FINAL DETERMINATION

FLORIDA CRUSHED STONE COMPANY
PORTLAND CEMENT FACILITY No. 2
AC27-274892 (A) and PSD-FL-227(A)
Hernando County

An Intent to Issue an air construction permit for Florida Crushed Stone Company (FCSC) to build a second Portland Cement plant at the existing facility located approximately 3.5 miles Northwest of Brooksville, Hernando County, Florida was distributed on November 12, 1996. The Notice of Intent to Issue was published in the Hernando Today/ Hernando Sunday on November 22, 1996.

Comments in response to the Public Notice period were submitted by Mr. Donald F. Elias, Principal, RTP Environmental Associates, Inc., on behalf of Florida Crushed Stone. Mr. Elias had several comments regarding the BACT determination and the Draft Permit.
The Bureau has considered Mr. Elias' comments and has addressed them as follows:

COMMENT No. 1 AND No. 2

FCS requested an extension of the expiration date of the permits and that these permits be worded to allow construction of either kiln to begin within 18 months of the effective date of this permit.

RESPONSE:

The expiration date of the precalciner kiln permit [AC27-274892 (A) and PSD-FL-227(A)] as well as the gepol tower permit [AC27-274892 and PSD-FL-227] will be extended to January 30, 2002. The Department has already given FCS the authority to construct either a gepol tower or a precalciner kiln. However, a statement to confirm the authority to construct either kiln will be included in this permit (Page 3). FCS shall surrender one of the permits to the Department's Bureau of Air Regulation after the decision to construct the selected kiln has been made and before the construction of the selected kiln will begin.

COMMENT No. 3:

FCS requested that the unconfined particulate matter specific conditions be deleted. The permit application already specifies the materials to be stored and the moisture content that could be used to control unconfined PM. In addition, FCS states that annual visible emission testing is required for minor and fugitives emissions. FCS also states that this facility maintains an ambient monitoring network that includes particulate monitoring as a further check on particulate emissions and impacts.

RESPONSE:

This facility shall comply with Rule 62-296.320 (4) (c) 1. through 3, F.A.C., Unconfined Emissions of Particulate Matter, which states that any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions taken by the facility to control these emissions [Rule 62-296.320 (4) (c) 2., F.A.C]. Therefore, FCS shall provide the Department's Southwest District office with a

protocol for the control of unconfined particulate matter (UPM and Fugitive emissions) before obtaining an operating permit.

SPECIFIC CONDITION SECTION II. No. 2.2 will be modified as follows:

FROM:

2.2 Unconfined Emissions of Particulate Matter **[Rule 62-296.320(4)(c), F.A.C.]**

The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emissions.

Reasonable precautions shall include but not be limited to the following:

- All permanent haul roads shall be paved.
- Temporary haul roads shall be watered or treated with chemical dust suppressants at regular intervals.
- Dry materials (moisture content < 14%) shall be stored below grade, in silos, or in enclosed structures.
- Coal stored at or above natural grade shall be compacted, turned and/or watered as necessary to maintain a minimum 8% moisture content in the surface layer, and shall be aligned with the predominant wind direction to minimize wind erosion.
- Abandoned haul roads and other disturbed areas shall be revegetated within 60 days of the date that active service of the roads end.
- All cement products shall be transferred to transport trucks with sealed pneumatic conveying systems that is either a closed system or exhausted through a bag filter.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

TO:

2.2 Unconfined Emissions of Particulate Matter [Rule 62-296.320(4)(c), F.A.C.]

(a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.

(b) The following reasonable precautions shall be implemented at the facility:

- **All permanent haul roads and traffic areas at the plant site (with the exception of the coal storage area) shall be paved.**

