	3450	0.00%	0.00240	828	0.00%	0.00011	--	--
Ethylbenzene	0.0058	0.0016	4340	0.00%	0.00087	1041.6	0.00%	0.000039	1000	0.00%
n-Hexane	0.005	0.0013	1760	0.00%	0.00075	422.4	0.00%	0.000034	200	0.00%
Toluene	0.049	0.013	3770	0.00%	0.0073	904.8	0.00%	0.00033	300	0.00%
1,1,1-Trichloroethane	0.0001	0.000027	38200	0.00%	0.000015	9168	0.00%	6.8E-07	--	--
Trichlorethene	0.0001	0.000027	2690	0.00%	0.000015	645.6	0.00%	6.8E-07	--	--
Styrene	0.027	0.0072	2130	0.00%	0.0040	511.2	0.00%	0.00018	--	--
Total Xylene	0.0239	0.0064	4340	0.00%	0.0036	1041.6	0.00%	0.00016	80	0.00%

Generic (10 g/s) Maximum Impacts:

Annual	0.54 $\mu\text{g}/\text{m}^3$
8-hour	21.3 $\mu\text{g}/\text{m}^3$
24-hour	11.9 $\mu\text{g}/\text{m}^3$

Notes:

^a Maximum emission rate is below detection limit.

6.0 CONCLUSIONS AND RECOMMENDATIONS

FMM has conducted a test burn program utilizing WTDF to provide up to 20 percent of the heat input to Kiln No. 1 located at its Brooksville cement plant. The program was witnessed and evaluated by KBN, acting on behalf of the HCBC. The FDEP also witnessed portions of the testing by sending staff representatives from the FDEP Tampa office. Based on the review of all available data, the major conclusions of the WTDF test burn are summarized below:

1. The test protocol developed for the test burn was adequate to demonstrate whether any increases in emissions of regulated air pollutants will occur due to WTDF firing in the cement kiln;
2. USEPA reference methods were used to measure stack emissions from Kiln No. 1. Proper stack test procedures were followed during the stack testing.
3. FMM plant personnel were cooperative throughout the test period. No indication was received of any intent to conceal or falsify any plant operating or test data. Two unannounced visits were conducted to verify proper operation when firing WTDF.
4. Both baseline and WTDF/coal testing were conducted with Kiln No. 1 operating at or near its maximum operating rate.
5. Kiln operating parameters during the test period were consistent with proper operation and expected differences due to WTDF firing. Equipment maintenance and repairs performed on Kiln No. 1 between the baseline and WTDF test periods did not affect kiln operating parameters.
6. Plant operating data indicate that acceptable clinker was being produced on a continuous basis throughout the test period, including WTDF/coal firing periods.
7. PM emissions from Kiln No. 1 were well below the allowable emission rate during both baseline and WTDF/coal firing conditions (PM is the only pollutant for which an allowable emission rate has been established for the kiln).
8. Emissions of CO were demonstrated to increase as a result of WTDF firing in the cement kiln. Actual CO emissions were found to be 49.1 lb/hr when burning WTDF/coal, which is an increase of 17.5 lb/hr over baseline conditions (76.7 TPY increase at 8,760 hr/yr operation). CO is a criteria pollutant and both FDEP and EPA have adopted ambient air quality standards for CO. This level of CO emission from Kiln No. 1 does not represent a concern from an air quality standpoint since predicted maximum CO impacts due to Kiln No. 1 firing WTDF/coal are less than 1 percent of the CO ambient air quality standard. This increase is also less than the 100

TPY threshold which would trigger new source review under the prevention of significant deterioration (PSD) regulations. However, since an increase in CO emissions is demonstrated, the FDEP rules require that FMM apply for and obtain a construction permit prior to conducting further burning of WTDF.

9. Emissions of zinc, barium, acetone and bromomethane were also found to increase as a result of WTDF/coal firing. However, actual emissions of these pollutants are low (less than 0.06 lb/hr and 0.3 TPY each, average). This level of emissions does not represent a concern from an emission or air quality impact standpoint for several reasons. There are no FDEP or EPA regulations applicable to these pollutants. These pollutants are not contained on EPA's list of 189 hazardous air pollutants as defined in Title III of the Clean Air Act Amendments of 1990. Under EPA's rules regulating the burning of hazardous wastes in boilers and industrial furnaces (BIF rule), there are no emission standards for these pollutants, although a reference air concentration (RAC) has been set for bromomethane of $0.8 \mu\text{g}/\text{m}^3$, annual average and for barium of $50 \mu\text{g}/\text{m}^3$, annual average. The only applicable requirements for these pollutants is contained in FDEP's air toxics policy. This policy requires that the impacts of toxic pollutants be assessed against certain ambient No-Threat Levels (NTLs). As presented in Section 5.0, the ambient impacts of the pollutants are all less than 1% of the respective NTL and EPA's RAC for bromomethane and barium.
10. Emissions of all other regulated and non-regulated pollutants were demonstrated to decrease as a result of the WTDF burning, and therefore WTDF burning represents an air quality improvement for these pollutants.
11. The analysis of coal and WTDF demonstrate that WTDF is overall a cleaner fuel than coal. Concentrations of nearly all trace elements measured in the TDF are lower than the concentrations in coal.
12. The modeling analysis demonstrates that the potential impacts of each criteria and air toxic pollutant are well below the respective ambient standard or FDER no-threat level (NTL).

In conclusion, the test burn satisfies beyond all reasonable doubts that WTDF firing in the Kiln No. 1 at FMM can occur without an increase in allowable PM emissions (the only pollutant for which an allowable emission rate exists). However, the test burn results demonstrate an increase in emissions of CO, zinc, barium, acetone, and bromomethane emissions.

These conclusions are valid for the range of conditions experienced during the test burn, which were the typical operating conditions for the kiln. Further, these conclusions are only valid for the specific WTDF feed mechanism utilized during the test burn. FMM has indicated through conversations that the present WTDF feed mechanism, which is labor intensive, will be replaced in the future with a more automated system. If a new feed system is installed on Kiln No. 1, WTDF/coal operating parameters could be significantly affected, and the present test results may no longer be valid. Therefore, any permit for FMM to utilize WTDF in Kiln No. 1 should stipulate that any changes to the WTDF feed mechanism be reviewed with FDEP and Hernando County prior to implementation.

It is concluded that WTDF firing in Kiln No. 1 at FMM, if conducted properly, can occur in an environmentally safe manner, and that the health and safety of the residents of Hernando County will not be jeopardized.

This conclusion is supported in part by the large number of cement kilns in the U.S. which have or are currently burning waste tires as a permitted supplemental fuel. Test data available from some of the dry process cement kilns in the United States that were burning TDF indicate emissions are not adversely affected and, in many cases, improve. The long residence times, high operating temperatures, and scrubbing action of cement kilns provide an ideal environment to burn waste tires as a supplemental fuel. Organics are efficiently destroyed, and many trace elements are incorporated into the clinker product.

In order to provide reasonable assurance that FMM conducts WTDF burning in an environmentally acceptable manner, the following conditions are recommended to be included in any air permit issued for WDF firing in Kiln No. 1 at FMM.

Specific Conditions:

- #7 1. The cement kiln's maximum utilization/firing rate of whole tire-derived fuel (WTDF) shall not exceed 20.0 percent of the total Btu heat input, or 2.14 tons per hour.
- #8 2. The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly, and the records shall be kept on file for a minimum of two years.
- #9 3. The quantity of all deliveries of WTDF shall be documented and kept on record/file for a minimum of two years.

- 2110
- 3, inlet
4. WTDF may be introduced into the cement kiln only at a point at the base of the preheater (i.e., at the kiln exit).
 5. This permit is valid for only the specific WTDF feed mechanism utilized during the test burn of WTDF/coal. Any physical modification to the WTDF feed mechanism will require a modification of this permit, and provide a clear point of entry for Hernando County and any other substantially affected parties. If the WTDF feed mechanism is to be physically modified, a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and determine if further information or stack testing is required in order determine if such modifications will result in an increase in actual emissions, and it shall be FMM's burden to provide reasonable assurance that such modifications will not affect the conclusions derived from the test burn of May and June 1993.
 5. WTDF firing in Kiln No. 1 shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400°F for one hour. The operating temperature shall be measured at the cement kiln exit.
- #12 Modification
- #11

Recommendations to HCBCC

It is recommended that if the above specific conditions are incorporated into the FDEP permit for WTDF burning, the HCBCC should not challenge the issuance of the FMM permit. If such conditions are not incorporated into the permit, reasonable assurance will not be provided that WTDF fuel will be utilized in an environmentally acceptable manner, and the HCBCC should challenge the issuance of the permit in an administrative hearing.

REFERENCES

- Buff, D.A. (KBN Engineering and Applied Sciences, Inc.). July 16, 1993. Letter to Mr. Segundo Fernandez. Re: Florida Mining and Materials WTDF Test Burn.
- Buff, D.A. (KBN Engineering and Applied Sciences, Inc.). August 10, 1993. Letter to Mr. Segundo Fernandez. Re: Florida Mining and Materials WTDF Test Burn, Review of Koogler & Associates Stack Test Reports.
- Koogler & Associates Environmental Services. 1993. Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions, Kiln No. 1. Gainesville, Florida.
- Stone, M. (Brooksville Cement). June 16, 1993. Letter to David A. Buff. Re: Florida Mining and Materials, No. 1 Kiln Shutdown Repairs.

APPENDIX A
STATISTICAL ANALYSIS OF EMISSION TEST RESULTS

Table A-1. Significance Test of Stack Test Results for Kiln No. 1 at Florida Mining & Materials: Criteria Pollutants

		Pollutant					
		PM	NO _x	SO ₂	Pb	THC	CO
<u>BASELINE EMISSIONS (lb/hr)</u>							
May 4th, 1993 data	Run 1	6.15	205.95	1.71 ^b	0.00763 ^b	2.36	28.1
	Run 2	6.99	236.35	1.71 ^b	0.00747 ^b	3.54	30.73
	Run 3	8.00	205.38	1.78 ^b	0.00834	4.06	31.21
	Run 4		193.97	1.78 ^b		3.07	33.56
	Run 5		190.08	1.78 ^b		3.07	36.24
	Run 6		166.42	1.78 ^b		3.44	31.17
May 5th, 1993 data	Run 1		133.54	1.90 ^b		2.75	30.9
	Run 2		185.79	1.90 ^b		4.64	33.06
	Run 3		200.64	1.90 ^b		3.92	29.9
	Run 4		242.86	1.98 ^b		3.11	32
	Run 5		221.71	1.98 ^b		3.48	30.97
	Run 6		194.41	2.06 ^b		2.88	31.56
Statistical summary							
Average (lbs/hr)		7.05	198.09	1.85 ^b	0.00781 ^b	3.36	31.62
Standard deviation		0.926	29.485	0.114	0.00046	0.627	2.018
N		3	12	12	3	12	12
<u>WTDF CONDITIONS EMISSIONS (lb/hr)</u>							
June 8th, 1993 data	Run 1	11.33	118.78	1.05 ^b	0.00201 ^b	2.80	66.08
	Run 2	7.3	92.30	0.35 ^b	0.00201 ^b	2.62	39.91
	Run 3	8.75	133.50	0.84 ^b	0.00201 ^b	2.61	66.93
	Run 4		161.73	0.50 ^b		3.37	49.70
	Run 5		227.33	1.42 ^b		2.60	47.73
	Run 6		215.70	0.71 ^b		2.90	70.04
June 9th, 1993 data	Run 1		166.34	0.90 ^b		4.79	52.00
	Run 2		189.05	0.18 ^b		3.69	41.16
	Run 3		244.46	1.25 ^b		3.17	39.76
	Run 4		265.64	0.71 ^b		3.24	37.11
	Run 5		243.96	0.70 ^b		3.65	39.13
	Run 6		201.78	0.70 ^b		3.63	39.51
Statistical summary							
Average (lbs/hr)		9.13	188.38	0.78 ^b	0.00201 ^b	3.26	49.09
Standard deviation		2.041	54.714	0.353	0.00	0.636	12.155
N		3	12	12	3	12	12
<u>Test for Significance</u>							
Pooled Standard Deviation (Sp)		1.585	43.949	0.262	0.00033	0.631	8.713
Degrees of Freedom		4	22	22	4	22	22
Is Test Applicable (WTDF avg > Baseline avg)?		YES	NO	NO	NO	NO	YES
Test Statistic (t')		1.61	N/A	N/A	N/A	N/A	4.91
t Table value		2.132	1.717	1.717	2.132	1.717	1.717
Is Change Significant? ^a		NO	NO	NO	NO	NO	YES

Notes: ^a Change is significant only if the average emission is increased and the test statistic is greater than the Table t-value.^b Value below detectable limit.

Table A-2. Significance Test of Stack Test Results for Kiln No. 1 at Florida Mining & Materials: Non-Criteria Pollutants.

		Pollutant											
		Hydrogen Chloride	Arsenic	Chromium	Zinc	Mercury	Dioxins / Furans	Ammonia	Iron	Aluminum	Barium	Calcium	Magnesium
BASELINE EMISSIONS (lb/hr)													
May 4-5th, 1993 data	Run 1	0.47	0.00176 ^a	0.00205 ^a	0.00558	0.02935	-- ^a	17.35	0.29	0.12	0.03 ^a	1.27	0.07
	Run 2	0.44	0.00172 ^a	0.00201 ^a	0.00546	0.00233	-- ^a	21.60	0.14	0.10	0.03 ^a	1.28	0.10
	Run 3	0.42	0.00173 ^a	0.00201 ^a	0.00633	0.00728	-- ^a	20.18	0.12	0.09	0.03 ^a	1.22	0.09
Statistical summary													
Average		0.443	0.001737 ^a	0.00202 ^a	0.0058	0.0130	-- ^a	19.71	0.183	0.103	0.03 ^a	1.26	0.087
Standard deviation		0.03	0.000021	0.000023	0.000471	0.014	--	2.16	0.093	0.015	0.00	0.032	0.015
N		3	3	3	3	3	3	3	3	3	3	3	3
WTDF CONDITIONS EMISSIONS (lb/hr)													
June 8-9th, 1993 data	Run 1	0.36	0.00143 ^a	0.00287 ^a	0.00832	0.00037 ^a	-- ^a	14.10	0.09	0.12	0.04	0.71	0.07
	Run 2	0.32 ^a	0.00143 ^a	0.00287 ^a	0.01392	0.00035 ^a	-- ^a	9.73	0.18	0.07	0.08	0.59	0.08
	Run 3	0.38 ^a	0.00143 ^a	0.00287 ^a	0.00853	0.00036 ^a	-- ^a	8.47	0.10	0.12	0.05	0.96	0.09
Statistical summary													
Average		0.35	0.0014 ^a	0.00287 ^a	0.01026	0.00036	--	10.77	0.123	0.103	0.057	0.753	0.080
Standard deviation		0.031	0.0000	0.00	0.00317	0.000010	--	2.95	0.049	0.029	0.021	0.189	0.010
N		3	3	3	3	3	3	3	3	3	3	3	3
Test for Significance													
Pooled Standard Deviation (Sp)		0.027988	0.000015	0.000016	0.002269	0.010172	--	2.590	0.074	0.023	0.015	0.135	0.013
Degrees of Freedom		4	4	4	4	4	4	4	4	4	4	4	4
Is Test Applicable (WTDF avg > Baseline avg)?		NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
Test Statistic (t')		N/A	N/A	N/A	2.41	N/A	N/A	N/A	N/A	N/A	2.22	N/A	N/A
t Table value		2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132	2.132
Is Change Significant? ^b		NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO

Notes: ^a Change is significant only if the average emission is increased and the test statistic is greater than the Table t-value.

^b Below detectable limit.

Table A-3. Significance Test of Stack Test Results for Kiln No. 1 at Florida Mining & Materials: Speciated Volatile Organic Compounds.

		Pollutant												
		Acetone	Benzene	Bromo- methane	C ₂ S	Chloro- benzene	Ethyl- benzene	n-Hexane	Toluene	1,1,1-Tri- Chloroethane	Trichloro- ethene	Styrene	m-\p- xylene	o-Xylene
BASELINE EMISSIONS (lb/hr)														
May 4th, 1993 data	Run 1	4.3e-05 ^b	0.045	2.1e-05 ^b	0.0055	0.014	0.005	0.0038	0.032	2.10e-05	2.10e-05	0.02	0.014	0.006
	Run 2	4.3e-05 ^b	0.048	0.0015	0.0044	0.013	0.005	0.0047	0.045	2.10e-05 ^b	2.10e-05 ^b	0.02	0.015	0.006
	Run 3	4.5e-05 ^b	0.057	2.2e-05 ^b	0.006	0.015	0.0051	0.0044	0.047	2.20e-05 ^b	2.20e-05 ^b	0.03	0.016	0.006
	Run 4	4.5e-05 ^b	0.063	2.2e-05 ^b	0.0073	0.016	0.0058	0.005	0.054	2.20e-05 ^b	2.20e-05 ^b	0.031	0.019	0.0076
	Run 5	4.5e-05 ^b	0.062	2.2e-05 ^b	2.2e-05 ^b	0.018	0.0068	0.0053	0.062	2.20e-05 ^b	2.20e-05 ^b	0.034	0.021	0.0084
	Run 6	4.5e-05 ^b	0.073	2.2e-05 ^b	2.2e-05 ^b	0.019	0.0071	0.007	0.055	2.20e-05 ^b	2.20e-05 ^b	0.033	0.018	0.0077
Statistical summary														
Average		4.4e-05 ^b	0.058	0.00027 ^b	0.0039	0.016	0.0058	0.0050	0.049167	2.2e-05 ^b	2.2e-05 ^b	0.026667	0.017167	0.0069
Standard deviation		0.00	0.010	0.0006	0.00313	0.00232	0.00094	0.00109	0.010381	5.16e-07	5.16e-07	0.007062	0.002639	0.001163
N		6	6	6	6	6	6	6	6	6	6	6	6	6
WTDF CONDITIONS EMISSIONS (lb/hr)														
June 8th, 1993 data	Run 1	0.012	0.041	0.0013	0.0087	0.0096	0.005	0.0013	0.029	2.20e-05 ^b	2.20e-05 ^b	0.01	0.0091	0.0037
	Run 2	0.012	0.042	0.00094	0.0058	0.014	0.0061	0.0016	0.036	2.20e-05 ^b	2.20e-05 ^b	0.014	0.013	0.0049
	Run 3	0.049	0.039	0.0024	0.0056	0.013	0.0053	0.0023	0.031	2.10e-05 ^b	2.10e-05 ^b	0.013	0.011	0.0043
	Run 4	0.017	0.041	0.0013	0.0048	0.014	0.0059	0.0028	0.033	2.10e-05 ^b	2.10e-05 ^b	0.014	0.012	0.0049
	Run 5	0.017	0.041	0.00085	0.0045	0.012	0.0049	0.0029	0.04	2.20e-05 ^b	2.20e-05 ^b	0.0038	0.01	0.004
	Run 6	0.019	0.043	0.00082	0.0051	0.013	0.006	0.0029	0.035	2.20e-05 ^b	2.20e-05 ^b	0.013	0.012	0.0049
Statistical summary														
Average		0.02	0.0412	0.00127	0.00575	0.0126	0.00553	0.0023	0.034	2.2e-05 ^b	2.2e-05 ^b	0.0113	0.0112	0.00445
Standard deviation		0.014	0.0013	0.0006	0.00152	0.00165	0.00053	0.0007	0.003899	5.16e-07	5.16e-07	0.00396	0.00144	0.000528
N		6	6	6	6	6	6	6	6	6	6	6	6	6
Test for Significance														
Pooled Standard Deviation (Sp)		0.00991	0.00738	0.0006	0.00246	0.00201	0.00077	0.00092	0.007841	5.16e-07	5.16e-07	0.005724	0.002127	0.000903
Degrees of Freedom		10	10	10	10	10	10	10	10	10	10	10	10	10
Is Test Applicable (WTDF avg > Baseline avg)?		YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
Test Statistic (t')		3.66	N/A	2.89	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
t Table value		1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812	1.812
Is Change Significant? ^a		YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: ^a Change is significant only if the average emission is increased and the test statistic is greater than the Table t-value.8/27/93

^b Below detectable limit.

TABLE 5
 FUEL ULTIMATE ANALYSIS
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILE, FLORIDA

May 4-5, 1993
 AND
 JUNE 8-9, 1993

Parameter	UNIT	BASELINE	COAL/TDF	COAL/TDF
		COMPOSITE COAL 5/4-5/93	COMPOSITE COAL 6/8-9/93	COMPOSITE TDF 6/8-9/93
Moisture	(%)	6.34	7.75	0.47
Carbon	(%)	70.5	67.77	74.35
Hydrogen	(%)	4.69	4.55	7.08
Nitrogen	(%)	1.39	1.24	0.41
Sulfur	(%)	0.83	0.96	1.02
Ash	(%)	9.91	11.28	9.40
Oxygen	(%)	6.36	6.45	0.73
Heating Value	(Btu/lb)	12646	12186	15141

All parameters reported AS RECEIVED

TABLE 6
 KILN FEED, COAL AND CLINKER METAL ANALYSES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIAL
 BROOKSVILLE, FLORIDA

MAY 4-5, 1993
 AND
 JUNE 8-9, 1993

Metal	UNIT	BASELINE COMPOSITE KILN FEED 5/4-5/93	COAL/TDF COMPOSITE KILN FEED 6/8-9/93	BASELINE COMPOSITE COAL 5/4-5/93	COAL/TDF COMPOSITE COAL 6/8-9/93	BASELINE COMPOSITE CLINKER 5/4-5/93	COAL/TDF COMPOSITE CLINKER 6/8-9/93	COAL/TDF COMPOSITE TIRE 6/8-9/93
Arsenic	(ug/g)	16	25	6	16	29	34	<1
Chromium	(ug/g)	35	47	6	6	73	97	5
Lead	(ug/g)	66	66	8	4	83	100	5
Mercury	(ug/g)	0.24	0.24	0.10	0.18	<0.02	<0.02	0.04
Zinc	(ug/g)	38	59	10	6	92	82	4400
Chlorine	(% Wt)	0.12	0.12	0.16	0.16	0.07	0.07	0.07

APPENDIX B
CORRESPONDENCE



July 16, 1993

Mr. Segundo Fernandez
Oertel, Hoffman, Fernandez and Cole
2700 Blair Stone Road, Suite C
Tallahassee, FL 32301

RE: Florida Mining & Materials WTDF Test Burn

Dear Mr. Fernandez:

By letter dated June 3, 1993, from Mr. David Buff, P.E., to Mr. Larry Jennings, Manager of the Hernando County Planning Department, certain concerns over the baseline and WTDF testing at FMM/Southdown were expressed. Baseline testing on Kiln 1 at FMM utilizing 100 percent coal as fuel was conducted on May 4-5, 1993, while WTDF testing using up to 20 percent WTDF as fuel to the kiln was conducted on June 8-9, 1993. Due to operational problems with the kiln, the WTDF test was first delayed and then was postponed as the kiln was shutdown for repairs and maintenance. Testing conducted on May 12, just prior to the kiln shutdown, indicated large fluctuations in CO emissions from the kiln. These fluctuations were not observed during the baseline testing, and it is not clear if these were due to the equipment problems or due to other reasons.

According to FMM plant manager Don Kelly, the Kiln 1 was restarted on May 21 after the preheater/kiln/cooler system underwent maintenance and repair. The kiln was brought on-line while burning oil, which is the normal startup procedure, followed by 100 percent coal firing. The kiln then continued to operate until June 2, when a short outage was experienced. Kiln 1 resumed operation on June 2, and WTDF firing began the morning of June 3. This schedule provided 5 days of WTDF firing prior to the WTDF testing period, as required by the test protocol.

Based on the course of events between the baseline and WTDF testing, there were several areas of concern related to the acceptability of the overall testing program. The first concern is that the baseline testing will have been conducted approximately one month prior to the WTDF testing. During this period of time, significant differences in raw feed composition, coal quality, and other operational parameters may have occurred. These changes could in turn affect air emissions. Therefore, it may be more difficult to compare baseline emissions to WTDF emissions on the same basis. The test protocol allowed only 5 calendar days between baseline and WTDF testing. The 5 day period was considered to be the minimum time required to allow the entire system to reach equilibrium after the fuel switch. This relatively short period would result in the least chance for process and operational variability in the kiln system to occur, thus allowing easier comparison of coal and WTDF emissions.

The second concern was that the repairs and maintenance performed on Kiln 1 will have altered the air emissions associated with the kiln. Mr. Kelly mentioned that a kiln outage to perform needed maintenance had been scheduled for March 1993, but due to high cement sales and client demands, the outage was postponed. This apparently led to the operational problems with the kiln that resulted in the shutdown on May 13.

KILN ENGINEERING AND APPLIED SCIENCES, INC.

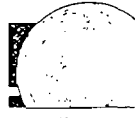
13076A-1/3 West 57th Street
Gainesville, Florida 32605
904-331-9000 FAX 904-332-8189

5680 West Cypress Street, Suite 1
Tampa, Florida 33607
813-287-1717 FAX 813-287-1716

1801 Clint Moore Road, Suite 105
Boca Raton, Florida 33487
407-994-9910 FAX 407-994-9393

One Church Street, Suite 801
Rockville, Maryland 20850
301-738-1100 FAX 301-738-1105





Based on these concerns, FMM was requested to provide information regarding kiln operational parameters during the baseline and WTDF testing in order to determine if parameters were sufficiently similar as to not jeopardize the comparison of test results. In addition, FMM was requested to provide a listing of the repairs and/or maintenance performed on Kiln 1 and a description of each, whether these were planned maintenance items or unplanned items, and the affects that each would have on kiln/preheater operation and associated air emissions.

FMM has provided the requested information. KBN has reviewed the information and our analysis of the data is provided below. Our conclusions regarding the acceptability of the test burns follow this analysis.

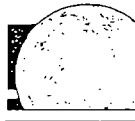
Effects of Kiln Maintenance/Repair

FMM provided a letter response dated June 16, 1993, along with supportive information regarding the repairs and maintenance performed on the Kiln 1 system. This letter is attached. Three major repairs were performed, all on the preheater: replacement of the preheater fan, the raw material feedpipe (spincast thimble), and the segmented thimble. All of these items were planned to be replaced in 1993 and are considered by FMM to be routine maintenance/repair. Other repairs and activities performed during the May kiln outage are shown in FMM's three-page graph. These included re-bricking the kiln, replacing the cyclones in the preheater, installing new grates in the cooler, and replacing some of the bags in the kiln baghouse.

Due to the nature of these repairs, it is possible kiln system operating parameters may have been altered. To investigate this possibility, several parameters were compared based on the baseline and WTDF test burns. These parameters are kiln feed rate, stack gas flow rate, kiln exit temperature, and baghouse operating temperature. During baseline testing (May 4-5), the average kiln feed rate varied between 133 and 145 tons per hour (TPH). During WTDF testing, the kiln feed rate ranged between 130 and 142 TPH. These rates are within the normal range experienced by the kiln, and indicate no significant difference between baseline and WTDF tests.

Stack gas flow rates are presented in Table 1. During baseline testing, the average stack gas flow rate for Kiln 1 was 187,200 acfm, and decreased to 175,900 acfm during WTDF testing. Although statistically this difference is significant at the 95 percent confidence level, it represents only a 6 percent change. This change could be due to the introduction of WTDF in the kiln, which, due to its characteristics and location, could change the air flow requirements. However, this difference is also expected to be within the normal operating fluctuations of the kiln.

Comparisons of kiln exit temperature and baghouse operating temperature for baseline and WTDF conditions are shown in the attached figure. The kiln exit temperature is seen to be slightly higher during WTDF conditions as compared to baseline conditions. This result is expected due to the introduction of WTDF at the base of the preheater, which would increase temperatures at the kiln exit, and is not considered to be a result of the kiln repairs. Also, baghouse operating temperatures were in the same range during the two test periods.



Other operating parameters as reported on FMM's Control Report for the baseline and WTDF periods were also reviewed. These control reports are attached. The ranges experienced by the kiln for each of these pertinent parameters were as follows:

	<u>Baseline</u>	<u>WTDF</u>
Cooler Exit Temp. (°F)	285 - 370	235 - 380
Secondary Air Temp. (°F)	1450 - 1900	1630 - 1980
Preheater Fan Temp. (°F)	740 - 820	720 - 770

The range of conditions as reflected in these data are generally consistent and do not indicate any substantial differences between baseline and WTDF conditions.

Kiln Feed and Clinker

Kiln feed raw material and clinker analysis were examined to determine if any significant differences in either were apparent during the two testing periods. Both sulfate (SO_3) content and tricalcium silicate (C_3S) content in both materials were evaluated. The results are presented in the attached figures (four figures in all). Kiln feed SO_3 and C_3S contents both reflect a good degree of variability, but baseline and WTDF contents are within the same range. In the case of Clinker C_3S , the results are similar for baseline and WTDF conditions. For clinker SO_3 content, the WTDF levels are somewhat higher than the baseline levels, although all values are below 1.0 percent. Since kiln feed SO_3 levels are similar for the baseline and WTDF conditions, the reasons for the differing clinker SO_3 levels are not known.

Conclusions

Review of the test data from the baseline and WTDF test burns indicates no significant differences in plant operating parameters for the two test periods. Furthermore, FMM plant personnel have stated that the repairs and maintenance activities performed on the Kiln 1 system should not have affected kiln operation. Based upon this analysis, it is concluded that the baseline and WTDF test burns were conducted under similar operating conditions, and the plant operations were suitable for determining if the utilization of WTDF in Kiln 1 results in an increase in emissions to the atmosphere.

This analysis does not address the suitability of the stack and emission testing conducted during the baseline and WTDF test periods. These aspects of the testing will be evaluated separately after receipt of the test data from Koogler & Associates.

Please call if you have any questions concerning this matter.

Sincerely,

David A. Buff, M.E., P.E.
Principal Engineer

cc: File(2)

Table 1. Statistical Analysis of Stack Test Results During Baseline and WTDF Test Burn.

		Stack Flow Rate (dscfm)
<hr/>		
BASELINE EMISSIONS (lb/hr)		
<hr/>		
May 4th, 1993 data	Run 1	171,832
	Run 2	
	Run 3	
	Run 4	178,987
	Run 5	178,483
	Run 6	
May 5th, 1993 data	Run 1	189,686
	Run 2	
	Run 3	197,855
	Run 4	
	Run 5	206,572
	Run 6	
Statistical summary		
Average		187,236
Standard deviation		13,226
N		6
<hr/>		
WTDF CONDITIONS EMISSIONS (lb/hr)		
<hr/>		
June 8th, 1993 data	Run 1	174,208
	Run 2	
	Run 3	168,693
	Run 4	
	Run 5	178,489
	Run 6	
June 9th, 1993 data	Run 1	180,315
	Run 2	
	Run 3	
	Run 4	178,588
	Run 5	
	Run 6	175,121
Statistical summary		
Average		175,902
Standard deviation		4,215
N		6
<hr/>		
Test for Significance		
<hr/>		
Pooled Standard Deviation (Sp)		9815.405
Degrees of Freedom		10
Is Test Applicable (WTDF avg > Baseline avg)?		YES
Test Statistic (t')		2.00
t Table value		1.812
Is Change Significant? ¹		YES*

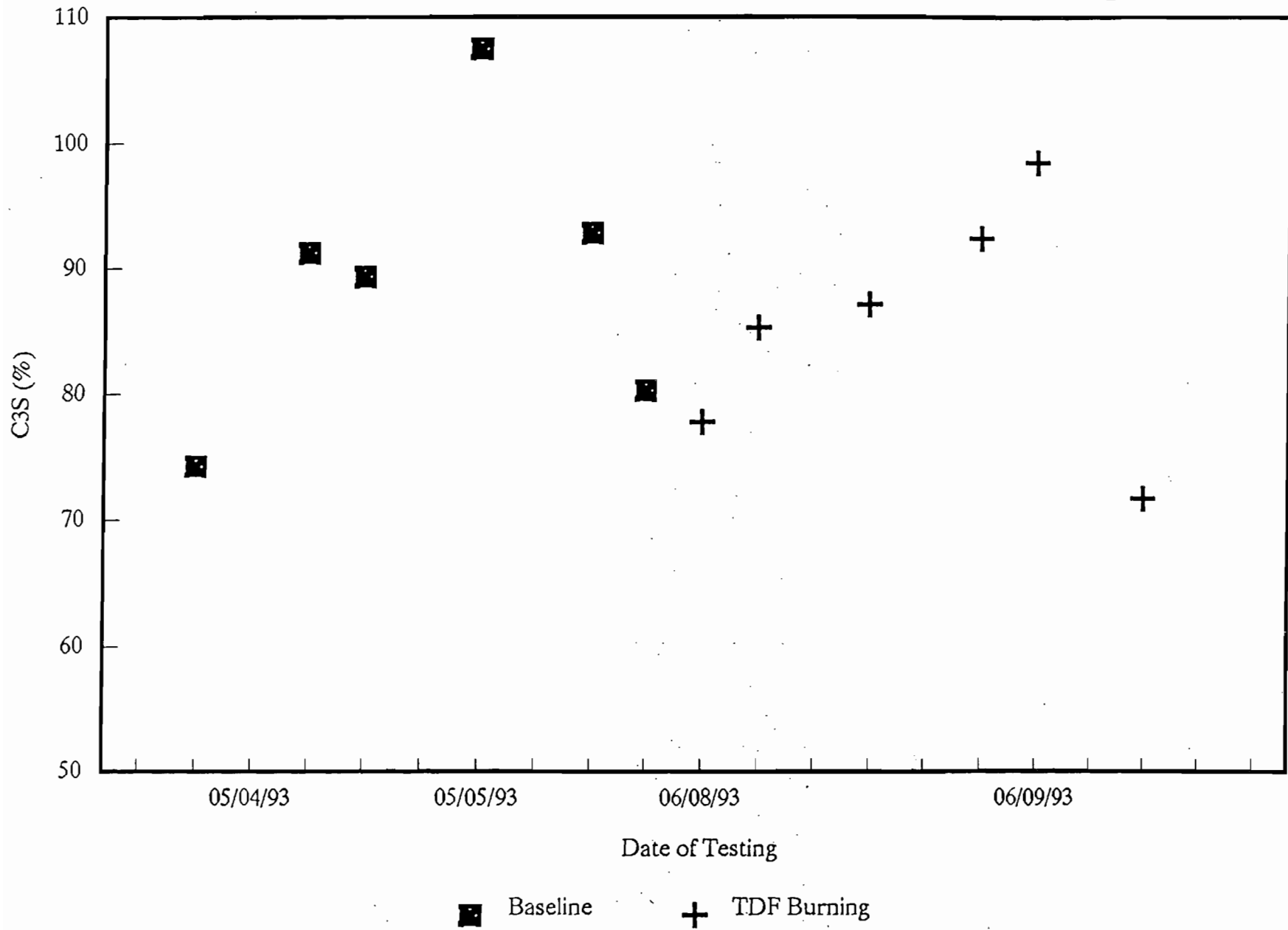
Notes:

FMMSTAT2
7/15/93

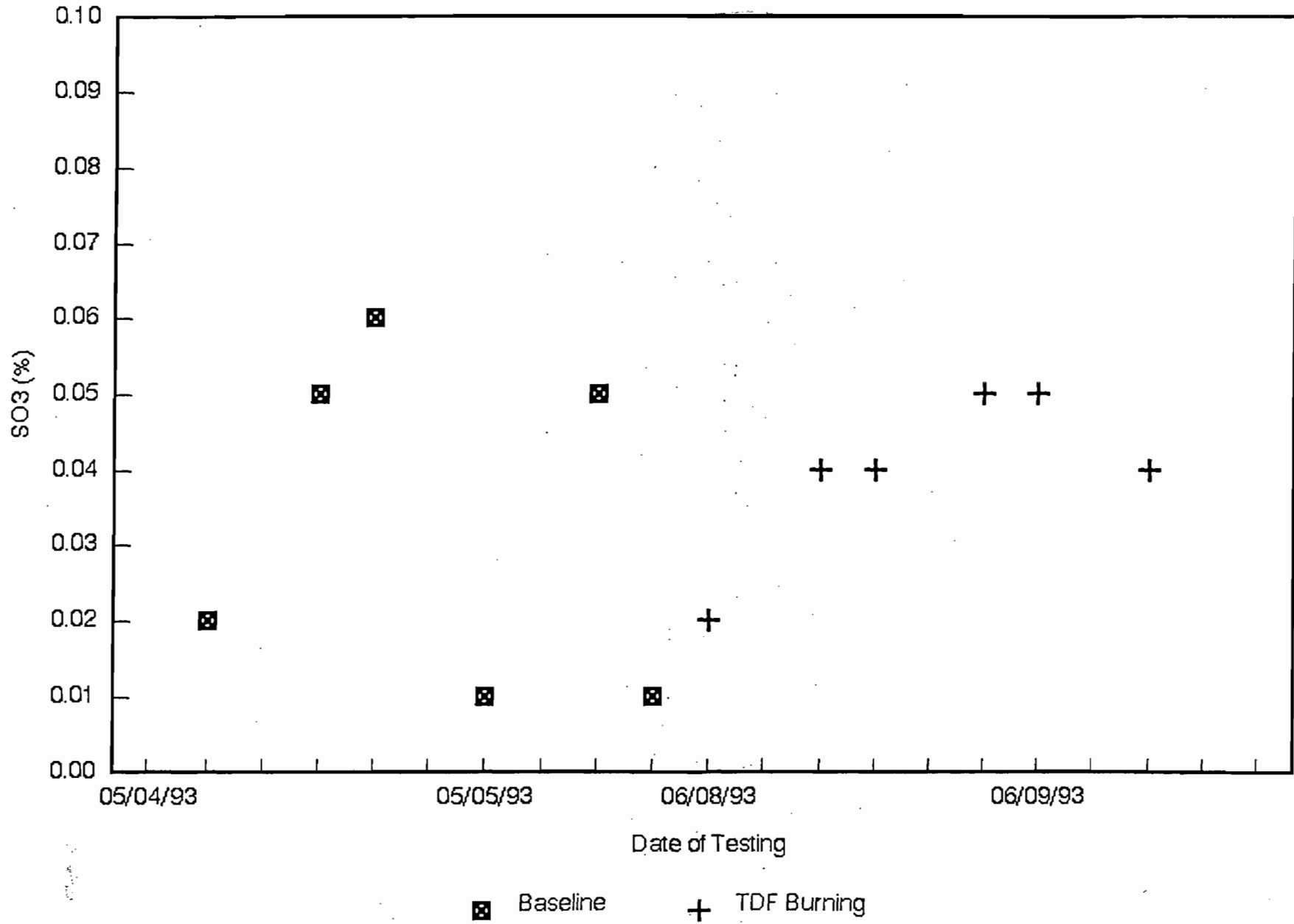
¹ Change is significant only if the average emission is increased and the test statistic is greater than the Table t-value.

* Stack Flow Rate change is a significant decrease.

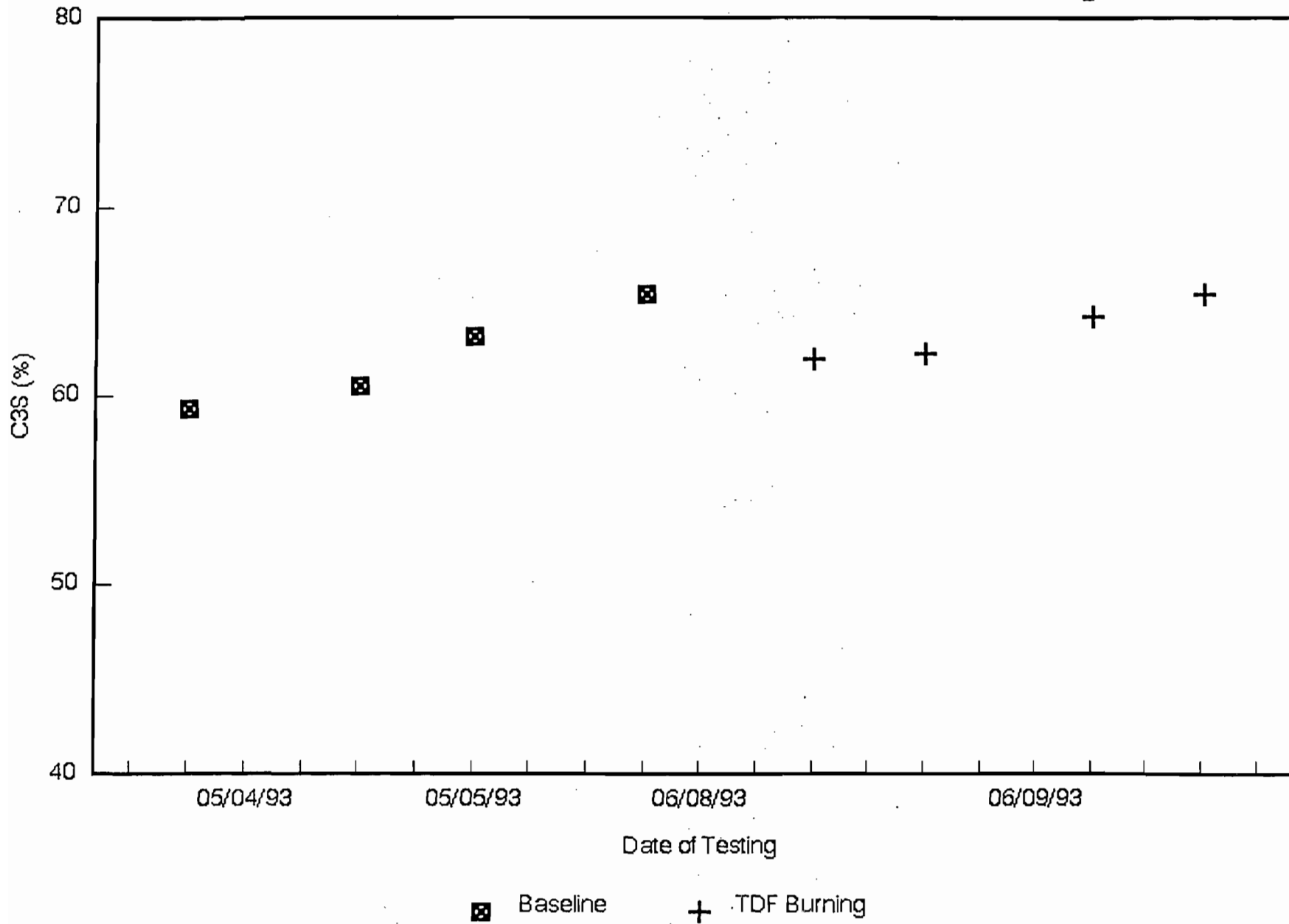
Kiln Feed C3S: Baseline vs TDF Burning



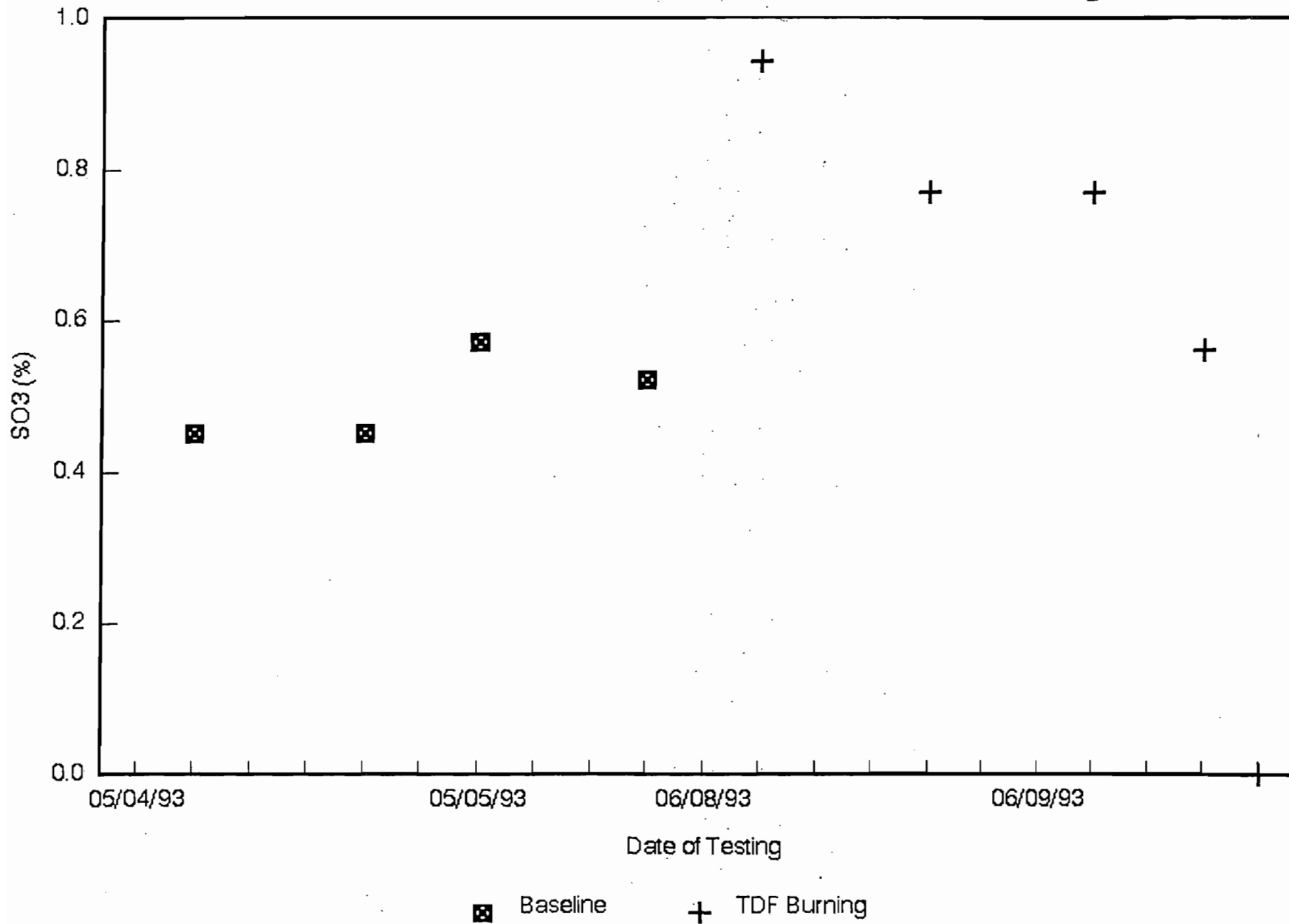
Kiln Feed SO3: Baseline vs TDF Burning



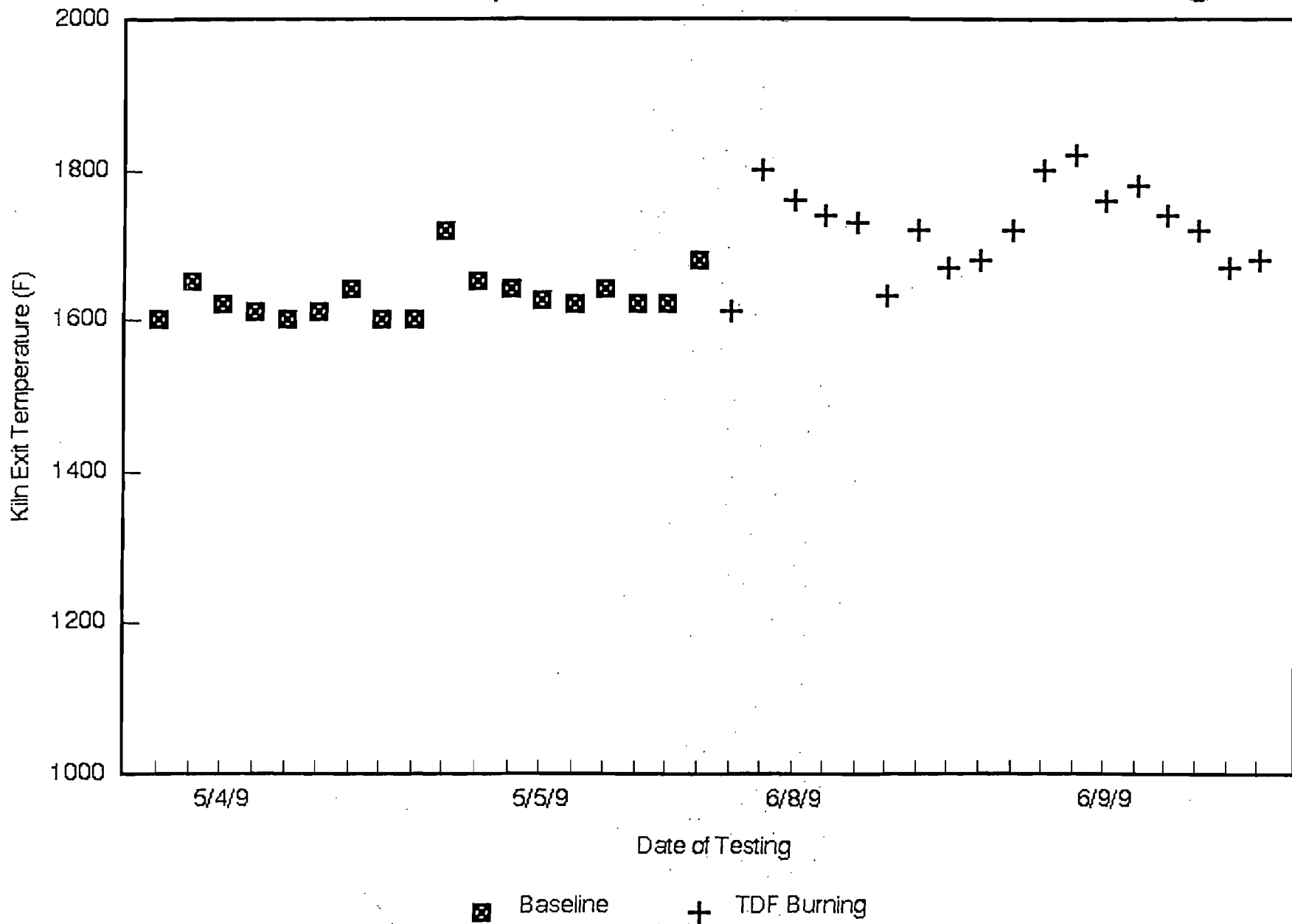
Clinker C3S: Baseline vs TDF Burning



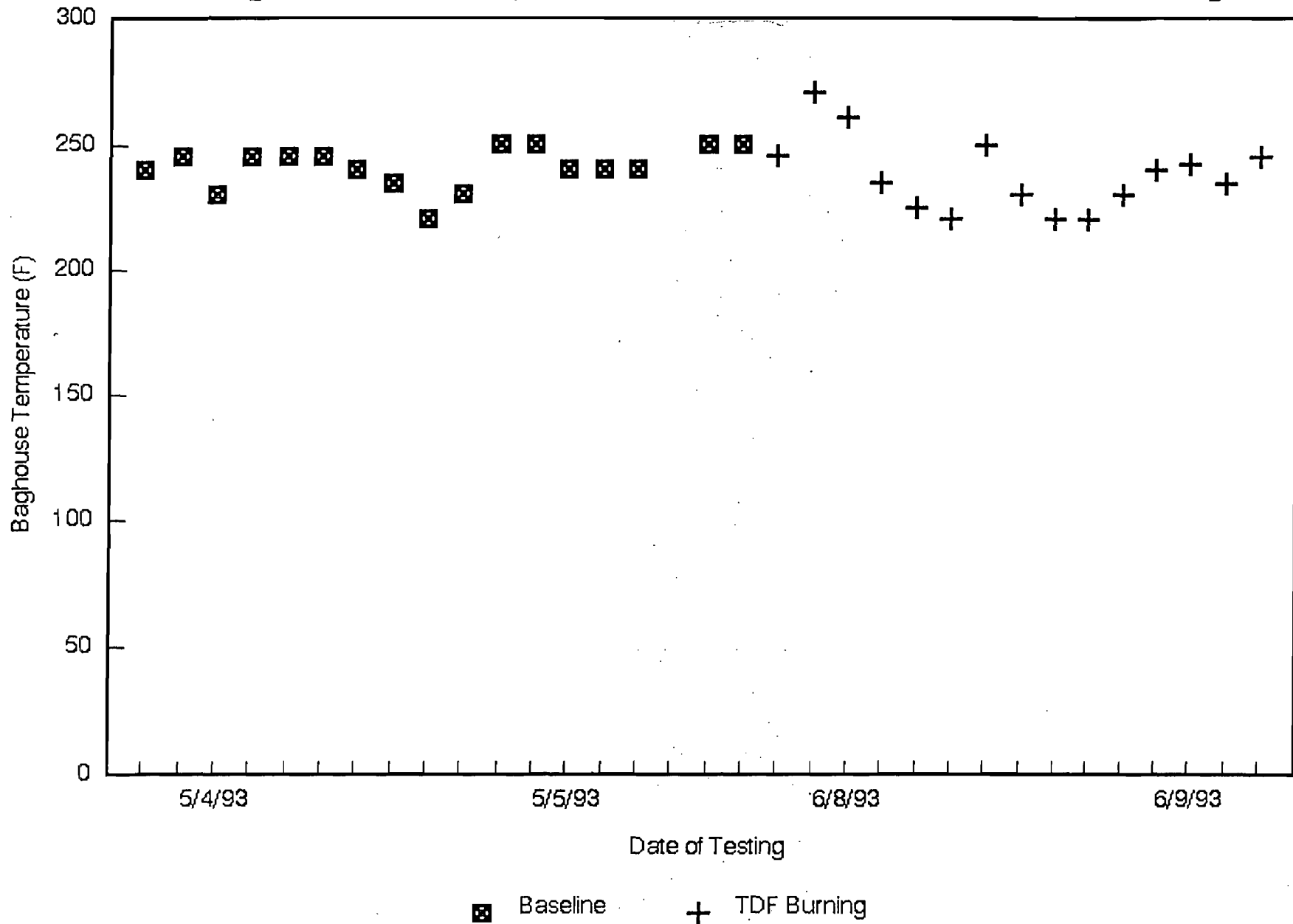
Clinker SO3: Baseline vs TDF Burning



Kiln Exit Temperature: Baseline vs TDF Burning

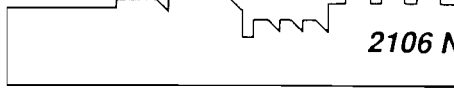


Baghouse Temperature: Baseline vs TDF Burning



APPENDIX C
AIR CONSULTING & ENGINEERING, INC.
FIELD REPORT

ACE
AIR CONSULTING
& ENGINEERING, INC.



2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32606
(904) 335-1889 FAX (904) 335-1891

August 23, 1993

Mr. David Buff
KBN Engineering & Applied
Sciences, Inc.
1034 NW 57th Street
Gainesville, Florida 32605

**RE: Southdown Baseline and
TDF Source Tests**

Dear Dave:

I am sending my notes on the referenced project. I prepared these in the field so please excuse the brevity. Please send me a copy of the prior reports that are being quoted as evidence of normal CO emission ranges. CO appears to be the only questionable "significant increase" parameter for TDF so a review of that data is important.

I am sorry I was unable to compile CEM data concurrent to Koogler and Associates (KA) testing for TDF. My CEM data matched that of KA very well for the times that we monitored concurrently (5/11/93 aborted test day).

Respectfully,

AIR CONSULTING AND ENGINEERING, INC.

Stephen L. Neck, P.E.

SLN/cvt

Enclosures

ACE File: 163 93 03

STACK TEST REVIEW

1. VOC (EPA Method 25A) for both test series needs to be inflated for wet basis sampling by dividing by FDA (minor point as both series done the same way).
2. Should review prior reports Koogler and Associates (KA) used to determine the insignificance of "significant difference".
3. Report otherwise is acceptable. My inspections in the field revealed metals and VOST train as well as CEM monitors were all conducted according to the reference methods. I was not there for dioxin/furan testing.

4/19/93 - Arrive at 1015 met with Matt Stone. Tour facility. They were awaiting tires to be delivered so there was no TDF at this time. They have opacity monitor at stack and O₂ and combustibles monitor at kiln exit. Koogler and Associates personnel on site for preliminary testing. Sampling for gases conducted with heated probe, out-of-stack heated filter, heat traced line to heated manifold, VOC heated to Ratfisch 55 CA, rest to H₂O knockout then dry to Western Research 721 at SO₂ analyzer, Thermo Environmental 10S NO_x analyzer and 48H CO analyzer, plus Teledyne 320P O₂ analyzer. Leave site at 1130.

5/4/93 - Baseline test. Arrive 0838 while KA running gases along with PM and multi-metals train. Set-up my sample system completely independent with similar plumbing monitored from 1536-1706.

Baseline Test - 5/4/93

<u>Time</u>	<u>O2 dry</u>	<u>CO dry</u>	<u>NOx dry</u>	<u>C3H8 wet</u>
Air Consulting and Engineering, Inc. - Values				
1536-1706	13.55	44.62	172.50*	2.08
Koogler and Associates - CEM Run 4				
1512-1702	14.10	43.00	151.30	2.50
	(orsat)			

*Not Calibrated Fully

Leave plant approximately 1815

5/11/93 - Arrive 0700. Set up for monitor gases for TDF test. Kiln experiencing CO spiking. Test finally aborted leave at 1630. Observed TDF rate of 58 lbs/min. Monitored CEM 1024-1626. Matching with KA values very well on a spot check basis. KA values were not tabulated for comparison at test was aborted.

5/13/93 - Arrive 0700 for TDF test. Kiln coming on line. Trying to make adjustments in kiln parameters using my CEM system for feedback. Test aborted again. Pack up and leave at 1440.



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

August 13, 1993

RECEIVED

AUG 18 1993

Division of Air
Resources Management

Mr. David Buff
KBN Engineering & Applied Sciences, Inc.
1034 N.W. 57th Street
Gainesville, FL 32605

Subject: Supplemental Data for Reviewing
TDF/Baseline Test Report
Florida Mining & Materials
Hernando County, Florida

Dear Dave:

In accordance with our recent telephone conversation, I am providing the attached information to assist in your review of the TDF/baseline test report for Florida Mining & Materials.

1. Carbon monoxide emission data referenced in data comparison report

Carbon monoxide emission data from Kiln No. 1 for February 28, 1992 and from Kiln No. 2 for March 24, 1992 and February 10, 1993, were referenced in the data comparison report. Attached hereto are portions of the four test reports documenting the carbon monoxide emission rates referenced in the data comparison report.

2. Expected Carbon Monoxide Emission rate under coal and coal/TDF operating conditions

The maximum hourly carbon monoxide emission rate reported in the coal/TDF and baseline test reports was approximately 80 pounds per hour. The average hourly carbon monoxide emission rates of all data reported in the data comparison report was approximately 40 pounds per hour. Based upon these measured emission rates and the carbon monoxide fluctuations expected from a dry process Portland cement plant, I would estimate that the maximum hourly carbon monoxide emission rate would very seldom exceed 100 pounds per hour (equivalent to approximately 125 parts per million in the stack gas).

*Patty
File w/
TDF
info. Bruce
got a copy
Preston
8/18/93*

3. Heat input rate

Even though TDF provided slightly over 20 percent of the heat input during the test period, Florida Mining & Materials will accept the 20 percent TDF heat input limit requested in the application for the permit amendment.

Regarding the total heat input to the kiln, the 300 MMBTU per hour permitted rate was the maximum expected heat input rate anticipated at the time the kiln was permitted. The actual heat input rate to the kiln averages 240-260 MMBTU per hour.

4. Kiln oxygen levels.

During the baseline tests, the oxygen at the feed end of the kiln ranged from 0.2 percent to 2.2 percent. During the coal/TDF tests, the oxygen level ranged from 2.3 percent to 5.0 percent. The oxygen level at the feed end of the kiln was purposely increased during the coal/TDF test to improve combustion of the TDF which was added at the feed end. The presence of sufficient oxygen for the combustion of the TDF is an obvious necessity. As more experience is gained with the burning of TDF, oxygen levels will be reduced as much as practical.

It should be noted from all of the other data monitored during the two test periods demonstrated that the alteration of the combustion zones in the kiln had no affect on the quality of clinker, the operation of the kiln nor the emissions from the kiln.

5. Reporting of cations in conjunction with HCl emission data.

Southdown has developed information demonstrating that chlorides emitted from dry process Portland cement plants are not in the form of hydrogen chloride but in the form of salts of various cations. The reported cations were included to demonstrate that this was in fact the case at the Florida Mining & Materials facility.

6. Impact analysis

A screening model run was conducted to demonstrate that the impacts of emissions from the No. 1 cement kiln at Florida Mining & Materials were well below applicable air quality standards and No Threat Levels. The model run was the ISC-ST2, Version 93109, using Tampa meteorological data for calendar year 1986. The model was run with a hypothetical emission rate of 10 grams per second (79.4 pounds per hour). The impacts of the constituents measured during the coal/TDF and baseline test periods can be determined by multiplying the modeled impacts by a ratio of the measured



emission rates to the modeled emission rate. The model predicted the following maximum impacts for a 10 gram per second emission rate:

Annual 0.54 micrograms per cubic meter
 8-hour 21.3 micrograms per cubic meter
 24-hour 11.9 micrograms per cubic meter

The following table summarizes the highest average emission rates measured during the test period, the maximum expected annual impacts and the air quality standard or No Threat Level applicable to each measured constituent.

Constituent	Emission Rate (lbs/hr)	Maximum Annual Impact (micrograms per cubic meter)	Air Quality Standard or No Threat Level (micrograms per cubic meter)
PM	9.13	less than 0.1	50
Arsenic	0.00174	1.2×10^{-5}	2.3×10^{-4}
Chromium (total)	0.00287	2.0×10^{-5}	NA
Lead	0.00781	5.3×10^{-5}	0.09
Mercury	0.01299	8.8×10^{-5}	0.3
Zinc	0.01026	7.0×10^{-5}	NA
Nitrogen Oxides	197.4	1.3	100
Sulfur Dioxide	less than 2.0	less than 0.1	60
Carbon Monoxide	56.6	0.4	NA
Hydrogen Chloride	0.44	3.0×10^{-3}	7
Acetone	0.0210	1.4×10^{-4}	NA
Benzene	0.0580	3.9×10^{-4}	0.12
Bromomethane	0.0013	8.8×10^{-6}	NA
Carbon Disulfide	0.0057	3.9×10^{-5}	200
Chlorobenzene	0.0160	1.1×10^{-4}	NA
Ethylbenzene	0.0058	3.9×10^{-5}	1000
n-Hexane	0.0050	3.4×10^{-5}	200
Toluene	0.0490	3.3×10^{-4}	300
1,1,1-trichloroethane	less than 0.0001	6.8×10^{-7}	NA
Trichloroethylene	less than 0.0001	6.8×10^{-7}	NA
Styrene	0.0270	1.8×10^{-4}	NA
Xylene (total)	0.0239	1.6×10^{-4}	80

The impacts for the 8-hour and the 24-hour time periods were checked and were also found to be well below ambient air quality standards and No Threat Levels.

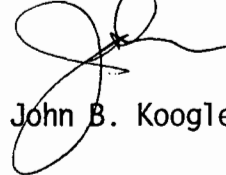
Mr. David Buff
KBN Engineering & Applied
Sciences, Inc.

August 13, 1993
Page 4

If, after reviewing the attached data, you have any further questions,
please do not hesitate to contact me.

Very truly yours,

KOGLER & ASSOCIATES



John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. John Brown, FDEP, Tallahassee
Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Charles Hetrick, HCBC
Ms. A. Lue, P.E., Southdown, Inc.
Mr. J. Gill, P.E., Southdown, Inc.
Mr. T. Cleveland, Esq., OHF&C
Mr. D. Dee, Esq., CFWES&C

B, Thomas, SW Dist



CO STARTING
CO TITLEONE FLORIDA MINING & MATERIALS (SOUTHDOWN) MET = TPAB2
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME PERIOD 8 24
CO POLLUTID OTHER
CO DCAYCOEF .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED

SO STARTING
** Source Location Cards:
** SRCID SRCTYP XS YS ZS
SO LOCATION 1 POINT .0000 .0000 .0000

** Source Parameter Cards:
** POINT: SRCID QS HS TS VS DS
SO SRCPARAM 1 10.0000 39.9600 398.70000 11.000 3.94100

SO BUILDHGT 1 36*25.60
SO BUILDWID 1 36*24.00

SO EMISUNIT .100000E+07 (GRAMS/SEC) (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE GRIDPOLR POL STA
RE GRIDPOLR POL ORIG 0.0 0.0
RE GRIDPOLR POL DIST 250.0 500.0 750.0 1000.0 1250.0 1500.0 1750.0
RE GRIDPOLR POL DIST 2000.0 2500.0 3000.0 4000.0 5000.0
RE GRIDPOLR POL GDIR 36 10.00 10.00
RE GRIDPOLR POL END
RE DISCCART -13200.00 6300.00
RE FINISHED

ME STARTING
ME INPUTFIL D:\ISC2\TAMPA86.ASC
ME ANEMHGHT 10.000 METERS
ME SURFDATA 12842 1986 TAMPA, FL
ME UAIRDATA 12842 1986 RUSKIN, FL
ME WINDCATS 1.54 3.09 5.14 8.23 10.80
ME FINISHED

OU STARTING
OU RECTABLE ALLAVE FIRST SECOND
OU MAXTABLE ALLAVE 50
OU PLOTFILE PERIOD ALL D:\ISC2\SDWN6_AN.PRN
OU PLOTFILE 24 ALL FIRST D:\ISC2\SDWN6_24.PRN
OU PLOTFILE 8 ALL FIRST D:\ISC2\SDWN6_08.PRN
OU FINISHED

*** SETUP Finishes Successfully ***

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

08/13/93
10:29:52
PAGE 1

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCENTRATION Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:

1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 2 Short Term Average(s) of: 8-HR 24-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 433 Receptor(s)

**The Model Assumes A Pollutant Type of: OTHER

**Model Set To Continue RUNNING After the Setup Testing.

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: SDWN_6.INP

; **Output Print File: SDWN_6.OUT

**Detailed Error/Message File: ERRORS.OUT

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN) ***

MET = TPA82

08/13/93

10:29:52

PAGE 2

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
1	0	0.10000E+02	0.0	0.0	0.0	39.96	398.70	11.00	3.94	YES	

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

08/13/93
10:29:52
PAGE 3

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID

SOURCE IDs

ALL 1 ,

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

*** 08/13/93
*** 10:29:52
PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: 1

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	25.6,	24.0,	0	2	25.6,	24.0,	0	3	25.6,	24.0,	0	4	25.6,	24.0,	0	5	25.6,	24.0,	0
7	25.6,	24.0,	0	8	25.6,	24.0,	0	9	25.6,	24.0,	0	10	25.6,	24.0,	0	11	25.6,	24.0,	0
13	25.6,	24.0,	0	14	25.6,	24.0,	0	15	25.6,	24.0,	0	16	25.6,	24.0,	0	17	25.6,	24.0,	0
19	25.6,	24.0,	0	20	25.6,	24.0,	0	21	25.6,	24.0,	0	22	25.6,	24.0,	0	23	25.6,	24.0,	0
25	25.6,	24.0,	0	26	25.6,	24.0,	0	27	25.6,	24.0,	0	28	25.6,	24.0,	0	29	25.6,	24.0,	0
31	25.6,	24.0,	0	32	25.6,	24.0,	0	33	25.6,	24.0,	0	34	25.6,	24.0,	0	35	25.6,	24.0,	0
																36	25.6,	24.0,	0

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN) ***

MET = TPA82

08/13/93
10:29:52
PAGE 5

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***

X-ORIG = 0.00 ; Y-ORIG = 0.00 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

250.0,	500.0,	750.0,	1000.0,	1250.0,	1500.0,	1750.0,	2000.0,	2500.0,	3000.0,
4000.0,	5000.0,								

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN) ***

MET = TPA82

08/13/93
10:29:52
PAGE 8

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\ISC2\TAMPA86.ASC
SURFACE STATION NO.: 12842
NAME: TAMPA,
YEAR: 1986

FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1)
UPPER AIR STATION NO.: 12842
NAME: RUSKIN,
YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW	SPEED	TEMP	STAB	MIXING HEIGHT (M)	
				VECTOR	(M/S)	(K)	CLASS	RURAL	URBAN
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0
86	1	1	18	47.0	0.00	293.2	5	419.0	418.0
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0
86	1	1	20	127.0	0.00	290.9	6	437.0	430.0
86	1	1	21	130.0	0.00	290.9	6	447.0	435.0
86	1	1	22	132.0	0.00	289.8	6	456.0	441.0
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL
 INCLUDING SOURCE(S): 1 , ***

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)								
	250.00	500.00	750.00	1000.00	1250.00	1500.00	1750.00	2000.00	2500.00
10.00	0.18187	0.10384	0.11716	0.13630	0.14328	0.14317	0.13926	0.13343	0.11963
20.00	0.17508	0.09858	0.11433	0.13554	0.14335	0.14298	0.13828	0.13150	0.11605
30.00	0.18841	0.10490	0.12194	0.14454	0.15470	0.15634	0.15288	0.14679	0.13164
40.00	0.16858	0.10531	0.13063	0.15262	0.16103	0.16064	0.15497	0.14675	0.12851
50.00	0.17491	0.13376	0.16937	0.19735	0.20477	0.20070	0.19084	0.17880	0.15477
60.00	0.21901	0.17593	0.21646	0.25755	0.26711	0.25997	0.24525	0.22793	0.19410
70.00	0.24518	0.21071	0.24973	0.30390	0.31723	0.30809	0.28897	0.26649	0.22272
80.00	0.26645	0.24316	0.26986	0.33380	0.35138	0.34188	0.32033	0.29472	0.24461
90.00	0.33237	0.27698	0.28505	0.35942	0.38516	0.38014	0.36021	0.33444	0.28122
100.00	0.34419	0.23580	0.22978	0.28426	0.30482	0.30266	0.28916	0.27098	0.23202
110.00	0.29950	0.16989	0.15867	0.19390	0.21120	0.21399	0.20874	0.19965	0.17739
120.00	0.29712	0.13493	0.11910	0.13986	0.15182	0.15518	0.15361	0.14955	0.13799
130.00	0.31279	0.13003	0.11038	0.12593	0.13544	0.13822	0.13715	0.13410	0.12510
140.00	0.29183	0.12258	0.10197	0.11926	0.12958	0.13273	0.13168	0.12848	0.11905
150.00	0.21542	0.09071	0.07892	0.09400	0.10328	0.10660	0.10632	0.10409	0.09658
160.00	0.16570	0.06957	0.06033	0.07097	0.07776	0.08044	0.08054	0.07911	0.07353
170.00	0.14575	0.06404	0.06029	0.07455	0.08446	0.08919	0.09036	0.08929	0.08340
180.00	0.18986	0.07853	0.07204	0.08364	0.09179	0.09540	0.09593	0.09459	0.08881
190.00	0.21018	0.08050	0.07295	0.08257	0.08931	0.09269	0.09374	0.09331	0.08950
200.00	0.19668	0.07874	0.07540	0.08565	0.09148	0.09369	0.09352	0.09190	0.08618
210.00	0.23315	0.10370	0.10137	0.11653	0.12357	0.12518	0.12372	0.12061	0.11183
220.00	0.40300	0.16691	0.15583	0.17541	0.18504	0.18753	0.18617	0.18280	0.17262
230.00	0.53887	0.22557	0.20832	0.23461	0.24913	0.25428	0.25402	0.25067	0.23858
240.00	0.50011	0.23010	0.21803	0.25128	0.27090	0.27847	0.27889	0.27520	0.26067
250.00	0.45122	0.22848	0.22362	0.25479	0.27008	0.27296	0.26900	0.26157	0.24237
260.00	0.41680	0.20473	0.20386	0.23340	0.24687	0.24818	0.24309	0.23504	0.21572
270.00	0.45802	0.22020	0.21615	0.25145	0.26829	0.27145	0.26719	0.25936	0.23938
280.00	0.39312	0.19609	0.19710	0.22727	0.24049	0.24165	0.23646	0.22832	0.20887
290.00	0.39354	0.20205	0.20401	0.23336	0.24612	0.24713	0.24202	0.23405	0.21518
300.00	0.46148	0.21892	0.21906	0.25732	0.27634	0.28026	0.27589	0.26764	0.24699
310.00	0.41535	0.19189	0.19009	0.23339	0.25724	0.26420	0.26152	0.25419	0.23393
320.00	0.28639	0.12736	0.13000	0.16099	0.17830	0.18377	0.18232	0.17748	0.16373
330.00	0.19635	0.09412	0.10153	0.12334	0.13469	0.13820	0.13711	0.13373	0.12439
340.00	0.16115	0.08170	0.08998	0.10532	0.11149	0.11221	0.10993	0.10625	0.09737
350.00	0.15758	0.08102	0.09299	0.10615	0.11039	0.10988	0.10681	0.10252	0.09278
360.00	0.18185	0.09810	0.11001	0.12676	0.13356	0.13452	0.13213	0.12791	0.11686

*** ISCS2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

08/13/93
10:29:52
PAGE 10

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	3000.00	4000.00	5000.00	DISTANCE (METERS)
---------------------	---------	---------	---------	-------------------

10.00	0.10685	0.08853	0.07659	
20.00	0.10213	0.08281	0.07020	
30.00	0.11739	0.09709	0.08371	
40.00	0.11220	0.08907	0.07483	
50.00	0.13438	0.10668	0.09017	
60.00	0.16608	0.12791	0.10471	
70.00	0.18674	0.13838	0.10936	
80.00	0.20351	0.14755	0.11385	
90.00	0.23611	0.17302	0.13429	
100.00	0.19833	0.15014	0.11948	
110.00	0.15696	0.12601	0.10528	
120.00	0.12615	0.10829	0.09586	
130.00	0.11562	0.10096	0.09108	
140.00	0.10904	0.09408	0.08400	
150.00	0.08870	0.07640	0.06786	
160.00	0.06736	0.05756	0.05058	
170.00	0.07622	0.06440	0.05590	
180.00	0.08232	0.07118	0.06335	
190.00	0.08471	0.07682	0.07084	
200.00	0.07982	0.07027	0.06349	
210.00	0.10269	0.08944	0.07999	
220.00	0.16118	0.14568	0.13438	
230.00	0.22356	0.20133	0.18504	
240.00	0.24433	0.21764	0.19877	
250.00	0.22333	0.19356	0.17505	
260.00	0.19772	0.17086	0.15411	
270.00	0.21981	0.19105	0.17259	
280.00	0.19047	0.16401	0.14715	
290.00	0.19667	0.17002	0.15288	
300.00	0.22629	0.19691	0.17826	
310.00	0.21342	0.18391	0.16416	
320.00	0.14892	0.12742	0.11257	
330.00	0.11446	0.09979	0.08973	
340.00	0.08922	0.07750	0.06968	
350.00	0.08385	0.07114	0.06297	
360.00	0.10609	0.08977	0.07858	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)				
	250.00	500.00	750.00	1000.00	1250.00
10.0	8.75124 (86031416)	4.39460 (86032016)	3.28094 (86063016)	4.36555 (86063016)	4.48779 (86063016)
20.0	8.69964 (86032016)	4.07188 (86072916)	3.45416 (86080216)	5.25367 (86080216)	5.83862 (86080216)
30.0	6.91294 (86022708)	2.56148 (86082916)	3.63864c(86090116)	3.75438 (86082816)	4.27191 (86080216)
40.0	8.24345 (86042108)	2.33200c(86060808)	4.02346c(86090116)	2.98289 (86022216)	3.14490 (86022216)
50.0	10.72973 (86022716)	4.46520 (86022716)	4.26333 (86090716)	3.88378 (86042016)	3.83488 (86042016)
60.0	13.63431 (86022716)	5.01167c(86071616)	6.97740c(86071616)	5.44594c(86071616)	4.61881 (86040716)
70.0	12.48035 (86040824)	4.89895c(86071616)	7.07317c(86071616)	5.77306 (86071516)	6.03068 (86042516)
80.0	5.35845 (86040916)	5.08890 (86081816)	5.49157 (86080716)	5.80195c(86100516)	6.49075c(86100516)
90.0	12.41634 (86070316)	7.92131 (86070316)	6.65918 (86081816)	8.12523 (86081816)	8.09344 (86081816)
100.0	16.95576 (86012716)	6.25230 (86012716)	5.64917 (86072016)	6.69599 (86050916)	6.78737 (86050916)
110.0	13.66447 (86012716)	5.98766 (86041616)	5.08805 (86041616)	6.08054 (86041616)	6.25748 (86041616)
120.0	15.95092 (86012716)	5.70509 (86012716)	4.22976 (86042216)	4.82914 (86042216)	4.89182 (86042216)
130.0	16.69277 (86030116)	5.63127 (86030116)	4.66393 (86042216)	5.21675 (86042216)	5.08244 (86042216)
140.0	15.22556 (86030116)	4.92638 (86030116)	3.46585 (86042216)	3.99763 (86042216)	4.08623 (86042216)
150.0	7.95243 (86032116)	3.33611 (86032116)	2.41742 (86061116)	2.72370 (86041016)	2.99417 (86041016)
160.0	21.28599 (86010516)	7.13671 (86010516)	3.94257 (86010516)	4.16635 (86010516)	4.66468 (86010516)
170.0	8.03473 (86011108)	2.82515 (86032116)	2.33869 (86021316)	3.03020 (86021316)	3.51135 (86021316)
180.0	10.97418 (86032108)	3.34182 (86032108)	2.45570 (86032216)	2.89610 (86032216)	3.19195 (86021316)
190.0	10.35961 (86011208)	3.82841 (86011116)	2.68365 (86011116)	3.23667 (86011116)	3.76634 (86011116)
200.0	11.04917 (86120524)	3.00382 (86120524)	2.53106 (86032816)	3.34562 (86112116)	3.94938 (86112116)
210.0	13.73897 (86120608)	3.66937 (86042316)	3.60186 (86042316)	4.15259 (86042316)	5.21947 (86011216)
220.0	13.91321 (86120708)	4.42509 (86032916)	3.84685 (86032916)	4.77530 (86032916)	5.02289 (86032916)
230.0	18.74781 (86120624)	6.09873 (86010816)	4.58349c(86082316)	5.34748 (86032916)	5.78920 (86032916)
240.0	12.36732 (86111408)	5.82175 (86051016)	4.38966 (86051016)	5.17524 (86101916)	6.21935 (86101916)
250.0	8.64165 (86011624)	4.70370 (86050416)	4.36621 (86050416)	5.99799 (86091516)	6.75631 (86091716)
260.0	10.92794 (86111416)	4.33001 (86111416)	3.98313 (86091716)	5.65397 (86091716)	6.15445 (86091516)
270.0	13.47992 (86040424)	4.59564 (86111016)	3.58776 (86091816)	4.93254 (86070716)	5.53854 (86070716)
280.0	11.60394 (86102408)	4.60677 (86052716)	4.43172 (86050516)	5.70903 (86111116)	6.51795 (86111116)
290.0	7.81073 (86042008)	4.92781 (86051516)	4.54063 (86082616)	5.38884 (86052716)	5.79125 (86111116)
300.0	9.44940c(86102424)	4.48160 (86081116)	4.73346c(86070816)	4.95979 (86051416)	5.39403 (86081116)
310.0	15.24276 (86031824)	5.23371 (86031816)	4.26466 (86112416)	6.01905 (86112416)	7.06338 (86112416)
320.0	9.62638 (86051908)	3.86482 (86031816)	2.78425 (86031816)	3.38994 (86082116)	3.56200 (86082116)
330.0	7.69654 (86031408)	3.87767 (86052816)	3.89344 (86052816)	4.68688 (86052816)	4.45418 (86052816)
340.0	8.74089 (86031408)	3.92500 (86050616)	3.64951 (86050616)	4.13027 (86050616)	3.87604 (86050616)
350.0	8.57409 (86020608)	5.17377 (86050616)	4.96471 (86050616)	5.60754 (86050616)	5.14668 (86050616)
360.0	7.86263 (86121116)	3.36239 (86050616)	3.83382 (86080616)	3.45434 (86050616)	3.44673 (86051916)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL
INCLUDING SOURCE(S): 1

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)				
	1500.00	1750.00	2000.00	2500.00	3000.00
10.0	4.68094 (86121216)	4.68601 (86121216)	4.56292 (86121216)	4.14581 (86121216)	3.73192 (86121216)
20.0	5.62198 (86080216)	5.07192 (86080216)	4.44683 (86080216)	3.83489 (86111716)	3.36308 (86111716)
30.0	4.19160 (86080216)	3.82136 (86080216)	3.37007 (86080216)	2.81649 (86070416)	2.71565 (86011016)
40.0	3.28257 (86030416)	3.30214 (86030416)	3.18936 (86030416)	2.79985 (86030416)	2.62061 (86112016)
50.0	3.72063 (86010416)	3.75603 (86010416)	3.63696 (86010416)	3.22159 (86010416)	2.77302 (86010416)
60.0	4.37039 (86040716)	3.99787 (86111716)	3.65870 (86111716)	3.33782 (86022716)	3.16457 (86022716)
70.0	5.75581 (86042516)	5.22689 (86042516)	4.64125 (86042516)	3.62595 (86040824)	3.61605 (86040824)
80.0	6.28512c(86100516)	5.69050c(86100516)	4.99842c(86100516)	3.97050 (86030316)	3.27068 (86030316)
90.0	7.53879 (86070316)	7.11780 (86070316)	6.62500 (86070316)	5.61790 (86070316)	4.80047 (86070316)
100.0	6.27480 (86050916)	5.68940 (86081716)	5.41991 (86081716)	4.68738 (86081716)	3.95938 (86081716)
110.0	5.92306 (86041616)	5.40515 (86041616)	4.85694 (86041616)	4.46694 (86030616)	4.15833 (86030616)
120.0	4.58229 (86042216)	4.22681 (86012016)	4.15831 (86012016)	3.82619 (86012016)	3.50512 (86012016)
130.0	4.58472 (86042216)	4.11535 (86041316)	3.89814 (86041316)	3.33018 (86041316)	2.78051 (86041316)
140.0	3.89275 (86042216)	3.67572 (86041316)	3.48673 (86041316)	3.02523 (86041316)	2.75075 (86040924)
150.0	3.11964c(86050724)	3.22341c(86050724)	3.26093c(86050724)	3.22605c(86050724)	3.06247c(86050724)
160.0	5.00299 (86010516)	5.20686 (86010516)	5.30443 (86010516)	5.15946 (86010516)	4.96604 (86010516)
170.0	3.58559 (86021316)	3.44250 (86021316)	3.20424 (86021316)	2.67603 (86021316)	2.21778 (86021316)
180.0	3.19396 (86021316)	3.05376 (86011116)	2.90565 (86011116)	2.78982 (86032108)	2.80133 (86032108)
190.0	4.00731 (86011116)	4.04638 (86011116)	3.96111 (86011116)	3.58601 (86011116)	3.18369 (86011116)
200.0	3.96477 (86112116)	3.68263 (86112116)	3.29994 (86112116)	2.56985 (86112116)	2.50547 (86120524)
210.0	5.79395 (86011216)	5.94379 (86011216)	5.83605 (86011216)	5.27520 (86011216)	4.60170 (86011216)
220.0	4.79560 (86032916)	4.56799 (86101716)	4.35308 (86101716)	3.77945 (86101716)	3.67782 (86120516)
230.0	5.69530 (86032916)	5.33953 (86032916)	4.88538 (86032916)	4.74737 (86010816)	4.60659 (86010816)
240.0	6.59600 (86101916)	6.53069 (86101916)	6.22764 (86101916)	5.36497 (86101916)	4.52775 (86101916)
250.0	6.77712 (86091716)	6.42937 (86091716)	5.94654 (86091716)	4.95003 (86091716)	4.09590 (86091716)
260.0	6.18895 (86091516)	5.90922 (86091516)	5.49920 (86091516)	4.60995 (86091516)	3.82101 (86091516)
270.0	5.37097 (86070716)	5.25719 (86111016)	5.16527 (86111016)	4.72423 (86111016)	4.26870 (86111016)
280.0	6.55154 (86111116)	6.19390 (86111116)	5.68355 (86111116)	4.62430 (86111116)	3.78782 (86112316)
290.0	5.68944 (86111116)	5.23699 (86111116)	4.67647 (86111116)	3.61763 (86111116)	2.94863 (86110716)
300.0	5.33476 (86081116)	5.02018 (86081116)	4.60557 (86081116)	3.76025 (86081116)	3.20399 (86030916)
310.0	7.39615 (86112416)	7.27262 (86112416)	6.90352 (86112416)	5.91611 (86112416)	4.95263 (86112416)
320.0	3.78495 (86112516)	3.86062 (86112516)	3.77280 (86112516)	3.36803 (86112516)	3.03123 (86081216)
330.0	4.34865 (86112516)	4.32131 (86112516)	4.13597 (86112516)	3.58203 (86112516)	3.01236 (86112516)
340.0	3.37776 (86050616)	2.87221 (86050616)	2.47871 (86100816)	2.64257 (86082024)	2.67746 (86082024)
350.0	4.38379 (86050616)	3.65021 (86050616)	3.12207 (86031616)	2.93266 (86031616)	2.64875 (86031616)
360.0	3.30259 (86051916)	3.18394 (86031616)	3.14569 (86031616)	2.90107 (86031616)	2.70998 (86121116)