- A sweeper truck shall be maintained and operated at the plant to limit dust buildup on paved surfaces in and around the plant site, as well as internal areas of the plant.
- A water tanker truck shall be maintained and operated at the plant to water paved surfaces, raw material transfer points and other plant areas during dry meteorological periods as necessary to prevent fugitive emissions. Unpaved haul roads in and around the plant site shall be watered at regular intervals (or, alternately, treated with chemical dust suppressants at regular intervals).
- A vacuum truck shall be maintained and operated at the plant to "immediately collect" any spilled cement kiln dust.
- Dry materials (moisture content less than 10%) shall be stored below grade, in silos, or in covered structures.
- Limestone and gypsum shall be stored in the existing covered A-frame storage structure.
- Fly ash shall be charged directly into the storage silo via tank truck.
- Coal stored at or above natural grade shall be shaped, compacted, turned and/or watered as necessary to minimize wind erosion.
- A water sprinkler system shall be maintained and operated at the coal storage area to wet high traffic areas during hopper charging operations The hopper and coal conveyor network shall be covered. Traffic in the coal storage area is limited to hopper charging operations.
- All cement products shall be transferred to transport vehicles with sealed pneumatic conveying systems which are either closed systems or exhausted through bag filters.
- All plant equipment operators shall be trained in basic environmental compliance, and shall perform visual inspections of materials before handling. If the visual inspections indicate a lack of excess surface moisture, the materials will be wetted. Such wetting shall continue until the materials can be handled without generating unconfined particulate matter emissions.

(c) FCS shall comply with applicable provisions of Rule 62-296.320(4)(c), F.A.C.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

COMMENT No. 4

FCS suggested that specific condition III. B11. be reworded as indicated in Mr. Elias' letter.

RESPONSE:

The Department agrees with Mr. Elias and will change this condition as follows:

FROM:

Compliance By Continuous Emission Monitoring System (CEMS)

B11. Compliance with the emission limits for NO_x and SO_2 in Table 1-2 shall be demonstrated by the continuous emission monitoring system (CEMS). The CEMS shall calculate and record emission rates in

units of pounds of NO_x (and SO_2) per hour as well as pounds NO_x (and SO_2) per ton of clinker. Clinker production rates shall be recorded each hour. The permittee may establish a relationship between material feed rates and production rates of clinker if material feed rates are measured more accurately than clinker production rates and the relationship is accurate within 10%.

After each monitored operating hour, a 24-hour block average shall be calculated for the previous 24 successive monitored operating hours. A monitored operating hour is each hour in which fuel is fired in the unit and at least two emission measurements are recorded at least 15 minutes apart. Data taken during periods of startup, or when fuel is not fired to the unit, or when the CEMS is not calibrated shall be excluded from the 24-hour block average.

For compliance with the emission limit in Table 1-2 the 24-hour rolling average shall not include data from periods of startup. Startup shall not exceed 2 hours without notifying the Department pursuant to Rule 62-210.700 F.A.C. Data recorded during periods of shutdown, malfunction, load change, and continuous operating periods shall be included in the 24-hour rolling average.

To the extent the monitoring system is available to record emissions data, the CEMS shall be operated and shall record data at all operating hours when fuel is fired in the unit, including periods of startup, shutdown, load change, continuous operation and malfunction.

Monitor downtimes, and excess emissions based on 24-hour rolling hour averages, which includes startup emissions, shall be reported on a quarterly basis using the SUMMARY REPORT in 40 CFR 60.7. A detailed report of the cause, duration, magnitude, and corrective action taken or preventative measures adopted for each excess emission occurrence, and a listing of monitor downtime occurrences shall accompany the SUMMARY REPORT when the total duration of excess emissions is 1% or greater or if the monitoring system downtime is 5% or greater of the total monitored operating hours.

Mass emission rates (lb/hr, and lb/ton clinker) shall be calculated based on source specific and fuel specific F factors calculated using 40 CFR 60 Appendix A, Method 19. These F factors shall be recalculated when fuel properties vary significantly from those used in the previously calculated F factors but not less than once per year.

TO:

B.11 Compliance with the emission limits for NO_x and SO_2 in Table 1-2 shall be demonstrated by the continuous emission monitoring system (CEMS). The CEMS shall calculate and record emission rates in units of pounds of NO_x and SO_2 per hour. Clinker production rates shall be recorded **daily**. The permittee may establish a relationship between material feed rates and production rates of clinker if material feed rates are measured more accurately than clinker production rates and the relationship is accurate within 10%.

Every day, the 24-hour average NO_x and SO_2 emission rate for the previous day shall be calculated. Emissions shall be calculated in units of pounds per hour and pounds per ton of clinker. Daily averages are to be calculated as the arithmetic mean of each monitored operating hour. A monitored operating hour is each hour in which fuel is fired in the unit and at least two emission measurements are recorded at least 15 minutes apart. Data taken during periods of startup, or when fuel is not fired to the unit, or when the CEMS is not calibrated shall be excluded from the daily average.