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN) ***

MET = TPA82

08/13/93

10:29:52

PAGE 14

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)	
	4000.00	5000.00
10.0	3.07485 (86121216)	2.91024 (86021908)
20.0	2.64761 (86010424)	2.75277 (86010424)
30.0	2.73299 (86072924)	2.71478 (86072924)
40.0	2.35771 (86112016)	2.01440 (86112016)
50.0	2.05571 (86010416)	1.83862 (86022224)
60.0	2.75552 (86022716)	2.61056 (86073108)
70.0	3.66524 (86040824)	3.55073 (86040824)
80.0	2.32861 (86070208)	2.40019 (86070208)
90.0	3.60635 (86070316)	2.81786 (86070316)
100.0	2.83475 (86081716)	2.32893 (86042208)
110.0	3.53221 (86030616)	3.00069 (86030616)
120.0	2.91364 (86012016)	2.43808 (86012016)
130.0	2.73533c(86052124)	2.77016c(86052124)
140.0	2.56724 (86040924)	2.42413 (86040924)
150.0	2.82805c(86050724)	2.66905c(86050724)
160.0	4.40873 (86010516)	3.83731 (86010516)
170.0	1.76554 (86011108)	1.55519 (86011108)
180.0	2.64965 (86032108)	2.40977 (86032108)
190.0	2.93056c(86042308)	2.99170c(86042308)
200.0	2.39502 (86120524)	2.19995 (86120524)
210.0	3.44812 (86011216)	2.88641 (86102816)
220.0	3.41333 (86120516)	3.08230 (86120516)
230.0	4.28592 (86120624)	3.99222 (86120624)
240.0	3.24642 (86101916)	2.88532 (86111408)
250.0	2.88139 (86091716)	2.61314 (86092008)
260.0	2.67963 (86091516)	2.30180 (86111108)
270.0	3.45899 (86111016)	2.84949 (86111016)
280.0	2.83739 (86112316)	2.53269 (86102408)
290.0	2.31169c(86040408)	2.36991 (86112908)
300.0	2.51749 (86052524)	2.48751 (86052524)
310.0	3.82228 (86031308)	3.51289 (86031824)
320.0	3.12893 (86102608)	3.15374 (86102608)
330.0	2.26361 (86020508)	2.37463 (86080308)
340.0	2.85631 (86082024)	2.88748 (86082024)
350.0	2.08716 (86031616)	1.93261 (86020608)
360.0	2.71930 (86121116)	2.61405 (86121116)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)				
	250.00	500.00	750.00	1000.00	1250.00
10.0	3.36637 (86031924)	1.53480 (86032024)	1.14464 (86032024)	1.51845c(86063024)	1.56097c(86063024)
20.0	3.55838c(86072924)	1.99412c(86072924)	1.47225c(86080224)	2.24697c(86080224)	2.51469c(86080224)
30.0	3.60263c(86072924)	1.59633c(86072924)	1.41503c(86090124)	1.66862c(86082824)	1.95556c(86080224)
40.0	3.44948 (86042124)	1.29143c(86022224)	1.56468c(86090124)	1.51535c(86022224)	1.61065c(86022224)
50.0	6.15224 (86022724)	2.15208 (86022724)	1.89481c(86090724)	1.55264c(86022224)	1.58816c(86022224)
60.0	7.48804 (86022724)	2.39955 (86022724)	2.71343c(86071624)	2.11787c(86071624)	1.96549 (86072124)
70.0	5.83653c(86040824)	2.15937 (86072124)	2.75068c(86071624)	2.60151c(86071524)	2.68313c(86042524)
80.0	3.57895c(86040824)	2.26174c(86081824)	2.18242c(86080724)	2.51655c(86081824)	2.55874c(86060624)
90.0	5.71591 (86040924)	3.17997c(86081824)	2.96088c(86081824)	3.61195c(86081824)	3.59761c(86081824)
100.0	6.10958 (86011924)	2.68586 (86072024)	2.45956 (86072024)	2.91784 (86072024)	2.90717 (86072024)
110.0	5.70277 (86041624)	2.93153 (86041624)	2.23270 (86041624)	2.59299 (86041624)	2.70922 (86041624)
120.0	6.74806c(86012624)	2.30745c(86012024)	1.59373c(86012024)	1.84686c(86012024)	2.08932c(86012024)
130.0	8.95772c(86030124)	3.05746c(86030124)	2.02292 (86042224)	2.20490 (86042224)	2.18513 (86042224)
140.0	7.29429c(86030124)	2.16709c(86030124)	1.52918c(86052224)	2.12001c(86052224)	2.37235c(86052224)
150.0	5.80722c(86030124)	1.87759c(86030124)	1.29255c(86030124)	1.28929c(86030124)	1.36881c(86030124)
160.0	8.09030c(86010524)	2.60193c(86010524)	1.43659c(86010524)	1.50347c(86010524)	1.67146c(86010524)
170.0	4.02119 (86011124)	1.30854 (86011124)	0.97638c(86021324)	1.19765c(86021324)	1.36312c(86021324)
180.0	5.04897 (86032124)	1.95819 (86032224)	1.34119 (86032224)	1.51187 (86032224)	1.69195 (86032224)
190.0	6.96213 (86011124)	2.64190 (86011124)	1.73872 (86011124)	1.92132 (86011124)	2.15202 (86011124)
200.0	5.00059 (86120424)	1.32067 (86120424)	1.12777 (86120424)	1.37632c(86032824)	1.52675 (86120424)
210.0	4.68573 (86120624)	1.60197c(86032824)	1.42098c(86032824)	1.70517c(86032824)	1.81547c(86011224)
220.0	7.44949 (86101724)	2.88145 (86101724)	2.41056 (86101724)	2.68334 (86101724)	2.87961 (86101724)
230.0	11.86699 (86010824)	3.87566 (86010824)	2.12789 (86010824)	2.26377 (86010824)	2.56944 (86010824)
240.0	9.41365 (86111424)	3.11717 (86051024)	2.37360 (86051024)	2.57748 (86051024)	2.61761 (86051024)
250.0	5.09959 (86032524)	2.18979 (86041924)	2.00437 (86091724)	2.59977 (86091724)	2.84083 (86091724)
260.0	4.67350 (86041924)	2.10722 (86041924)	1.77499 (86083024)	2.13621c(86070724)	2.32691c(86070724)
270.0	6.70017 (86110824)	2.72205c(86040424)	2.08986 (86110824)	2.50155c(86040424)	2.76153c(86040424)
280.0	5.28646 (86040524)	2.63210c(86040424)	2.05510c(86040424)	2.57695c(86040424)	2.79475c(86040424)
290.0	3.87695 (86052724)	2.27054 (86052724)	2.02046c(86082624)	2.37823 (86052724)	2.51816 (86052724)
300.0	5.04451 (86052824)	2.25621 (86052724)	1.84388 (86052724)	2.18013 (86052724)	2.20789 (86052724)
310.0	8.18952 (86031324)	3.09602 (86031824)	2.05841 (86031824)	2.47191 (86031824)	2.79540 (86112424)
320.0	6.20065 (86031324)	1.86572 (86031824)	1.21223 (86031824)	1.36520 (86031824)	1.41215 (86031824)
330.0	4.06553 (86031924)	1.29391 (86052824)	1.34494 (86052824)	1.67360 (86052824)	1.67677 (86052824)
340.0	4.23589c(86031424)	1.40284c(86031424)	1.21650 (86050624)	1.37676 (86050624)	1.29201 (86050624)
350.0	3.26132 (86020624)	1.72471 (86050624)	1.65497 (86050624)	1.86923 (86050624)	1.71560 (86050624)
360.0	4.21180 (86020524)	1.54931 (86020524)	1.27794 (86080624)	1.27089 (86020524)	1.30787 (86020524)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	1500.00	1750.00	2000.00	2500.00	3000.00
10.0	1.56031 (86121224)	1.56200 (86121224)	1.52097 (86121224)	1.38194 (86121224)	1.24397 (86121224)
20.0	2.44462c(86080224)	2.23015c(86080224)	1.97852c(86080224)	1.51969c(86080224)	1.17255c(86080224)
30.0	1.99922c(86080224)	1.91396c(86080224)	1.77934c(86080224)	1.67703 (86070424)	1.59705 (86070424)
40.0	1.54471c(86022224)	1.41415c(86022224)	1.26813c(86022224)	1.18930c(86081924)	1.16249c(86081924)
50.0	1.53410 (86010424)	1.55898 (86010424)	1.53247 (86010424)	1.41814 (86010424)	1.26285 (86010424)
60.0	1.94068 (86022724)	2.04118 (86022724)	2.10724 (86022724)	2.11501 (86022724)	2.06924 (86022724)
70.0	2.56046c(86042524)	2.37570 (86072124)	2.27227 (86072124)	2.05119 (86072124)	1.83053 (86072124)
80.0	2.37728c(86040824)	2.24512c(86040824)	2.08133c(86040824)	1.82469 (86070224)	1.65727 (86070224)
90.0	3.32883 (86072024)	3.11698 (86072024)	2.88641 (86072024)	2.46254 (86072024)	2.12335 (86072024)
100.0	2.69516 (86072024)	2.56084c(86081524)	2.39645c(86081524)	2.03783c(86081524)	1.73716c(86081524)
110.0	2.64053 (86041624)	2.49685 (86041624)	2.33122 (86041624)	2.01471c(86030624)	1.87460c(86030624)
120.0	2.21284c(86012024)	2.26037c(86012024)	2.26300c(86012024)	2.16840c(86012024)	2.04078c(86012024)
130.0	2.04403 (86042224)	1.87424 (86042224)	1.82810 (86012724)	1.78508 (86012724)	1.73567 (86012724)
140.0	2.36459c(86052224)	2.23179c(86052224)	2.05595c(86052224)	1.70907c(86052224)	1.44105 (86040924)
150.0	1.43061c(86030124)	1.47619c(86030124)	1.50809c(86030124)	1.51969c(86030124)	1.50245c(86030124)
160.0	1.78588c(86010524)	1.85448c(86010524)	1.88655c(86010524)	1.83287c(86010524)	1.76033c(86010524)
170.0	1.38929c(86021324)	1.33866c(86021324)	1.25298c(86021324)	1.05928c(86021324)	0.92688 (86011124)
180.0	1.75982 (86032224)	1.76253 (86032224)	1.72983 (86032224)	1.59095 (86032224)	1.46168 (86032224)
190.0	2.26777 (86011124)	2.30038 (86011124)	2.27901 (86011124)	2.12516 (86011124)	1.95967 (86011124)
200.0	1.66891 (86120424)	1.75791 (86120424)	1.80636 (86120424)	1.82378 (86120424)	1.70669 (86120424)
210.0	2.01529c(86011224)	2.06740c(86011224)	2.02993c(86011224)	1.83485c(86011224)	1.60059c(86011224)
220.0	2.95699 (86101724)	2.95938 (86101724)	2.92084 (86101724)	2.78693 (86101724)	2.57411 (86101724)
230.0	2.79221 (86010824)	2.94215 (86010824)	3.03122 (86010824)	3.00394 (86010824)	2.94207 (86010824)
240.0	2.55848c(86092124)	2.51679c(86092124)	2.53909 (86111424)	2.60265 (86111424)	2.61191 (86111424)
250.0	2.83702 (86091724)	2.71968 (86091724)	2.56322 (86091724)	2.24547 (86091724)	1.97838 (86091724)
260.0	2.20826c(86070724)	2.13237 (86110124)	2.05324 (86110124)	1.86588 (86110124)	1.69728 (86110124)
270.0	2.81806c(86040424)	2.83059 (86110824)	2.80148 (86110824)	2.65641 (86110824)	2.46402 (86110824)
280.0	2.77460c(86040424)	2.64023c(86040424)	2.46292c(86040424)	2.08616c(86040424)	1.81890 (86040524)
290.0	2.47373 (86052724)	2.34764 (86052724)	2.19446 (86052724)	1.89283 (86052724)	1.61507 (86052724)
300.0	2.09203 (86081124)	2.00857 (86081124)	1.90479 (86092924)	1.76710 (86092924)	1.62524 (86092924)
310.0	2.93682 (86112424)	2.92328 (86112424)	2.82447 (86112424)	2.53889 (86031824)	2.35626 (86031824)
320.0	1.52105c(86112524)	1.55797c(86112524)	1.53571c(86112524)	1.42379 (86081224)	1.37005c(86080324)
330.0	1.74232c(86112524)	1.74182c(86112524)	1.68378c(86112524)	1.49492c(86112524)	1.28428c(86112524)
340.0	1.17832 (86112624)	1.16143c(86031424)	1.20074c(86031424)	1.33116 (86082024)	1.38464 (86082024)
350.0	1.46130 (86050624)	1.21677 (86050624)	1.04069 (86031624)	0.97755 (86031624)	0.88292 (86031624)
360.0	1.31770 (86020524)	1.30747 (86020524)	1.28593 (86020524)	1.22275 (86020524)	1.16678 (86020524)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: POL ; NETWORK TYPE: GRIDPOLR ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

DIRECTION (DEGREES)	DISTANCE (METERS)	
	4000.00	5000.00
10.0	1.15240 (86021924)	1.13148 (86021924)
20.0	1.11704 (86010424)	1.11645 (86010424)
30.0	1.54438 (86070424)	1.49530 (86070424)
40.0	1.08744c(86081924)	1.01046c(86081924)
50.0	1.07039 (86022724)	0.91515c(86022224)
60.0	1.94043 (86022724)	1.76992 (86022724)
70.0	1.72477c(86040824)	1.62315c(86040824)
80.0	1.41640 (86070224)	1.27745 (86070224)
90.0	1.63802 (86072024)	1.36452 (86072024)
100.0	1.33222 (86011924)	1.19365 (86011924)
110.0	1.59098c(86030624)	1.35239c(86030624)
120.0	1.83311c(86012024)	1.64861c(86012024)
130.0	1.58071 (86012724)	1.40994 (86012724)
140.0	1.32548 (86040924)	1.21898 (86040924)
150.0	1.43778c(86030124)	1.37825c(86030124)
160.0	1.56140c(86010524)	1.35837c(86010524)
170.0	0.83153 (86011124)	0.72794 (86011124)
180.0	1.23512 (86032124)	1.11008 (86032124)
190.0	1.62899 (86011124)	1.37292 (86011124)
200.0	1.57279 (86120424)	1.43862 (86120424)
210.0	1.43731c(86102824)	1.33907c(86102824)
220.0	2.28590 (86101724)	2.08474 (86101724)
230.0	2.68725 (86010824)	2.39103 (86010824)
240.0	2.49312 (86111424)	2.30432 (86111424)
250.0	1.74603 (86092024)	1.72316 (86092024)
260.0	1.41451 (86110124)	1.27881 (86110124)
270.0	2.14647 (86110824)	1.92259 (86110824)
280.0	1.53707 (86040524)	1.33384 (86040524)
290.0	1.26830 (86052724)	1.06813c(86092724)
300.0	1.36383 (86092924)	1.25898c(86052524)
310.0	2.06950 (86031324)	1.80310 (86031324)
320.0	1.41759c(86080324)	1.38255c(86080324)
330.0	1.12297c(86080324)	1.12050c(86080324)
340.0	1.42903 (86082024)	1.37587 (86082024)
350.0	0.78861c(86010124)	0.74848c(86010124)
360.0	1.03054 (86020524)	0.95684 (86020524)

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN) ***

MET = TPA82

08/13/93
10:29:52
PAGE 30

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.53887 AT (	-191.51,	-160.70,	0.00,	0.00)	GP	POL
	2ND HIGHEST VALUE IS	0.50011 AT (	-216.51,	-125.00,	0.00,	0.00)	GP	POL
	3RD HIGHEST VALUE IS	0.46148 AT (	-216.51,	125.00,	0.00,	0.00)	GP	POL
	4TH HIGHEST VALUE IS	0.45802 AT (	-250.00,	0.00,	0.00,	0.00)	GP	POL
	5TH HIGHEST VALUE IS	0.45122 AT (	-234.92,	-85.51,	0.00,	0.00)	GP	POL
	6TH HIGHEST VALUE IS	0.41680 AT (	-246.20,	-43.41,	0.00,	0.00)	GP	POL

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

*** 08/13/93
*** 10:29:52
PAGE 31

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	21.28599 ON 86010516: AT (	85.51, -234.92, 0.00,	0.00) GP	POL
	HIGH 2ND HIGH VALUE IS	18.07550 ON 86010816: AT (	-191.51, -160.70, 0.00,	0.00) GP	POL

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST2 - VERSION 93109 ***

*** FLORIDA MINING & MATERIALS (SOUTHDOWN)

MET = TPA82

08/13/93
10:29:52
PAGE 33

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
*** NONE ***

*** ISCST2 Finishes Successfully ***

PARTICULATE MATTER, PARTICLE SIZE, TOTAL HYDROCARBONS,
SULFUR DIOXIDE, NITROGEN OXIDES, CARBON MONOXIDE,
AND VISIBLE EMISSION MEASUREMENTS

KILN NO. 1
FUEL: 70% COAL - 30% FLOLITE

PERMIT NO. AC27-186923

FLORIDA MINING AND MATERIALS, INC.
BROOKSVILLE, FLORIDA

February 28, 1992

KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FL 32609
(904) 377-5822



5. SUMMARY OF RESULTS

The results of the particulate matter emission measurements conducted on February 28, 1992, are summarized in Table 1. During the test period, the particulate matter emission rate averaged 8.96 pounds per hour compared to the allowable of 39 pounds per hour, and the stack gas flow averaged 173967 dry standard cubic feet per minute at 240°F and 11.3 percent moisture. The nitrogen oxides emission rate averaged 26.14 pounds per hour; the carbon monoxide emission rate averaged 39.41 pounds per hour; the total hydrocarbons emission rate averaged 2.77 pounds per hour (as propane); and the sulfur dioxide emission rate averaged 1.44 pounds per hour as summarized in Table 2.

The opacity of visible emissions was zero percent for the one-hour observation period. The permit requires an opacity of less than 20 percent.

The particle sizing indicated that virtually all of the particles released from the Kiln No. 1 study are less than 10 micrometers in diameter.

All of the CEM emissions data are summarized in Table 2. Field and laboratory data sheets, field notes, emission calculations, and a list of project participants are included in the Appendix of the report.

TABLE 2
SUMMARY OF SOURCE VOC, NO_x, CO AND SO₂ EMISSION MEASUREMENTS

FLORIDA MINING & MATERIALS / BROOKSVILLE, FL
NO. 1 KILN / 70% COAL - 30% FLOLITE
FEBRUARY 28, 1992

Run No.	VOC		NO _x		CO		SO ₂	
	ppm	lb/hr	ppm	lbs/hr	ppm	lbs/hr	ppm	lbs/hr
1	2	2.28	21	24.99	45	32.59	0.50	0.82
2	3	3.65	20	25.42	44	37.47	0.99	1.75
3	2	2.45	22	28.18	46	40.74	0.98	1.75
Avg.		2.77		26.14		39.41		1.44

Calculations: NO_x, CO, VOC

$$\text{lb/hr} = \text{ft}^3/\text{min} \times 60 \text{ min/hr} \times (\text{conc. ppm}) \times \text{MW}/385 \times 10^{-6}$$

MW (NO_x) = 46
MW (CO) = 28
MW (VOC) = 44 (as propane)

Calculation: SO₂ are separate in Appendix



TABLE 3
FUEL RATES AND PROCESS RATE
KILN NO. 1 - 70% COAL - 30% FLOLITE
FEBRUARY 26, 1992

Test 2 70% Coal(1) at 7.35 TPH
 30% Flolite(2) at 8.35 GPM

Calculation: (1) 7.35 TPH x 12,500 BTU/lb x 2000 lb/ton
 = 184 MMBTU/hr

 (2) 8.35 GPM x 145,000 BTU/gal x 60 min/hr
 = 73 MMBTU/hr



PARTICULATE MATTER, PARTICLE SIZE, TOTAL HYDROCARBONS,
SULFUR DIOXIDE, NITROGEN OXIDES AND CARBON MONOXIDE

KILN NO. 1
FUEL: COAL

PERMIT NO. AC27-186923

FLORIDA MINING AND MATERIALS, INC.
BROOKSVILLE, FLORIDA

February 28, 1992

KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FL 32609
(904) 377-5822



5. SUMMARY OF RESULTS

The results of the particulate matter emission measurements conducted on February 28, 1992, are summarized in Table 1. During the test period, the particulate matter emission rate averaged 6.15 pounds per hour (compared to the allowable of 39 lbs/hr) and the stack gas flow averaged 179538 dry standard cubic feet per minute at a temperature of 233°F and a moisture content of 9.1 percent. The nitrogen oxides emission rate averaged 321.8 pounds per hour; the carbon monoxide emission rate averaged 39.41 pounds per hour; the total hydrocarbons emission rate averaged 2.06 pounds per hour (as propane); and the sulfur dioxide emission rate averaged 1.16 pounds per hour as summarized in Table 2.

The opacity of visible emissions was zero percent for the one-hour observation period compared to the permit requirement of less than 20 percent.

The particle sizing indicated that virtually all of the particles released from the Kiln NO. 1 study are less than 10 micrometers in diameter.

Field and laboratory data sheets, field notes, emission calculations, and a list of project participants are included in the Appendix of the report.

TABLE 2
SUMMARY OF SOURCE VOC, NO_x, CO AND SO₂ EMISSION MEASUREMENTS

FLORIDA MINING & MATERIALS / BROOKSVILLE, FL
NO. 1 KILN / 100% COAL
FEBRUARY 28, 1992

Run No.	VOC		NO _x		CO		SO ₂	
	ppm	lb/hr	ppm	lbs/hr	ppm	lbs/hr	ppm	lbs/hr
1	1	1.24	250	322.9	51	40.09	0.49	0.89
2	2	2.45	240	307.8	48	37.47	0.72	1.28
3	2	2.46	260	334.6	52	40.74	0.74	1.33
Avg.		2.06		321.8		39.41		1.16

Calculations: NO_x, CO, VOC

$$\text{lb/hr} = \text{ft}^3/\text{min} \times 60 \text{ min/hr} \times (\text{conc. ppm}) \times \text{MW}/385 \times 10^{-6}$$

MW (NO_x) = 46
MW (CO) = 28
MW (VOC) = 44 (as propane)

Calculation: SO₂ are separate in Appendix



TABLE 3
FUEL RATES AND PROCESS RATE
KILN NO. 1 - COAL
FEBRUARY 28, 1992

Run 3 Coal at 9.75 TPH

Calculation: 9.75 TPH x 12,500 BTU/lb x 2000 lb/ton
 = 244 MMBTU/hr

130 TPH FEED TO KILN

PARTICULATE MATTER, PARTICLE SIZE, TOTAL HYDROCARBONS,
SULFUR DIOXIDE, NITROGEN OXIDES, CARBON MONOXIDE,
AND VISIBLE EMISSION MEASUREMENTS

KILN NO. 2
FUEL: COAL

PERMIT NO. A027-194660

FLORIDA MINING AND MATERIALS, INC.
BROOKSVILLE, FLORIDA

March 24, 1992

KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FL 32609
(904) 377-5822



5. SUMMARY OF RESULTS

The results of the particulate matter emission measurements conducted on March 24, 1992, are summarized in Table 1. During the test period, the particulate matter emission rate averaged 4.12 pounds per hour compared to the allowable of 13.5 pounds per hour, and the stack gas flow averaged 163230 dry standard cubic feet per minute at a temperature of 197°F and a moisture content of 9.0 percent. The nitrogen oxides emission rate averaged 101.4 pounds per hour compared to the allowable of 162.3 pounds per hour; the carbon monoxide emission rate averaged 40.2 pounds per hour compared to the allowable of 64.0 pounds per hour; the total hydrocarbons emission rate averaged 2.2 pounds per hour (as propane) compared to the allowable of 7.4 pounds per hour; and the sulfur dioxide emission rate averaged 7.6 pounds per hour compared to the allowable of 11.5 pounds per hour (see Table 2).

The opacity of emissions was zero percent for the one-hour observation period. The permit requires an opacity of less than 10 percent.

The particle sizing indicated that approximately 65 percent of the particles released from Kiln No. 2 are less than 10 micrometers in diameter (see Figure 2).

Field and laboratory data sheets, field notes, emission calculations, and a list of project participants are included in the Appendix of the report.



TABLE 2
SUMMARY OF SOURCE VOC, NO_x, CO AND SO₂ EMISSION MEASUREMENTS

FLORIDA MINING & MATERIALS / BROOKSVILLE, FL
NO. 2 KILN / COAL
MARCH 24, 1992

Run No.	VOC		NO _x		CO		SO ₂	
	ppm	lb/hr	ppm	lbs/hr	ppm	lbs/hr	ppm	lbs/hr
1	2	2.3	90	108.0	52.9	38.6	2.6	4.2
2	2	2.2	85	99.3	57.2	40.7	3.6	5.9
3	2	2.2	85	97.0	59.6	41.4	7.8	12.7
Avg.		2.2(1)		101.4		40.2		7.6

(1) As propane

Calculations: NO_x, CO, VOC, SO₂

$$\text{lb/hr} = \text{ft}^3/\text{min} \times 60 \text{ min/hr} \times (\text{conc. ppm}) \times \text{MW}/385 \times 10^{-6}$$

MW (NO_x) = 46
 MW (CO) = 28
 MW (VOC) = 44 (as propane)
 MN (SO₂) = 64

TABLE 3
FUEL RATES AND PROCESS RATE
KILN NO. 2 - COAL
MARCH 24, 1992

COAL FEED RATE AVERAGED 7.79 TONS PER HOUR

HEAT INPUT = 7.79 tph x 12,500 BTU/pound x 2000 pounds/ton
= 195 MMBTU

KILN FEED RATE AVERAGED 139.4 TONS PER HOUR.

PARTICULATE MATTER, TOTAL HYDROCARBONS,
SULFUR DIOXIDE, CARBON MONOXIDE,
AND VISIBLE EMISSION MEASUREMENTS

NO. 2 CEMENT KILN
FUEL: COAL

FLORIDA MINING AND MATERIALS, INC.
BROOKSVILLE, FLORIDA

PERMIT NO. AC27-212252
(Expires December 31, 1993)

February 10, 1993

KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FL 32609
(904) 377-5822



5. SUMMARY OF RESULTS

The results of the particulate matter emission measurements conducted on February 10, 1993, are summarized in Table 1. During the test period, the particulate matter emission rate averaged 6.36 pounds per hour compared to the allowable of 13.5 pounds per hour, and the stack gas flow averaged 155630 dry standard cubic feet per minute at a temperature of 197°F and a moisture content of 12.2 percent. The carbon monoxide emission rate averaged 43.8 pounds per hour compared to the allowable of 64.0 pounds per hour; the total hydrocarbons emission rate averaged 2.25 pounds per hour (as propane) compared to the allowable of 7.4 pounds per hour; and the sulfur dioxide emission rate averaged 1.55 pounds per hour compared to the allowable of 11.5 pounds per hour (see Table 2). The nitrogen oxides emission rate will be monitored over a 30-day period and a separate test report will be submitted at the end of that period.

The opacity of emissions was zero percent for the one-hour observation period. The permit requires an opacity of less than 10 percent.

Field and laboratory data sheets, field notes, emission calculations, and a list of project participants are included in the Appendix of the report.

TABLE 2
SUMMARY OF VOC, CO AND SO2 EMISSION MEASUREMENTS

FLORIDA MINING & MATERIALS / BROOKSVILLE, FL
NO. 2 KILN / COAL
FEBRUARY 10, 1993

Run No.	VOC		CO		SO2	
	ppm	lb/hr	ppm	lbs/hr	ppm	lbs/hr
1	2.45	2.62	61.3	41.6	1.0	1.6
2	1.98	2.12	69.4	47.3	1.0	1.6
3	1.91	2.03	61.9	41.8	1.0	1.6
Avg.		2.25(1)		43.8		1.6

(1) As propane

Calculations: CO, VOC, SO₂

$$\text{lb/hr} = \text{ft}^3/\text{min} \times 60 \text{ min/hr} \times (\text{conc. ppm}) \times \text{MW}/385 \times 10^{-6}$$

MW (CO) = 28
MW (VOC) = 44 (as propane)
MN (SO₂) = 64



TABLE 3
FUEL RATES AND PROCESS RATE
KILN NO. 2 - COAL
FEBRUARY 10, 1993

COAL FEED RATE AVERAGED 7.34 TONS PER HOUR

$$\begin{aligned} \text{HEAT INPUT} &= 7.34 \text{ tph} \times 12,500 \text{ BTU/pound} \times 2000 \text{ pounds/ton} \\ &= 184 \text{ MMBTU} \end{aligned}$$

KILN FEED RATE AVERAGED 138.7 TONS PER HOUR.

11.0 DIOXIN AND FURAN EMISSION COMPARISON

Dioxin and furan emission rates were measured over three two-hour periods during the baseline test on May 5, 1993, and for the same duration during the coal/TDF firing period on June 9, 1993. The measurements were made in accordance with EPA Method 23 (40CFR60, Appendix A). Under both sets of operating conditions, the dioxin and furan concentrations in all samples were below the limit of detection of the analytical method.

It can therefore be concluded that dioxins and furans are not present in the stack gas from Kiln No. 1 under either baseline conditions or coal/TDF conditions.

12.0 OPACITY OF EMISSIONS

The opacity of emissions was observed during four one-hour periods during both the baseline tests and the coal/TDF tests. No visible emissions were observed during any of the observation periods. It can therefore be concluded that the use of TDF has no effect on the opacity of emissions from Kiln No. 1.

13.0 STACK GAS FLOW AND CHARACTERISTICS

The stack gas flow rate, temperature and moisture were measured during six test runs under baseline conditions and six test runs under coal/TDF firing conditions and oxygen and carbon dioxide concentrations were measured during each two-hour period during the 12 hours of monitoring conducted on each of the four test dates.

The stack gas flow rate averaged 187,443 dscfm under baseline conditions and 176,009 dscfm under coal/TDF firing conditions (Table 16). The stack gas temperature averaged 248°F under baseline conditions and 251°F under coal/TDF conditions (Table 17). The stack gas moisture averaged 9.6 percent under baseline conditions and 10.2 percent under coal/TDF firing conditions (Table 18). The oxygen (Table 19) and carbon dioxide (Table 20) concentrations averaged 14.0 and 13.7 percent and 11.6 and 11.6 percent, respectively, under baseline and coal/TDF conditions.

Although there was a slight difference in the stack gas flow rates (as a result of a higher flow rate measured on the second day of baseline testing [5/5/93]), there were no significant differences in the other parameters and all of the stack gas parameters were within ranges normally observed. It can be concluded that the use of TDF as a fuel supplement has no effect on stack gas characteristics.

TABLE 16
 COMPARISON OF STACK GAS FLOW RATE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline dscfm	TDF dscfm
1	171750	175893
2	178834	167984
3	178597	178353
4	190365	180008
5	198498	178665
6	206616	175148
Mean	187443	176009
S var	179398377	18739215
n	6	6
Pooled est	9953	
t stat.	1.99	
t' (95% C.I.)	1.812	
Difference is significant		

TABLE 17
 COMPARISON OF STACK TEMPERATURE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline F	TDF F
1	251.20	258.00
2	249.60	264.00
3	241.30	240.00
4	250.88	242.00
5	247.83	255.00
6	244.54	247.00
Mean	247.56	251.00
S var	15.36	90.40
n	6.00	6.00
Pooled est	7.27	
t stat.	0.82	
t' (95% C.I.)	1.812	
Difference is not significant		

TABLE 18
 COMPARISON OF STACK GAS MOISTURE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline %	TDF %
1	10.50	9.90
2	10.70	10.20
3	10.70	11.80
4	9.00	10.00
5	8.30	9.50
6	8.30	10.10
Mean	9.58	10.25
S var	1.39	0.64
n	6.00	6.00
Pooled est	1.01	
t stat.	1.15	
t' (95% C.I.)	1.812	
Difference is not significant		

TABLE 19
 COMPARISON OF STACK GAS OXYGEN CONCENTRATION
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline %	TDF %
1	13.03	14.20
2	12.50	14.30
3	14.13	13.10
4	14.10	12.30
5	13.13	13.30
6	13.20	13.80
7	14.27	14.50
8	14.57	14.00
9	14.43	13.10
10	15.00	13.90
11	15.00	13.80
12	15.17	13.70
Mean	14.04	13.67
S var	0.78	0.38
n	12.00	12.00
Pooled est	0.76	
t stat.	1.21	
t' (95% C.I.)	1.717	
Difference is not significant		

TABLE 20
COMPARISON OF STACK GAS CARBON DIOXIDE CONCENTRATION
BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA
MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline %	TDF %
1	12.37	11.80
2	12.83	9.70
3	12.20	11.90
4	12.57	11.70
5	12.20	11.70
6	11.47	12.20
7	10.85	10.50
8	10.86	12.00
9	10.57	11.90
10	11.00	12.10
11	11.00	12.20
12	10.83	12.10
Mean	11.56	11.65
S var	0.66	0.58
n	12.00	12.00
Pooled est	0.79	
t stat.	0.27	
t' (95% C.I.)	1.717	
Difference is not significant		

14.0 CONCLUSIONS

Based on the comparison of emission data and plant operating data collected during the baseline period (100 percent coal firing) on May 4-5, 1993 and during the coal/TDF period on June 8-9, 1993, it can be concluded that the use of TDF to provide up to 20 percent of the heat input to Kiln No. 1 has no effect on emissions, operations or clinker quality.





KOOGLER & ASSOCIATES

ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-93-03

July 22, 1993

RECEIVED

JUL 30 1993

Division of Air
Resources Management

Mr. Chisun Lee
Florida Department of
Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Subject: Comparison Report and Summary Report
of Air Pollutant Emission Measurements
Conducted on Florida Mining & Materials
Kiln No. 1 Under Baseline and Coal/TDF
Firing Conditions

Dear Mr. Lee:

Enclosed are two reports which describe the results of air pollutant emission measurements conducted on Florida Mining & Materials' Kiln No. 1 under baseline (May 4-5, 1993) and coal/TDF (June 8-9, 1993) firing conditions. One report is a summary of the results of these tests and the other report provides a comparison of the test results.

If you have any questions concerning the enclosed reports, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

c: ✓ Mr. Bruce Mitchell, FDER, Tallahassee
Mr. Charles Hetrick, HCBC
Ms. Anetha Lue, P.E., Southdown, Inc.
Mr. Amarjit Gill, P.E., Southdown, Inc.
Mr. Don Kelly, Florida Mining & Materials
Mr. Tony Cleveland, Esq., Oertel, Hoffman, et al
Mr. David Dee, Esq., Carlton, Fields, et al
Mr. David Buff, KBN Engineering, Gainesville

COMPARISON OF PARTICULATE MATTER,
SULFUR DIOXIDE, TOTAL HYDROCARBONS,
CARBON MONOXIDE, NITROGEN OXIDES,
HYDROGEN CHLORIDE, SPECIATED VOLATILE
ORGANICS, METALS AND DIOXINS/FURANS
EMISSION MEASUREMENTS AND OPACITIES OF EMISSIONS
UNDER BASELINE AND COAL/TDF FIRING CONDITIONS

KILN NO.1

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA

MAY 4-5, 1993
AND
JUNE 8-9, 1993

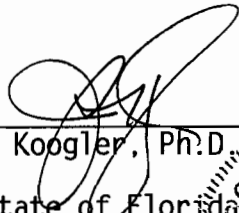
KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FL 32609
(904) 377-5822



TABLE OF CONTENTS

1.0	SUMMARY	1
2.0	PLANT OPERATING CONDITIONS	4
3.0	PARTICULATE MATTER EMISSION COMPARISON	11
4.0	METALS EMISSION RATES	13
5.0	TOTAL HYDROCARBONS	20
6.0	NITROGEN OXIDES	22
7.0	SULFUR DIOXIDE	24
8.0	CARBON MONOXIDE	26
9.0	HYDROGEN CHLORIDE	32
10.0	SPECIATED VOLATILE ORGANIC COMPOUNDS	34
11.0	DIOXIN AND FURAN EMISSION COMPARISON	49
12.0	OPACITY OF EMISSIONS	50
13.0	STACK GAS FLOW AND CHARACTERISTICS	51
14.0	CONCLUSIONS	57

To the best of my knowledge, all applicable field and analytical procedures comply with the Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

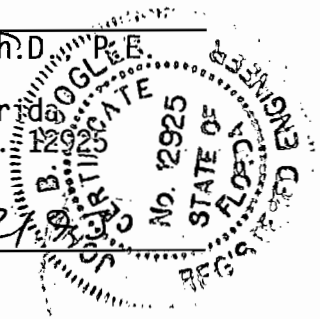


John B. Koogler, Ph.D. P.E.

State of Florida
Registration No. 12925

7/22/95

Date



1.0 INTRODUCTION

Southdown, Incorporated, doing business as Florida Mining & Materials (FM&M), operates two dry process cement kilns at the Brooksville facility located south of Highway 98 in Hernando County, Florida. On February 5, 1993, FM&M received approval from the Florida Department of Environmental Protection (FDEP) to conduct tests on the No. 1 cement kiln to evaluate the effect of burning a combination of coal and whole tire derived fuel (TDF).

Kiln No. 1 is presently operating under Permit A027-213207. The permit limits the feed rate to the kiln to 130 tons per hour (corresponding to a preheater feed rate of 145 tons per hour), limits the clinker production rate to 79.6 tons per hour and limits the heat input to the kiln to 300 MMBTU per hour. The permit also limits the emission rate of particulate matter from the kiln to 39.0 pounds per hour and limits the opacity of emissions to 20 percent, maximum six-minute average.

The primary heat input to Kiln No. 1 is pulverized coal. The amendment to Permit A027-213207, issued on February 5, 1993, allows FM&M to test using TDF to provide up to 20 percent of the heat input to the kiln. The TDF is fed through a double air lock feeder at the base of the preheater (near the point where feed material enters the kiln).

The TDF test was scheduled for a 43-day period; an initial 30-day period when TDF would be used to provide up to 20 percent of the heat input to the No. 1 kiln system, a four-day period for the plant to stabilize on coal, a two-day period for baseline testing (100 percent coal), a five-day period for the plant to stabilize on coal/TDF and a two-day test period with coal providing approximately 80 percent of the heat input and TDF providing approximately 20 percent of the heat input. The time periods proposed were operating days as opposed to calendar days.

The 30-day period of TDF firing began on March 29, 1993. The baseline tests were conducted on May 4-5, 1993 and the coal/TDF tests were conducted on June 8-9, 1993. Between the baseline test period (May 4-5, 1993) and the coal/TDF test period (June 8-9, 1993), the No. 1 kiln system was shut down for repair and maintenance. The extent of the repair and maintenance was documented in a separate transmittal to FDEP and Hernando County. The documentation demonstrated that the repairs had no effect on kiln operations.

During both test periods, the test protocol required the monitoring of certain plant operating conditions and the measurement of emission rates of various constituents from the Kiln No. 1 stack. The plant operating conditions included the preheater feed rate, the fuel feed rate (coal and TDF), the temperatures at the feed end of the kiln and at the preheater exit, and the oxygen concentration at the feed end of the kiln. Additionally, the raw material fed into the kiln, the clinker and the fuel were to be analyzed for specified constituents.

Emission measurements were to be made for particulate matter, certain metals, hydrogen chloride, nitrogen oxides, sulfur dioxide, carbon monoxide, total VOCs, speciated VOCs, dioxins and furans. Additionally, the stack gas characteristics were to be measured, including the carbon dioxide and oxygen concentration of the stack gas, and visible emission observations were to be conducted.

In the following sections, the results of the measurements and operating rates under baseline and coal/TDF conditions are compared.

2.0 PLANT OPERATING CONDITIONS

The plant operating conditions that were to be monitored during the two test periods were documented in an FDEP-approved Test Protocol. Plant operating parameters monitored during the baseline and coal/TDF periods are summarized in Tables 1 and 2. A comparison of these data demonstrates that Kiln No. 1 was operating under similar conditions during both test periods. The feed rates to the preheater and other kiln conditions were within the normal range of plant operations during the two test periods and the preheater feed rates were near the maximum permitted rate of 145 tons per hour. During the baseline period, 100 percent of the heat input to Kiln No. 1 (212 MMBTU/hr) was provided with coal. During the coal/TDF test period, coal provided about 78.3 percent of the heat input (182.8 MMBTU/hr) and TDF provided the remaining 21.7 percent (50.8 MMBTU/hr).

Clinker, raw feed and fuel analyses for the baseline and TDF test periods are included in Tables 3, 4, 5 and 6. These data demonstrate that there are no significant differences in the feed, clinker or fuel during the two test periods; other than variations within the normal day-to-day range of these parameters.

TABLE 1
 PLANT OPERATING DATA
 FLORIDA MINING & MATERIALS
 KILN # 1 - BASELINE CONDITIONS

BROOKSVILLE, FLORIDA
 MAY 4 AND 5, 1993

May 4, 1993

Time	Kiln Feed (tph)	Coal Feed (tph)	Coal Heat Input (MMBTU/hr)	Kiln Exit Temp. (oF)	Preheater Exit Temp. (oF)	Kiln Exit O2 (%)
0900	144.7	8.66	220.6	1600	750	2.2
1100	142.7	8.43	214.8	1650	760	0.6
1300	147.8	8.55	217.8	1620	750	0.1
1500	139.0	8.45	215.3	NR	NR	NR
1700	139.0	8.19	208.6	1610	750	1.5
1900	139.0	8.65	220.4	1600	740	2.2
2100	139.0	7.92	201.8	1610	750	2.0
Avg	141.6	8.41	214.18	1615	750	1.4

May 5, 1993

0900	104.8	8.32	208.9	1720	820	1.3
1100	141.5	7.08	177.8	1650	760	1.4
1300	146.7	9.29	233.3	1640	760	0.6
1500	145.7	8.67	217.7	NR	NR	NR
1700	145.7	8.50	213.4	1625	750	1.0
1900	145.7	8.31	208.7	1620	750	0.8
2100	145.7	8.31	208.7	1640	760	0.2
Avg	139.4	8.35	209.8	1649	767	0.9

NR - Not reported in control room log.

TABLE 2
 PLANT OPERATING DATA
 FLORIDA MINING & MATERIALS
 KILN # 1 - COAL/TDF CONDITIONS

BROOKSVILLE, FLORIDA
 JUNE 8 AND 9, 1993

June 8, 1993

Time	Kiln Feed (tph)	Coal Feed (tph)	Coal Heat Input MMBTU/hr	TDF Feed (tph)	TDF Heat Input MMBTU/hr	Kiln Exit Temp. (oF)	Preheat. Exit Temp. (oF)	Kiln Exit O2 (%)
0900	138.5	7.07	174.5	1.65	53.46	1610	760	5.0+
1100	101.9	7.07	174.5	1.64	53.14	1800	770	3.2
1300	142.6	7.07	174.5	1.34	43.42	1760	760	3.5
1500	133.3	7.39	182.4	1.60	51.84	NR	NR	NR
1700	133.3	7.39	182.4	1.64	53.14	1740	735	2.8
1900	136.3	7.39	182.4	1.64	53.14	1730	720	4.2
2100	140.3	7.39	182.4	1.72	55.73	1630	750	4.5
Avg	132.3	7.25	179.0	1.60	51.98	1712	749	3.9

June 9, 1993

0900	142.4	7.70	185.3	1.37	44.39	1720	760	2.3
1100	142.4	7.70	185.3	1.52	49.25	1800	770	2.4
1300	142.4	7.70	185.3	1.56	50.55	1820	760	3.1
1500	140.2	7.80	187.7	1.46	47.31	NR	NR	NR
1700	140.2	7.80	187.7	1.62	52.49	1760	755	2.6
1900	140.2	7.80	187.7	1.61	52.17	1780	765	3.4
2100	140.2	7.80	187.7	1.58	51.20	1740	760	3.2
Avg	141.1	7.76	186.7	1.53	49.62	1770	762	2.8

NR - Not reported in control room log.

TABLE 3
KILN FEED AND CLINKER ANALYSIS
FLORIDA MINING & MATERIALS
KILN # 1 - BASELINE CONDITIONS

BROOKSVILLE, FLORIDA
MAY 4 AND 5, 1993

Element	KILN FEED - 5/4/93		CLINKER - 5/4/93	
	Conc. (%)		Conc. (%)	
SiO ₂	20.42	C3S = 81.76	21.64	C3S = 62.24
Al ₂ O ₃	4.90	C2S = -3.14	5.17	C2S = 15.10
Fe ₂ O ₃	4.06	C3A = 6.12	4.35	C3A = 6.33
CaO	67.72	C4AF = 12.34	66.12	C4AF = 13.24
MgO	0.70	S/R = 2.28	0.68	S/R = 2.27
SO ₃	0.01	A/F = 1.21	0.52	A/F = 1.19
Na ₂ O	0.10	LP = 26.49	0.15	LP = 26.50
K ₂ O	0.10	LSF = 101.56	0.62	LSF = 93.58
	-----	Na ₂ O Equiv = 0.16	-----	Na ₂ O Equiv = 0.56
Total	98.01	Burn.F = 121.68	99.25	Burn.F = 111.96
		Burn.I = 4.43		Burn.I = 3.18
		Factor = 0.9856		Factor = 1.0000

Element	KILN FEED - 5/5/93		CLINKER - 5/5/93	
	Conc. (%)		Conc. (%)	
SiO ₂	19.32	C3S = 94.66	21.53	C3S = 64.43
Al ₂ O ₃	4.86	C2S = -16.02	5.26	C2S = 13.13
Fe ₂ O ₃	4.09	C3A = 5.96	4.42	C3A = 6.47
CaO	68.79	C4AF = 12.45	66.58	C4AF = 13.44
MgO	0.74	S/R = 2.16	0.73	S/R = 2.23
SO ₃	0.01	A/F = 1.19	0.45	A/F = 1.19
Na ₂ O	0.10	LP = 26.48	0.15	LP = 26.87
K ₂ O	0.09	LSF = 108.25	0.52	LSF = 94.41
	-----	Na ₂ O Equiv = 0.16	-----	Na ₂ O Equiv = 0.49
Total	98.00	Burn.F = 127.05	99.64	Burn.F = 112.47
		Burn.I = 5.14		Burn.I = 3.24
		Factor = 0.9837		Factor = 1.0000

TABLE 4
 KILN FEED AND CLINKER ANALYSIS
 FLORIDA MINING & MATERIALS
 KILN # 1 - COAL/TDF CONDITIONS

BROOKSVILLE, FLORIDA
 JUNE 8 AND 9, 1993

Element	KILN FEED - 6/8/93		CLINKER - 6/8/93	
	Conc. (%)		Conc. (%)	
SiO2	20.23	C3S = 81.48	20.88	C3S = 64.64
Al2O3	5.05	C2S = -3.47	5.37	C2S = 11.09
Fe2O3	4.20	C3A = 6.27	4.79	C3A = 6.13
CaO	67.61	C4AF = 12.79	65.70	C4AF = 14.56
MgO	0.71	S/R = 2.19	0.70	S/R = 2.06
SO3	0.03	A/F = 1.20	0.44	A/F = 1.12
Na2O	0.10	LP = 25.24	0.15	LP = 27.94
K2O	0.07	LSF = 101.75	0.49	LSF = 95.24
	-----	Na2O Equiv = 0.15	-----	Na2O Equiv = 0.47
Total	98.00	Burn.F = 120.97	98.52	Burn.F = 111.79
		Burn.I = 4.28		Burn.I = 3.12
		Factor = 0.9864		Factor = 1.0000

Element	KILN FEED - 6/9/93		CLINKER - 6/9/93	
	Conc. (%)		Conc. (%)	
SiO2	19.26	C3S = 92.45	20.78	C3S = 66.49
Al2O3	5.08	C2S = -14.52	5.26	C2S = 9.40
Fe2O3	4.23	C3A = 6.30	4.78	C3A = 5.84
CaO	68.53	C4AF = 12.87	65.82	C4AF = 14.56
MgO	0.72	S/R = 2.07	0.69	S/R = 2.07
SO3	0.00	A/F = 1.20	0.50	A/F = 1.10
Na2O	0.10	LP = 24.41	0.15	LP = 27.64
K2O	0.08	LSF = 107.44	0.53	LSF = 96.06
	-----	Na2O Equiv = 0.15	-----	Na2O Equiv = 0.50
Total	98.00	Burn.F = 125.43	98.51	Burn.F = 112.64
		Burn.I = 4.82		Burn.I = 3.26
		Factor = 0.9892		Factor = 1.0000

TABLE 5
 FUEL ULTIMATE ANALYSIS
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA

May 4-5, 1993
 AND
 JUNE 8-9, 1993

Parameter	UNIT	BASELINE COMPOSITE COAL 5/4-5/93	COAL/TDF COMPOSITE COAL 6/8-9/93	COAL/TDF COMPOSITE TDF 6/8-9/93
Moisture	(%)	6.34	7.75	0.47
Carbon	(%)	70.5	67.77	74.35
Hydrogen	(%)	4.69	4.55	7.08
Nitrogen	(%)	1.39	1.24	0.41
Sulfur	(%)	0.83	0.96	1.02
Ash	(%)	9.91	11.28	9.40
Oxygen	(%)	6.36	6.45	0.73
Heating Value	(Btu/lb)	12646	12186	15141

All parameters reported AS RECEIVED

TABLE 6
 KILN FEED, COAL AND CLINKER METAL ANALYSES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIAL
 BROOKSVILLE, FLORIDA

MAY 4-5, 1993
 AND
 JUNE 8-9, 1993

Metal	UNIT	BASELINE COMPOSITE KILN FEED 5/4-5/93	COAL/TDF COMPOSITE KILN FEED 6/8-9/93	BASELINE COMPOSITE COAL 5/4-5/93	COAL/TDF COMPOSITE COAL 6/8-9/93	BASELINE COMPOSITE CLINKER 5/4-5/93	COAL/TDF COMPOSITE CLINKER 6/8-9/93	COAL/TDF COMPOSITE TIRE 6/8-9/93
Arsenic	(ug/g)	16	25	6	16	29	34	<1
Chromium	(ug/g)	35	47	6	6	73	97	5
Lead	(ug/g)	66	66	8	4	83	100	5
Mercury	(ug/g)	0.24	0.24	0.10	0.18	<0.02	<0.02	0.04
Zinc	(ug/g)	38	59	10	6	92	82	4400
Chlorine	(% Wt)	0.12	0.12	0.16	0.16	0.07	0.07	0.07

01

3.0 PARTICULATE MATTER EMISSION COMPARISON

Particulate matter emission rates were measured during the baseline period on May 4, 1993, and during the coal/TDF firing period on June 8, 1993. Under both sets of operating conditions, the particulate matter emission rates were well below the permitted emission rate of 39 pounds per hour and within the range of particulate matter emissions measured from the kiln on other occasions.

The data presented in Table 7 show an average emission rate of 9.13 pounds per hour during the coal/TDF period and an emission rate of 7.04 pounds per hour during the baseline period. These emission rates are not significantly different. Therefore, it can be concluded that the use of TDF to provide up to 20 percent of the heat input has no significant effect on the particulate matter emission rate of Kiln No. 1.

TABLE 7
 COMPARISON OF PARTICULATE MATTER EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	6.15	11.33
2	6.98	7.30
3	8.00	8.75
Mean	7.04	9.13
S var	0.86	4.17
n	3.00	3.00
Pooled est	1.59	
t stat.	1.61	
t' (95% C.I.)	2.132	
Difference is not significant		

4.0 METALS EMISSION RATES

The emission rates of arsenic, total chromium, lead, mercury, and zinc were measured with the EPA multi-metals train (EPA Method 29). The measurements under baseline operating conditions were made on May 4, 1993, and the measurements under coal/TDF conditions were made on June 8, 1993. The emission rates measured under the two sets of conditions are summarized in the following table:

Metal	Baseline Average Emissions (lb/hr)	TDF Average Emissions (lb/hr)
Date	May 4, 1993	June 8, 1993
Arsenic	<0.00174	<0.00143
Chromium	<0.00202	<0.00287
Lead	<0.00781	<0.00201
Mercury	0.01299	<0.00036
Zinc	0.00579	0.01026*

*Significantly greater

Comparisons of these data (Tables 8A-8E) demonstrate that the emission rates of arsenic, chromium and lead are below the detectable limit and are therefore of no concern under either operating condition. The data also show that there is no significant difference in the emission rate of

mercury. Statistically however, the emission rate of zinc measured under coal/TDF conditions was greater than the emission rate measured under the baseline firing conditions. The apparent increase in zinc emissions could be due to the zinc content of the TDF.

It can be concluded that the use of TDF to supply up to 20 percent of the heat input to Kiln No. 1 has no effect on metals emissions, with the possible exception of zinc.

TABLE 8A
COMPARISON OF METAL EMISSION RATES
ARSENIC
BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA
MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<0.00176	<0.00143
2	<0.00172	<0.00143
3	<0.00173	<0.00143
Mean	<0.00174	<0.00143

Emissions too close to detection limit.
No meaningful comparison possible.

TABLE 8B
 COMPARISON OF METAL EMISSION RATES
 CHROMIUM
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<0.00205	<0.00287
2	<0.00201	<0.00287
3	<0.00201	<0.00287
Mean	<0.00202	<0.00287

Emissions too close to detection limit.
 No meaningful comparison possible.

TABLE 8C
COMPARISON OF METAL EMISSION RATES
LEAD
BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA
MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<0.00763	<0.00201
2	<0.00747	<0.00201
3	0.00834	<0.00201
Mean	<0.00781	<0.00201

Emissions too close to detection limit.
No meaningful comparison possible.

TABLE 8D
 COMPARISON OF METAL EMISSION RATES
 MERCURY
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	0.02935	<0.00037
2	0.00233	<0.00035
3	0.00728	<0.00037
Mean	0.01299	<0.00036
S var	2.07E-04	1.33E-10
n	3.00	3.00
Pooled est	1.02E-02	
t stat.	1.52	
t' (95% C.I.)	2.132	
Difference is not significant		

TABLE 8E
 COMPARISON OF METAL EMISSION RATES
 ZINC
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	0.00558	0.00832
2	0.00546	0.01392
3	0.00633	0.00853
Mean	0.00579	0.01026
S var	2.22E-07	1.01E-05
n	3.00	3.00
Pooled est	2.27E-03	
t stat.	2.41	
t' (95% C.I.)	2.132	

Difference is significant

5.0 TOTAL HYDROCARBONS

The total hydrocarbon concentration in the stack gas of the plant was measured for two 12-hour periods under baseline conditions and for two 12-hour periods under coal/TDF firing conditions using EPA Method 25A as described in 40CFR60, Appendix A. These data were summarized as 12 two-hour average hourly emission rates for each test condition and were calculated from stack gas flow rates measured during each day of monitoring.

The average emission rate under baseline conditions was 3.36 pounds per hour while the average emission rate under coal/TDF firing conditions was 3.26 pounds per hour. The difference in the emission rates is not statistically significant (Table 9). It can be concluded that the use of TDF to provide up to 20 percent of the heat input does not affect total hydrocarbon emissions from Kiln No. 1.

TABLE 9
 COMPARISON OF TOTAL HYDROCARBON EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	2.36	2.80
2	3.54	2.62
3	4.06	2.61
4	3.07	3.37
5	3.07	2.6
6	3.44	2.9
7	2.75	4.79
8	4.64	3.69
9	3.92	3.17
10	3.11	3.24
11	3.48	3.65
12	2.88	3.63
Mean	3.36	3.26
S var	0.39	0.40
n	12.00	12.00
Pooled est	0.63	
t stat.	0.40	
t' (95% C.I.)	1.717	
Difference is not significant		

6.0 NITROGEN OXIDES

The nitrogen oxides concentration in the stack gas from the plant was measured for two 12-hour periods under baseline conditions and for two 12-hour periods under coal/TDF firing conditions. The method of sampling was EPA Method 7E, 40CFR60, Appendix A. The mass emission rates were calculated using stack gas flow rates measured during each day of monitoring and are reported as 12 two-hour average hourly emission rates.

These data, summarized in Table 10, show an average nitrogen oxides emission rate under baseline conditions of 197 pounds per hour and an average emission rate of 188 pounds per hour under coal/TDF firing conditions. Statistically, there is no difference in these emission rates. It can be concluded that the use of TDF to provide up to 20 percent of the heat input does not affect nitrogen oxides emissions from Kiln No. 1.

TABLE 10
 COMPARISON OF NITROGEN OXIDE EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	205.95	118.78
2	236.35	92.30
3	205.38	133.55
4	193.97	161.73
5	190.08	227.33
6	166.42	215.70
7	134.01	166.34
8	185.79	189.05
9	200.64	242.46
10	242.86	265.64
11	212.71	243.96
12	194.41	201.78
Mean	197.38	188.22
S var	832.05	2973.08
n	12.00	12.00
Pooled est	43.62	
t stat.	0.51	
t' (95% C.I.)	1.717	
Difference is not significant		

7.0 SULFUR DIOXIDE

The sulfur dioxide concentration in the stack gas from the cement plant was measured for two 12-hour periods under baseline conditions and for two 12-hour periods under coal/TDF firing conditions. The method of sampling was EPA Method 6C, 40CFR60, Appendix A. The mass emission rates were calculated using stack gas flow rates measured each day of monitoring and are reported as 12 two-hour average hourly emission rates. The data are summarized in Table 11 and show an average sulfur dioxide emission rate under baseline conditions of less than 1.9 pounds per hour and an average emission rate under coal/TDF firing conditions of less than 0.8 pounds per hour.

These emission rates were both below the detection limit of Method 6C and no statistical analysis was possible. It can be concluded, however, that the use of TDF in the cement plant does not affect sulfur dioxide emissions from Kiln No. 1.

TABLE 11
 COMPARISON OF SULFUR DIOXIDE EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<1.71	<1.05
2	<1.71	<0.35
3	<1.78	<0.84
4	<1.78	<0.5
5	<1.78	<1.42
6	<1.78	<0.71
7	<1.9	<0.9
8	<1.9	<0.18
9	<1.9	<1.25
10	<1.98	<0.71
11	<1.98	<0.7
12	<2.06	<0.7
Mean	<1.86	<0.78

Emissions too close to detection limit
 No meaningful comparison possible.

8.0 CARBON MONOXIDE

The carbon monoxide concentration in the stack gas was continuously monitored for two 12-hour periods during the baseline tests and two 12-hour periods during the coal/TDF tests. The measurements were made in accordance with EPA Method 10, 40CFR60, Appendix A. The mass emission rates of carbon monoxide were calculated using stack gas flow rates measured during each day of monitoring and were initially reported as 12 two-hour average hourly emission rates for each of the two test periods. These data are summarized in Table 12.

The carbon monoxide emission data summarized in Table 12 show an average emission rate of 31.5 pounds per hour under baseline conditions and an average emission rate of 49.1 pounds per hour under coal/TDF firing conditions. Statistically, the carbon monoxide emission rate under coal/TDF firing conditions was greater than the emission rate measured under baseline conditions. This matter was further investigated as measurements made at other cement plants under coal and coal/TDF firing conditions have shown that TDF has no effect on carbon monoxide or other emission rates.

The carbon monoxide emission measurements made under baseline conditions (24 hours of monitoring) and under coal/TDF conditions (24 hours of monitoring) were reduced to one-hour average emission rates and carbon monoxide emission data for FM&M Kilns No. 1 and No. 2, measured on other

dates, were abstracted from previous reports. These hourly average emission rates are summarized in Table 13.

The carbon monoxide data from the previous tests were analyzed and no difference was found between emission rates from Kiln No. 1 while burning coal (2/28/92) and while burning coal and flolite (2/28/92). Likewise, there was no difference in the emission rates from Kiln No. 2 (a kiln identical to Kiln No. 1) on 3/24/92 and on 2/10/93. It was also determined that there was no difference in the carbon monoxide emission rates from Kiln No. 1 and Kiln No. 2. As a result of these analyses, the data from previous tests were treated as a single set of "baseline" data (i.e. operations without TDF).

When the data from previous tests were compared with carbon monoxide emission data from the current baseline tests (5/4/93, 5/5/93 and 5/4-5/93), it was determined that the previously measured emission rates were significantly greater than the emission rates measured on both 5/4/93 and 5/5/93 and on 5/4-5/93 (all current baseline dates handled collectively). The analysis further showed there was no significant difference between carbon monoxide emission rates measured on 5/4/93 and 5/5/93.

When comparing the previously measured "baseline" data with the coal/TDF carbon monoxide emission measurements, it was statistically determined that:

1. There was no difference between the previous baseline emission rate and the 6/9/93 coal/TDF emission rate;

2. The carbon monoxide emission rates measured on 6/8/93 (coal/TDF) were greater than those measured under previous baseline conditions; and
3. The carbon monoxide emission rate measured on 6/8/93 (coal/TDF) was greater than that measured on 6/9/93 (coal/TDF). In both cases, kiln operating conditions were the same.

In summary:

1. The carbon monoxide emission rate measured under 5/4-5/93 baseline (coal) conditions was less than the emission rates measured under "previous baseline" (coal and coal/flolite) conditions; demonstrating that there can be significant differences in carbon monoxide emission rates with the kiln operating under the same conditions.
2. The carbon monoxide emission rate measured on 6/8/93 with Kiln No. 1 fired with coal/TDF was significantly greater than that measured on 6/9/93 with Kiln No. 1 fired with coal/TDF. This again demonstrates that there can be significant differences in carbon monoxide emission rates with the kiln operating under the same conditions.

3. The carbon monoxide emission rate measured under coal/TDF conditions on 6/9/93 was no different than that measured under "previous baseline" conditions. This demonstrates that the use of coal/TDF does not result in increased carbon monoxide emissions.

4. These data collectively, and data reported from other cement plants, demonstrate that there are significant fluctuations in carbon monoxide emissions from cement plants. These fluctuations results from several factors that vary within the normal range of cement plant operating parameters and not, in this case, from the use of TDF.

TABLE 12
 COMPARISON OF CARBON MONOXIDE EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	28.10	66.08
2	30.73	39.91
3	31.21	66.63
4	33.56	49.7
5	36.24	47.63
6	31.17	70.04
7	30.9	52
8	33.06	41.16
9	29.9	39.76
10	30.32	37.11
11	30.97	39.13
12	31.56	39.51
Mean	31.48	49.06
S var	4.19	146.81
n	12.00	12.00
Pooled est	8.69	
t stat.	4.96	
t' (95% C.I.)	1.717	
Difference is significant		

TABLE 13
 CARBON MONOXIDE DATA REVIEW
 FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 5 AND JUNE 9, 1993

Baseline Data - (No TDF)					Coal/TDF Data			
Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	Kiln Number	Test Date	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)
1	02/28/92	Coal	144	40.1 37.5 40.7	1	06/08/93	140-142	64.2 67.9 32.9
1	02/28/92	Coal/Flolite	144	32.6 37.5 40.7				46.2 52.4 80.9
2	03/24/92	Coal	139	38.6 40.7 41.4				55.5 43.9 44.8
2	02/10/93	Coal	139	41.6 47.3 41.8				50.5 71.3 68.8
			Set Average	40.0			Set Average	56.6
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8	1	06/09/93	101-143	56.1 47.9 37.7 44.6 39.6 39.9 35.1 39.2 38.6 39.7 34.8 44.2
			Set Average	31.8			Set Average	41.5
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5				
			Set Average	31.4				

9.0 HYDROGEN CHLORIDE

The emission rate of hydrogen chloride was measured under both baseline and coal/TDF firing conditions using EPA Method 26, as described in 40CFR60, Appendix A. The mass emission rates of hydrogen chloride were calculated using stack gas flow rates measured during each day of monitoring.

The hydrogen chloride emission data summarized in Table 14 show an emission rate of 0.44 pounds per hour under baseline conditions and an emission rate of less than 0.35 pounds per hour under coal/TDF firing conditions. Statistically, the hydrogen chloride emission rate under baseline firing conditions is greater than the emission rate measured under coal/TDF conditions.

Under neither condition would the emission rate of hydrogen chloride be of consequence; even if the chlorides present were as hydrogen chloride. The presence of several cations in the Method 26 sampling train (along with chloride) demonstrates that the chlorides are present as salts of the cations (aluminum, ammonia, sodium, etc.) and not as hydrogen chloride.

TABLE 14
 COMPARISON OF HYDROGEN CHLORIDE EMISSION RATES
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 5 AND JUNE 9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	0.47	0.36
2	0.44	<0.32
3	0.42	<0.38
Mean	0.44	<0.35
S var	6.33E-04	9.33E-04
n	3.00	3.00
Pooled est	2.80E-02	
t stat.	3.94	
t' (95% C.I.)	2.132	
Difference is significant		

10.0 SPECIATED VOLATILE ORGANIC COMPOUNDS

The emission rates of 13 specific volatile organic compounds were measured under both baseline and coal/TDF firing conditions using the VOST system as described in EPA Method M-0300. This method is also an equivalent EPA Method 18, 40CFR60, Appendix A. The mass emission rates of the compounds were calculated using stack gas flow rates measured during each day of monitoring.

The emission data in Tables 15A-15M are summarized below.

VOC	Emission Rate (lb/hr)	
	Baseline	Coal/TDF
Acetone	<0.0001	0.0210*
Benzene	0.0580*	0.0410
Bromomethane	<0.0003	0.0013*
Carbon Disulfide	0.0039	0.0057
Chlorobenzene	0.0160*	0.0130
Ethylbenzene	0.0058	0.0055
n-Hexane	0.0050*	0.0023
Toluene	0.0490*	0.0340
1,1,1-Trichloroethane	<0.0001	<0.0001
Trichloroethylene	<0.0001	<0.0001
Styrene	0.0270*	0.0120
m-\p-Xylene	0.0170*	0.0110
o-Xylene	0.0069*	0.0044

* Significantly greater

The emission data show greater emission rates of two compounds (acetone and bromomethane) under coal/TDF conditions, greater emission rates of seven compounds under baseline conditions and either no change or concentrations below the detection limits for four compounds. A reasonable conclusion regarding the emission rates of these specific volatile organic compounds is that there is considerable fluctuation at very low emission rates of these organic compounds from cement kilns and that TDF as a fuel supplement has no effect on the magnitude of these emission rates.



TABLE 15A
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 ACETONE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

	Baseline	TDF
Run	lb/hr	lb/hr
1	< 4.3E-05	1.2E-02
2	< 4.3E-05	1.2E-02
3	< 4.5E-05	4.9E-02
4	< 4.5E-05	1.7E-02
5	< 4.5E-05	1.7E-02
6	< 4.5E-05	1.9E-02
Mean	< 4.4E-05	2.1E-02
S var	1.1E-12	2.0E-04
n	6	6
Pooled est	0	
t stat.	3.66	
t' (95% C.I.)	1.812	
Difference is significant		

TABLE 15B
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 BENZENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

	Baseline	Coal/TDF
Run	lb/hr	lb/hr
1	4.5E-02	4.1E-02
2	4.8E-02	4.2E-02
3	5.7E-02	3.9E-02
4	6.3E-02	4.1E-02
5	6.2E-02	4.1E-02
6	7.3E-02	4.3E-02
Mean	5.8E-02	4.1E-02
S var	1.1E-04	1.8E-06
n	6	6
Pooled est	0	
t stat.	3.95	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15C
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 BROMOMETHANE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<2.1E-05	1.3E-03
2	1.5E-03	9.4E-04
3	<2.2E-05	2.4E-03
4	<2.2E-05	1.3E-03
5	<2.2E-05	8.5E-04
6	<2.2E-05	8.2E-04
Mean	<2.7E-04	1.3E-03
S var	3.6E-07	3.5E-07
n	6	6
Pooled est	0	
t stat.	2.89	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15D
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 CARBON DISULFIDE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	5.5E-03	8.7E-03
2	4.4E-03	5.8E-03
3	6.0E-03	5.6E-03
4	7.3E-03	4.8E-03
5	< 2.2E-05	4.5E-03
6	< 2.2E-05	5.1E-03
Mean	3.9E-03	5.7E-03
S var	9.8E-06	2.3E-06
n	6	6
Pooled est	0	
t stat.	1.32	
t' (95% C.I.)	1.812	
Difference is not significant		

TABLE 15E
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 CHLOROBENZENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

	Baseline	TDF
Run	lb/hr	lb/hr
1	1.4E-02	9.6E-03
2	1.3E-02	1.4E-02
3	1.5E-02	1.3E-02
4	1.6E-02	1.4E-02
5	1.8E-02	1.2E-02
6	1.9E-02	1.3E-02
Mean	1.6E-02	1.3E-02
S var	5.4E-06	2.7E-06
n	6	6
Pooled est	0	
t stat.	2.79	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15F
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 ETHYLBENZENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	5.0E-03	5.0E-03
2	5.0E-03	6.1E-03
3	5.1E-03	5.3E-03
4	5.8E-03	5.9E-03
5	6.8E-03	4.9E-03
6	7.1E-03	6.0E-03
Mean	5.8E-03	5.5E-03
S var	8.9E-07	2.8E-07
n	6	6
Pooled est	0	
t stat.	0.60	
t' (95% C.I.)	1.812	
Difference is not significant		

TABLE 15G
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 n-HEXANE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	3.8E-03	1.3E-03
2	4.7E-03	1.6E-03
3	4.4E-03	2.3E-03
4	5.0E-03	2.8E-03
5	5.3E-03	2.9E-03
6	7.0E-03	2.9E-03
Mean	5.0E-03	2.3E-03
S var	1.2E-06	4.9E-07
n	6	6
Pooled est	0	
t stat.	5.16	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15H
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 TOLUENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	3.2E-02	2.9E-02
2	4.5E-02	3.6E-02
3	4.7E-02	3.1E-02
4	5.4E-02	3.3E-02
5	6.2E-02	4.0E-02
6	5.5E-02	3.5E-02
Mean	4.9E-02	3.4E-02
S var	1.1E-04	1.5E-05
n	6	6
Pooled est	0	
t stat.	3.35	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15I
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 1,1,1-TRICHLOROETHANE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	<2.1E-05	<2.2E-05
2	<2.1E-05	<2.2E-05
3	<2.2E-05	<2.1E-05
4	<2.2E-05	<2.1E-05
5	<2.2E-05	<2.2E-05
6	<2.2E-05	<2.2E-05
Mean	<2.2E-05	<2.2E-05

Emissions too close to detection limit.
 No meaningful comparison possible.

TABLE 15J
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 TRICHLOROETHENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline	TDF
	lb/hr	lb/hr
1	<2.1E-05	<2.2E-05
2	<2.1E-05	<2.2E-05
3	<2.2E-05	<2.1E-05
4	<2.2E-05	<2.1E-05
5	<2.2E-05	<2.2E-05
6	<2.2E-05	<2.2E-05
Mean	<2.2E-05	<2.2E-05

Emissions too close to detection limit.
 No meaningful comparison possible.

TABLE 15K
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 STYRENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

	Baseline	TDF
Run		
	lb/hr	lb/hr
1	1.9E-02	1.0E-02
2	1.8E-02	1.4E-02
3	2.5E-02	1.3E-02
4	3.1E-02	1.4E-02
5	3.4E-02	9.8E-03
6	3.3E-02	1.3E-02
Mean	2.7E-02	1.2E-02
S var	5.0E-05	3.7E-06
n	6	6
Pooled est	0	
t stat.	4.81	
t' (95% C.I.)	1.812	
Difference is significant		

TABLE 15L
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 m-p-XYLENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

Run	Baseline lb/hr	TDF lb/hr
1	1.4E-02	9.1E-03
2	1.5E-02	1.3E-02
3	1.6E-02	1.1E-02
4	1.9E-02	1.2E-02
5	2.1E-02	1.0E-02
6	1.8E-02	1.2E-02
Mean	1.7E-02	1.1E-02
S var	7.0E-06	2.1E-06
n	6	6
Pooled est	0	
t stat.	4.87	
t' (95% C.I.)	1.812	

Difference is significant

TABLE 15M
 COMPARISON OF SPECIATED VOLATILE ORGANICS EMISSION RATES
 o-XYLENE
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS
 BROOKSVILLE, FLORIDA
 MAY 4 AND JUNE 8, 1993

	Baseline	TDF
Run	lb/hr	lb/hr
1	5.7E-03	3.7E-03
2	5.6E-03	4.9E-03
3	6.4E-03	4.3E-03
4	7.6E-03	4.9E-03
5	8.4E-03	4.0E-03
6	7.7E-03	4.9E-03
Mean	6.9E-03	4.4E-03
S var	1.4E-06	2.8E-07
n	6	6
Pooled est	0	
t stat.	4.70	
t' (95% C.I.)	1.812	
Difference is significant		



KA 521-93-03

July 9, 1993

Mr. Chisun Lee
Florida Department of
Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Subject: Southdown, Inc. dba FM&M
Cement Kiln No. 1 (A027-213207)
Baseline and Whole Tire Derived Fuel
Performance Testing

Dear Mr. Lee:

As mentioned in my letter of June 11, 1993, the Florida Department of Environmental Protection issued an amendment to Permit A027-213207 on February 5, 1993 which authorized Southdown, Inc. dba Florida Mining & Materials to conduct performance tests on the No.1 Cement Kiln to evaluate the effects of using whole tire derived fuel (TDF) as a fuel supplement. The amendment required testing under baseline conditions (100% coal) and under Coal/TDF firing conditions.

Baseline and Coal/TDF tests were conducted in May 4-5, 1993 and June 8-9, 1993, respectively. The amendment authorizing the testing requires a comparison of the results of measurements made during the two test periods and, as such, envisions the overall test program as a single test.

Condition No. 1 of the amendment states that a written report be must be submitted within 45 days of the completion of the last test run. The report preparation is proceeding on schedule. No problems are anticipated with submitting the report to the Department by July 23, 1993; or within 45 days of the completion of the Coal/TDF test on June 9, 1993.

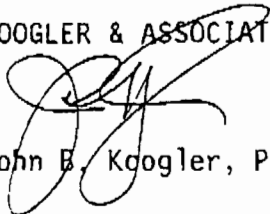
Mr. Chisun Lee
Florida Department of
Environmental Protection

July 9, 1993
Page 2

If you have any questions, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:jg

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Ms. Anetha Lue, P.E., Southdown, Inc.
Mr. Don Kelly, Florida Mining & Materials
Mr. Matt Stone, Florida Mining & Materials
Mr. David Dee, Esq., Calton, Fields et al





KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: JBK

PROJECT: 521-93-03

SENT BY: J. Garcia

DATE: 7-9-93

FAX PHONE: 904-377-7158

The text being transmitted consists of 2 pages PLUS this one.

REMARKS: _____

PM
6-21-93
Gainesville, FL

MEMORANDUM

VIA FAX

TO: David Buff
KBN Engineering

FROM: John Koogler

DATE: June 21, 1993

SUBJECT: Preliminary Emission and Stack Gas
Flow Rate Data from Baseline and
TDF Tests
Florida Mining & Materials
Hernando County, Florida

RECEIVED

JUN 22 1993

Division of Air
Resources Management

Attached are tables summarizing preliminary emission data and stack gas flow data for the baseline and TDF test periods at Florida Mining & Materials. The baseline tests were conducted on May 4 and 5, 1993 and the TDF tests were conducted on June 8 and 9, 1993. The emission rates and stack gas concentrations of total hydrocarbons, carbon monoxide, nitrogen oxides and sulfur dioxide were determined in accordance with EPA Test Methods 25A, 10, 7E and 6C, respectively. Each "run" represents nominally a two-hour period. The six "runs" reported for each day represent a nominal 12-hour sampling period. The stack gas flow rate, temperature, moisture content, oxygen content and CO₂ content were measured during each of three two-hour test runs conducted on each of the four days. These parameters were measured in accordance with EPA Methods 2, 3 and 4. The measurements were conducted in conjunction with particulate matter/metals and dioxin/furans emission testing.

Also attached are statistical summaries of the measurements comparing the results measured during the baseline tests with results measured during the TDF tests. These summaries show no significant differences in emission rates of VOC, NO_x or SO₂. The summaries also show no difference in the concentrations of oxygen, carbon dioxide or moisture in the stack gas and no difference in the stack gas temperatures between the two sets of test conditions. The summaries do show a higher carbon monoxide emission rate measured during the TDF test period and a slightly higher stack gas flow rate during the baseline period.

A summary of particulate matter emission rates measured during the two test periods is also attached but not included in the tables. These data



show an average particulate matter emission rate of 7.05 pounds per hour during the baseline period and 9.13 pounds per hour during the TDF period. A statistical comparison shows that there are no differences in these emission rates.

In our opinion, there is nothing in the attached data that would indicate the routine maintenance performed on the cement plant between the two test periods affected operations or emissions from the No. 1 kiln. It is my understanding that Florida Mining & Materials has forwarded to you information regarding kiln operations during the TDF test period and a description of the maintenance that was performed between the two test periods. We have requested comparable plant data for the baseline test period and will see that you receive a copy as soon as it is available. After reviewing the attached information and the information provided to you by Florida Mining & Materials, please give me a call.

c: Mr. Bruce Mitchell, FDEP, Tallahassee
Mr. Don Kelly, FM&M
Mr. Matt Stone, FM&M
Ms. Anetha Lue, Southdown

TABLE 1 - EMISSION TESTING SUMMARY

FLORIDA MINING & MATERIALS
KILN # 1 - BASELINE

BROOKSVILLE, FLORIDA

May 4, 1993

Parameter	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Avg	
	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)
THC	2.00	2.36	3.00	3.54	3.30	3.90	2.50	3.07	2.50	3.07	2.80	3.43	2.68	3.23
CO	37.50	28.12	41.00	30.74	40.00	29.99	43.00	33.58	46.50	36.32	40.00	31.15	41.33	31.65
NOx	167.27	206.05	191.96	236.46	160.20	197.34	151.30	194.14	148.46	190.49	129.98	166.31	158.20	198.47
SO2	< 1.00	< 1.71	< 1.00	< 1.71	< 1.00	< 1.71	< 1.00	< 1.79	< 1.00	< 1.79	< 1.00	< 1.78	< 1.00	< 1.75
O2 (orsat)	13.40 %		12.50 %		13.80 %		14.4 %		13.13 %		13.50 %		13.46 %	
CO2 (orsat)	12.38 %		12.80 %		12.20 %		12.6 %		12.20 %		11.50 %		12.28 %	
MOISTURE	10.50 %		10.50 %		10.50 %		10.7 %		10.70 %		10.70 %		10.60 %	
STACK TEMP.	251.20 F		251.20 F		251.20 F		249.6 F		249.60 F		241.30 F		249.02 F	
STACK FLOW RATE	171832 dscfm		171832 dscfm		171832 dscfm		178987 dscfm		178987 dscfm		178483 dscfm		175326 dscfm	

May 5, 1993

Parameter	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Avg	
	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)
THC	2.10	2.74	3.55	4.63	3.00	4.08	2.28	3.10	2.55	3.62	2.03	2.88	2.59	3.51
CO	37.20	30.79	39.80	32.94	36.00	31.08	35.00	30.22	35.75	32.23	35.00	31.55	36.46	31.47
NOx	98.20	133.54	136.14	185.13	147.02	208.53	170.67	242.08	149.48	221.36	131.25	194.37	138.79	197.50
SO2	<1.00	<1.89	<1.00	<1.89	<1.00	<1.97	<1.00	<1.97	<1.00	<2.06	<1.00	<2.06	<1.00	<1.98
O2 (orsat)	14.20 %		14.30 %		14.45 %		15.00 %		15.00 %		15.10 %		14.68 %	
CO2 (orsat)	10.80 %		10.80 %		10.55 %		11.00 %		11.00 %		10.85 %		10.83 %	
MOISTURE	9.00 %		9.00 %		8.30 %		8.30 %		8.30 %		8.30 %		8.53 %	
STACK TEMP.	250.88 F		250.88 F		247.83 F		247.83 F		244.54 F		244.54 F		247.75 F	
STACK FLOW RATE	189686 dscfm		189686 dscfm		197855 dscfm		197855 dscfm		206572 dscfm		206572 dscfm		198038 dscfm	

TABLE 2 - EMISSION TESTING SUMMARY

FLORIDA MINING & MATERIALS
KILN # 1 - TDF ***

BROOKSVILLE, FLORIDA

June 8, 1993

Parameter	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Avg	
	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)
THC	2.32	2.78	2.17	2.60	2.26	2.62	2.92	3.38	2.12	2.60	2.37	2.91	2.36	2.81
CO	86.10	65.45	52.00	39.53	90.90	66.91	67.80	49.91	61.20	47.67	90.00	70.10	74.67	56.59
NOx	94.20	117.64	73.20	91.42	110.90	134.11	134.30	162.41	177.80	227.51	186.70	238.89	129.52	162.00
SO2	< 0.60	< 1.04	< 0.20	< 0.35	< 0.50	< 0.84	< 0.30	< 0.50	< 0.80	< 1.42	< 0.40	< 0.71	< 0.47	< 0.81
O2 (orsat)	14.20 %		14.30 %		13.10 %		12.3 %		13.30 %		13.80 %		13.50 %	
CO2 (orsat)	11.80 %		9.70 %		11.90 %		11.7 %		11.70 %		12.20 %		11.50 %	
MOISTURE	9.90 %		9.90 %		10.20 %		10.2 %		11.80 %		11.80 %		10.63 %	
STACK TEMP.	258.00 F		258.00 F		264.00 F		264.0 F		240.00 F		240.00 F		254.00 F	
STACK FLOW RATE	174208 dscfm		174208 dscfm		168693 dscfm		168693 dscfm		178489 dscfm		178489 dscfm		173797 dscfm	

June 9, 1993

Parameter	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Avg	
	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)
THC	3.87	4.79	2.98	3.69	2.58	3.20	2.64	3.24	3.03	3.72	3.02	3.63	3.02	3.71
CO	66.20	52.09	52.40	41.23	51.00	40.13	47.60	37.09	51.20	39.90	51.70	39.51	53.35	41.66
NOx	128.90	166.62	146.50	189.37	189.30	244.70	207.40	265.53	194.30	248.76	160.70	201.74	171.18	219.45
SO2	< 0.50	< 0.90	< 0.10	< 0.18	< 0.70	< 1.26	< 0.40	< 0.71	< 0.40	< 0.71	< 0.40	< 0.70	< 0.42	< 0.74
O2 (orsat)	14.50 %		14.00 %		13.10 %		13.90 %		13.80 %		13.70 %		13.83 %	
CO2 (orsat)	10.50 %		12.00 %		11.90 %		12.10 %		12.20 %		12.10 %		11.80 %	
MOISTURE	10.00 %		10.00 %		10.00 %		9.50 %		9.50 %		10.10 %		9.85 %	
STACK TEMP.	242.00 F		242.00 F		242.00 F		255.00 F		255.00 F		247.00 F		247.17 F	
STACK FLOW RATE	180315 dscfm		180315 dscfm		180315 dscfm		178588 dscfm		178588 dscfm		175121 dscfm		178874 dscfm	

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

		Method 25A	
		THC	
Run		Baseline	TDF
		lb/hr	lb/hr
	1	2.36	2.78
	2	3.54	2.60
	3	3.90	2.62
	4	3.07	3.38
	5	3.07	2.6
	6	3.43	2.91
	7	2.74	4.79
	8	4.63	3.69
	9	4.08	3.2
	10	3.1	3.24
	11	3.62	3.72
	12	2.88	3.63
Mean		3.37	3.26
S var		0.40	0.41
n		12.00	12.00
Pooled est		0.64	
t stat.		0.40	
t' (95% C.I.)		1.717	
Difference is not significant			

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Method 10	
	CO	TDF
	Baseline	TDF
	lb/hr	lb/hr
1	28.12	65.45
2	30.74	39.53
3	29.99	66.91
4	33.58	49.91
5	36.32	47.67
6	31.15	70.1
7	30.79	52.09
8	32.94	41.23
9	31.08	40.13
10	30.22	37.09
11	32.23	39.9
12	31.55	39.51
Mean	31.56	49.13
S var	4.26	144.73
n	12.00	12.00
Pooled est	8.63	
t stat.	4.99	
t' (95% C.I.)	1.717	
Difference is significant		

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Method 7E	
	NOx Baseline lb/hr	TDF lb/hr
1	206.05	117.64
2	236.46	91.42
3	197.34	134.11
4	194.14	162.41
5	190.49	227.51
6	166.31	238.89
7	133.54	166.62
8	185.13	189.37
9	208.53	244.7
10	242.08	265.53
11	221.36	248.76
12	194.37	201.74
Mean	197.98	190.73
S var	868.50	3224.02
n	12.00	12.00
Pooled est	45.24	
t stat.	0.39	
t' (95% C.I.)	1.717	
Difference is not significant		

Florida Mining & Materials
Comparison of Baseline and TDF Tests

Run	Method 6C	
	SO2 Baseline lb/hr	TDF lb/hr
1	<1.71	1.04
2	<1.71	0.35
3	<1.71	0.84
4	<1.79	0.5
5	<1.79	1.42
6	<1.78	0.71
7	<1.89	0.9
8	<1.89	0.18
9	<1.97	1.26
10	<1.97	0.71
11	<2.06	0.71
12	<2.06	0.7
Mean	<1.86	0.78

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Orsat O ₂ Baseline %	TDF %
1	13.40	14.20
2	12.50	14.30
3	13.80	13.10
4	14.40	12.30
5	13.13	13.30
6	13.50	13.80
7	14.20	14.50
8	14.30	14.00
9	14.45	13.10
10	15.00	13.90
11	15.00	13.80
12	15.10	13.70
Mean	14.07	13.67
S var	0.66	0.38
n	12.00	12.00
Pooled est	0.72	
t stat.	1.35	
t' (95% C.I.)	1.717	
Difference is not significant		

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Orsat CO2	
	Baseline %	TDF %
1	12.38	11.80
2	12.80	9.70
3	12.20	11.90
4	12.60	11.70
5	12.20	11.70
6	11.50	12.20
7	10.80	10.50
8	10.80	12.00
9	10.55	11.90
10	11.00	12.10
11	11.00	12.20
12	10.85	12.10
Mean	11.56	11.65
S var	0.67	0.58
n	12.00	12.00
Pooled est	0.79	
t stat.	0.29	
t' (95% C.I.)	1.717	
Difference is not significant		

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Stack Gas Moisture Baseline %	TDF %
1	10.50	9.90
2	10.50	10.20
3	10.70	11.80
4	9.00	10.00
5	8.30	9.50
6	8.30	10.10
Mean	9.55	10.25
S var	1.31	0.64
n	6.00	6.00
Pooled est	0.99	
t stat.	1.23	
t' (95% C.I.)	1.812	
Difference is not significant		

Florida Mining & Materials
Comparison of Baseline and TDF Tests

Run	Stack Temperature	
	Baseline	TDF
	F	F
1	251.20	258.00
2	249.60	264.00
3	241.30	240.00
4	250.88	242.00
5	247.83	255.00
6	244.54	247.00
Mean	247.56	251.00
S var	15.36	90.40
n	6.00	6.00
Pooled est	7.27	
t stat.	0.82	
t' (95% C.I.)	1.812	
Difference is not significant		

Florida Mining & Materials
 Comparison of Baseline and TDF Tests

Run	Stack Flow Rate	
	Baseline dscfm	TDF dscfm
1	171832	174208
2	178987	168693
3	178483	178489
4	189686	180315
5	197855	178588
6	206572	175121
Mean	187236	175902
S var	174918157	17766202
n	6	6
Pooled est	9815	
t stat.	2.00	
t' (95% C.I.)	1.812	
Difference is significant		

Florida Mining & Materials
Comparison of Baseline and TDF Tests

PM

Run	Baseline lb/hr	TDF lb/hr
1	6.15	11.30
2	6.99	7.33
3	8.00	8.75
Mean	7.05	9.13
S var	0.86	4.05
n	3.00	3.00
Pooled est	1.57	
t stat.	1.63	
t' (95% C.I.)	2.132	

Difference is not significant



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Koogler

PROJECT: 521-93-03

SENT BY: Nendy

DATE: 6/21/93

FAX PHONE: 904-377-7158

The text being transmitted consists of 16 pages PLUS this one.

REMARKS: _____

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
PATRICIA A. RENOVITCH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

NORMAN H. HORTON, JR.
OF COUNSEL

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

J. R. SUBRAMANI, PH. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

June 9, 1993

RECEIVED

JUN 09 1993

Division of Air
Resources Management

Mr. Bruce Mitchell
Department of Environmental Regulation
Division of Air Resources
2600 Blair Stone Road
Tallahassee, FL 32399

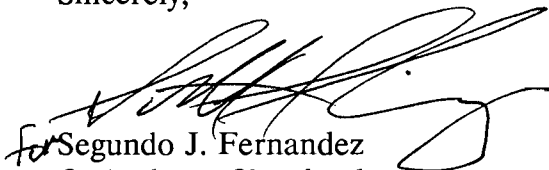
Re: Southdown, Inc., d/b/a Florida Mining and Minerals; Tire-Derived Fuel Test
Burn

Dear Mr. Mitchell:

As you know, Southdown, Inc., d/b/a Florida Mining and Minerals (FMM) is currently in the process of conducting a tire-derived fuel test burn in furtherance of a request to the Department of Environmental Regulation for permit authorization to burn tire-derived fuel as a partial substitute to coal. Enclosed is a letter to FMM with attached comments from David Buff, KBN Engineering, Inc., indicating the County's concerns with the validity of the plant's baseline testing. Our letter requests that the company perform additional baseline testing to ensure an appropriate comparison of tire-derived fuel test results.

Please contact me if you have any questions or comments.

Sincerely,


for Segundo J. Fernandez
C. Anthony Cleveland

SS:cjb/1579

Enclosure

cc: B. Thomas

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
PATRICIA A. RENOVITCH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

NORMAN H. HORTON, JR.
OF COUNSEL

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

J. P. SUBRAMANI, PH. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

June 9, 1993

John B. Koogler, Ph.D., P.E.
Koogler & Associates
Environmental Services
4014 NW Thirteenth Street
Gainesville, FL 32609

Re: Southdown, Inc., d/b/a Florida Mining and Minerals – Substitute Tire-Derived Fuel Testing

Dear Mr. Koogler:

As you know, an agreement was signed February 12, 1993, between the Board of County Commissioners and your client, Southdown, Inc., d/b/a Florida Mining and Minerals (FMM). Pursuant to the agreement, Mr. David Buff, with KBN Engineering, was hired by the County to observe the FMM tire-derived fuel testing and advise the Board of County Commissioners of the test results and their significance.