For compliance with the emission limits in Table 1-2, the **daily average shall not include data from periods of startup when no clinker is being produced. However, emissions during startup periods shall not exceed the pound per hour limits in Table 1-2. Data recorded during periods of shutdown, malfunction, load change, and continuous operating periods shall be included in the daily average.**

To the extent the monitoring system is available to record emissions data, the CEMS shall be operated and shall record data at all operating hours when fuel is fired in the unit, including periods of startup, shutdown, load change, continuous operation and malfunction.

Monitor downtimes, and excess emissions based on **daily averages**, which includes startup emissions, shall be reported on a quarterly basis using the SUMMARY REPORT in 40 CFR 60.7. A detailed report of the cause, duration, magnitude, and corrective action taken or preventative measures adopted for each excess emission occurrence, and a listing of monitor downtime occurrences shall accompany the SUMMARY REPORT when the total duration of excess emissions is 1% or greater or if the monitoring system downtime is 5% or greater of the total monitored operating hours.

Mass emission rates (lb/hr, and lb/ton clinker) shall be calculated based on source specific and fuel specific F factors calculated using 40 CFR 60 Appendix A, Method 19. These F factors shall be recalculated when fuel properties vary significantly from those used in the previously calculated F factors but not less than once per year.

COMMENT NO. 5

FCS requested to revise the BACT Beryllium (Be) limit and Table 1-2 Air Pollutants Standards and Terms values [SO_2, H_2SO_4, PM(cooler), VOC and Be] and to add a footnote noting that the permittee has 18 months to achieve the NO_x permit limit.

RESPONSE:

The Department agrees with Mr. Elias' comments. The values in Table 1-2 and the BACT Be limit were changed and the footnote noting that the permittee has 18 months to achieve the NO_x permit limit was added to the Table.

COMMENT No. 6

FCS requested to change the required test method for beryllium from EPA Method 104 to EPA Method 29.

RESPONSE:

The Department agrees with Mr. Elias. The test method for Beryllium will be changed to EPA Method 29 to simplify the initial stack tests procedures and minimize testing costs.

COMMENT NO. 7:

FCS requested that the permit state that visible emissions in excess of 5% opacity are not permit violations, but only require that particulate tests be performed.

RESPONSE:

The Department agrees with Mr. Elias and will add the following clarification to Specific Condition III.C5.

In accordance with Rule 62-297.620(4) F.A.C., minor particulate sources equipped with baghouses with visible emissions which are greater than or equal to 5 percent opacity may result in permittee being required to perform a stack test in accordance with approved methods to verify compliance with the emission limits contained in Table 1-1.

COMMENT No. 8

FCS requested to revise the opacity limit for coal's fugitives emissions to be the same as the other fugitives emissions from this facility.

RESPONSE:

This Specific Condition (III. C10. c.) is an existing specific condition in permits for the Power Plant and Cement Plant No.1. To avoid confusion the reference to the 10% opacity will be deleted from Table 1-1 to reflect only 5/20 percent opacity instead of 5/10/20 percent opacity.
Compliance with the Visible Emissions standards (fugitives and minor sources controlled by baghouses) shall be demonstrated by EPA Method 9.

CONCLUSION

The Department will issue final permit AC27-274892 (A) and PSD-FL-227(A) as proposed except with the changes noted above.

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.

BROOKSVILLE FEB 12 1997 USPS

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. JOSEPH T. PIERMATEO
SR. VICE PRESIDENT
FLORIDA CRUSHED STONE COMPANY
10311 CEMENT PLANT ROAD
BROOKSVILLE, FL 34601

4a. Article Number
P 265 659 162

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

7. Date of Delivery
2-12-97

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank

P 265 659 162

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to: MR. JOSEPH T. PIERMATEO	
Street & Number: 10311 CEMENT PLANT ROAD	
Post Office, State, & ZIP Code: BROOKSVILLE, FL 34601	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: 2-10-97 FCS PSD-FL-227(A)	

PS Form 3800, April 1995

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit

Mr. Joseph T. Piermateo
Sr. Vice President
Florida Crushed Stone Company
10311 Cement Plant Road
Brooksville, Florida 34601

DEP File No.AC27-274892(A)
PSD-FL-227 (A)