Baseline testing on Southdown kiln 1 was conducted on May 4 and 5, 1993, and testing with up to 20% tire-derived fuel was to be conducted on May 12, 1993, but was delayed. We understand that this testing has now commenced and is under way. Transmitted herewith is a letter prepared by Mr. Buff providing comments to the County concerning the adequacy of the testing.

Mr. Buff's letter indicates that there were several significant deviations from what he feels is the acceptable testing protocol and methodology for obtaining appropriate baseline test information to which tire-derived fuel test emissions may be compared. Accordingly, Mr. Buff recommends additional baseline testing be conducted subsequent to the date on which the tire-derived fuel testing is concluded. Mr. Buff feels that this will help to ensure that baseline and tire-derived fuel testing is conducted under the most similar conditions.

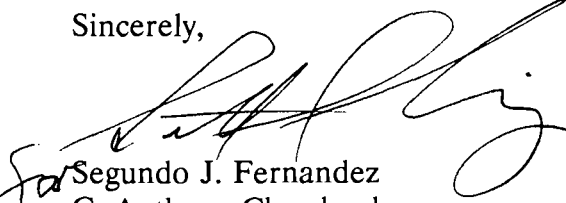
Accordingly, the County requests that the company implement Mr. Buff's recommendations and retest for baseline conditions beginning the sixth day after the tire-derived fuel testing is concluded. If for any reason you disagree with Mr. Buff's

John B. Koogler, Ph.D., P.E.
June 9, 1993
Page 2

assessment or otherwise decide not to conduct the additional recommended baseline testing, please so advise the County in writing.

If you have any questions or comments, please contact me.

Sincerely,



For Segundo J. Fernandez
C. Anthony Cleveland

SS:cjb/1579

cc: Don Kelly, Plant Manager



June 3, 1993

RECEIVED

JUN 8 1993

Mr. Larry Jennings, Manager
Hernando County Planning Department
20 North Main Street, Room 262
Brooksville, Florida 34601

OERTEL, HOFFMAN,
FERNANDEZ & COLE, P.A.

Re: Florida Mining & Materials WTDF Test Burn

Dear Mr. Jennings:

The purpose of this correspondence is to bring to your attention certain concerns over the upcoming WTDF testing at FMM/Southdown. As you are aware, the baseline testing on Kiln 1 at FMM utilizing 100 percent coal as fuel was conducted on May 4-5, 1993. WTDF testing using up to 20 percent WTDF as fuel to the kiln was planned for May 11-12, 1993. However, due to operational problems with the kiln, this test was first delayed and then was postponed as the kiln was shutdown for repairs and maintenance. Testing conducted on May 12, just prior to the kiln shutdown, indicated large fluctuations in CO emissions from the kiln. These fluctuations were not observed during the baseline testing, and it is not clear if these were due to the equipment problems or due to other reasons.

According to FMM plant manager Don Kelly, the kiln system was restarted on May 21 after undergoing maintenance and repair. The kiln was brought on-line while burning oil, which is the normal startup procedure, followed by 100 percent coal firing. The kiln then continued to operate until June 2, when a short outage was experienced (cause not known by KBN at this time). Mr. Kelly expects the kiln to resume operation today (June 2), and for WTDF firing to begin the morning of June 3. This schedule would provide 5 days of WTDF firing prior to the WTDF testing period, as stated in the test protocol.

Based on the course of events since the baseline testing was conducted, there are several areas of concern related to the acceptability of the overall testing program. The first concern is that the baseline testing will have been conducted approximately one month prior to the WTDF testing. During this period of time, significant differences in raw feed composition, coal quality, and other operational parameters may have occurred. These changes could in turn affect air emissions. Therefore, it may be more difficult to compare baseline emissions to WTDF emissions on the same basis. The test protocol allowed only 5 calendar days between baseline and WTDF testing. The 5 day period was considered to be the minimum time required to allow the entire system to reach equilibrium after the fuel switch. This relatively short period would result in the least chance for process and operational variability in the kiln system to occur, thus allowing easier comparison of coal and WTDF emissions. We would like for FMM to provide reasonable assurance that kiln parameters during the baseline and WTDF testing will be sufficiently similar as to not jeopardize the comparison of test results. This information could include raw feed analysis, coal quality data, kiln operating data, etc.

13076A1/1

KBN ENGINEERING AND APPLIED SCIENCES, INC.

1034 North West 57th Street
Gainesville, Florida 32608
404-331-7000 FAX 904-331-1189

5680 West Cypress Street, Suite 1
Tampa, Florida 33607
813-287-1717 FAX 813-287-1716

1801 Clint Moore Road, Suite 105
Boca Raton, Florida 33487
407-994-9910 FAX 407-994-9393

One Church Street, Suite 801
Rockville, Maryland 20850
301-738-1100 FAX 301-738-1105





The second concern is that the repairs and maintenance performed on Kiln 1 will have altered the air emissions associated with the kiln. Mr. Kelly mentioned that a kiln outage had been scheduled for March 1993, but due to high cement sales and client demands, the outage was postponed. This apparently led to the subsequent operational problems with the kiln that resulted in the shutdown on May 13. We would like FMM to provide a listing of the repairs and/or maintenance performed on Kiln 1 and a description of each, whether these were planned maintenance items or unplanned items, and the affects that each would have on kiln/preheater operation and associated air emissions. Again, our concern is that the testing as now planned may not be comparing apples to apples.

As an option to providing the requested data and assurances, FMM may consider re-testing for baseline conditions beginning on the sixth day after WTDF testing is concluded. This would be the most valid way of insuring that baseline and WTDF testing is conducted under the most similar conditions.

Our goal is not to create additional, unnecessary requests or testing for FMM. However, this project will undergo review by the Florida Department of Environmental Regulation, and public scrutiny and evaluation before the Hernando County Board of Commissioners. Therefore, the testing program must have the highest level of credibility and acceptability.

Please call if you have any questions concerning this matter.

Sincerely,

David A. Buff, M.E., P.E.
Principal Engineer

cc: Kathy Liles
~~Tony Cleveland~~



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

May 13, 1993

RECEIVED
MAY 17 1993
Division of Air
Resources Management

Mr. Chi-Sun Lee
Florida Department of
Environmental Regulation
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Subject: WTDF Performance Test
Southdown, Inc. dba Florida Mining & Materials
Brooksville, Florida

Dear Mr. Lee:

Due to equipment failure at Kiln No. 1, the tests scheduled for this week have been postponed. Kiln No. 1 has been shutdown for repairs which may require one to two weeks. The performance tests will be rescheduled as soon as the plant is operational.

If you have any questions, please give me a call.

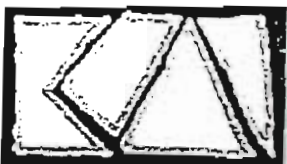
Very truly yours,

KOOGLER & ASSOCIATES

N. Mason Joye, Jr.
N. Mason Joye, Jr.

NMJ:wa

c: Mr. Clair Fancy, FDER, Tallahassee
Mr. Bruce Mitchell, FDER, Tallahassee
Ms. Jewell Harper, EPA, Atlanta
Mr. John Bunyak, National Park Service
Mr. Charles Hetrick, HCBC
Mr. D. Beason, Esq., OGC, FDER
Ms. Anetha Lue, P.E., Southdown, Inc.
Mr. Armajit Gill, P.E., Southdown, Inc.
Mr. Don Kelly, Florida Mining & Materials
Mr. Tony Cleveland, Esq., Oertel, Hoffman et al
Mr. David Dee, Esq., Carlton, Fields et al
Mr. David Buff, KBN Engineering, Gainesville



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

FAX TRANSMITTAL FORM

TO: Howard Rhodes
Bruce Mitchell

FROM: John Koogler

PROJECT: 521-93-03

SENT BY: Sonja

DATE: 11 May 93

FAX PHONE: 904-377-7158

The text being transmitted consists of _____ pages
PLUS this one.

REMARKS: _____



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-93-03

May 11, 1993

VIA FAX

Mr. Chi-Sun Lee
Florida Department of
Environmental Regulation
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Subject: WTDF Performance Test
Southdown, Inc. dba Florida Mining and Materials
Brooksville, Florida

Dear Mr. Lee:

The performance test to evaluate the use of whole-tire derived fuel (TDF) at Florida Mining and Materials has been postponed until May 12, 1993.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Howard Rhodes, FDER, Tallahassee
Mr. Bruce Mitchell, FDER, Tallahassee
Ms. Jewell Harper, EPA, Atlanta
Mr. John Bunyak, National Park Service
Mr. Charles Hetrick, HCBC
Mr. D. Beason, Esq., OGC, FDER
Ms. Anetha Lue, P.E., Southdown, Inc.
Mr. Armajit Gill, P.E., Southdown, Inc.
Mr. Don Kelly, Florida Mining & Materials
Mr. Tony Cleveland, Esq., Oertel, Hoffman et al
Mr. David Dee, Esq., Carlton, Fields et al
Mr. David Buff, KBN Engineering, Gainesville



ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

May 3, 1993

RECEIVED

MAY 05 1993

Division of Air
Resources Management

VIA FAX

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

Subject: Test Protocol for Use of WTDF
Southdown, Inc. dba Florida Mining & Materials
Brooksville, Florida

Dear Mr. Mitchell:

In accordance with the test protocol previously submitted, Florida Mining & Materials (FM&M) began burning coal in Kiln No. 1 on Tuesday, April 27, 1993, to stabilize the unit for baseline tests scheduled for May 4 and 5, 1993. The tests protocol, on page 5 states, "The No. 1 kiln system, will have a four day period for the plant to stabilize on coal, ... prior to the two day baseline tests period."

On Thursday, April 29, the kiln was down for 14.4 hours and on April 30, the kiln was down for 4.3 hours. Kiln No. 1 has been up and running on coal since 19:43 hours on April 30, 1993.

All of the above has been discussed with Mr. Dave Buff of KBN Engineering; the consultant for Hernando County. Mr. Buff agrees that the kiln will have had plenty of time to stabilize by May 4, 1993, and baseline tests can begin at that time (approximately 08:00 hours on May 4, 1993).

This memo is to clarify the stabilization period prior to the testing in case questions arise later.

Mr. Bruce Mitchell
Florida Department of
Environmental Regulation

May 3, 1993
Page 2

If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOGLER & ASSOCIATES

N. Mason Joye, Jr.
N. Mason Joye, Jr.

NMJ:wa

c: Mr. Howard Rhodes, FDER, Tallahassee
Mr. Charles Hetrick, HCBC
Mr. D. Beason, Esq., OGC, FDER
Mr. Chi-Sun Lee, FDER, Tampa
Ms. Anetha Lue, P.E., Southdown, Inc.
Mr. Armajit Gill, P.E., Southdown, Inc.
Mr. Don Kelly, Florida Mining & Materials
Mr. Tony Cleveland, Esq., Oertel, Hoffman et al
Mr. David Dee, Esq., Carlton, Fields et al
Mr. David Buff, KBN Engineering, Gainesville



**KOOGLER & ASSOCIATES****ENVIRONMENTAL SERVICES**4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 521-92-01

April 26, 1993

VIA FAXMr. Chi-Sun Lee
Florida Department of
Environmental Regulation
Southwest District Office
3804 Coconut Palm Drive
Tampa, FL 33619-8318Subject: Air Emission Measurements
Southdown dba Florida Mining & Materials
No. 1 Cement Kiln (Permit No. A027-213207)

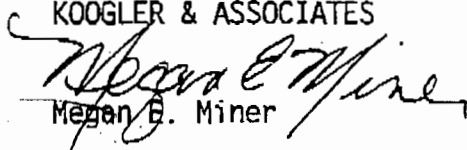
Dear Mr. Lee:

On April 23, 1993, Koogler & Associates Environmental Services scheduled the air emission measurements to be conducted on the No. 1 Cement Kiln at Florida Mining & Materials. In addition to the emission parameters scheduled by our letter dated April 23, 1993, emission measurements will be conducted for hydrogen chloride, dioxins and furans, in accordance with EPA Methods 26 and 23, as described in 40CFR60, Appendix A.

If you have any questions concerning this schedule, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES


Megan E. Minerc: Ms. Anetha Lue, Southdown
Mr. Jeet Gill, Southdown
Mr. Don Kelly, Florida Mining & Materials
Mr. Howard Rhodes, FDER-Tallahassee
Mr. Bruce Mitchell, FDER-Tallahassee
Ms. Jewell Harper, Environmental Protection Agency
Mr. John Bunyak, National Park Service
Mr. Charles Hetrick, Hernando County
Mr. D. Beason, FDER-OGC
Mr. David Buff, KBN Engineering
Mr. Anthony Cleveland, Oertel & Hoffman
Mr. David Dee, Carlton, Fields



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

FAX TRANSMITTAL FORM

RECEIVED
APR 27 1993
Division of Air
Resources Management

TO: Mr. Howard Rhodes
Bruce Mitchell

FROM: Ms. Megan Miner

PROJECT: KA 521-92-01

SENT BY: Sonyia

DATE: 24 Apr 93

FAX PHONE: 904-377-7158

The text being transmitted consists of 1 pages
PLUS this one.

REMARKS: _____



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

RECEIVED

APR 28 1993

**Division of Air
Resources Management**

KA 521-92-01

April 23, 1993

VIA FAX

Mr. Chi-Sun Lee
Florida Department of
Environmental Regulation
Southwest District Office
3804 Coconut Palm Drive
Tampa, FL 33619-8318

Subject: Air Emission Measurements
Southdown dba Florida Mining & Materials
No. 1 Cement Kiln (Permit No. A027-213207)

Dear Mr. Lee:

As per our telephone conversation, I would like to confirm that Koogler & Associates Environmental Services will conduct air emission measurements on the No. 1 Cement Kiln at Florida Mining & Materials, in Brooksville, Florida on May 4-5 and 11-23, 1993.

Emission measurements will be conducted for particulate matter, sulfur dioxide, nitrogen oxide, carbon monoxide and total hydrocarbons, in accordance with EPA Methods 5, 6, 7E, 10, and 25A. Visible emissions observations will be taken in accordance with EPA Method 9. All EPA methods are described in 40CFR60, Appendix A. Benzene emission measurements will be conducted with VOST-SW846-0030. Metals will be measured with the Multi-Metals Train Method SW846-0012.

The performance tests scheduled for May 4-5, 1993 will be conducted while the No. 1 Cement Kiln is burning 100% coal. The performance tests scheduled for May 11-12, 1993 will be conducted while the No. 1 Cement Kiln is burning coal and WTDF.

Mr. Chi-Sun Lee
Florida Department of
Environmental Regulation

April 23, 1993
Page 2

If you have any questions concerning this schedule, please do not hesitate to give me a call.

Very truly yours,

KOUGLER & ASSOCIATES



Megan E. Miner

c: Ms. Anetha Lue, Southdown
Mr. Jeet Gill, Southdown
Mr. Don Kelly, Florida Mining & Materials
Mr. Howard Rhodes, FDER-Tallahassee
Mr. Bruce Mitchell, FDER-Tallahassee
Ms. Jewell Harper, Environmental Protection Agency
Mr. Scott Bunyak, National Park Service
Mr. Charles Hetrick, Hernando County
Mr. D. Beason, FDER-OGC
Mr. David Buff, KBN Engineering
Mr. Anthony Cleveland, Oertel & Hoffman
Mr. David Dee, Carlton, Fields





KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5622 • FAX 377-7158

FAX TRANSMITTAL FORM

TO: Mr. Donald Brooks
Mr. Bruce Mitchell

FROM: Agan Miner

RECEIVED
APR 27 1993
Division of Air
Resources Management

PROJECT: 521-92-01

SENT BY: _____

DATE: 4/23

FAX PHONE: 904-377-7158

The text being transmitted consists of 2 pages
PLUS this one.

REMARKS: Please disregard previous
fax - Thank you

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500
FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

CHARLES A. CULP
RALPH A. DEMEO
JAMES C. GOODLETT
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
JULIE B. ROME
KRISTIN C. RUBIN
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOKES

February 28, 1992

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

RECEIVED

FEB 28 1992

Division of Air
Resources Management

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to your Order dated February 7, 1992, FMM has until February 28, 1992 to file a petition for administrative proceedings regarding the permits.

I am writing on behalf of FMM to request an extension of sixty (60) additional days, to and including April 28, 1992, in which to file a petition for administrative proceedings regarding the permits. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. As proposed, the amended permits contain fourteen specific conditions that would establish various requirements applicable to performance testing and related matters.

Carol M. Browner, Secretary
February 28, 1992
Page 2

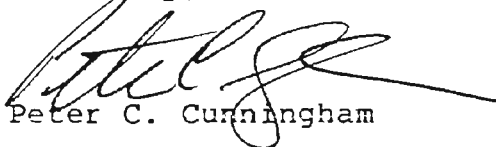
2. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

3. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Bruce Mitchell, of the Department's Bureau of Air Regulation, regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including April 28, 1992.

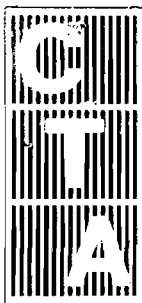
Sincerely,



Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell
W. Douglas Beason, Esquire
Segundo Fernandez, Esquire
Don Kelly
Diane Schenke, Esquire



CROSS/TESSITORE & ASSOCIATES, P.A.

4763 S. CONWAY ROAD, SUITE F.
ORLANDO, FLORIDA 32812
407/851-1484

D. E. R.

April 30, 1991

MAY 2 1991

SOUTHWEST DISTRICT
TAMPA

Mr. Bill Thomas, P.E.
Air Engineering Section
FDER - Southwest District
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

Subject: Florida Mining & Materials
Performance Testing on Kilns No. 1 and No. 2
Proof of Publication
C/TA # F03.669

Dear Mr. Thomas:

Please find enclosed the affidavit of legal publication,
dated April 24, 1991, on the subject notice of Intent to
Issue for Performance Testing on Kilns No. 1 and No.2
located in Brooksville, Florida.

Should you have any questions, please do not hesitate to
contact me.

Sincerely,

Gregory R. Gonzales
Environmental Specialist

GRG:slw
Enc: a/s
cc: Ralph Shepard - FM&M

B. Mitchell ✓
O. Harper, EPA
E. Sawyer, OPS

AFFIDAVIT OF LEGAL PUBLICATION

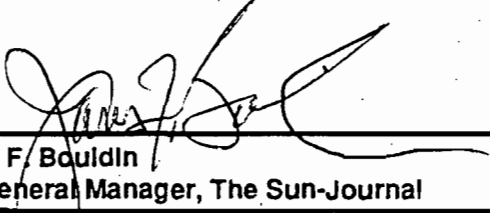
The Sun-Journal
Published Wednesday
Brooksville, Hernando, Florida
STATE OF FLORIDA
COUNTY OF HERNANDO

Best Available Copy

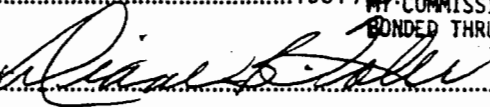
Before the undersigned authority personally appeared J.F. Bouldin, who on oath says he is General Manager of the Sun-Journal, a weekly newspaper published at 703 Lamar Ave., Brooksville in Hernando County, Florida; that the attached copy of advertisement, being a legal advertisement in

the matter of Notice of Intent
in the _____ Court
was published in said newspaper in the issues of _____
4-24

Affiant says that the said Sun-Journal is a newspaper published at 703 Lamar Ave., Brooksville, in said Hernando County, Florida, and that said newspaper has heretofore been continuously published in said Hernando County, Florida, each Wednesday and has been entered as second-class mail matter at the post office in Brooksville, in said Hernando County, Florida, for a period of 1 year next preceding the first publication of the attached copy of advertisement; and 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. F. Bouldin
General Manager, The Sun-Journal

Sworn to and subscribed before me this 24th day of April 1991

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. SEPT. 27, 1994
BONDED THRU GENERAL INS. UND.
BY 
Notary Public

Filed.....19....., at.....O'clock.....M. and Recorded in.....

Book No....., Page.....

Record Verified.....

Clerk,.....Court, Hernando County, FL

By.....D.C.

Environmental
Regulation
Notice of Intent
to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit amendment to Florida Mining & Materials (FM&M), Post Office Box 6, Brooksville, Florida 34605-0006, to conduct performance tests on the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input of the Nos. 1 and 2 Cement Kilns. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version).

Although the applicant, FM&M, expects that there will be no actual pollutant emission increases, the Nos. 1 and 2 Cement Kilns are not permitted to fire these fuel mixtures and such claims will have to be verified. The purpose of this amendment is to allow FM&M the opportunity to obtain the data necessary to determine whether the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configurations and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis. The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida. The Department is issuing this Intent to Issue for the reasons stated in the proposed letter amendment to air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

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 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

Best Available Copy

- 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 applications 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

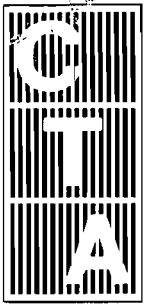
waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The applications are available for public inspection during 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 Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Department of Environmental Regulation
Southwest District Office
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347
Hernando County Board of County Commission
20 North Main Street, Room 460
Brooksville, Florida 34601

Any person may send written comments on the proposed action to Mr. Bary Andrews 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.

PUBLISH: April 24, 1991



CROSS/TESSITORE & ASSOCIATES, P.A.

4763 S. CONWAY ROAD, SUITE F
ORLANDO, FLORIDA 32812
407/851-1484

April 19, 1991
F03.182

D. E. R.

APR 22 1991

SOUTHWEST DISTRICT
TAMPA

Mr. Bill Thomas, P.E.
Air Engineering Section
FDER-Southwest District
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

SUBJECT: Florida Mining & Materials
Kiln No. 1 Auxiliary Sources
Proof of Publication

Dear Mr. Thomas:

Please find enclosed the affidavit of legal publication, dated April 17, 1991, on the subject notice of Intent to Issue for modification of Kiln No. 1 auxiliary sources located in Brooksville, Florida.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Gregory R. Gonzales
Environmental Specialist

GRG:kim
Enc.a/s
cc: Ralph Shepard FM&M

J. Reynolds

AFFIDAVIT OF LEGAL PUBLICATION

The Sun-Journal
Published Wednesday
Brooksville, Hernando, Florida
STATE OF FLORIDA
COUNTY OF HERNANDO

Before the undersigned authority personally appeared
J.F. Bouldin, who on oath says he is General Manager of the Sun-
Journal, a weekly newspaper published at 703 Lamar Ave.,
Brooksville in Hernando County, Florida; that the attached copy
of advertisement, being a legal advertisement in

the matter of Notice of Intent
in the Court
was published in said newspaper in the issues of
4-17

Affiant says that the said Sun-Journal is a newspaper
published at 703 Lamar Ave., Brooksville, in said Hernando
County, Florida, and that said newspaper has heretofore been
continuously published in said Hernando County, Florida, each
Wednesday and has been entered as second-class mail matter
at the post office in Brooksville, in said Hernando County, Florida,
for a period of 1 year next preceding the first publication of the
attached copy of advertisement; and 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.

[Signature]
J. F. Bouldin
General Manager, The Sun-Journal

Sworn to and subscribed before me this 17th day of

April 1991 A.D.
NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP SEPT. 27, 1994
BONDED THRU GENERAL INS. LTD.
[Signature]
Notary Public

Filed 19..... atO'clock.....M. and Recorded in.....
Book No....., Page.....
Record Verified.....
Clerk,.....Court, Hernando County, FL
By.....D.C.

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 permits to Florida Mining
and Materials, P.O. Box 6, Brooksville, Florida 34605-
6000, to modify permits for kiln No. 1 auxiliary sources at their
Brooksville cement plant. The permit modifications involve
adjustments to current limits for production rate, operating
hours and emissions, in order to make them consistent with
other recent permit changes. The net change in the pro-
posed annual emissions versus current actual emissions is
essentially zero. These permit modifications do not involve
processing or combustion of hazardous wastes or toxic
materials. The applicant's facility is located off U.S. 98
Highway 98 northwest of Brooksville, Florida 33823. A
determination of Best Available Control Technology
(BACT) was required. 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 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 designed to formulate agency action. Accordingly, the Department's final action may differ from the position taken by it in this Notice. Persons whose substantial interests will be affected by a 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 the 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 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 Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, Department of Environmental Regulation, Southwest District, 4520 Oak Fair Blvd., Tampa, Florida 33610-7347.
Any person may send written comments on the proposed action to Mr. Barry Andrews, 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.
PUBLISH: April 17, 1991

I N T E R O F F I C E M E M O R A N D U M

Date: 31-Dec-1991 11:35am EST
From: Iris Littleton (TAL)
LITTLETON_I
Dept: Office General Counsel
Tel No: 904/488-9730

TO: Remote Addressee (REVELL, DUANE)
CC: Janet Llewellyn (TAL) (LLEWELLYN_J)
CC: Pat Manning (TAL) (MANNING_P)
Subject: New OGC Case Assignments

TO: Duane Revell
FROM: Iris - OGC - Tallahassee

Received 12/26/91 request for an Administrative Hearing from Michael E. Savastio against intent to issue dredge and fill permit 52-176846-9 to Pinellas County.

Received 12/30/91 request for an Extension of Time from Florida Mining & Materials/Brooksville Cement Plant permits AC27-173474 and AC27-186923.

cc: B. Mitchell

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500
FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DE ROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

CHARLES A. CULP
JAMES C. GOODLETT
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
JULIE B. ROME
KRISTIN C. RUBIN
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOXES

December 30, 1991

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

RECEIVED

DEC 30 1991

Division of Air
Resource Management

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to your Order dated November 21, 1991, FMM has until December 30, 1991 to file a petition for administrative proceedings regarding the permits.

I am writing on behalf of FMM to request an extension of sixty (60) additional days, to and including February 28, 1992, in which to file a petition for administrative proceedings regarding the permits. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. As proposed, the amended permits contain fourteen specific conditions that would establish various requirements applicable to performance testing and related matters.

Carol M. Browner, Secretary
December 30, 1991
Page 2

2. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

3. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Bruce Mitchell, of the Department's Bureau of Air Regulation, regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including February 28, 1992.

Sincerely,


Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell
W. Douglas Beason, Esquire
Segundo Fernandez, Esquire
Don Kelly
Diane Schenke, Esquire

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 8526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

RECEIVED

OCT 30 1991

Division of Air
Resources Management

October 29, 1991

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOXES

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to your Order dated September 9, 1991, FMM has until October 29, 1991 to file a petition for administrative proceedings regarding the permits.

I am writing on behalf of FMM to request an extension of sixty-two (62) additional days, to and including December 30, 1991, in which to file a petition for administrative proceedings regarding the permits. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. As proposed, the amended permits contain fourteen specific conditions that would establish various requirements applicable to performance testing and related matters.

Carol M. Browner, Secretary
October 29, 1991
Page 2

2. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

3. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Bruce Mitchell, of the Department's Bureau of Air Regulation, regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including December 30, 1991.

Sincerely,


Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell ✓
W. Douglas Beason, Esquire
Segundo Fernandez, Esquire
Don Kelly
Diane Schenke, Esquire

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOKES

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOYMAN
WILLIAM L. BOYD
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DE ROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RICHARDS
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

RECEIVED

AUG 30 1991

Division of Air
Resources Management

August 30, 1991

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to your Order dated June 3, 1991, FMM has until August 30, 1991 to file a petition for administrative proceedings regarding the permit.

I am writing on behalf of FMM to request an extension of sixty (60) additional days, to and including October 29, 1991, in which to file a petition for administrative proceedings regarding the permit. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. The proposed permit amendments contain fourteen specific conditions that would establish various requirements applicable to the performance testing and related matters.

Carol M. Browner, Secretary
August 30, 1991
Page 2


2. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

3. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Bruce Mitchell of the Department's Bureau of Air Regulation, regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including October 29, 1991.

Sincerely,



Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell ✓
W. Douglas Beason, Esquire
Segundo Fernandez, Esquire
C. M. Coleman, Jr.
Diane Schenke, Esquire

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500
FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DE ROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH
OF COUNSEL
W. ROBERT FOKES

July 29, 1991

BY HAND DELIVERY

Mr. Steve Smallwood
Director, Division of Air Resources
Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
JUL 29 1991
Division of Air
Resources Management

Re: Florida Mining & Materials;
Request For Approval of New Stack at
Brooksville Cement Plant Kiln No. 1
Permit No. AC 27-186923

Dear Steve:

I am writing on behalf of Florida Mining & Materials (FMM) to clarify a statement made in your letter of June 25, 1991 to Mr. Don Kelly, Manager of the Brooksville Cement Plant, regarding the referenced matter. Your letter indicated that the Department does not object to FMM's request to construct a new stack for Kiln No. 1, but noted that "you will not be able to take credit for the increased plume rise by combining the 16 baghouse system flues (i.e., in any future modeling demonstrations)."

Joe Tessitore and I contacted Tom Rogers of the Bureau of Air Monitoring and Assessment to discuss this statement, and based upon that conversation we understand that it is intended solely to acknowledge that provisions of the Department's stack height rule (Florida Administrative Code Rule 17-2.270) may, in some cases, prohibit taking credit for certain "dispersion techniques" in modeling demonstrations. Mr. Rogers agreed that credit can be taken for the new stack height (150 feet), and that the referenced rule only precludes modeling credit for any increased "plume rise" that is associated with a new stack configuration. The attached letter from Mr. Tessitore sets forth pertinent facts about the new stack proposed for Kiln No. 1 which

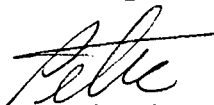
Mr. Steve Smallwood
July 29, 1991
Page 2

demonstrate that there will be no increase in exhaust gas temperature and no increase (in fact a reduction) in exhaust gas exit velocity. Consequently, FMM understands that full modeling credit may be taken for the new stack parameters, which is the approach taken in the modeling analysis presented in the pending application (dated June 7, 1991) for approval of a test burn of solid hazardous waste fuel at Kiln No. 1.

In reliance upon this understanding, FMM intends to commence construction of the new stack for Kiln No. 1, at a cost of approximately \$1.3 million, within one week of the date of this letter unless the Department advises of any disagreement with FMM's analysis regarding the modeling credit allowable for the new stack.

The Department's continued consideration in this matter is much appreciated. Should you or members of your staff have any questions, please do not hesitate to call me.

Sincerely,

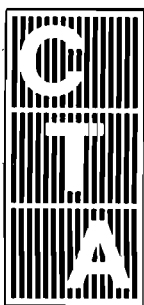


Peter C. Cunningham

/kkm:Smallwood

cc: Clair Fancy
Tom Rogers
Diane Schenke, Esquire
Don Kelly
Joe Tessitore

Attachment



CROSS/TESSITORE & ASSOCIATES, P.A.

4763 S. CONWAY ROAD, SUITE F
ORLANDO, FLORIDA 32812
407/851-1484

RECEIVED

JUL 23 1991

Hopping Boyd
Green & Sams

July 22, 1991

Mr. Peter C. Cunningham
Hopping Boyd Green & Sam
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314

Subject: Florida Mining & Materials
(C/TA # F03.360)

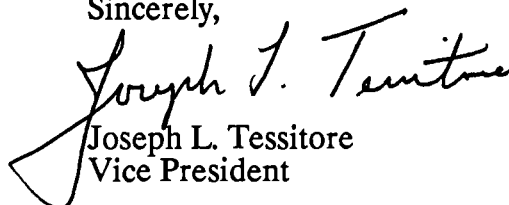
Dear Mr. Cunningham:

This letter is to address the statement contained in the June 25 letter from Mr. Steve Smallwood (FDER) regarding increased plume rise resulting from the proposed No. 1 Cement Kiln Stack modification. This modification will consist of combining the exhaust gas flows currently exiting 16 baghouse vents to one common stack. The letter from Mr. Smallwood states that credit cannot be taken for increased plume rise resulting from this modification. I have reviewed DER 17-2.270 Stack Height Policy which provides the relevant regulation and provides a description of dispersion techniques to effect such plume rise. I have concluded that there would be no increase in plume rise, associated with the proposed stack modification, as disallowed by the referenced regulation. The following facts support this conclusion:

- 1) The proposed stack height (150 ft) is less than 65 meters.
- 2) The proposed stack modification will not affect the exhaust gas flow temperature.
- 3) The proposed stack modification will effect a reduction in exhaust gas exit velocity, thus resulting in a decrease in plume rise due to the velocity component. The attached analysis provides supporting calculations for comparing current and proposed exit velocities.

Should you have any questions or comments regarding this information, please do not hesitate to contact me.

Sincerely,


Joseph L. Tessitore
Vice President

JLT/slw
cc: Diane Schenke, Southdown
C3576.Doc

REGISTERED PROFESSIONAL ENGINEERS

Federal ID # 59-1638534

NO. 1 CEMENT KILN

Current Velocity: (16 Baghouse Vents)

Total Exhaust Flow = 275,000 ACFM

Existing Baghouse Vent Dimensions = 35" x 22"

Existing Baghouse Vent Cross Sectional Area = 5.35 sf (per vent 16 total)

$$\begin{aligned}\text{Velocity} &= \frac{(275,000 \text{ CF/M})}{(60 \text{ S/M} (16) (5.35 \text{ sf}))} \\ &= 53.5 \text{ FPS}\end{aligned}$$

Proposed Velocity: (Single Common Stack)

Total Exhaust Flow = 275,000 ACFM

Proposed Baghouse Stack Diameter = 13.0 ft

Proposed Baghouse Stack Cross Sectional Area = 132.73 sf

$$\begin{aligned}\text{Velocity} &= \frac{(275,000 \text{ CF/M})}{(60 \text{ S/M} (132.73 \text{ sf}))} \\ &= 34.5 \text{ FPS}\end{aligned}$$

Current Velocity > Proposed Velocity

Thus no increase in Plume Rise due to Velocity Change from Stack Modification

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

KATHLEEN BLIZZARD
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH

OF COUNSEL
W ROBERT FOKES

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPEL
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

June 26, 1991

RECEIVED

JUN 26 1991

Bureau of
Air Regulation

Bruce Mitchell
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 338
Tallahassee, Florida 32399-2400

Re: Florida Mining & Materials
Amendment of Permits No.
AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Bruce:

I am writing to clarify one point in Joseph L. Tessitore's letter of June 7, 1991 to Clair Fancy transmitting Florida Mining & Materials' application for approval to perform a demonstration test burn using solid hazardous waste fuel at Kiln No. 1. Specifically, please be advised that Florida Mining is not requesting any action by the Department at this time regarding the amendments to the referenced permits to authorize a test burn using tire derived fuel (TDF) and/or used oil at Kiln No. 1 or Kiln No. 2. As we have discussed, those permit amendments have, in effect, been put on "hold" pending further discussions between representatives of Florida Mining and Hernando County. A copy of Florida Mining's second request for extension of time to petition for administrative proceedings on the TDF/used oil test burn approval is attached for your information.

Florida Mining remains hopeful that agreement on both the TDF/used oil test burn and the solid hazardous waste fuel test burn can be reached, and appropriate Department approvals issued, to allow the test burns to proceed by late summer. This letter is intended merely to confirm our conversation regarding the absence of any immediate need for Department action on the TDF/used oil permit amendments.

Your continued consideration in this matter is much appreciated.

Bruce Mitchell
June 26, 1991
Page 2

As always, please do not hesitate to call me if you have any questions.

Sincerely,



Peter C. Cunningham

Mitchell:gbb

cc: C. M. Coleman
Edgar Marston, Esquire
Diane Schenke, Esquire
Segundo Fernandez, Esquire

B. Thomas, SW Dist.
J. Harper, EPA
C. Shaw, NPS
C. Detrick, HEBC
CIF/BA

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DE ROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

KATHLEEN BLIZZARD
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOKES

June 26, 1991

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to your Order dated May 27, 1991, FMM has until July 1, 1991 to file a petition for administrative proceedings regarding the permit.

I am writing on behalf of FMM to request an extension of sixty (60) additional days, to and including August 30, 1991, in which to file a petition for administrative proceedings regarding the permit. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. The proposed permit amendments contain fourteen specific conditions that would establish various requirements applicable to the performance testing and related matters.

Carol M. Browner, Secretary
June 26, 1991
Page 2

2. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

3. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Bruce Mitchell of the Department's Bureau of Air Regulation regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including August 30, 1991.

Sincerely,



Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell
W. Douglas Beason, Esquire
Segundo Fernandez, Esquire
C. M. Coleman, Jr.
Diane Schenke, Esquire



United States Department of the Interior
FISH AND WILDLIFE SERVICE



IN REPLY REFER TO:

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

RW Air Quality
Mail Stop 60130

MAY 24 1991

RECEIVED

MAY 30 1991

Division of Air
Resources Management

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

Dear Mr. Fancy:

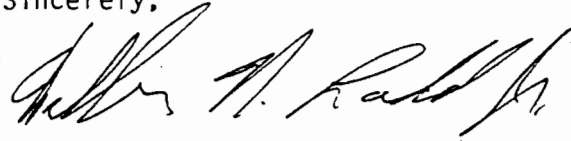
We have reviewed the information that you forwarded to us regarding Florida Mining and Materials' (FM&M) request to conduct performance tests while burning Tire Derived Fuel (TDF) and/or used oil with coal in Kilns 1 and 2 at their Brooksville, Florida, cement plant. The FM&M facility is located approximately 25 km southeast of the Chassahowitzka Wilderness Area, a class I air quality area administered by the U.S. Fish and Wildlife Service.

Florida Mining and Materials expects that actual pollutant emissions would not increase as a result of firing these fuel mixtures. We are pleased to see that the conditions you specified for the proposed performance tests are very extensive and complete. If the performance tests confirm FM&M's assertion that actual emissions of the listed pollutants would not increase, then we would not object to the firing of these fuels in the kilns on a continuous basis. However, given the proximity of the Chassahowitzka Wilderness Area and the toxic nature of the pollutants to be tested (i.e., heavy metals, dioxins, furans, benzene, polynuclear aromatic hydrocarbons, etc.), we would be concerned about potential impacts on sensitive resources at the wilderness area if the emissions of these pollutants would increase. Consequently, if the performance tests show that emissions would increase as a result of firing TDF and used oil in the kilns, FM&M should perform a thorough assessment of the potential effects of the emission increases on resources at the wilderness area. We ask that you then provide us ample opportunity to review this assessment to determine if such impacts would be adverse, before you permit FM&M to burn these fuels continuously.

We understand that Florida Crushed Stone (FCS) has also requested a permit amendment to allow burning of TDF in a kiln at their Brooksville cement plant. If the emissions of toxic pollutants would increase as a result of FCS burning TDF, we would have the same concerns as those discussed above for the FM&M proposal.

We appreciate you keeping us informed about permitting activities that could impact our resources. We will await the results of the FM&M performance tests. In the meantime, if you have any questions regarding this matter, please contact John Bunyak of our Air Quality Office at (303) 969-2071.

Sincerely,



Wilbur N. Ladd, Jr.
Assistant Regional Director
Refuges and Wildlife, Region 6

cc: B. Mitchell ✓
B. Shomers, SW Dist.
C. Detrick, HCBC
C. Coleman, FM&M
J. Sessitore, CT/A
P. Cunningham, HBS&S
D. Stone FCS
A. Koogler, K&A
Z. Sellers, H&K
CHF/BA



United States Department of the Interior

NATIONAL PARK SERVICE
AIR QUALITY DIVISION
P.O. BOX 25287
DENVER, CO 80225

IN REPLY REFER TO:

DATE: 5/23/91

TIME: 3:00

FAX PHONE NO. FTS 327-2822 or (303) 969-2822

NUMBER OF PAGES TO FOLLOW: 2

TO: Bruce Mitchell

PHONE: _____

FROM: John Bunyak

National Park Service PHONE: (303) 969-2071

SUBJECT: Florida Mining Materials / Florida Crushed Stone

REMARKS: Here's a copy of the letter that will be signed and dated shortly. Call me if you have any questions.

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500
FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLÉ
GARY P. SAMS
ROBERT P. SMITH, JR.
CHERYL G. STUART

KATHLEEN BLIZZARD
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
DIANA M. PARKER
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH

OF COUNSEL
W. ROBERT FOKES

April 29, 1991

BY HAND DELIVERY

Carol M. Browner, Secretary
c/o Office of General Counsel
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 654
Tallahassee, Florida 32399-2400

Re: Florida Mining & Materials
Brooksville Cement Plant Kilns No. 1 and 2
Permits No. AC 27-173474, AC 27-186923, PSD-FL-124B

Dear Secretary Browner:

On April 15, 1991, Florida Mining & Materials ("FMM") received the Department's Notice of Intent to amend the referenced air construction permits to authorize performance testing of Kilns No. 1 and 2 with tire derived fuel and/or used oil at its Brooksville Cement Plant located in Hernando County, Florida. Pursuant to the Notice of Intent and Florida Administrative Code Rule 17-103.155, FMM has until April 29, 1991 to file a petition for administrative proceedings regarding the permit.

I am writing on behalf of FMM to request an extension of sixty (60) days, to and including June 28, 1991, in which to file a petition for administrative proceedings regarding the permit. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time for filing, FMM would show the following:

1. The proposed permit amendments contain fourteen specific conditions that would establish various

Carol M. Browner, Secretary
April 29, 1991
Page 2

requirements applicable to the performance testing and related matters.

2. FMM desires additional time to complete its review of the proposed permit conditions.

3. FMM understands that Hernando County Board of County Commissioners is interested in the proposed permit amendments. Additional discussions with representatives of Hernando County are anticipated, in conjunction with the Citizen Advisory Committee consideration of the protocol for performance testing of solid hazardous waste derived fuel at FMM's Brooksville Cement Plant.

4. This request is filed as a protective measure to avoid waiver of FMM's rights to challenge the permit amendments as proposed. Grant of this request will allow all interested parties an opportunity to discuss the pertinent permit provisions and to achieve a mutually acceptable resolution of points in need of clarification or correction, without the initiation of formal administrative proceedings.

I hereby certify that I have contacted Clair Fancy, Chief of the Department's Bureau of Air Regulation, regarding this matter and that he does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's Notice of Intent to revise air construction permits No. AC 27-173474, AC 27-186923 and PSD-FL-124B to and including June 28, 1991.

Sincerely,

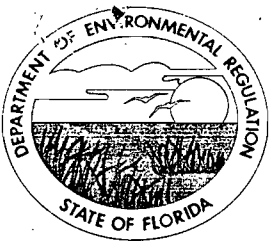


Peter C. Cunningham

FlMinExt:gbb

cc: Clair Fancy, P.E.
Bruce Mitchell
Gary Smallridge, Esquire
Segundo Fernandez, Esquire
C. M. Coleman, Jr.
Diane Schenke, Esquire

B. Thomas, SW Dist
J. Harper, EPA
E. Shaver, NPS
C. Mitchell, NEBCE



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

April 9, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. C. M. Coleman Jr.
Vice President and General Manager
Florida Mining & Materials
Post Office Box 6
Brooksville, Florida 34749-0006

Dear Mr. Coleman:

Re: Requests to Allow Performance Tests While Burning Tire Derived Fuel and/or On-Specification Used Oil Fuel with Coal in the Nos. 1 and 2 Cement Kilns

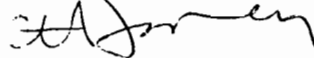
Attached is one copy of the proposed letter amendment to air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B, for Florida Mining & Materials (FM&M) to performance test the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input to the Nos. 1 and 2 Cement Kilns. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version).

Although your company expects that there will be no actual pollutant emission increases from firing these fuel mixtures, the Nos. 1 and 2 Cement Kilns are not permitted to fire these fuels and such claims will have to be verified. Therefore, the purpose of this letter amendment is to allow FM&M the opportunity to obtain the data necessary to determine whether the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configurations and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis.

Mr. C. M. Coleman Jr.
April 9, 1991
Page Two

If there are any questions, please call Bruce Mitchell at (904)488-1344 or submit any written comments you wish to have considered concerning the Department's proposed action to me.