Enclosed is the FINAL Permit Number PSD-FL-227(A) and AC27-274892(A) to construct a 2500 tons per day (maximum TPD as clinker) dry process portland cement plant with a preheater/precalciner design pursuant to the 40 CFR 52.21-Prevention of Significant Deterioration (PSD permit) regulations. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., 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 Legal Office; 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 14 (fourteen) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 2-10-97 to the person(s) listed:

Mr. Joseph T. Piermatteo, Florida Crushed Stone Company *
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Buck Oven, DEP
Mr. Bill Thomas, SWD
Mr. Doug Beason, OGC
Mr. Lawrence Jennings, Hernando Co.
Mr. Don Elias, RTP
Mr. Lawrence Curtin, H&K

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Lynn Fisher 2-10-97
(Clerk) (Date)

DIVISION OF AIR RESOURCES MANAGEMENT
BUREAU OF AIR REGULATION
NEW SOURCE REVIEW SECTION
PHONE 904/488-1344 FAX 904/922-6979
Mail Station # 5505

AIR CONSTRUCTION PERMIT
Portland Cement Plant No. 2

(This permit replaces permit AC27-274892 and PSD-FL-227)

FLORIDA CRUSHED STONE COMPANY

Facility ID No. 0530021
Brooksville, Florida
Hernando County

Permit No. AC 27-274892(A)
PSD-FL-227(A)
PA 82-17

February 6, 1997

FLORIDA CRUSHED STONE COMPANY.

PORTLAND CEMENT PLANT NO. 2

Brooksville, Florida

PSD-FL-227(A) and AC 27-274892(A)

Facility ID No.: 0530021

Table of Contents

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

PERMITTEE:

Florida Crushed Stone Company
Brooksville Plant
10311 Cement Plant
Brooksville, Florida 34601

Authorized Representative:
Joseph Piermatteo
Senior Vice President

FID No.	0530021
PSD No.	PSD-FL-227(A)
Permit No.	AC 27-274892 (A)
PPS No.	82-17
Expires:	January 30, 2002

LOCATED AT:

Florida Crushed Stone, Company, Brooksville Facility
Project: Portland Cement Manufacturing Plant No. 2 and Associated Equipment
Standard Industrial Classification Code (SIC): 3241
Hernando County, Florida

UTM: Zone 17; 360.0 km E ; 3162.5 km N
Directions: *Approximately 3.5 miles Northwest of Brooksville, Hernando County*

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and Tables made a part of this permit:

Table 1-1	Allowable Opacity Limits
Table 1-2	Air Pollutants Standards and Terms
Table 2-1	Compliance Requirements
Appendix BD	BACT Determination
Appendix GC	Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION:

This existing facility consists of one (1) portland cement plant (preheater design) and associated equipment (Cement Plant No.1), a lime manufacturing plant and a 150 MW Power Plant. This permit is for the construction of a second portland cement plant (preheater/precalciner design) and associated equipment. The new plant will be identified as Cement Plant No. 2.

EMISSION UNITS

This permit addresses the following emission units:

EMISSIONS UNIT NO.	SYSTEM	EMISSIONS UNITS DESCRIPTION
031	Raw Materials Processed	Material Handling (Fugitive) Handling and Storage (Fugitive)
025	Raw Mill System	Filter Dust Bin Transport, Raw Meal Transport, Raw Meal Storage, Homogenizing Silos
026	Kiln System	Kiln Feed System Kiln & Cooler Main Stack
027	Clinker Cooler	Kiln & Cooler Main Stack
028	Finish Mill	Gypsum Storage Bin, Clinker Transport, Belt Conveyor, Finish Mill Discharge Vent, Finish Mill Sepal Separator, Clinker Storage Silo and Clinker Bin
029	Cement Handling	Cement Storage Silo A, Cement Storage Silo B, Cement Silo Discharge Hopper A, Cement Silo Discharge Hopper B
030	Coal Handling	Coal Handling and Storage (fugitives) Coal Dust Bin, Coal Mill

REGULATORY CLASSIFICATION

This industry is listed in Table 62-212.400-1 of Chapter 62-212, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 tons per year of carbon monoxide, volatile organic compounds, sulfur dioxide, nitrogen oxides, or particulate matter characterize the installation as a major facility subject to the requirements of **Rule 62-204.800, F.A.C.**, which incorporates 40 CFR Subpart F, the New Source Performance Standards (NSPS) for Portland Cement Plants. This facility is a Title V source.