Sincerely,



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/BM/rbm

Attachments

c: B. Thomas, SW District
J. Tessitore, P.E., C/T&A
C. Shaver, NPS
J. Harper, EPA
C. Hetrick, HCBCC
G. Smallridge, DER
P. Cunningham, HBG&S

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Applications for Amendment by:

FM&M
P. O. Box 6
Brooksville, Florida 34605-0006

DER File Nos. AC 27-186923
AC 27-173474
PSD-FL-124B

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue an amendment (copy attached) for the proposed project as detailed in the applications for an amendment specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached letter amendment.

The applicant, Florida Mining & Materials (FM&M), requested on September 25, 1990, to the Department of Environmental Regulation for authorization to performance test the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input to the Nos. 1 and 2 Cement Kilns. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version).

Although the applicant, FM&M, expects that there will be no actual pollutant emission increases, the Nos. 1 and 2 Cement Kilns are not permitted to fire these fuel mixtures and such claims will have to be verified. The purpose of this amendment is to allow FM&M the opportunity to obtain the data necessary to determine whether the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configurations and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis. The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an amendment 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. 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 amendment.

The Department will issue the amendment 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 amendment 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

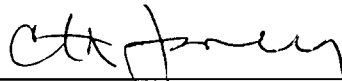
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 applications 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.
Chief
Bureau of Air Regulation

Copies furnished to:

B. Thomas, SW District	G. Smallridge, DER
J. Tessitore, P.E., C/T&A	P. Cunningham, HBG&S
C. Shaver, NPS	C. Hetrick, HCBCC
J. Harper, EPA	

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 4-12-91.

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

Kimi Baker 4-12-91
Clerk 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 amendment to Florida Mining & Materials (FM&M), Post Office Box 6, Brooksville, Florida 34605-0006, to conduct performance tests on the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input of the Nos. 1 and 2 Cement Kilns. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version).

Although the applicant, FM&M, expects that there will be no actual pollutant emission increases, the Nos. 1 and 2 Cement Kilns are not permitted to fire these fuel mixtures and such claims will have to be verified. The purpose of this amendment is to allow FM&M the opportunity to obtain the data necessary to determine whether the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configurations and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis. The proposed project will occur at the applicant's facility located on U.S. Highway 98 NW of Brooksville, Hernando County, Florida. The Department is issuing this Intent to Issue for the reasons stated in the proposed letter amendment to air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

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 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 applications 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.

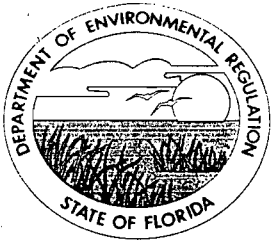
The applications are available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

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

Department of Environmental Regulation
Southwest District Office
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

Hernando County Board of County Commission
20 North Main Street, Room 460
Brooksville, Florida 34601

Any person may send written comments on the proposed action to Mr. Barry Andrews 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.



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. M. Coleman Jr.
Vice President and General Manager
Florida Mining & Materials
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Coleman:

Re: Amendment to Construction Permits Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B to Conduct Performance Test(s) on the Nos. 1 and 2 Cement Kilns While Burning Tire Derived Fuel and/or On-Specification Used Oil Fuel with Coal.

The Department has reviewed the requests that you provided on September 25, 1990. We have also considered the Department's legal authority to allow you to conduct the requested performance test(s). Paragraph 403.061(15), Florida Statutes (F.S.), authorizes the Department to consult with any person proposing to construct, install, or otherwise acquire a pollution control device or system concerning the efficacy of such device or system, or the pollution problem which may be related to the source, device, or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Florida Administrative Code (F.A.C.) Rule 17-2.250(5) authorizes the Department to consider variations in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

In accordance with the provisions of Paragraphs 403.061(15), (16) and (18), F.S., and F.A.C. Rule 17-2.250(5), you are hereby authorized to conduct performance tests the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input to the Nos. 1 and 2 Cement Kilns.

Mr. C. M. Coleman Jr.

Page Two

The purpose of this authorization is to provide FM&M the opportunity to obtain performance test data on the Nos. 1 and 2 Cement Kilns to verify pollutant emissions and to see if the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configuration and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis.

The performance test(s) shall be subject to the following conditions.

1. The permittee shall notify, in writing, the Department's Southwest District and Bureau of Air Regulation offices at least 15 days prior to commencement of the performance test(s). The test reports shall be submitted to these offices no later than 45 days upon completion of the last test run.
2. Prior to or after conducting pollutant emissions tests on the Nos. 1 and 2 Cement Kilns while firing combinations of TDF and/or on-specification used oil fuel with coal (Post-tests; Tables 1, 2, 3, 4 and 5;), emissions tests (Pre-tests) shall be conducted on the Nos. 1 and 2 Cement Kilns while firing 100% coal for all of the identified pollutants and pollutant categories (Table 2) in order to establish background levels, unless performance tests have already been conducted and the results can be provided to the Department. These tests, "Pre-tests" (i.e. coal only), shall be compared to the post-tests (TDF and/or on-specification used oil fuel with coal) to determine if:
 - a. PSD or non-PSD review is required, which includes the construction permit application(s) and the appropriate processing fee(s); or,
 - b. The current construction permits can be amended to allow the use of TDF and/or on-specification used oil fuel with coal.
3. All post-test results shall be compared to "actual emissions" for PSD review purposes (see Region IV, U.S. EPA's letter dated April 4, 1990).
4. a. The performance tests shall be in accordance with Table 1;

Mr. C. M. Coleman Jr.

Page Three

- b. The test parameters and methods shall be in accordance with Table 2; however, other test methods may be used if prior written approval from the Department has been received;
 - c. The performance test fuel combination scenarios shall be in accordance with Table 3;
 - d. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version) and shall not exceed the constituent/property levels specified in Table 6 (40 CFR 266.40(e)); total halogens shall be limited to 1,000 ppm maximum;
 - e. Analysis and recordkeeping for on-specification used oil fuel shall be in accordance with 40 CFR 266.43(b)(1) and (6);
 - f. Maximum process input rates shall be in accordance with Table 5;
 - g. The use of on-specification used oil fuel shall be in accordance with all applicable provisions of 40 CFR 266, Subpart E (July, 1990 version); and,
 - h. An ultimate analysis of each delivery of on-specification used oil fuel shall be required and submitted to the Department prior to performance testing and shall establish, at a minimum, the levels of the sulfur content (weight %), metals on a constituent basis, moisture content, etc., using the appropriate ASTM Methods (i.e., ASTM D1552-83, ASTM D396-78, ASTM D129-64, etc.) in accordance with F.A.C. Rule 17-2.700 and 40 CFR (July, 1990 version).
5. An ultimate analysis of the particulate filter(s) shall be required. Also, an ultimate analysis of a representative sample(s) from the baghouse hopper shall be required.
 6. This authorized performance test(s) shall not result in the release of objectionable odors pursuant to F.A.C. Rule 17-2.620(2).
 7. Performance testing shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare. Performance testing shall not resume until appropriate measures to correct the problem have been implemented.

Mr. C. M. Coleman Jr.
Page Four

8. The performance test(s) shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida.
9. This Department action is just to authorize the performance tests for pollutant emissions on the Nos. 1 and 2 Cement Kilns while firing TDF and/or on-specification used oil fuel with coal. The firing of TDF and used oil after the last performance test run is completed will be deemed a violation of the current air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.
10. Complete documentation of the amount (i.e., weight or volume) of TDF and on-specification used oil fuel usage in the Nos. 1 and 2 Cement Kilns shall be required (i.e., start-up and testing).
11. The Department shall be notified in writing on the date of the last test run completion.
12. From the initial date of using TDF and on-specification used oil fuel, which shall be documented in writing to the Department, the permittee shall be limited to 45 days to stabilize the Nos. 1 and 2 Cement Kilns and to submit notification of performance testing. If additional time is needed, the permittee shall provide the Department with documentation of the progress accomplished to date and shall identify what is left to be done in order to achieve stabilization of the Nos. 1 and 2 Cement Kilns for performance testing purposes.
13. Visible emissions shall not exceed 10% opacity in accordance with EPA Method 9 pursuant to F.A.C. Rules 17-2.660 and 17-2.700 and 40 CFR 60 (July, 1990 version).
14. This amendment does not relieve the permittee from complying with the conditions of the construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124.
15. Attachments (See Attachment Section) are incorporated.

The Department has relied on the information referenced in the Attachments and conversations with representatives of FM&M, the U.S. EPA-Region IV, and the Department of Interior's National Park Service in authorizing this permit letter amendment to the air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

Mr. C. M. Coleman Jr.
Page Five

A copy of this letter and its Attachments shall be attached to the air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner
Secretary

CMB/bm

Attachments

cc: B. Thomas, SW District
J. Tessitore, P.E., C/T&A
C. Shaver, NPS
J. Harper, EPA
G. Smallridge, DER
P. Cunningham, HBG&S
C. Hetrick, HCBCC

TABLE 1

PROCESS DATA

Cement Kiln No. 1 or 2

Kiln Feed Rate	130 T/hr
Clinker Production Rate	79.6 T/hr
Maximum Heat Input	3.0×10^8 Btu/hr

TABLE 2

PROPOSED PERFORMANCE TEST MATRIX

Cement Kiln No. 1 or 2

The proposed testing would include stack sampling during four separate cases for the kiln. These are represented in the following matrix.

Fuel Type	Test Conditions			
	1*	2	3	4
	% of Total Fuel Supply			
Coal (min.)	100	80	50	30
Waste Tires (max.)	0	20	0	20
Used Oil (max.)	0	0	50	50

*Baseline

FMMZTIRE.DOC

TABLE 3
FUEL COMBINATION SUMMARY DATA
Cement Kiln No. 1 or 2

	<u>Current Fuels</u>		<u>Proposed Fuels</u>	
	<u>Coal</u>	<u>Flolite¹</u>	<u>Waste Tires</u>	<u>Used Oil</u>
Case 1				
Consumption	24,170 lb/hr	--	0	0
Heat Input (Btu/hr)	3.0×10^8	--	0	0
Portion of Total Fuel Supply (%)	100	--	0	0
Case 2				
Consumption	19,336 lb/hr	--	4286 lb/hr	0
Heat Input (Btu/hr)	2.4×10^8	--	0.6×10^8	0
Portion of Total Fuel Supply (%)	80	--	20	0
Case 3				
Consumption	12,085 lb/hr	--	0	1034 gal/hr
Heat Input (Btu/hr)	1.5×10^8	--	0	1.5×10^8
Portion of Total Fuel Supply (%)	50	--	0	50
Case 4				
Consumption	7251 lb/hr	--	4286 lb/hr	1034 gal/hr
Heat Input (Btu/hr)	0.9×10^8	--	0.6×10^8	1.5×10^8
Portion of Total Fuel Supply (%)	30	--	20	50

1 Flolite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.

TABLE 4
 ADDITIONAL FUELS DATA

	Heat Capacity	Sulfur Content ²
Current:		
Coal	12,500 Btu/lb	1.0 %
Flolite ¹	145,000 Btu/gal	1.0 %
Proposed:		
Used Oil	145,000 Btu/gal	1.5 %
Waste Tires	14,000 Btu/lb	<1.0 %

(1) Flolite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.

(2) Values shown are approximate.

TABLE 5

SUMMARY OF TEST PARAMETERS

Particulate Matter	EPA Method 5
Visible Emissions	EPA Method 9
Metals:	EPA Method 5 (filter and probe rinse)
Aluminum	Barium
Arsenic	Copper
Cadmium	Nickel
Chromium (Total)	Iron
Lead	Vanadium
Zinc	
NO _x	EPA Method 7
Sulfur Dioxide	EPA Method 6 (in back half of Method 5 train)
Carbon Monoxide	EPA Method 10
Volatile Organic Compounds	VOST
Semi-Volatile Organic Compounds	Modified Method 5
CO ₂ /O ₂	EPA Method 3
Stack Gas Flow/Moisture/Temp.	EPA Methods 2 and 4 (in conjunction with EPA Method 5)
PCDDS/PCDFS	EPA Method 23
Polynuclear Aromatic Hydrocarbons	Modified Method 5
Benzene	EPA Method 18
Mercury	EPA Method 101 or 101A

TABLE 6

ON-SPEC USED OIL FUEL CHARACTERISTICS

As specified in 40 CFR 266.40(e), "Used Oil Burned For Energy Recovery", the following characteristics are applicable to on-specification used oil fuel:

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F minimum
Total Halogens	1,000 ppm maximum

Attachment Section

1. Ms. Patricia K. Rykowski's letter with enclosures received September 25, 1990.
2. Ms. Jewell A. Harper's letter dated April 4, 1990.
3. 40 CFR (July, 1990 version).
4. Ms. Kay Rykowski's letter received April 1, 1991, via FAX.
5. Intent to Issue Package dated April 9, 1991.
6. 40 CFR 266, Subpart E (July, 1990 version)

ATTACHMENT 1

Available Upon Request

ATTACHMENT 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

APR 4 1990

4APT-AEB

RECEIVED

APR 09 1990

DER-BAQM

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

RE: Florida Crushed Stone (PSD-FL-091)

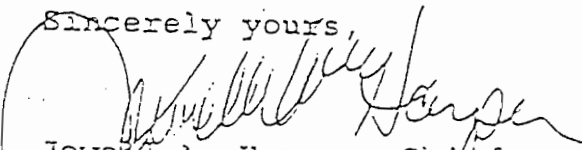
Dear Mr. Fancy:

This is to acknowledge receipt of your letter dated March 15, 1990, transmitting a request by Florida Crushed Stone to amend their prevention of significant deterioration (PSD) permit to allow the burning of tire derived fuel (TDF) in their cement kiln. The current permit for the source limits the fuel of the kiln to coal only. As discussed between Mr. Bruce Mitchell of your staff and Mr. Gregg Worley of my staff on March 30, 1990, we have the following comments.

Under the scenario presented by the source, the switch to the use of TDF in the kiln would not constitute a major modification for the purposes of PSD provided that the increase in pollutants due to the fuel switch did not exceed significant emissions increase levels. It is important to note that the change in emissions must be evaluated from "old actual" to "new allowable" emissions. The old actual emissions must be based on the previous two years of operating data unless some other period is deemed to be more representative of normal operating conditions. The new allowable emissions will be those emissions which are reflected in the amended permit. Also, it was noted that the list of pollutants to be tested did not include benzene. Since benzene is a pollutant regulated under the Clean Air Act for which a significant emissions rate has not been established, any increase of emissions of benzene would subject the source to PSD.

Thank you for the opportunity to review and comment on this package. If you have any further questions or comments, please do not hesitate to contact Mr. Gregg Worley of my staff at 404/347-1864.

Sincerely yours,


Jewel A. Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division

ATTACHMENT 3

Available Upon Request

ATTACHMENT 4

CROSS/TESSITORE & ASSOCIATES, P.A.
4763 South Conway Road, Suite F.
Orlando, Florida 32812

Telephone: 407-851-1484
Fax#: 407-855-0369

URGENT FACSIMILE DOCUMENT

ATTN: BRUCE MITCHELL FAX#: 904-487-4938

COMPANY: FDER/BUREAU OF AIR REGULATION

FROM: KAY RYKOWSKI FAX#: 407-855-0369

SUBJECT: FLORIDA MINING & MATERIALS

C/TA PROJECT NUMBER: F03.178

DATE: MARCH 29, 1991

NO. OF PAGES (INCLUDING THIS SHEET): 1 HARD COPY TO FOLLOW YES X NO

Bruce:

My records show the current permit for Florida Mining & Materials' No. 2 Kiln as AC27-173474 which expires December 31, 1991. Please let me know if the extension is still required.

Thank you,

Kay Rykowski

ATTACHMENT 6

(d) *Required notices.* Before a burner accepts the first shipment of hazardous waste fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

(1) He has notified EPA and identified his waste-as-fuel activities; and

(2) He will burn the fuel only in a boiler or furnace identified in § 266.31(b).

(e) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 264 and 265 of this chapter, a burner must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives hazardous waste fuel from that marketer.

(The notification requirements contained in paragraph (b) of this section were approved by the Office of Management and Budget under control number 2050-0028. The storage requirements contained in paragraph (c) of this section were approved by the Office of Management and Budget under control number 2050-0009. The certification requirements contained in paragraph (d) of this section were approved by the Office of Management and Budget under control number 2050-0047. The recordkeeping requirements contained in paragraph (e) of this section were approved by the Office of Management and Budget under control number 2050-0047.)

[50 FR 49204, Nov. 29, 1985, as amended at 52 FR 11821, Apr. 13, 1987]

Subpart E—Used Oil Burned for Energy Recovery

SOURCE: 50 FR 49205, Nov. 29, 1985, unless otherwise noted.

§ 266.40 Applicability.

(a) The regulations of this subpart apply to used oil that is burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter; except as provided by paragraphs (c) and (e) of this section. Such used oil is termed "used oil fuel". Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment.

(b) "Used oil" means any oil that has been refined from crude oil, used, and, as a result of such use, is contaminated by physical or chemical impurities.

(c) Except as provided by paragraph (d) of this section, used oil that is mixed with hazardous waste and burned for energy recovery is subject to regulation as hazardous waste fuel under Subpart D of Part 266. Used oil containing more than 1000 ppm of total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Subpart D of Part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of Part 261 of this chapter).

(d) Used oil burned for energy recovery is subject to regulation under this subpart rather than as hazardous waste fuel under Subpart D of this part if it is a hazardous waste solely because it:

(1) Exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter, provided that it is not mixed with a hazardous waste; or

(2) Contains hazardous waste generated only by a person subject to the special requirements for small quantity generators under § 261.5 of this chapter.

(e) Except as provided by paragraph (c) of this section, used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, is subject to regulation under this subpart unless it is shown not to exceed any of the allowable levels of the constituents and properties in the specification shown in the following table. Used oil fuel that meets the specification is subject only to the analysis and recordkeeping requirements under § 266.43(b) (1) and (6). Used oil fuel that exceeds any specification level is termed "off-specification used oil fuel".

USED OIL EXCEEDING ANY SPECIFICATION LEVEL IS SUBJECT TO THIS SUBPART WHEN BURNED FOR ENERGY RECOVERY *

Constituent/property	Allowable level
Arsenic.....	5 ppm maximum.
Cadmium.....	2 ppm maximum.
Chromium.....	10 ppm maximum.
Lead.....	100 ppm maximum.
Flash Point.....	100 °F minimum.
Total Halogens.....	4,000 ppm maximum.*

* The specification does not apply to used oil fuel mixed with a hazardous waste other than small quantity generator hazardous waste.

* Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under § 266.40(c). Such used oil is subject to Subpart D of this part rather than this subpart when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

§ 266.41 Prohibitions.

(a) A person may market off-specification used oil for energy recovery only:

(1) To burners or other marketers who have notified EPA of their used oil management activities stating the location and general description of such activities, and who have an EPA identification number; and

(2) To burners who burn the used oil in an industrial furnace or boiler identified in paragraph (b) of this section.

(b) Off-specification used oil may be burned for energy recovery in only the following devices:

(1) Industrial furnaces identified in § 260.10 of this chapter; or

(2) Boilers, as defined in § 260.10 of this chapter, that are identified as follows:

(i) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;

(ii) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale; or

(iii) Used oil-fired space heaters provided that:

(A) The heater burns only used oil that the owner or operator generates or used oil received from do-it-yourself oil changers who generate used oil as household waste;

(B) The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour; and

(C) The combustion gases from the heater are vented to the ambient air.

§ 266.42 Standards applicable to generators of used oil burned for energy recovery.

(a) Except as provided in paragraphs (b) and (c) of this section, generators of used oil are not subject to this subpart.

(b) Generators who market used oil directly to a burner are subject to § 266.43.

(c) Generators who burn used oil are subject to § 266.44.

§ 266.43 Standards applicable to marketers of used oil burned for energy recovery.

(a) Persons who market used oil fuel are termed "marketers". Except as provided below, marketers include generators who market used oil fuel directly to a burner, persons who receive used oil from generators and produce, process, or blend used oil fuel from these used oils (including persons sending blended or processed used oil to brokers or other intermediaries), and persons who distribute but do not process or blend used oil fuel. The following persons are not marketers subject to this subpart:

(1) Used oil generators, and collectors who transport used oil received only from generators, unless the generator or collector markets the used oil directly to a person who burns it for energy recovery. However, persons who burn some used oil fuel for purposes of processing or other treatment to produce used oil fuel for marketing are considered to be burning incidentally to processing. Thus, generators and collectors who market to such incidental burners are not marketers subject to this subpart;

(2) Persons who market only used oil fuel that meets the specification under § 266.40(e) and who are not the first person to claim the oil meets the specification (i.e., marketers who do not receive used oil from generators or initial transporters and marketers who

Department of Environmental Regulation
Routing and Transmittal Slip

To: (Name, Office, Location)

1.

Bruce Mitchell

2.

3.

4.

Remarks:

870-EL-124B

RECEIVED

APR 1 1991

DER-BAG

From:

Date

Phone

CROSS/TESSITORE & ASSOCIATES, P.A.
4763 South Conway Road, Suite F.
Orlando, Florida 32812

Telephone: 407-851-1484
Fax#: 407-855-0369

URGENT FACSIMILE DOCUMENT

ATTN: BRUCE MITCHELL FAX# 904-487-4938

COMPANY: FDER/BUREAU OF AIR REGULATION

FROM: KAY RYKOWSKI FAX#: 407-855-0369

SUBJECT: FLORIDA MINING & MATERIALS

C/IA PROJECT NUMBER: F03.178

DATE: MARCH 29, 1991

NO. OF PAGES (INCLUDING THIS SHEET) 1 HARD COPY TO FOLLOW YES X NO

Bruce:

My records show the current permit for Florida Mining & Materials' No. 2 Kiln as AC27-173474 which expires December 31, 1991. Please let me know if the extension is still required.

Thank you,

Kay Rykowski

OERTEL, HOFFMAN, FERNANDEZ & COLE, P. A.

ATTORNEYS AT LAW

SUZANNE BROWNLESS
M. CHRISTOPHER BRYANT
R. L. CALEEN, JR.
C. ANTHONY CLEVELAND
TERRY COLE
ROBERT C. DOWNIE, II
MARTHA J. EDENFIELD
SEGUNDO J. FERNANDEZ
KENNETH F. HOFFMAN
KENNETH G. OERTEL
HAROLD F. X. PURNELL
PATRICIA A. RENOVTICH
SCOTT SHIRLEY
THOMAS G. TOMASELLO
W. DAVID WATKINS

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

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

TELEPHONE (904) 877-0099
FACSIMILE (904) 877-0981

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

J. P. SUBRAMANI, PH. D., P. E.
ENVIRONMENTAL CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

November 1, 1990

HAND DELIVERY

Clair H. Fancy, P.E.
Chief, Bureau of Air Regulation
Florida Department of Environmental
Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

- RE: (1) Florida Crushed Stone Company; Amendment to
AC 27-118674; and
- (2) Florida Mining and Materials Company;
Amendments to AC 27-169616 and AC 27-173474.

Dear Mr. Fancy:

Our law firm has been retained by Hernando County to evaluate the proposals by the Florida Crushed Stone Company and Florida Mining and Materials to respectively burn industrial sludge, and tires and used oil, in their cement manufacturing operations. We respectfully request that the Department reconsider the permit authorization granted to Florida Crushed Stone Company to burn industrial sludge. We also request the Department not to allow the burning of the tires in the cement kilns owned by the Florida Mining and Materials Company. Our reasons are stated below.

1. ~~Proposal by Florida Crushed Stone Company to~~
burn industrial sludge (AC 27-118674)

Our evaluation of this proposal clearly indicates that the Department approval was granted based on an inadequate and inappropriate review of the EP and TCLP toxicity characterization of the industrial sludge from the Jacksonville Electric Authority (JEA). The EP and TCLP procedures evaluate the solubility characteristics of the metals in the water medium and have no direct relationship to air pollution evaluation factors. The EP and TCLP characterization, while indicative of heavy metals content, is primarily appropriate for evaluating the threat to groundwater and surface water contamination.

Secondly, the Department authorization appears to have been based on the test results of the Gifford-Hill Cement Company in Harleyville, South Carolina. That test report indicates that the metals content of the industrial sludge are much lower than those of the JEA sludge. A comparison of the concentration of certain metals is listed below.

<u>PARAMETER</u>	<u>SOUTH CAROLINA SLUDGE (ppm)</u>	<u>JEA SLUDGE (ppm)</u>
Arsenic	40	6,500
Molybdenum	910	16,000
Nickel	8,200	20,000
Vanadium	26,800	64,000
Selenium	24	330

Additionally, the JEA sludge contains 170,000 ppm iron, 41,000 ppm magnesium, 66,000 ppm sulfates and 5,800 ppm chlorides. No information is available as to the Department's evaluation of air pollution effects due to high contents of these components in the sludge. We also note that the Department has relaxed the requirement of emission testing for dioxins and furons. The chemistry for dioxin formation is not clearly understood and therefore testing for the precursors may not yield reliable information.

2. Proposal by Florida Mining and Materials Company to burn tires and used oil

The company's proposal is to burn as much as 70 percent supplementary fuel consisting of tires and used oil. We believe ~~there will be increases in the emissions of many air pollutants,~~ especially, fine particulate matter, and heavy metals such as arsenic, cadmium, chromium, lead and zinc. We also believe that there will be significant increase in the emissions of sulfur dioxide, acid mist and polynuclear aromatic compounds. We learned that the Department had earlier authorized Florida Crushed Stone to test burn tires in its Brooksville facility. We would appreciate receiving copies of the stack test emissions for the above pollutants. We would also appreciate receiving test reports for the Modesto Energy facility located in Westley, California.

Clair H. Fancy, P.E.
November 1, 1990
Page Three

HAND DELIVERY

Please feel free to contact me if you have any questions.

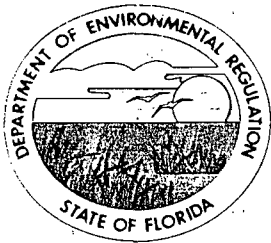
Sincerely,



J. P. Subramani

JPS:gg

cc: Bruce Snow, Esq.
Kathy Liles



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

October 23, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Henry E. Andre - Vice President
Florida Mining and Materials
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Andre:

Re: Completeness Review of Application to Construct/Modify
AC 27-186923

The Department has reviewed the above referenced application package received September 25, 1990, which requests a modification of the existing facility. Based on a technical review of the application package, it is deemed incomplete. Please submit to the Department's Bureau of Air Regulation the following information, including all reference material, assumptions and calculations, and the status will, again, be ascertained:

1. Calculate the potential emissions of all pollutants (i.e., PM, PM₁₀, SO₂, NO_x, CO, VOC, etc.) expected to be emitted from the No.1 kiln and based on new input rates of raw materials.
2. Referencing #1 above, calculate the potential pollutant emissions on each of the fuels (i.e., coal, fuel oil, and flolite) and at their maximum firing rates.
3. What is the maximum input rate of raw materials in TPH-dry?
4. What is the gas flow rate in dscfm?

If there are any questions, please call Bruce Mitchell at 904-488-1344 or write to me at the above address.

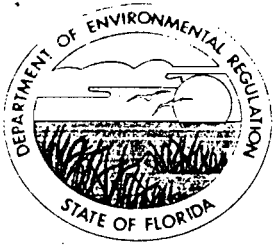
Sincerely,

C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/BM/plm

c: B. Thomas, SW Dist.
J. Tessitore, CIT & A
K. Liles, HC



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. M. Coleman Jr.
Vice President and General Manager
Florida Mining & Materials
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Coleman:

Re: Amendment to Construction Permits Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B to Conduct Performance Test(s) on the Nos. 1 and 2 Cement Kilns While Burning Tire Derived Fuel and/or On-Specification Used Oil Fuel with Coal.

The Department has reviewed the requests that you provided on September 25, 1990. We have also considered the Department's legal authority to allow you to conduct the requested performance test(s). Paragraph 403.061(15), Florida Statutes (F.S.), authorizes the Department to consult with any person proposing to construct, install, or otherwise acquire a pollution control device or system concerning the efficacy of such device or system, or the pollution problem which may be related to the source, device, or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Florida Administrative Code (F.A.C.) Rule 17-2.250(5) authorizes the Department to consider variations in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

In accordance with the provisions of Paragraphs 403.061(15), (16) and (18), F.S., and F.A.C. Rule 17-2.250(5), you are hereby authorized to conduct performance tests the Nos. 1 and 2 Cement Kilns for pollutant emissions while firing: 1) 100% coal for baseline conditions (actuals); 2) 80% coal and 20% tire derived fuel (TDF); 3) 50% coal and 50% on-specification used oil fuel; and, 4) 30% coal, 20% TDF and 50% on-specification used oil fuel. All of the percentages (%) referenced above relate to the maximum total (100%) fuel input to the Nos. 1 and 2 Cement Kilns.

Mr. C. M. Coleman Jr.
Page Two

The purpose of this authorization is to provide FM&M the opportunity to obtain performance test data on the Nos. 1 and 2 Cement Kilns to verify pollutant emissions and to see if the Nos. 1 and 2 Cement Kilns are capable of accommodating TDF and/or on-specification used oil fuel with coal under the Nos. 1 and 2 Cement Kilns' present physical configuration and what regulations the Nos. 1 and 2 Cement Kilns will be subject to if they are to be permitted to fire TDF and/or on-specification used oil fuel with coal on a continuous basis.

The performance test(s) shall be subject to the following conditions.

1. The permittee shall notify, in writing, the Department's Southwest District and Bureau of Air Regulation offices at least 15 days prior to commencement of the performance test(s). The test reports shall be submitted to these offices no later than 45 days upon completion of the last test run.
2. Prior to or after conducting pollutant emissions tests on the Nos. 1 and 2 Cement Kilns while firing combinations of TDF and/or on-specification used oil fuel with coal (Post-tests; Tables 1, 2, 3, 4 and 5;), emissions tests (Pre-tests) shall be conducted on the Nos. 1 and 2 Cement Kilns while firing 100% coal for all of the identified pollutants and pollutant categories (Table 2) in order to establish background levels, unless performance tests have already been conducted and the results can be provided to the Department. These tests, "Pre-tests" (i.e. coal only), shall be compared to the post-tests (TDF and/or on-specification used oil fuel with coal) to determine if:
 - a. PSD or non-PSD review is required, which includes the construction permit application(s) and the appropriate processing fee(s); or,
 - b. The current construction permits can be amended to allow the use of TDF and/or on-specification used oil fuel with coal.
3. All post-test results shall be compared to "actual emissions" for PSD review purposes (see Region IV, U.S. EPA's letter dated April 4, 1990).
4. a. The performance tests shall be in accordance with Table 1;

- b. The test parameters and methods shall be in accordance with Table 2; however, other test methods may be used if prior written approval from the Department has been received;
 - c. The performance test fuel combination scenarios shall be in accordance with Table 3;
 - d. The on-specification used oil fuel shall be as defined in 40 CFR 266.40 (July, 1990 version) and shall not exceed the constituent/property levels specified in Table 6 (40 CFR 266.40(e)); total halogens shall be limited to 1,000 ppm maximum;
 - e. Analysis and recordkeeping for on-specification used oil fuel shall be in accordance with 40 CFR 266.43(b)(1) and (6);
 - f. Maximum process input rates shall be in accordance with Table 5;
 - g. The use of on-specification used oil fuel shall be in accordance with all applicable provisions of 40 CFR 266, Subpart E (July, 1990 version); and,
 - h. An ultimate analysis of each delivery of on-specification used oil fuel shall be required and submitted to the Department prior to performance testing and shall establish, at a minimum, the levels of the sulfur content (weight %), metals on a constituent basis, moisture content, etc., using the appropriate ASTM Methods (i.e., ASTM D1552-83, ASTM D396-78, ASTM D129-64, etc.) in accordance with F.A.C. Rule 17-2.700 and 40 CFR (July, 1990 version).
5. An ultimate analysis of the particulate filter(s) shall be required. Also, an ultimate analysis of a representative sample(s) from the baghouse hopper shall be required.
 6. This authorized performance test(s) shall not result in the release of objectionable odors pursuant to F.A.C. Rule 17-2.620(2).
 7. Performance testing shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare. Performance testing shall not resume until appropriate measures to correct the problem have been implemented.

Mr. C. M. Coleman Jr.
Page Four

8. The performance test(s) shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida.
9. This Department action is just to authorize the performance tests for pollutant emissions on the Nos. 1 and 2 Cement Kilns while firing TDF and/or on-specification used oil fuel with coal. The firing of TDF and used oil after the last performance test run is completed will be deemed a violation of the current air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.
10. Complete documentation of the amount (i.e., weight or volume) of TDF and on-specification used oil fuel usage in the Nos. 1 and 2 Cement Kilns shall be required (i.e., start-up and testing).
11. The Department shall be notified in writing on the date of the last test run completion.
12. From the initial date of using TDF and on-specification used oil fuel, which shall be documented in writing to the Department, the permittee shall be limited to 45 days to stabilize the Nos. 1 and 2 Cement Kilns and to submit notification of performance testing. If additional time is needed, the permittee shall provide the Department with documentation of the progress accomplished to date and shall identify what is left to be done in order to achieve stabilization of the Nos. 1 and 2 Cement Kilns for performance testing purposes.
13. Visible emissions shall not exceed 10% opacity in accordance with EPA Method 9 pursuant to F.A.C. Rules 17-2.660 and 17-2.700 and 40 CFR 60 (July, 1990 version).
14. This amendment does not relieve the permittee from complying with the conditions of the construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124.
15. Attachments (See Attachment Section) are incorporated.

The Department has relied on the information referenced in the Attachments and conversations with representatives of FM&M, the U.S. EPA-Region IV, and the Department of Interior's National Park Service in authorizing this permit letter amendment to the air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

Mr. C. M. Coleman Jr.
Page Five

A copy of this letter and its Attachments shall be attached to the air construction permits, Nos. AC 27-186923 & AC 27-173474 and PSD-FL-124B.

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner
Secretary

CMB/bm

Attachments

cc: B. Thomas, SW District
J. Tessitore, P.E., C/T&A
C. Shaver, NPS
J. Harper, EPA
G. Smallridge, DER
P. Cunningham, HBG&S
C. Hetrick, HCBCC

TABLE 1
PROCESS DATA
Cement Kiln No. 1 or 2

Kiln Feed Rate	130 T/hr
Clinker Production Rate	79.6 T/hr
Maximum Heat Input	3.0×10^8 Btu/hr

TABLE 2
 PROPOSED PERFORMANCE TEST MATRIX
 Cement Kiln No. 1 or 2

The proposed testing would include stack sampling during four separate cases for the kiln. These are represented in the following matrix.

Fuel Type	Test Conditions			
	1*	2	3	4
	% of Total Fuel Supply			
Coal (min.)	100	80	50	30
Waste Tires (max.)	0	20	0	20
Used Oil (max.)	0	0	50	50

*Baseline

TABLE 3
FUEL COMBINATION SUMMARY DATA
Cement Kiln No. 1 or 2

	<u>Current Fuels</u>		<u>Proposed Fuels</u>	
	<u>Coal</u>	<u>Flolite¹</u>	<u>Waste Tires</u>	<u>Used Oil</u>
Case 1				
Consumption	24,170 lb/hr	--	0	0
Heat Input (Btu/hr)	3.0×10^8	--	0	0
Portion of Total Fuel Supply (%)	100	--	0	0
Case 2				
Consumption	19,336 lb/hr	--	4286 lb/hr	0
Heat Input (Btu/hr)	2.4×10^8	--	0.6×10^8	0
Portion of Total Fuel Supply (%)	80	--	20	0
Case 3				
Consumption	12,085 lb/hr	--	0	1034 gal/hr
Heat Input (Btu/hr)	1.5×10^8	--	0	1.5×10^8
Portion of Total Fuel Supply (%)	50	--	0	50
Case 4				
Consumption	7251 lb/hr	--	4286 lb/hr	1034 gal/hr
Heat Input (Btu/hr)	0.9×10^8	--	0.6×10^8	1.5×10^8
Portion of Total Fuel Supply (%)	30	--	20	50

¹ Flolite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.

TABLE 4
ADDITIONAL FUELS DATA

	Heat Capacity	Sulfur Content ²
Current:		
Coal	12,500 Btu/lb	1.0 %
Flo-lite ¹	145,000 Btu/gal	1.0 %
Proposed:		
Used Oil	145,000 Btu/gal	1.5 %
Waste Tires	14,000 Btu/lb	<1.0 %

- (1) Flo-lite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flo-lite is normally used only as a substitute for coal. In cases where flo-lite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^6 Btu/hr.
- (2) Values shown are approximate.

TABLE 5
SUMMARY OF TEST PARAMETERS

Particulate Matter	EPA Method 5
Visible Emissions	EPA Method 9
Metals:	EPA Method 5 (filter and probe rinse)
Aluminum	Barium
Arsenic	Copper
Cadmium	Nickel
Chromium (Total)	Iron
Lead	Vanadium
Zinc	
NO _x	EPA Method 7
Sulfur Dioxide	EPA Method 6 (in back half of Method 5 train)
Carbon Monoxide	EPA Method 10
Volatile Organic Compounds	VOST
Semi-Volatile Organic Compounds	Modified Method 5
CO ₂ /O ₂	EPA Method 3
Stack Gas Flow/Moisture/Temp.	EPA Methods 2 and 4 (in conjunction with EPA Method 5)
PCDDS/PCDFS	EPA Method 23
Polynuclear Aromatic Hydrocarbons	Modified Method 5
Benzene	EPA Method 18
Mercury	EPA Method 101 or 101A

TABLE 6

ON-SPEC USED OIL FUEL CHARACTERISTICS

As specified in 40 CFR 266.40(e), "Used Oil Burned For Energy Recovery", the following characteristics are applicable to on-specification used oil fuel:

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F minimum
Total Halogens	1,000 ppm maximum

Attachment Section

1. Ms. Patricia K. Rykowski's letter with enclosures received September 25, 1990.
2. Ms. Jewell A. Harper's letter dated April 4, 1990.
3. 40 CFR (July, 1990 version).
4. Ms. Kay Rykowski's letter received April 1, 1991, via FAX.
5. Intent to Issue Package dated April 9, 1991.
6. 40 CFR 266, Subpart E (July, 1990 version)

ATTACHMENT 1

Available Upon Request

ATTACHMENT 2

Best Available Copy



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

APR 4 1990

345 COURTLAND STREET NE
ATLANTA, GEORGIA 30365

4APT-AEB

RECEIVED

APR 09 1990

DER-BAQM

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

RE: Florida Crushed Stone (PSD-FL-091)

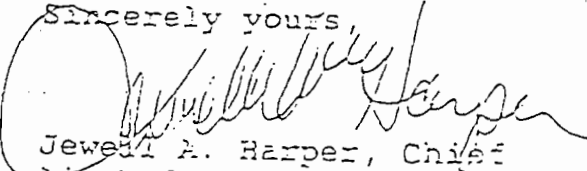
Dear Mr. Fancy:

This is to acknowledge receipt of your letter dated March 15, 1990, transmitting a request by Florida Crushed Stone to amend their prevention of significant deterioration (PSD) permit to allow the burning of tire derived fuel (TDF) in their cement kiln. The current permit for the source limits the fuel of the kiln to coal only. As discussed between Mr. Bruce Mitchell of your staff and Mr. Gregg Worley of my staff on March 30, 1990, we have the following comments.

Under the scenario presented by the source, the switch to the use of TDF in the kiln would not constitute a major modification for the purposes of PSD provided that the increase in pollutants due to the fuel switch did not exceed significant emissions increase levels. It is important to note that the change in emissions must be evaluated from "old actual" to "new allowable" emissions. The old actual emissions must be based on the previous two years of operating data unless some other period is deemed to be more representative of normal operating conditions. The new allowable emissions will be those emissions which are reflected in the amended permit. Also, it was noted that the list of pollutants to be tested did not include benzene. Since benzene is a pollutant regulated under the Clean Air Act for which a significant emissions rate has not been established, any increase of emissions of benzene would subject the source to PSD.

Thank you for the opportunity to review and comment on this package. If you have any further questions or comments, please do not hesitate to contact Mr. Gregg Worley of my staff at 404/347-1864.

Sincerely yours,


Jewel A. Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division

ATTACHMENT 3

Available Upon Request

ATTACHMENT 4

CROSS/TESSITORE & ASSOCIATES, P.A.
4763 South Conway Road, Suite F.
Orlando, Florida 32812

Telephone: 407-851-1484
Fax#: 407-855-0369

URGENT FACSIMILE DOCUMENT

ATTN: BRUCE MITCHELL FAX#: 904-487-4938

COMPANY: FDER/BUREAU OF AIR REGULATION

FROM: KAY RYKOWSKI FAX#: 407-855-0369

SUBJECT: FLORIDA MINING & MATERIALS

C/TA PROJECT NUMBER: F03.178

DATE: MARCH 29, 1991

NO. OF PAGES (INCLUDING THIS SHEET): 1 HARD COPY TO FOLLOW YES X
NO

Bruce:

My records show the current permit for Florida Mining & Materials' No. 2 Kiln as AC27-173474 which expires December 31, 1991. Please let me know if the extension is still required.

Thank you,

Kay Rykowski

ATTACHMENT 6

(d) *Required notices.* Before a burner accepts the first shipment of hazardous waste fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

- (1) He has notified EPA and identified his waste-as-fuel activities; and
- (2) He will burn the fuel only in a boiler or furnace identified in § 266.31(b).

(e) *Recordkeeping.* In addition to the applicable recordkeeping requirements of Parts 264 and 265 of this chapter, a burner must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives hazardous waste fuel from that marketer.

(The notification requirements contained in paragraph (b) of this section were approved by the Office of Management and Budget under control number 2050-0028. The storage requirements contained in paragraph (c) of this section were approved by the Office of Management and Budget under control number 2050-0009. The certification requirements contained in paragraph (d) of this section were approved by the Office of Management and Budget under control number 2050-0047. The recordkeeping requirements contained in paragraph (e) of this section were approved by the Office of Management and Budget under control number 2050-0047.)

[50 FR 49204, Nov. 29, 1985, as amended at 52 FR 11821, Apr. 13, 1987]

Subpart E—Used Oil Burned for Energy Recovery

Source: 50 FR 49205, Nov. 29, 1985, unless otherwise noted.

§ 266.40 Applicability.

(a) The regulations of this subpart apply to used oil that is burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter, except as provided by paragraphs (c) and (e) of this section. Such used oil is termed "used oil fuel". Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment.

(b) "Used oil" means any oil that has been refined from crude oil, used, and, as a result of such use, is contaminated by physical or chemical impurities.

(c) Except as provided by paragraph (d) of this section, used oil that is mixed with hazardous waste and burned for energy recovery is subject to regulation as hazardous waste fuel under Subpart D of Part 266. Used oil containing more than 1000 ppm of total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Subpart D of Part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of Part 261 of this chapter).

(d) Used oil burned for energy recovery is subject to regulation under this subpart rather than as hazardous waste fuel under Subpart D of this part if it is a hazardous waste solely because it:

- (1) Exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter, provided that it is not mixed with a hazardous waste; or
- (2) Contains hazardous waste generated only by a person subject to the special requirements for small quantity generators under § 261.5 of this chapter.

(e) Except as provided by paragraph (c) of this section, used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, is subject to regulation under this subpart unless it is shown not to exceed any of the allowable levels of the constituents and properties in the specification shown in the following table. Used oil fuel that meets the specification is subject only to the analysis and recordkeeping requirements under § 266.43(b) (1) and (6). Used oil fuel that exceeds any specification level is termed "off-specification used oil fuel".

USED OIL EXCEEDING ANY SPECIFICATION LEVEL IS SUBJECT TO THIS SUBPART WHEN BURNED FOR ENERGY RECOVERY *

Constituent/property	Allowable level
Arsenic.....	5 ppm maximum.
Cadmium.....	2 ppm maximum.
Chromium.....	10 ppm maximum.
Lead.....	100 ppm maximum.
Flash Point.....	100 °F minimum.
Total Halogens.....	4,000 ppm maximum.*

* The specification does not apply to used oil fuel mixed with a hazardous waste other than small quantity generator hazardous waste.

* Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under § 266.40(c). Such used oil is subject to Subpart D of this part rather than this subpart when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

§ 266.41 Prohibitions.

(a) A person may market off-specification used oil for energy recovery only:

(1) To burners or other marketers who have notified EPA of their used oil management activities stating the location and general description of such activities, and who have an EPA identification number; and

(2) To burners who burn the used oil in an industrial furnace or boiler identified in paragraph (b) of this section.

(b) Off-specification used oil may be burned for energy recovery in only the following devices:

(1) Industrial furnaces identified in § 260.10 of this chapter; or

(2) Boilers, as defined in § 260.10 of this chapter, that are identified as follows:

(i) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes;

(ii) Utility boilers used to produce electric power, steam, or heated or cooled air or other gases or fluids for sale; or

(iii) Used oil-fired space heaters provided that:

(A) The heater burns only used oil that the owner or operator generates or used oil received from do-it-yourself oil changers who generate used oil as household waste;

(B) The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour; and

(C) The combustion gases from the heater are vented to the ambient air.

§ 266.42 Standards applicable to generators of used oil burned for energy recovery.

(a) Except as provided in paragraphs (b) and (c) of this section, generators of used oil are not subject to this subpart.

(b) Generators who market used oil directly to a burner are subject to § 266.43.

(c) Generators who burn used oil are subject to § 266.44.

§ 266.43 Standards applicable to marketers of used oil burned for energy recovery.

(a) Persons who market used oil fuel are termed "marketers". Except as provided below, marketers include generators who market used oil fuel directly to a burner, persons who receive used oil from generators and produce, process, or blend used oil fuel from these used oils (including persons sending blended or processed used oil to brokers or other intermediaries), and persons who distribute but do not process or blend used oil fuel. The following persons are not marketers subject to this subpart:

(1) Used oil generators, and collectors who transport used oil received only from generators, unless the generator or collector markets the used oil directly to a person who burns it for energy recovery. However, persons who burn some used oil fuel for purposes of processing or other treatment to produce used oil fuel for marketing are considered to be burning incidentally to processing. Thus, generators and collectors who market to such incidental burners are not marketers subject to this subpart;

(2) Persons who market only used oil fuel that meets the specification under § 266.40(e) and who are not the first person to claim the oil meets the specification (i.e., marketers who do not receive used oil from generators or initial transporters and marketers who

neither receive nor market off-specification used oil fuel).

(b) Marketers are subject to the following requirements:

(1) *Analysis of used oil fuel.* Used oil fuel is subject to regulation under this subpart unless the marketer obtains analyses or other information documenting that the used oil fuel meets the specification provided under § 266.40(e).

(2) *Prohibitions.* The prohibitions under § 266.41(a);

(3) *Notification.* Notification to EPA stating the location and general description of used oil management activities. Even if a marketer has previously notified EPA of his hazardous waste management activities under section 3010 of RCRA and obtained a U.S. EPA Identification Number, he must renotify to identify his used oil management activities.

(4) *Invoice system.* When a marketer initiates a shipment of off-specification used oil, he must prepare and send the receiving facility an invoice containing the following information:

- (i) An invoice number;
- (ii) His own EPA identification number and the EPA identification number of the receiving facility;
- (iii) The names and addresses of the shipping and receiving facilities;
- (iv) The quantity of off-specification used oil to be delivered;
- (v) The date(s) of shipment or delivery; and
- (vi) The following statement: "This used oil is subject to EPA regulation under 40 CFR Part 266";

Note: Used oil that meets the definition of combustible liquid (flash point below 200 °F but at or greater than 100 °F) or flammable liquid (flash point below 100 °F) is subject to Department of Transportation Hazardous Materials Regulations at 49 CFR Parts 100 through 177.

(5) *Required notices.* (i) Before a marketer initiates the first shipment of off-specification used oil to a burner or other marketer, he must obtain a one-time written and signed notice from the burner or marketer certifying that:

(A) The burner or marketer has notified EPA stating the location and general description of his used oil management activities; and

(B) If the recipient is a burner, the burner will burn the off-specification used oil only in an industrial furnace or boiler identified in § 266.41(b); and

(ii) Before a marketer accepts the first shipment of off-specification used oil from another marketer subject to the requirements of this section, he must provide the marketer with a one-time written and signed notice certifying that he has notified EPA of his used oil management activities; and

(6) *Recordkeeping*—(i) *Used oil fuel that meets the specification.* A marketer who first claims under paragraph (b)(1) of this section that used oil fuel meets the specification must keep copies of analysis (or other information used to make the determination) of used oil for three years. Such marketers must also record in an operating log and keep for three years the following information on each shipment of used oil fuel that meets the specification. Such used oil fuel is not subject to further regulation, unless it is subsequently mixed with hazardous waste or unless it is mixed with used oil so that it no longer meets the specification.

(A) The name and address of the facility receiving the shipment;

(B) The quantity of used oil fuel delivered;

(C) The date of shipment or delivery; and

(D) A cross-reference to the record of used oil analysis (or other information used to make the determination that the oil meets the specification) required under paragraph (b)(6)(i) of this section.

(ii) *Off-specification used oil fuel.* A marketer who receives or initiates an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received or prepared. In addition, a marketer must keep a copy of each certification notice that he receives or sends for three years from the date he last engages in an off-specification used oil fuel marketing transaction with the person who sends or receives the certification notice.

(The analysis requirements contained in paragraph (b)(1) of this section were approved by OMB under control number 2050-

0047. The notification requirements contained in paragraph (b)(3) of this section were approved by OMB under control number 2050-0028. The invoice requirements contained in paragraph (b)(4) of this section were approved by OMB under control number 2050-0047. The certification requirements contained in paragraph (b)(5) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (b)(6) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49205, Nov. 29, 1985, as amended at 52 FR 11822, Apr. 13, 1987]

§ 266.44 Standards applicable to burners of used oil burned for energy recovery.

Owners and operators of facilities that burn used oil fuel are "burners" and are subject to the following requirements:

(a) *Prohibition.* The prohibition under § 266.41(b);

(b) *Notification.* Burners of off-specification used oil fuel, and burners of used oil fuel who are the first to claim that the oil meets the specification provided under § 266.40(e), except burners who burn specification oil that they generate, must notify EPA stating the location and general description of used oil management activities. Burners of used oil fuel that meets the specification who receive such oil from a marketer that previously notified EPA are not required to notify. Owners and operators of used oil-fired space heaters that burn used oil fuel under the provisions of § 266.41(b)(2) are exempt from this notification requirement. Even if a burner has previously notified EPA of his hazardous waste management activities under section 3010 of RCRA and obtained an identification number, he must renotify to identify his used oil management activities.

(c) *Required notices.* Before a burner accepts the first shipment of off-specification used oil fuel from a marketer, he must provide the marketer a one-time written and signed notice certifying that:

(1) He has notified EPA stating the location and general description of his used oil management activities; and

(2) He will burn the used oil only in an industrial furnace or boiler identified in § 266.41(b); and

(d) *Used oil fuel analysis.* (1) Used oil fuel burned by the generator is subject to regulation under this subpart unless the burner obtains analysis (or other information) documenting that the used oil meets the specification provided under § 266.40(e).

(2) Burners who treat off-specification used oil fuel by processing, blending, or other treatment to meet the specification provided under § 266.40(e) must obtain analyses (or other information) documenting that the used oil meets the specification.

(c) *Recordkeeping.* A burner who receives an invoice under the requirements of this section must keep a copy of each invoice for three years from the date the invoice is received. Burners must also keep for three years copies of analyses of used oil fuel as may be required by paragraph (d) of this section. In addition, he must keep a copy of each certification notice that he sends to a marketer for three years from the date he last receives off-specification used oil from that marketer.

(The notification requirements contained in paragraph (b) of this section were approved by OMB under control number 2050-0028. The certification requirements contained in paragraph (c) of this section were approved by OMB under control number 2050-0047. The analysis requirements contained in paragraph (d) of this section were approved by OMB under control number 2050-0047. The recordkeeping requirements contained in paragraph (e) of this section were approved by OMB under control number 2050-0047.)

[50 FR 49205, Nov. 29, 1985, as amended at 52 FR 11822, Apr. 13, 1987]

Subpart F—Recyclable Materials Utilized for Precious Metal Recovery

§ 266.70 Applicability and requirements.

(a) The regulations of this subpart apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these.

(b) Persons who generate, transport, or store recyclable materials that are regulated under this subpart are subject to the following requirements:



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

October 5, 1990

Mrs. Kathy Liles
20 North Main Street, Room 262
Brooksville, Florida 34601

Dear Mrs. Liles:

Re: Request to Process Tire Derived Fuel and Used Oil
Florida Mining and Materials - Cement Kilns Nos. 1 and 2

The enclosed information is being forwarded to you for completeness review.

Florida Mining and Materials has requested to process tire derived fuel and used oil in their existing cement kilns. Even though the claim is that there will be no actual pollutant emission increases, which will have to be verified, the sources are not permitted to process these fuels.

Due to the potential controversy with this operational change, the Department will require public notice of the company's intent prior to amending their construction permits.

If you have any questions, please call Bruce Mitchell at 904-488-1344 or write to me at the above address. All comments, written or oral, should be received by November 2, 1990. If it is convenient to FAX a response to us, the FAX number to use is 904-922-6979.

Sincerely,

for C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/BM/plm

Attachments

c: B. Mitchell, BAR



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

October 5, 1990

Ms. Jewell Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Ms. Harper:

Re: Request to Process Tire Derived Fuel and Used Oil
Florida Mining and Materials - Cement Kilns Nos. 1 and 2

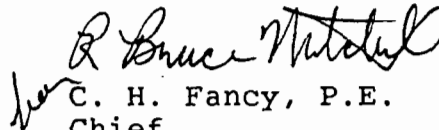
The enclosed information is being forwarded to you for completeness review.

Florida Mining and Materials has requested to process tire derived fuel and used oil in their existing cement kilns. Even though the claim is that there will be no actual pollutant emission increases, which will have to be verified, the sources are not permitted to process these fuels.

Due to the potential controversy with this operational change, the Department will require public notice of the company's intent prior to amending their construction permits.

If you have any questions, please call Bruce Mitchell at 904-488-1344 or write to me at the above address. All comments, written or oral, should be received by November 2, 1990. If it is convenient to FAX a response to us, the FAX number to use is 904-922-6979.

Sincerely,



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/BM/plm

Attachments

c: B. Mitchell, BAR



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

October 5, 1990

Mr. Bill Thomas, Administrator
Air Programs
Southwest District
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

Dear Mr. Thomas:

Re: Request to Process Tire Derived Fuel and Used Oil
Florida Mining and Materials - Cement Kilns Nos. 1 and 2

The enclosed information is being forwarded to you for completeness review.

Florida Mining and Materials has requested to process tire derived fuel and used oil in their existing cement kilns. Even though the claim is that there will be no actual pollutant emission increases, which will have to be verified, the sources are not permitted to process these fuels.

Due to the potential controversy with this operational change, the Department will require public notice of the company's intent prior to amending their construction permits.

If you have any questions, please call Bruce Mitchell at 904-488-1344 or write to me at the above address. All comments, written or oral, should be received by November 2, 1990. If it is convenient to FAX a response to us, the FAX number to use is 904-922-6979.

Sincerely,


C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/BM/plm

Attachments

c: B. Mitchell, BAR



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

October 5, 1990

Mrs. Chris Shaver, Chief
Permit Review and Technical Support Branch
National Park Service
Air Quality Division
Post Office Box 25287
Denver, Colorado 80255

Dear Mrs. Shaver:

Re: Request to Process Tire Derived Fuel and Used Oil
Florida Mining and Materials - Cement Kilns Nos. 1 and 2

The enclosed information is being forwarded to you for completeness review.

Florida Mining and Materials has requested to process tire derived fuel and used oil in their existing cement kilns. Even though the claim is that there will be no actual pollutant emission increases, which will have to be verified, the sources are not permitted to process these fuels.

Due to the potential controversy with this operational change, the Department will require public notice of the company's intent prior to amending their construction permits.

If you have any questions, please call Bruce Mitchell at 904-488-1344 or write to me at the above address. All comments, written or oral, should be received by November 2, 1990. If it is convenient to FAX a response to us, the FAX number to use is 904-922-6979.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/BM/plm

Attachments

c: B. Mitchell, BAR

APPLICATION TO AMEND FDER
AIR POLLUTION SOURCE PERMIT
AC27-173474 FOR PERFORMANCE TESTING
OF WASTE TIRES AND USED OIL
IN CEMENT KILN NO. 2

and

~~AC27-173450~~

PSD-FL-124

-124A

PSD-FL-124B

FLORIDA MINING AND MATERIALS
BROOKSVILLE, FLORIDA

September 14, 1990

Cross/Tessitore & Associates, P.A.
4763 South Conway Road, Suite F.
Orlando, Florida 32812
(407) 851-1484
F03.178/FMM2TIRE

TABLE OF CONTENTS

	<u>PAGE</u>
Application Form	1
Supplemental Information: Section II	13
1. Project Description	14
2. Table II-1 Proposed Performance Test Matrix	16
3. Figure II-1 Kiln No. 2 Process Flow Diagram	17
4. Figure II-2 Kiln No. 2 Temperature and Retention Time Profile	18
5. Table II-2 Permitting and Compliance Activities	19
6. Table II-3 Summary of Test Parameters	20
Supplemental Information: Section III	21
1. Table III-1 Regulated Emissions Summary	22
2. Table III-2 Fuels Summary	23
3. Table III-3 Additional Fuels Data	24
4. Table III-4 Off-Spec Used Oil Characteristics	25
Supplemental Information: Section V	25
1. Table V-1 Process Data (Feed, Production, Heat Input Rates)	27
2. Emissions Calculations	28
3. Figure V-1 Process Flow Diagram	35
4. Figure V-2 USGS Topographical Map	36
5. Figure V-3 Facility Plot Plan	37



Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-1400

DER Form # _____
Form Title _____
Change Date _____
DER Approval No. _____
Page 1 of 2

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Portland Cement Plant [] New¹ [x] Existing¹

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

COMPANY NAME: Moore McCormack, Inc. d/b/a Florida Mining & Materials COUNTY: Hernando

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) No. 2 Cement Kiln

SOURCE LOCATION: Street U.S. Highway 98 City NW of Brooksville

UTM: East 17-356 North 3169

Latitude 28° 38' 34"N Longitude 82° 28' 25"W

APPLICANT NAME AND TITLE: C. M. Coleman Jr., Vice President and General Manager

APPLICANT ADDRESS: P.O. Box 6, Brooksville, Florida 34605-0006

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Moore McCormack Inc. d/b/a Florida Mining & Materials

I certify that the statements made in this application for a modification 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]

Vice President
C.M. Coleman Jr., and General Manager
Name and Title (Please Type)

Date: 09/14/90 Telephone No. (904)796-7241

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)

Best Available Copy

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 Joseph L. Tessitore
Joseph L. Tessitore, P.E.
Name (Please Type)

Cross/Tessitore & Associates, P.A.
Company Name (Please Type)

4763 S. Conway Rd., Ste. F, Orlando, Florida 32812
Mailing Address (Please Type)

Florida Registration No. 23374 Date: 9/14/90 Telephone No. (407)851-1484

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 Supplemental Information: Section II

B. Schedule of project covered in this application (Construction Permit Application Only)
Start of Construction N/A Completion of Construction N/A

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.) The following information represents the initial costs associated with the existing baghouse system. No additional air pollution control equipment will be required for the subject modification.

Baghouse Equipment	\$2,825,000.00
Erection	\$2,800,000.00
Total	5,625,000.00

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.
See Supplemental Information: Section II

8,200 hrs/yr

Requested permitted equipment operating time: hrs/day ___; days/wk ___; wks/yr ___;
if power plant, hrs/yr ___; if seasonal, describe: _____

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? _____
 - 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. Yes¹
- 3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. Yes²
- 4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? Yes
- 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? _____
 - 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 justifi-
cation for any answer of "No" that might be considered questionable.

¹ BACT has been determined for particulate emissions under the previous
Permit AC 27-30450; BACT has been determined for Sulfur Dioxide and
Nitrogen Dioxide (NO_x) under the previous Permit AC 27-138850. No
BACT review was required for Carbon Monoxide and Volatile Organic
Compound emissions.

² PSD review for particulate, Sulfur Dioxide and Nitrogen Dioxide (NO_x)
was conducted under previous Permits AC 27-30450 and AC 27-138850 (PSD-FL-124).

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		
Limestone	Particulate	0.02	207,640	
Sand/Clay	Particulate	0.08	20,774	See Supplemental
Fly Ash	Particulate	0.14	26,182	Information: Section II
Staurolite	Particulate	1.40	2,704	
Mill Scale	Particulate	1.40	2,704	

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 260,000

2. Product Weight (lbs/hr): 159,250

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
	See Supplemental		Information:	Section III			

See Section V, Item 2.

²Reference 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)

³Calculated from operating rate and applicable standard.

⁴Emission, 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)
Fuller Reverse	Particulate	99.9	0-60	Testing
Air (Variable Cycle)				
Fabric Filter				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
See Supplemental Information: Section III			

Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See supplemental information: Section II

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

. Indicate liquid or solid wastes generated and method of disposal.

Solids collected from the fabric filter during normal operation will be
returned to the kiln feed and recycled through the system.

Best Available Copy

Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 90 ft. Stack Diameter: 14.0 ft.
 Gas Flow Rate: 300,000 ACFM 199,000 DSCFM Gas Exit Temperature: ~380 °F.
 Water Vapor Content: ~10 % Velocity: 24.87 FPS

SECTION IV: INCINERATOR INFORMATION NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated			NOT APPLICABLE				
Uncontrolled (lbs/hr)							

Description of Waste _____
 Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____
 Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____
 Manufacturer _____
 Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber		NOT APPLICABLE			
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ 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) _____

Best Available Copy

Brief description of operating characteristics of control devices: _____

NOT APPLICABLE

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOT APPLICABLE

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

See Supplemental Information: Section V

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).
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.)
With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

NOT APPLICABLE

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

BACT levels have been previously determined in Permit AC 27-138850 and previous Permit AC27-30450. 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

Contaminant	Rate or Concentration

11. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

12. What emission levels do you propose as best available control technology?

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

13. 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

NOT APPLICABLE

10. Stack Parameters

- a. Height: ft. b. Diameter: ft.
- c. Flow Rate: ACFM d. Temperature: °F.
- e. Velocity: FPS

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.

NOT APPLICABLE

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:

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:

Explain method of determining efficiency.

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

NOT APPLICABLE

- (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

NOT APPLICABLE

- (8) Process Rate:¹

10. Reason for selection and description of systems:

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

Company Monitored Data Not Applicable NOT APPLICABLE

1. _____ no. sites _____ TSP _____ () SO₂* _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
 month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

NOT APPLICABLE

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.

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.

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.

SUPPLEMENTAL INFORMATION: SECTION II

1. Project Description
2. Table II-1
Proposed Performance Test Matrix
3. Figure II-1
Kiln No. 2 Process Flow Diagram
4. Figure II-2
Kiln No. 2 Temperature and
Retention Time Profile
5. Table II-2
Permitting and
Compliance Activities
6. Table II-3
Summary of Test Parameters

PROJECT DESCRIPTION

The subject of this application is to request that FDER Permit AC27-173474 be amended to allow Florida Mining and Materials to conduct performance tests on Cement Kiln No. 2 for the burning of waste tires, used oil, and coal in various combination as presented in Table II-1.

The purpose of this testing is to allow Florida Mining and Materials (FM&M) to:

- (1) Evaluate the energy conservation benefits of utilizing waste tires and used oil as a fuel supplement to coal.
- (2) Determine if the existing facility in its present physical configuration is capable of operating with these fuel combinations.
- (3) Determine emission levels from the cement kiln during operation with these various fuel combinations.

The proposed performance test would include emission testing for the four separate fuel combinations as presented in Table II-1. The proposed test parameters and methods are provided in Table II-2. The results of this emission testing will be reported to FDER and may be used as a basis for amending FDER permit AC27-173474 for permanent operation with waste tires and used oil as supplemental fuels.

The cement kiln system provides an excellent environment for utilization of waste tires and used oil as kiln fuels. Initially, thermal destruction of organic compounds is ensured by the available combustion conditions, including temperatures of at least 2800° F and retention times of up to four (4) seconds within the kiln itself. Turbulent gas flow is maintained throughout the kiln which further enhances the environment for thermal destruction. Further in the system, exhaust gases are exposed to a counter current flow of raw materials feed which consists largely of calcium carbonate. Thus conditions are present for effective neutralization of acid gases contained in the exhaust. The counter current flow includes a high concentration of particulate matter which provides substantial surface area for condensation of volatile metal species as well as any residual organic compounds. To complete the system, the fabric filter then provides for maximum removal of particulates from the gas stream. Each of these phases combine to make up an efficient industrial process which offers a perfect opportunity for use of these fuel resources with an insignificant impact on the environment.

Estimated emissions relating to the current permit FDER No. AC27-173474 are detailed in the supporting information for Sections III and V of this application. No increase in emissions for currently limited compounds is expected as a result of this permit amendment. The baghouses currently operated with the No. 2 Kiln will remain as the air pollution control device, thus continuing to provide Best Available Control Technology as previously determined.

No significant emission increases are expected for particulates and/or SO₂ due to the high removal efficiency of the system as demonstrated in the attached Section V. Also, NO_x emissions are expected to decrease due to the use of waste tires since this would provide a better distribution of heat release and less fixation of atmospheric nitrogen. For the case of CO and HC, the emission rates are based on the process

combustion efficiency, and due to the high temperatures and long retention times, no decrease in combustion efficiency is expected.

For the case of the remaining compounds listed in Table II-3 (Metals, PCDDs/PCDFs, Polynuclear Aromatic Hydrocarbons, Benzene, Mercury) no substantial data base is available to estimate emission rates from the kiln No. 2 process. Although it can be generalized that the combination of high particulate removal, caustic scrubbing, and high combustion efficiency would minimize these emissions, exact emission rates for the various fuel combinations in Table II-1 cannot be determined. Therefore, it is the intent of the performance test to measure the baseline levels during coal combustion and subsequent emission changes for the various waste tire and used oil combinations.

In conclusion, it should be emphasized that this requested amendment does not include any significant and/or substantial change to the Kiln No.2 physical system and includes only the substitution of waste tires and used oil for coal. This amendment only includes the performance testing of Kiln No. 2 with these fuels and is not for operational purposes. It is also understood that any operation after the performance testing with these fuels would require a permanent amendment of Kiln No.2 Permit AC27-173474 by FDER and EPA.

TABLE II-1

PROPOSED PERFORMANCE TEST MATRIX

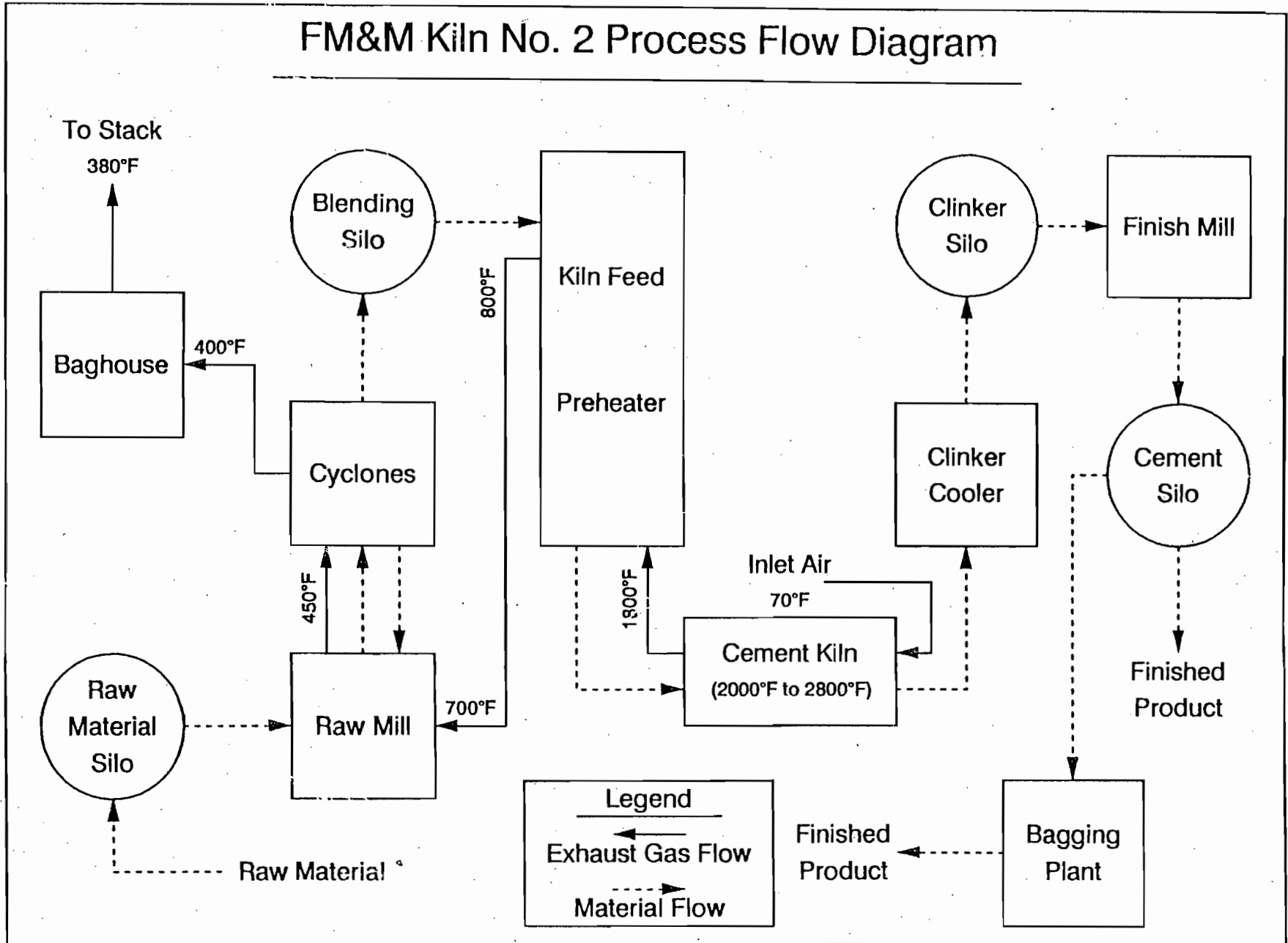
The proposed testing would include stack sampling during four separate cases for the kiln. These are represented in the following matrix.

Fuel Type	Test Conditions			
	1*	2	3	4
	% of Total Fuel Supply			
Coal (min.)	100	80	50	30
Waste Tires (max.)	0	20	0	20
Used Oil (max.)	0	0	50	50

*Baseline

FMMZTIRE.DOC

FIGURE II-1



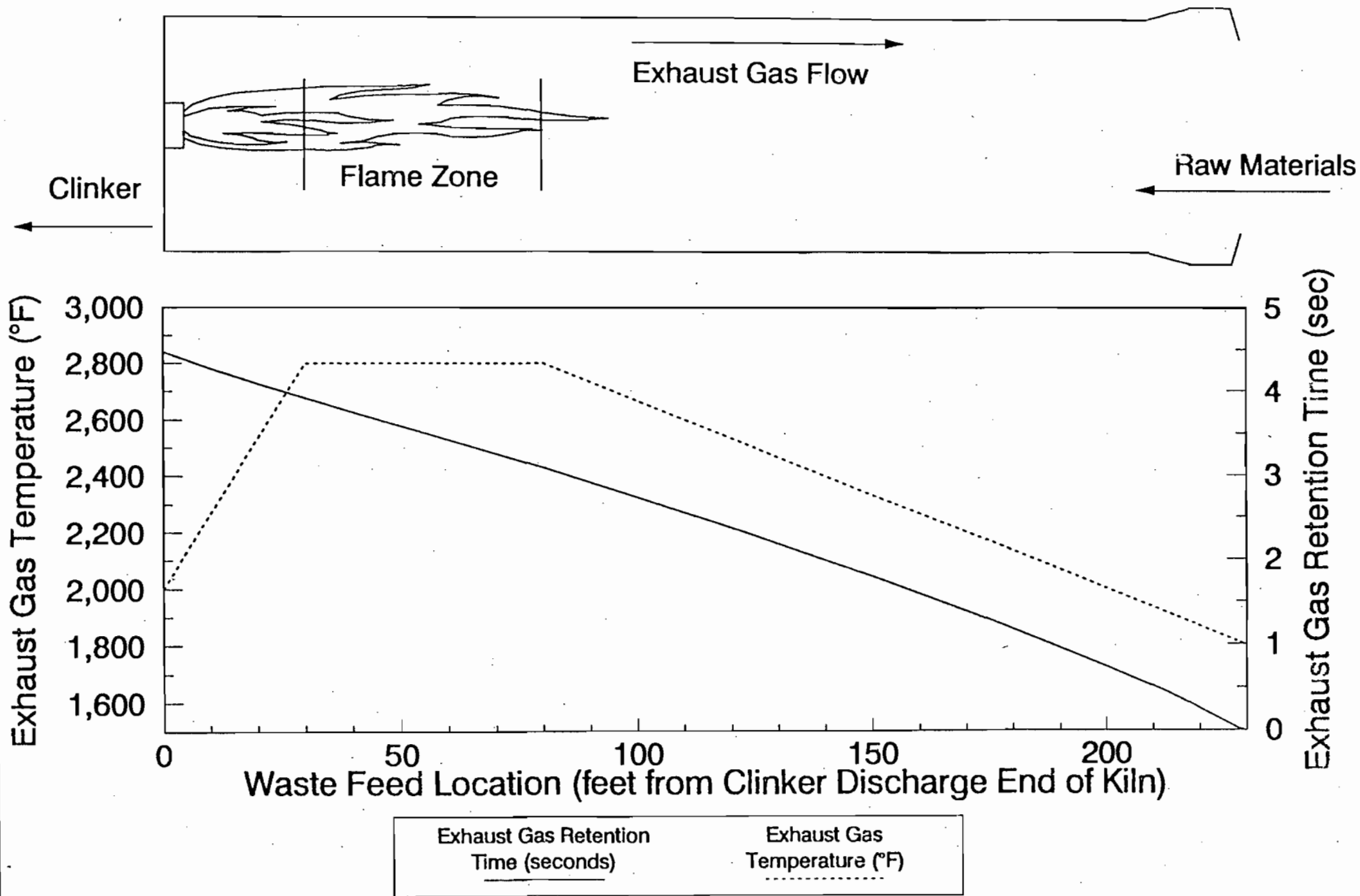
FMM2FLOW.DRW

C
T
A

Cross/Tessitore & Assoc., P.A.
Environmental Engineers Orlando, Florida

FIGURE II-2

FM&M Kiln No. 2 Temperature and Retention Time Profile



FMM2PROF.DRW

C
T
A
Cross/Tessitore & Assoc., P.A.
 Environmental Engineers Orlando, Florida

TABLE II-2
PERMITTING AND COMPLIANCE ACTIVITIES

<u>Activity</u>	<u>Number</u>	<u>Issued</u>	<u>Expired</u>
Construction Permit	AC27-30450	July 25, 1980	December 31, 1983
Operating Permit	AO27-65207	August 16, 1983	August 16, 1988
Consent Order	OGC-86-1471	January 23, 1987	-----
Consent Order	OGC-87-1685	September 1, 1988	-----
Construction Permit	AC27-138850	November 3, 1988	January 1, 1990
Construction Permit	AC27-173474	July 20, 1990	December 31, 1991

TABLE II-3
SUMMARY OF TEST PARAMETERS

Particulate Matter	EPA Method 5
Visible Emissions	EPA Method 9
Metals:	EPA Method 5 (filter and probe rinse)
Aluminum	Barium
Arsenic	Copper
Cadmium	Nickel
Chromium (Total)	Iron
Lead	Vanadium
Zinc	
NO _x	EPA Method 7
Sulfur Dioxide	EPA Method 6 (in back half of Method 5 train)
Carbon Monoxide	EPA Method 10
Volatile Organic Compounds	VOST
Semi-Volatile Organic Compounds	Modified Method 5
CO ₂ /O ₂	EPA Method 3
Stack Gas Flow/Moisture/Temp.	EPA Methods 2 and 4 (in conjunction with EPA Method 5)
PCDDS/PCDFS	EPA Method 23
Polynuclear Aromatic Hydrocarbons	Modified Method 5
Benzene	EPA Method 18
Mercury	EPA Method 101 or 101A

FMMZTIRE

SUPPLEMENTAL INFORMATION: SECTION III

1. Table III-1
Regulated Emissions Summary
2. Table III-2
Fuels Summary
3. Table III-3
Additional Fuels Data

TABLE III-1
REGULATED EMISSIONS SUMMARY

Parameter	Current Allowable Emissions		Allowed Emission Rate Per Rule 17-2	Potential Emissions		Relate to ⁽¹⁾ Flow Diagram
	lbs/hr	T/yr		lbs/hr	T/yr	
Particulate	13.5	55.3	36 lb/hr (17-2.660)	13.5	55.3	E-19
Sulfur Dioxide	11.5	47.0	N/A ⁽²⁾	11.5	47.0	E-19
Nitrogen Dioxide (NO _x)	162.3	665.3	N/A ⁽²⁾	162.3	665.3	E-19
Volatile Organic Compounds	7.4	31.2	N/A ⁽²⁾	7.4	31.2	E-19
Carbon Monoxide	64.0	262.2	N/A ⁽²⁾	64.0	262.2	E-19
Opacity	10 %	--	20% (17-2.660)	10 %	--	E-19

(1) See Figure V-6.

(2) Allowable emissions for these compounds have been previously established as stated in existing Construction Permit AC 27-173474.

TABLE III-2
FUEL COMBINATION SUMMARY DATA

	<u>Current Fuels</u>		<u>Proposed Fuels</u>	
	<u>Coal</u>	<u>Flolite¹</u>	<u>Waste Tires</u>	<u>Used Oil</u>
Case 1				
Consumption	24,170 lb/hr	--	0	0
Heat Input (Btu/hr)	3.0×10^8	--	0	0
Portion of Total Fuel Supply (%)	100	--	0	0
Case 2				
Consumption	19,336 lb/hr	--	4286 lb/hr	0
Heat Input (Btu/hr)	2.4×10^8	--	0.6×10^8	0
Portion of Total Fuel Supply (%)	80	--	20	0
Case 3				
Consumption	12,085 lb/hr	--	0	1034 gal/hr
Heat Input (Btu/hr)	1.5×10^8	--	0	1.5×10^8
Portion of Total Fuel Supply (%)	50	--	0	50
Case 4				
Consumption	7251 lb/hr	--	4286 lb/hr	1034 gal/hr
Heat Input (Btu/hr)	0.9×10^8	--	0.6×10^8	1.5×10^8
Portion of Total Fuel Supply (%)	30	--	20	50

1 Flolite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.

**TABLE III-3
ADDITIONAL FUELS DATA**

	Heat Capacity	Sulfur Content ²
Current:		
Coal	12,500 Btu/lb	1.0 %
Flolite ¹	145,000 Btu/gal	1.0 %
Proposed:		
Used Oil	145,000 Btu/gal	1.5 %
Waste Tires	14,000 Btu/lb	<1.0 %

- (1) Flolite will mainly be used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.
- (2) Values shown are approximate.

TABLE III-4

OFF-SPEC USED OIL CHARACTERISTICS*

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F minimum
Total Halogens	4,000 ppm maximum

* As specified in 40 CFR Part 266.40, "Used Oil Burned For Energy Recovery".

FMM2TIRE.Doc

SUPPLEMENTAL INFORMATION: SECTION V

1. Table V-1
Process Data (Feed, Production, Heat Input Rates)
2. Emissions Calculations
3. Figure V-1
Process Flow Diagram
4. Figure V-2
USGS Topographical Map
5. Figure V-3
Facility Plot Plan

TABLE V-1
PROCESS DATA

Kiln Feed Rate	130 T/hr
Clinker Production Rate	79.6 T/hr
Maximum Heat Input	3.0×10^8 Btu/hr

EMISSIONS CALCULATIONS

1. PARTICULATE

The anticipated emissions rate for particulate is the same as the currently permitted level. In order to determine the efficiency of the air pollution control device, the potential emission loading to the baghouse is calculated based on an emissions factor from the EPA Guidance Document AP-42, Table 8.6-1.

Calculation of Allowable Emissions:

Allowable Emissions = 13.5 lb/hr
(Permit AC27-173474)
= 55.3 T/yr
(Permit AC27-173474)

Calculation of Potential Emissions:

Potential Emissions = 13.5 lb/hr
= 55.35 T/yr

Calculation of Control Device Removal Efficiency:

Uncontrolled Emissions Factor = 245.0 lb/ton clinker
Production Rate = 79.6 T/hr clinker
Potential Emission Loading to Baghouse = (245 lb/ton) x (79.6 T/hr)
= 19,502.0 lb/hr
Control Device Removal Efficiency = (19,502 lb/hr - 13.5 lb/hr)
- (19,502 lb/hr)
= 99.9%

EMISSIONS CALCULATIONS

2. SULFUR DIOXIDE

The anticipated emissions rate for Sulfur Dioxide is the same as the current permitted level. Sulfur Dioxide is generated in the cement kiln from two sources: 1) The minerals present in the raw process feed, and 2) The combustion of fuel. Uncontrolled emissions factors for Sulfur Dioxide, found in the EPA Guidance Document AP-42, are used in calculating the potential loading to the from each source.

Calculation of Allowable Emissions:

Allowable Emissions = 11.5 lb/hr
(Permit AC27-173474)
= 47.0 T/yr
(Permit AC27-173474)

Calculation of Potential Emissions:

Potential Emissions = 11.5 lb/hr
= 47.0 T/yr

Calculation of System Removal Efficiency:

Mineral Source:

Sulfur Dioxide Emission Factor = 10.2 lb SO₂/ton clinker
(from AP-42)

Clinker Production Rate = 79.6 T/hr

Potential Emissions Loading
to the Fabric Filter = (79.6 tons clinker/hr)
x (10.2 lb SO₂/ton clinker)
= 811.9 lb/hr

EMISSIONS CALCULATIONS

Calculation of System Removal Efficiency: (continued)

Fuel Source:

Sulfur dioxide emissions associated with fuels sources of sulfur are minimized through compliance with current permit specific condition No. 4. This condition restricts the sulfur content of the coal currently used to a maximum of 1.0 percent by weight assuming a heating value of 12,387 Btu/lb. Coals with heating values lower than 12,387 Btu/lb are restricted to a maximum of 0.83 pounds of sulfur per MMBtu of heat input. The following analysis is provided to calculate the typical sulfur characteristics of the proposed waste fuels.

Waste Tires:

Heating Value	= 14,000 Btu/lb
Sulfur Content	= 0.72% (Based on available analytical Data)
Sulfur/Btu Ratio	= $\frac{(0.0072 \text{ lb S/lb fuel})}{(0.014 \text{ MMBtu/lb fuel})}$ = 0.51 lb S/MMbtu

Used Oil:

Heating Value	= 145,000 Btu/lb
API Gravity, 60/60 °F	= 30 (Based on available analytical data)
Specific Gravity	= $\frac{141,500}{1000(30 + 131.5)}$ = 0.88
Density	= (0.88) x (62.3 lb/ft ³) = 54.8 lb/ft ³
Sulfur Content	= 1.5%
Sulfur/Btu Ratio	= $\frac{(0.015 \text{ lb S/lb fuel})}{0.0145 \text{ MMBtu/gal}}$
Sulfur/Btu Ratio	= $\frac{(0.015 \text{ lb S/lb fuel}) \times (54.8 \text{ lb fuel/ft}^3)}{(0.145 \text{ MMBtu/gal}) \times (7.48 \text{ gal/ft}^3)}$ = 0.76 lb S/MMBtu

This analysis shows that waste tires and used oil do not contain sulfur levels exceeding the maximum criteria for coal. Therefore the use of these fuels should not result in an increase in sulfur dioxide emissions beyond the allowable rate for baseline coal usage. Fuel source emissions of sulfur dioxide are calculated as follows:

Maximum Fuel Consumption Rate = 300 mmBtu/hr

Maximum Fuel Sulfur Content = 0.83 lb/mmBtu

Conversion Factor = 2 lb SO₂/lb S

Potential Emissions Loading
to the Fabric Filter = (300 mmBtu fuel/hr)
x (0.83 lb sulfur/mmBtu fuel)
x (2 lb SO₂/lb S)
= 498 lb/hr SO₂

Total:

Estimated Total Potential Emissions
Loading to the Fabric Filter = 498 lb/hr + 811.9 lb/hr
= 1,310 lb/hr SO₂

System Removal Efficiency = (1,310 lb/hr - 11.5 lb/hr)
÷ (1,310 lb/hr)
= 99.1%

EMISSIONS CALCULATIONS

3. NITROGEN DIOXIDE (NO_x)

Nitrogen Dioxide (NO_x) emissions are a function of the kiln combustion process only. It is assumed that no control is provided by the fabric filter. The anticipated emissions are the same as the current permitted level.

Allowable Emissions	= 162.3 lb/hr NO _x (Permit AC27-173474)
	= 665.3 T/yr (Permit AC27-173474)
Potential Emissions	= 162.3 lb/hr
	= 665.3 T/yr
Control Device Removal Efficiency	= 0%

EMISSIONS CALCULATIONS

4. CARBON MONOXIDE

Carbon Monoxide emissions are a function of the kiln combustion and process reactions only. It is assumed that no control is provided by the fabric filter. The anticipated emission rate is the same as the current permitted level.

Allowable Emissions = 64.0 lb/hr
(Permit AC27-173474)

= 262.2 T/yr
(Permit AC27-173474)

Estimated Potential Emissions = 64.0 lb/hr

= 262.2 T/yr

Control Device Removal Efficiency = 0%

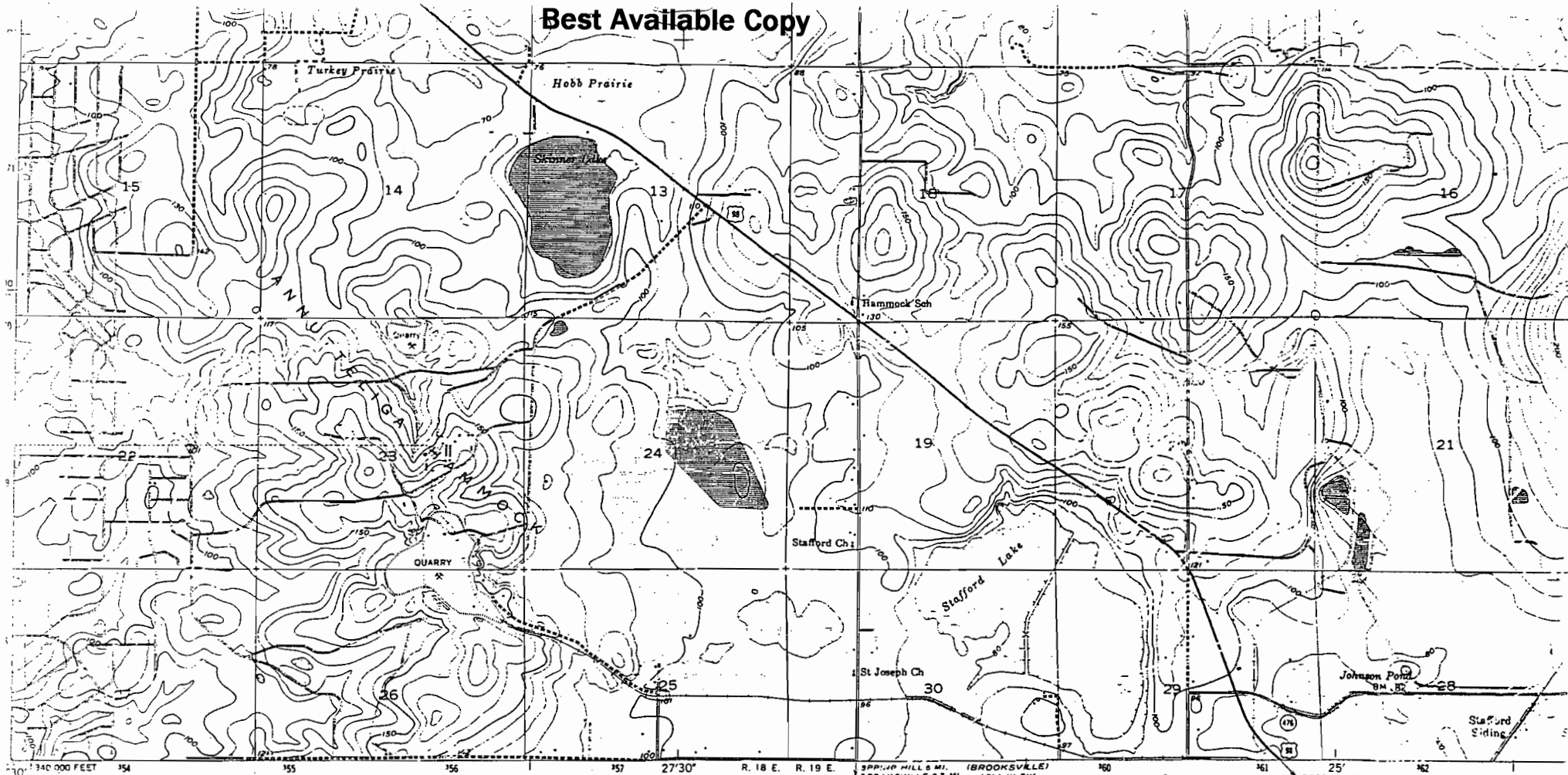
EMISSIONS CALCULATIONS

5. VOLATILE ORGANIC COMPOUNDS (TOTAL HYDROCARBONS)

Control of volatile organic compounds (hydrocarbons) is achieved through properly maintained combustion conditions within the kiln system. The proposed anticipated rate is the same as the current permitted level.

Allowable Emissions	= 7.4 lb/hr (Permit AC27-173474)
	= 31.2 T/yr (Permit AC27-173474)
Potential Emissions	= 7.4 lb/hr
	= 31.2 T/yr
Control Device Removal Efficiency	= 0%

Best Available Copy



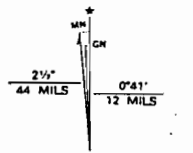
Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

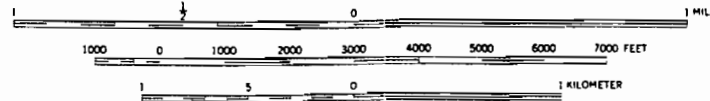
Topography from aerial photographs by Kesh plotter
Aerial photographs taken 1951. Field check 1954

Conic projection. 1927 North American datum
10,000-foot grid based on Florida coordinate system,
west zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue

To place on the predicted North American Datum 1983,
move the projection lines 27 meters south and
15 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of
the National or State reservations shown on this map



UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET



SCALE 1:24000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

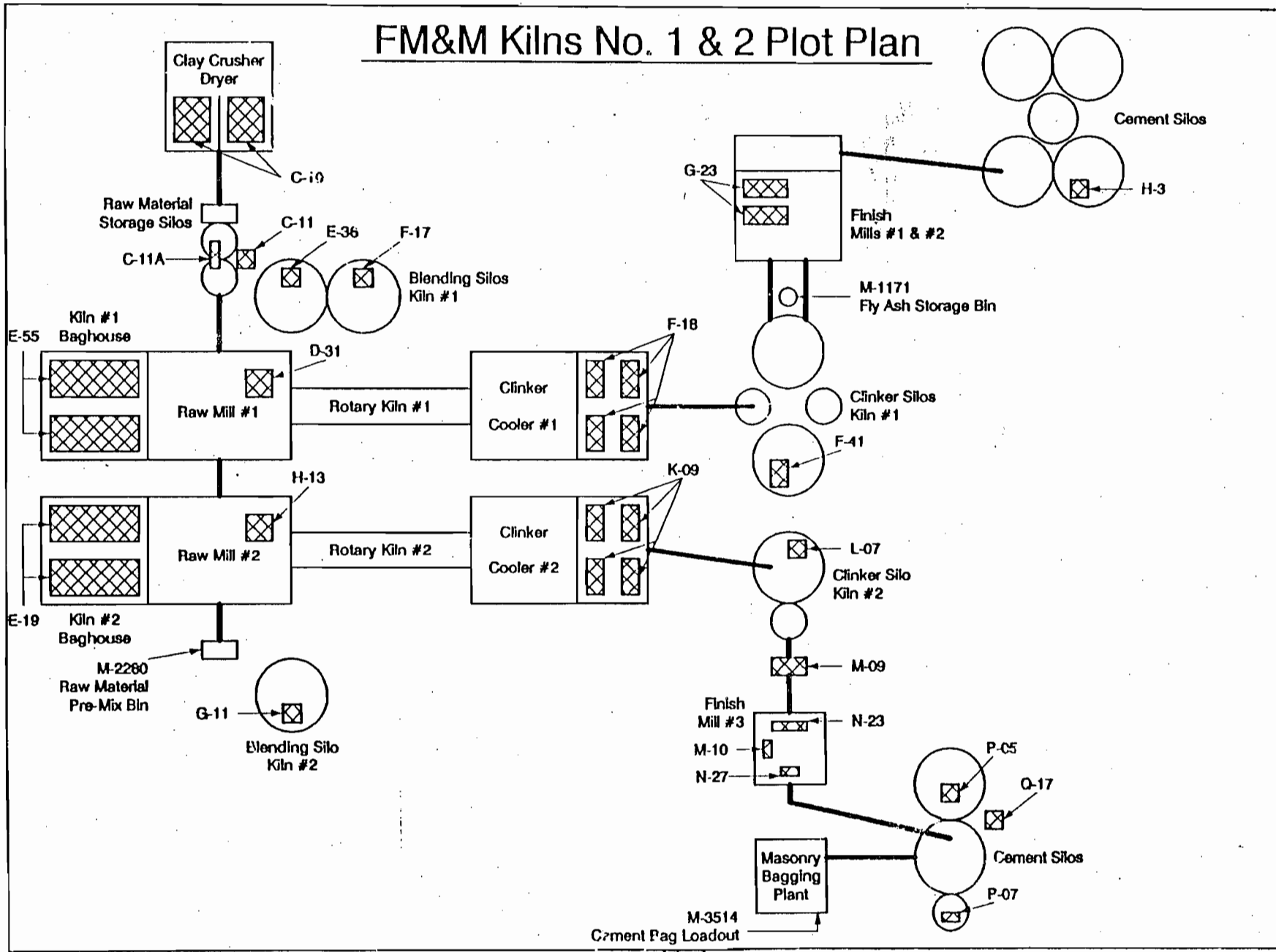
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs
other sources. This information not field checked. Mac et

FIGURE V-3



37

FMM1&2PL.DRW

C
T
A
Cross/Tessitore & Assoc., P.A.
 Environmental Engineers Orlando, Florida



CROSS/TESSITORE & ASSOCIATES, P.A.

4763 S. CONWAY ROAD, SUITE F
ORLANDO, FLORIDA 32812
407/851-1484

September 14, 1990

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

SUBJECT: Florida Mining & Materials (F03.669)

Dear Mr. Fancy:

Please find enclosed four (4) copies of each of the following documents:

- 1) Application to Amend FDER Air Pollution Source Permit AC27-169616 For Performance Testing of Waste Tires and Used Oil in Cement Kiln No. 1; and
- 2) Application to Amend FDER Air Pollution Source Permit AC27-173474 for Performance Testing of Waste Tires and Used Oil in Cement Kiln No. 2.

The purpose of the requested permit amendments is to allow Florida Mining and Materials (FM&M) to:

- (1) Evaluate the energy conservation benefits of utilizing waste tires and used oil as a fuel supplement to coal.
- (2) Determine if the existing facility in its present physical configuration is capable of operating with these fuel combinations.
- (3) Determine emissions levels from the cement kilns during operation with these various fuel combinations.

A modification of the existing sources is not requested at this time.

Should you have any questions or comments regarding these applications, please do not hesitate to contact me.

Sincerely,

Patricia K. Rykowski

Patricia K. Rykowski
Project Engineer

PKR/bdf
Enc. a/s
C0900.Doc

186923

APPLICATION TO AMEND FDER
AIR POLLUTION SOURCE PERMIT
AC27-~~186923~~ FOR PERFORMANCE TESTING
OF WASTE TIRES AND USED OIL
IN CEMENT KILN NO. 1

FLORIDA MINING AND MATERIALS
BROOKSVILLE, FLORIDA

September 14, 1990

Cross/Tessitore & Associates, P.A.
4763 South Conway Road, Suite F.
Orlando, Florida 32812
(407) 851-1484
F03.178/FMM1TIRE.Doc

TABLE OF CONTENTS

	<u>PAGE</u>
Application Form	1
Supplemental Information: Section II	13
1. Project Description	14
2. Table II-1 Proposed Performance Test Matrix	16
3. Figure II-1 Kiln No. 2 Process Flow Diagram	17
4. Figure II-2 Kiln No. 2 Temperature and Retention Time Profile	18
5. Table II-2 Permitting and Compliance Activities	19
6. Table II-3 Summary of Test Parameters	20
Supplemental Information: Section III	21
1. Table III-1 Regulated Emissions Summary	22
2. Table III-2 Fuel Combinatin Summary Data	23
3. Table III-3 Additional Fuels Data	24
4. Table III-4 Off-Spec Used Oil Characteristic	25
Supplemental Information: Section V	26
1. Table V-1 Process Data (Feed, Production, Heat Input Rates)	26
2. Emissions Calculation	
3. Figure V-1 Process Flow Diagram	29
4. Figure V-2 USGS Topographical Map	30
5. Figure V-3 Facility Plot Plan	31

Best Available Copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



Bob Martinez
GOVERNOR
Dale Twachtman
SECRETARY
Alex Alexander
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Portland Cement Plant [] New¹ [X] Existing¹

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

COMPANY NAME: Moore McCormack, Inc. d/b/a Florida Mining & Materials COUNTY: Hernando

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) No. 1 Cement Kiln

SOURCE LOCATION: Street U.S. Highway 98 City N.W. of Brooksville

UTM: East 17-356.00 North 3169.89

Latitude 28 ° 38 ' 34 "N Longitude 82 ° 28 ' 25 "W

APPLICANT NAME AND TITLE: C. M. Coleman Jr., Vice President and General Manager

APPLICANT ADDRESS: P.O. Box 6, Brooksville, Florida 34605-0006

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Moore McCormack, Inc. d/b/a Florida Mining & Materials

I certify that the statements made in this application for a Modification 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 40J, 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]

C.M. Coleman Jr., Vice President and General Manager
Name and Title (Please Type)

Date: 09/14/90 Telephone No. (904)796-7241

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Joseph L. Tessitore
Joseph L. Tessitore, P.E.
Name (Please Type)

Cross/Tessitore and Associates, P.A.
Company Name (Please Type)

4763 S. Conway Road, Orlando, Florida 32812
Mailing Address (Please Type)

Florida Registration No. 23374 Date: 9/14/80 Telephone No. (407)851-1484

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 SUPPLEMENTAL INFORMATION: Section II

Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Existing Completion of Construction Existing

Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.) The following information represents the initial costs associated with the existing baghouse system. No additional air pollution equipment will be required for the subject modification.

Baghouse Equipment	\$ 582,000.00
Erection	\$ 640,000.00
TOTAL	\$1,286,000.00

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

SEE SUPPLEMENTAL INFORMATION: Section II

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? _____
 - 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? NO
If yes, see Section VI.
- 3. Does the State "Prevention of Significant Deterioration" (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? YES
- 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? _____
- b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limestone	Particulate	0.02	207,640	
Sand/Clay	Particulate	0.08	20,774	SEE SUPPLEMENTAL
Fly Ash	Particulate	0.14	26,182	INFORMATION:
Staurolite	Particulate	1.40	2,704	Section V
Mill Scale	Particulate	1.40	2,704	Figure V-4

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 260,000

2. Product Weight (lbs/hr): 159,250

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
	SEE SUPPLEMENTAL		INFORMATION:	Section III, Table III-1			

¹ See Section V, Item 2.

² Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³ Calculated from operating rate and applicable standard.

⁴ Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Fuller Dracco				
Joy Western baghouse	Particulate	99.5%	≥ 10 Micron	Manufacturer's Data

E. Fuels see SUPPLEMENTAL INFORMATION: Section III

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: SEE SUPPLEMENTAL INFORMATION: Section III,

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.

Solids collected from the fabric filter during normal operation will be returned
to the kiln feed and recycled through the system.

1. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 70 ft. Stack Diameter: 3.0 (each vent) ft.
 Gas Flow Rate: 250,000 ACFM DSCFM Gas Exit Temperature: ~ 260 °F.
 Water Vapor Content: ~ 10 % Velocity: 69 FPS

SECTION IV: INCINERATOR INFORMATION
 NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

NOT APPLICABLE

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					

NOT APPLICABLE

Stack Height: _____ ft. Stack Diameter: _____ 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: _____

NOT APPLICABLE

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOT APPLICABLE

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

SEE SUPPLEMENTAL INFORMATION: Section V

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).
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.).
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.
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).
An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY NOT APPLICABLE

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

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

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant

Rate or Concentration

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

NOT APPLICABLE

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:

¹Explain method of determining efficiency.

²Energy 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

NOT APPLICABLE

(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

NOT APPLICABLE

(8) Process Rate:¹

10. Reason for selection and description of systems:

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

NOT APPLICABLE

1. _____ no. sites _____ TSP _____ () SO₂+ _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

¹Specify bubbler (B) or continuous (C).

NOT APPLICABLE

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

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.

Attach all other information supportive to the PSD review.

3. 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.

4. 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.

SUPPLEMENTAL INFORMATION: SECTION II

1. Project Description
2. Table II-1
Proposed Performance Test Matrix
3. Figure II-1
Kiln No.2 Process Flow Diagram
4. Figure II-2
Kiln No. 2 Temperature and Retention
Time Profile
5. Table II-2
Permitting and
Compliance Activities
6. Table II-3
Summary of Test Parameters

PROJECT DESCRIPTION

The subject of this application is to request that FDER Permit AC27-169616 be amended to allow Florida Mining and Materials to conduct performance tests on Cement Kiln No. 1 for the burning of waste tires, used oil, and coal in various combination as presented in Table II-1.

The purpose of this testing is to allow Florida Mining and Materials (FM&M) to:

- (1) Evaluate the energy conservation benefits of utilizing waste tires and used oil as a fuel supplement to coal.
- (2) Determine if the existing facility in its present physical configuration is capable of operating with these fuel combinations.
- (3) Determine emission levels from the cement kiln during operation with these various fuel combinations.

The proposed performance test would include emission testing for the four separate fuel combinations as presented in Table II-1. The proposed test parameters and methods are provided in Table II-2. The results of this emission testing will be reported to FDER and may be used as a basis for amending FDER permit A027-169616 for permanent operation with waste tires and used oil as supplemental fuels.

The cement kiln system provides an excellent environment for utilization of waste tires and used oil as kiln fuels. Initially, thermal destruction of organic compounds is ensured by the available combustion conditions, including temperatures of at least 2800° F and retention times of up to four (4) seconds within the kiln itself. Turbulent gas flow is maintained throughout the kiln which further enhances the environment for thermal destruction. Further in the system, exhaust gases are exposed to a counter current flow of raw materials feed which consists largely of calcium carbonate. Thus conditions are present for effective neutralization of acid gases contained in the exhaust. The counter current flow includes a high concentration of particulate matter which provides substantial surface area for condensation of volatile metal species as well as any residual organic compounds. To complete the system, the fabric filter then provides for maximum removal of particulates from the gas stream. Each of these phases combine to make up an efficient industrial process which offers a perfect opportunity for use of these fuel resources with an insignificant impact on the environment.

Estimated emissions relating to the current permit FDER No. A027-169616 are detailed in the supporting information for Sections III and V of this application. No increase in emissions for currently regulated compounds is expected as a result of this permit amendment. The baghouses currently operated with the No. 1 Kiln will remain as the air pollution control device, thus continuing to provide Best Available Control Technology as previously determined.

No significant emission increases are expected for particulates and/or SO₂ due to the high removal efficiency of the system as demonstrated in the attached Section V. Also, NO_x emissions are expected to decrease due to the use of waste tires since this would provide a better distribution of heat release and less fixation of atmospheric nitrogen. For the case of CO and HC, the emission rates are based on the process

combustion efficiency, and due to the high temperatures and long retention times, no decrease in combustion efficiency is expected.

For the case of the remaining compounds listed in Table II-3 (Metals, PCDDS/PCDFS, Polynuclear Aromatic Hydrocarbons, Benzene, Mercury) no substantial data base is available to estimate emission rates from the Kiln No. 1 process. Although it can be generalized that the combination of high particulate removal, caustic scrubbing, and high combustion efficiency would minimize these emissions, exact emission rates for the various fuel combinations in Table II-1 cannot be determined. Therefore, it is the intent of the performance test to measure the baseline levels during coal combustion and subsequent emission changes for the various waste tire and used oil combinations.

In conclusion, it should be emphasized that this requested amendment does not include any significant and/or substantial change to the Kiln No. 1 physical system and includes only the substitution of waste tires and used oil for coal. This amendment only includes the performance testing of Kiln No. 1 with these fuels and is not for operational purposes. It is also understood that any operation after the performance testing with these fuels would require a permanent amendment of Kiln No. 1 Permit AC27-169616 by FDER and EPA.

TABLE II-1

PROPOSED PERFORMANCE TEST MATRIX

The proposed testing would include stack sampling during four separate cases for the kiln. These are represented in the following matrix.

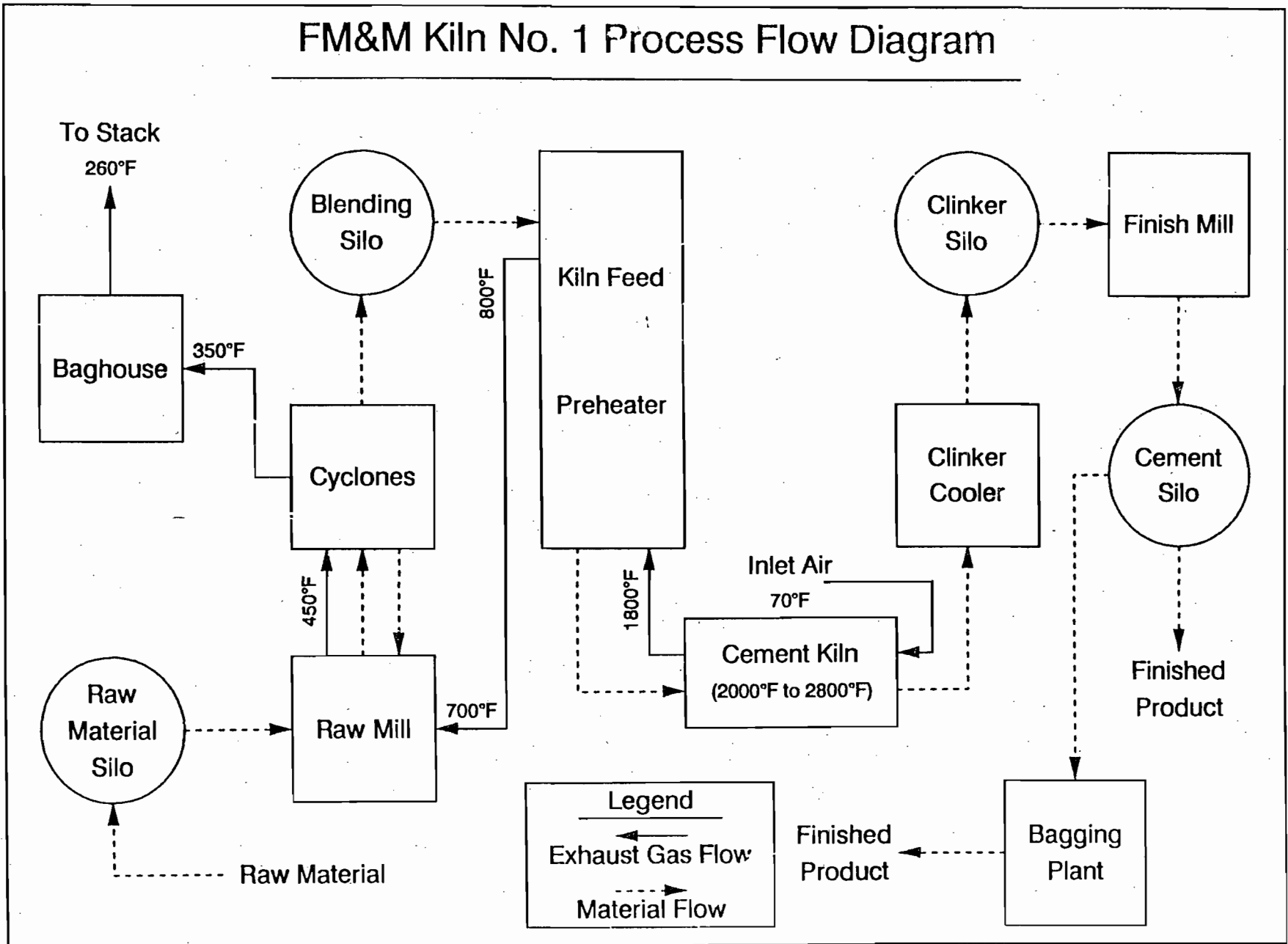
Fuel Type	Test Conditions			
	1*	2	3	4
	% of Total Fuel Supply			
Coal (min.)	100	80	50	30
Waste Tires (max.)	0	20	0	20
Used Oil (max.)	0	0	50	50

*Baseline

FMMITIRE.DOC

FIGURE II-1

FM&M Kiln No. 1 Process Flow Diagram



FMMIFLOW.DRW

C
T
A
Cross/Tessitore & Assoc., P.A.
Environmental Engineers Orlando, Florida

FIGURE II-2

FM&M Kiln No. 1 Temperature and Retention Time Profile

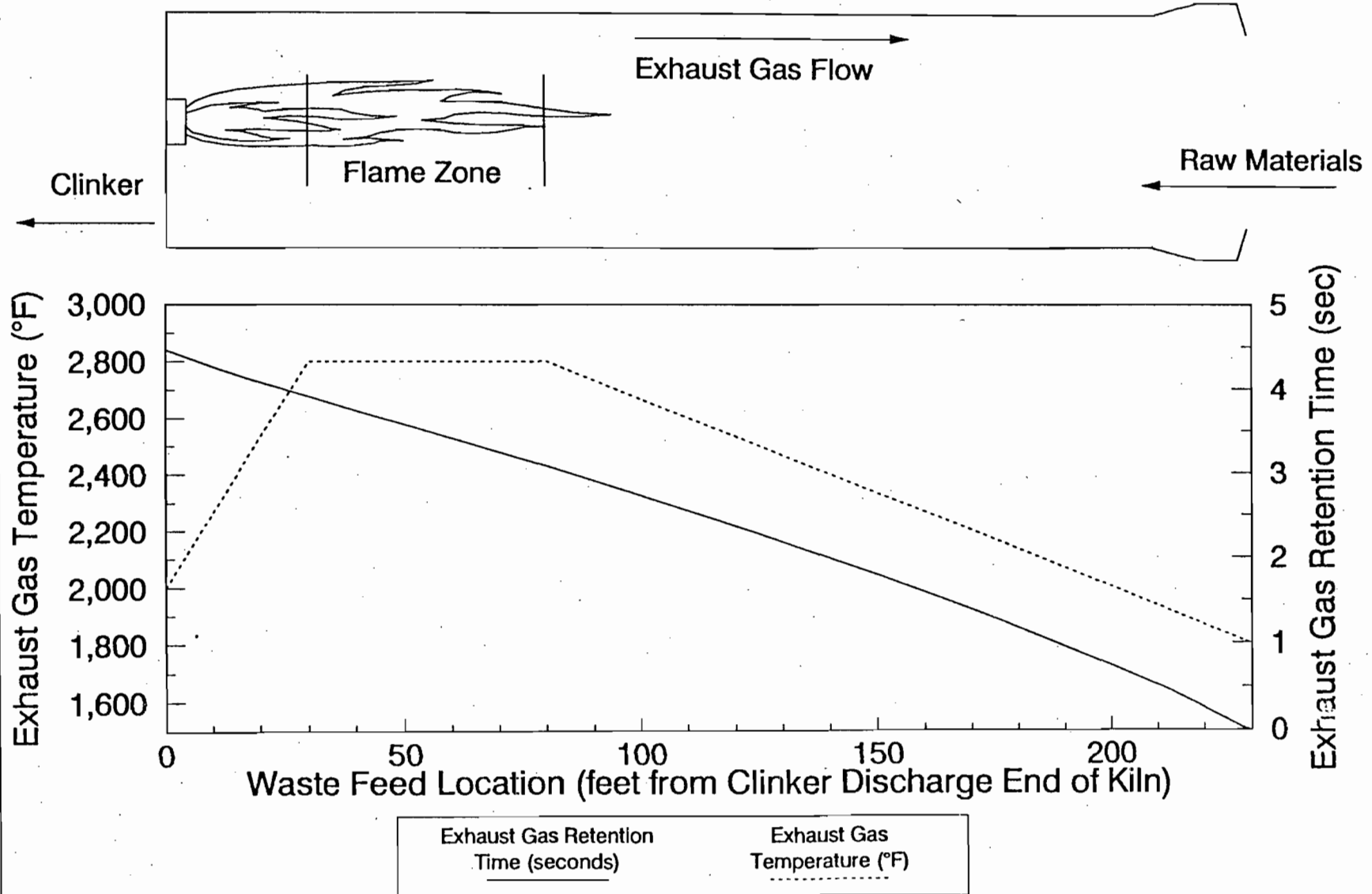


TABLE II-2
PERMITTING AND COMPLIANCE ACTIVITIES

<u>Activity</u>	<u>Number</u>	<u>Issued</u>	<u>Expired</u>
Construction Permit	AC27-2255	December 18, 1973	March 1, 1976
Construction Permit Extension	AC27-2255	--	--
Operating Permit	A027-20213	August 13, 1979	August 7, 1984
Operating Permit	A027-89814	October 5, 1984	October 3, 1989
Operating Permit	A027-169616	January 24, 1990	January 18, 1995

TABLE II-3
SUMMARY OF TEST PARAMETERS

Particulate Matter	EPA Method 5
Visible Emissions	EPA Method 9
Metals:	EPA Method 5 (filter and probe rinse)
Aluminum	Barium
Arsenic	Copper
Cadmium	Nickel
Chromium (Total)	Iron
Lead	Vanadium
Zinc	
NO _x	EPA Method 7
Sulfur Dioxide	EPA Method 6 (in back half of Method 5 train)
Carbon Monoxide	EPA Method 10
Volatile Organic Compounds	VOST
Semi-Volatile Organic Compounds	Modified Method 5
CO ₂ /O ₂	EPA Method 3
Stack Gas Flow/Moisture/Temp.	EPA Methods 2 and 4 (in conjunction with EPA Method 5)
PCDDS/PCDFS	EPA Method 23
Polynuclear Aromatic Hydrocarbons	Modified Method 5
Benzene	EPA Method 18
Mercury	EPA Method 101 or 101A

SUPPLEMENTAL INFORMATION: SECTION III

1. Table III-1
Regulated Emissions Summary
2. Table III-2
Fuel Combination Summary Data
3. Table III-3
Additional Fuels Data

TABLE III-1
REGULATED EMISSIONS SUMMARY

Parameter	Current Allowable Emissions		Allowed Emission Rate Per Rule 17-2	Potential Emissions ¹	
	lbs/hr	T/yr		lbs/hr	T/yr
Particulate	36.0	----	N/A	36.0	151.2
Opacity	10%	----	Rule 17-2.660	10%	----

¹ Relate to Figure V-6, Flow Diagram

TABLE III-2
FUEL COMBINATION SUMMARY DATA

	<u>Current Fuels</u>			<u>Proposed Fuels</u>	
	<u>Coal</u>	<u>No. 6 Fuel Oil¹</u>	<u>Flolite²</u>	<u>Waste Tires</u>	<u>Used Oil</u>
Case 1					
Consumption	24,170 lb/hr	--	--	0	0
Heat Input (Btu/hr)	3.0×10^8	--	--	0	0
Portion of Total Fuel Supply (%)	100	--	--	0	0
Case 2					
Consumption	19,336 lb/hr	--	--	4286 lb/hr	0
Heat Input (Btu/hr)	2.4×10^8	--	--	0.6×10^8	0
Portion of Total Fuel Supply (%)	80	--	--	20	0
Case 3					
Consumption	12,085 lb/hr	--	--	0	1034 gal/hr
Heat Input (Btu/hr)	1.5×10^8	--	--	0	1.5×10^8
Portion of Total Fuel Supply (%)	50	--	--	0	50
Case 4					
Consumption	7251 lb/hr	--	--	4286 lb/hr	1034 gal/hr
Heat Input (Btu/hr)	0.9×10^8	--	--	0.6×10^8	1.5×10^8
Portion of Total Fuel Supply (%)	30	--	--	20	50

- (1) The proposed testing would not include baseline testing of No. 6 fuel oil.
- (2) Flolite is mainly used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.

TABLE III-3
ADDITIONAL FUELS DATA

	Heat Capacity	Sulfur Content ²
Current:		
Coal	12,500 Btu/lb	1.0 %
No. 6 Diesel Oil	152,000 Btu/gal	0.77 %
Flolite ¹	145,000 Btu/gal	1.0 %
Proposed:		
Used Oil	145,000 Btu/gal	1.5 %
Waste Tires	14,000 Btu/lb	1.0 %

- (1) Flolite is mainly used during start-up of kiln operations and during periods when raw materials feed is stopped and kiln temperature must be maintained, and flolite is normally used only as a substitute for coal. In cases where flolite and coal are used concurrently, the maximum heat input rate will not exceed 3.0×10^8 Btu/hr.
- (2) Values shown are approximate.

TABLE III-4

OFF-SPEC USED OIL CHARACTERISTICS *

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F minimum
Total Halogens	4,000 ppm maximum

* As specified in 40 CFR Part 266.40, "Used Oil Burned For Energy Recovery".

FMM1TIRE.Doc

SUPPLEMENTAL INFORMATION: SECTION V

1. Table V-1
Process Data (Feed, Production, Heat Input Rates)
2. Emissions Calculations
3. Figure V-1
Process Flow Diagram
4. Figure V-2
USGS Topographical Map
5. Figure V-3
Facility Plot Plan

TABLE V-1
PROCESS DATA

Kiln Feed Rate	130 T/hr
Clinker Production Rate	79.6 T/hr
Maximum Heat Input	3.0×10^8 Btu/hr

EMISSIONS CALCULATIONS

1. PARTICULATE

The anticipated emissions rate for particulate is the same as the currently permitted level. In order to determine the efficiency of the air pollution control device, the potential emission loading to the baghouse is calculated based on an emissions factor from the EPA Guidance Document AP-42, Table 8.6-1.

Calculation of Allowable Emissions:

Allowable Emissions = 36.0 lb/hr
(Permit AO27-169616)

Calculation of Potential Emissions:

Potential Emissions = 36.0 lb/hr
= 157.7 T/yr

Calculation of Control Device Removal Efficiency:

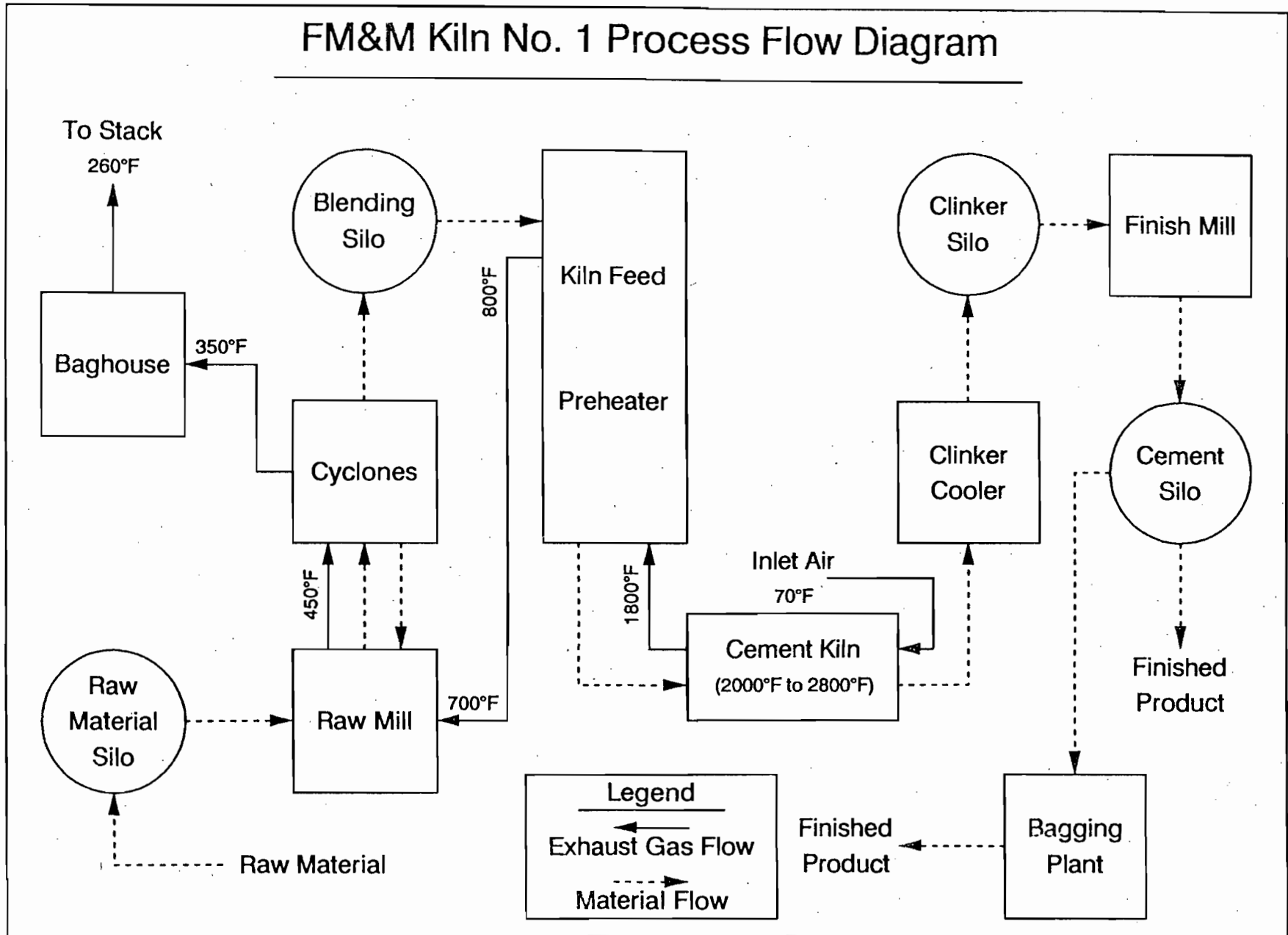
Uncontrolled Emissions Factor = 245.0 lb/ton clinker

Production Rate = 79.6 T/hr clinker

Potential Emission Loading to Baghouse = (245 lb/ton) x (79.6 T/hr)
= 19,502.0 lb/hr

Control Device Removal Efficiency = (19,502 lb/hr - 36.0 lb/hr)
- (19,502 lb/hr)
= 99.8%

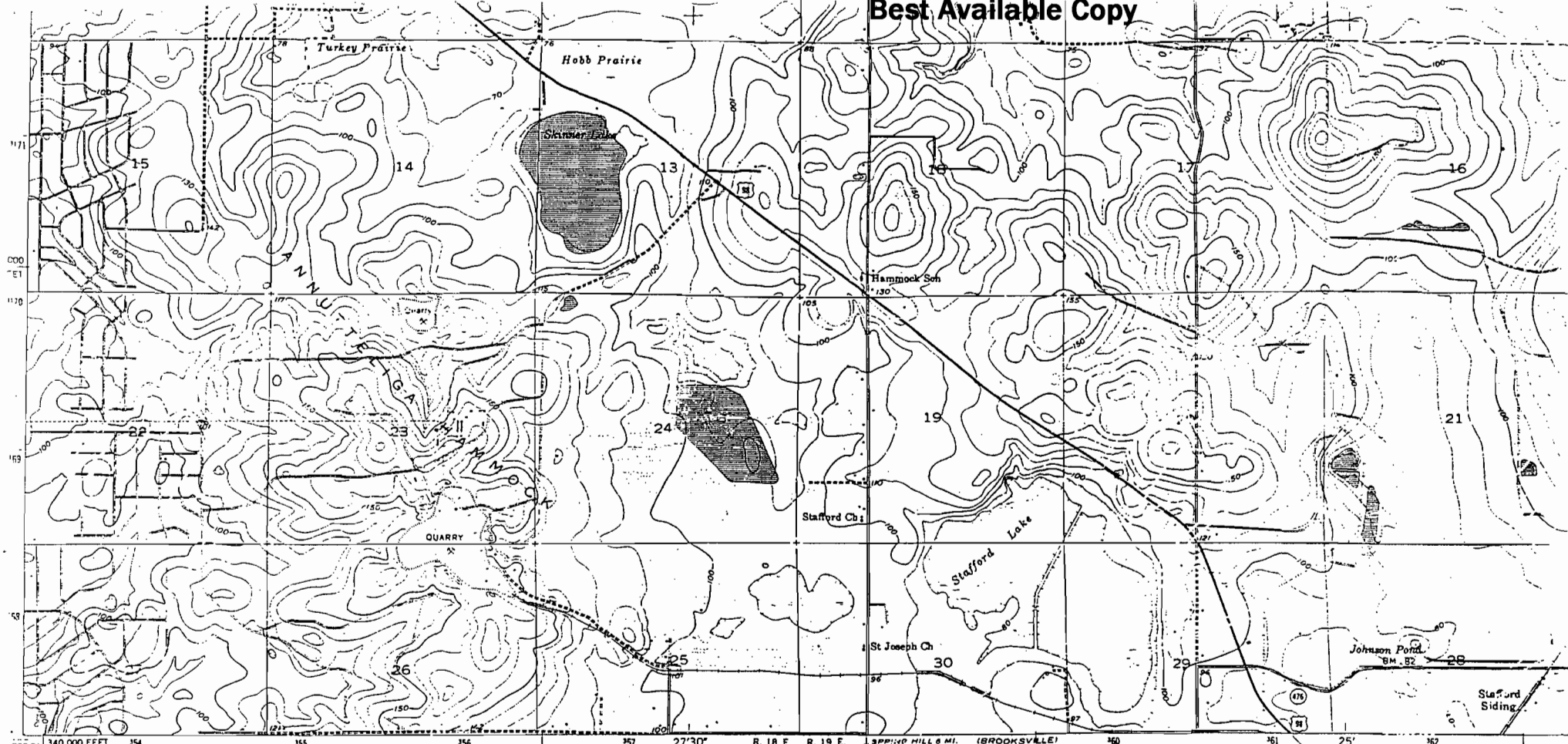
FIGURE V-1



FMM1FLOW.DRW

C
T
A

Cross/Tessitore & Assoc., P.A.
Environmental Engineers Orlando, Florida



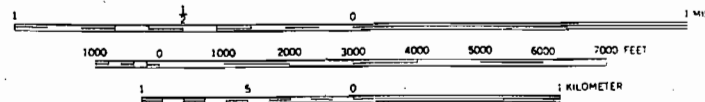
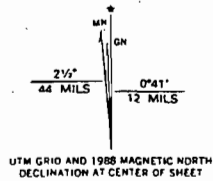
Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by Kesh plotter
Aerial photographs taken 1951. Field check 1954

Polyconic projection. 1927 North American datum
10,000-foot grid based on Florida coordinate system,
west zone
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue

To place on the predicted North American Datum 1983,
move the projection lines 27 meters south and
16 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of
the National or State reservations shown on this map



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

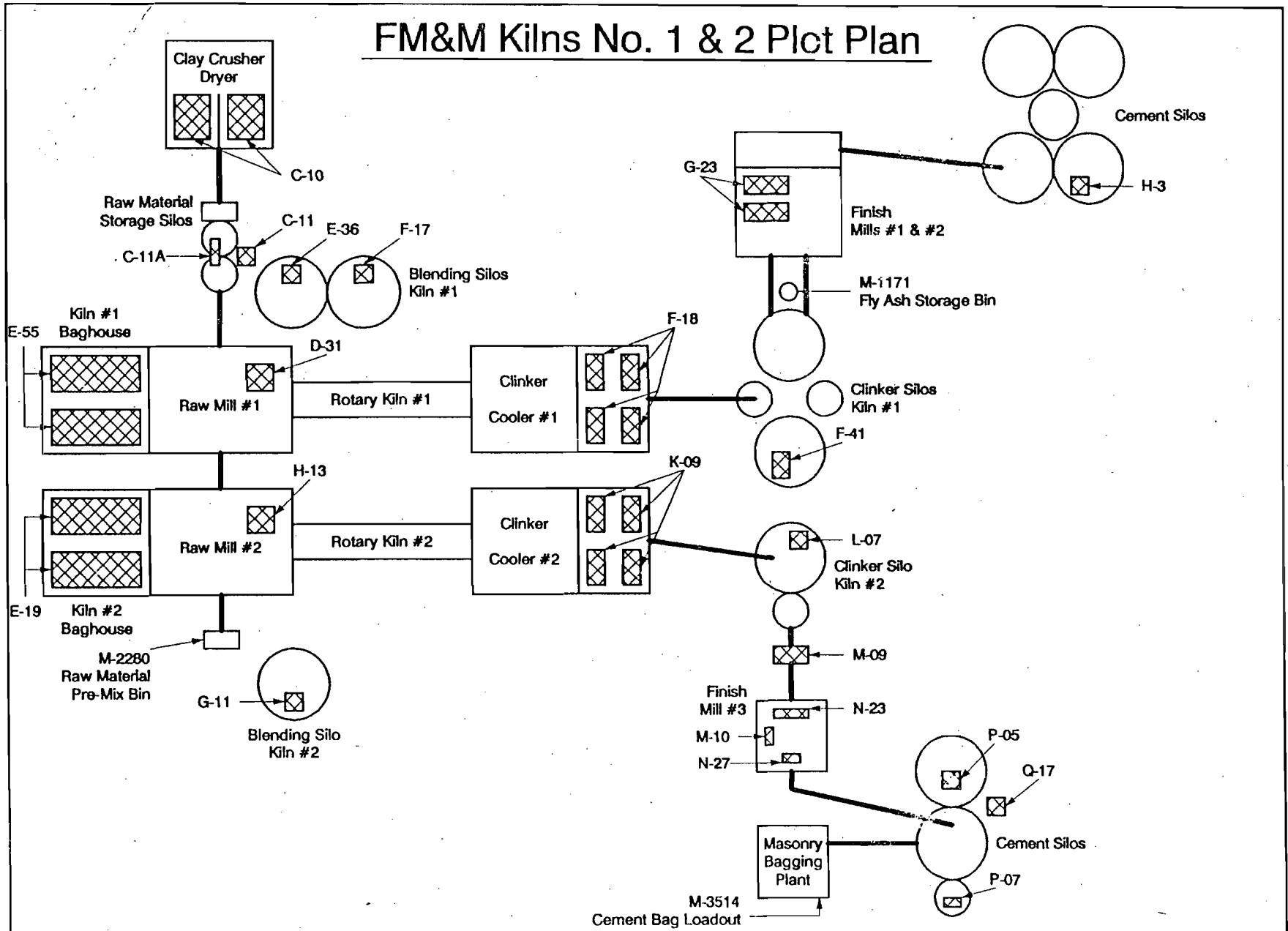
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs
other sources. This information not field checked. NAD 83

FIGURE V-3



31

FMM1&2PL.DRW

C
T
A **Cross/Tessitore & Assoc., P.A.**
Environmental Engineers Orlando, Florida