SECTION I. FACILITY INFORMATION

PERMIT SCHEDULE:

- 1/21/97 Receipt of the RTP Envronmental Associates most recent letter with comments
- 12/02/96 Proof of Publication received by the Department
- 11/22/96 Notice of Intent published in the Hernando Today/ Hernando Sunday
- 11/12/96 Issued Notice of Intent to issue Permit
- 10/17/96 Application deemed complete

RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. The documents listed below are specifically related to this permitting action. These documents are on file with the Department.

Year 1995

1. Application received March 13, 1995.
2. Department's letters dated April 21, memo dated June 16, letter dated August 3, August 10, and October 11, 1995.
3. RTP Environmental Associates letters dated March 21, May 10, May 19, July 11, July 17, August 11, August 22, September 5, September 7, September 12, September 14, and October 24, 1995.
4. EPA's letters dated June 15, and November 2, 1995.
5. Hernando County Planning Department's letter dated April 28, June 5, and August 11, 1995.
6. Technical Evaluation and Preliminary Determination, BACT determination and proposed permit dated October 3, 1995.
7. Construction Permit AC27-274892 and PSD-FL-227 issued on November 17, 1995.

Year 1996

1. Application received September 11, 1996.
2. Department's letter dated October 3, 1996.
3. EPA's letter dated November 1, 1996.
4. RTP Environmental Associates letter dated October 17, December 13, 1996 and January 16, 1997.
5. United States Department of the Interior letter dated October 11, 1996.

Permit AC27-274892 and PSD-FL-227 Issued on 11/17/95
(Expiration Date: January 30, 2002)

FCS is allowed to construct either kiln (gepol tower or precalciner kiln). FCS shall surrender one of the permits to the Department's Bureau of Air Regulation after the decision to construct the selected kiln has been made or before the construction of the selected kiln will take place.

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

1.1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department of Environmental Protection (DEP) Southwest District Air Resources Program Permitting Section located at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904)488-1344.

1.2 General Conditions: The owner and operator is subject to and shall be aware of and operate under, the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**

1.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.

1.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**

1.5 Expiration: This air construction permit shall expire on January 30, 2002. **[Rule 62-210.300(1), F.A.C.].** The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the project which would affect the startup day by more than 90 days. **[Rule 62-4.090, F.A.C]**

1.6 Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213 F.A.C., must be submitted to the DEP's Southwest District office. **[Chapter 62-213, F.A.C.]**

1.7 Applicable Regulations: Unless otherwise indicated, the construction and operation of Cement Plant No. 2 and associated equipment shall be in accordance with the capacities and specifications stated in the application. This facility is subject to all applicable provisions of Chapter 403, F.S and Florida Administrative Code Chapters 62-4; 62-103; 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the Code of Federal Regulations Section 40, Part 60, Subpart A, Appendix A and Appendix B (1995 version). Specifically, this facility is subject to the New Source Performance Standards (NSPS) for Portland Cement Plants identified by the Code of Federal Regulations Section 40, Part 60, Subpart F, and incorporated by reference in Florida Administrative Code Rule 62-204.800. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. **[Rule 62-210.300, F.A.C.]**

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

2.0 EMISSION LIMITING STANDARDS

2.1 General Visible Emissions Standard: **[Rule 62-296-320(4)(b)]** Unless otherwise specified by rule or permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere any air pollutants from new, or existing emissions units, the opacity of which is equal to:

- Visible emissions of all minor sources controlled by baghouses shall not exceed 5% opacity (BACT determination).
- Visible emissions from PM fugitive sources shall not exceed 10% opacity (BACT determination).

2.2 Unconfined Emissions of Particulate Matter **[Rule 62-296.320(4)(c), F.A.C.]**

(a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.

(b) The following reasonable precautions shall be implemented at the facility:

- All permanent haul roads and traffic areas at the plant site (with the exception of the coal storage area) shall be paved.
- A sweeper truck shall be maintained and operated at the plant to limit dust buildup on paved surfaces in and around the plant site, as well as internal areas of the plant.
- A water tanker truck shall be maintained and operated at the plant to water paved surfaces, raw material transfer points and other plant areas during dry meteorological periods as necessary to prevent fugitive emissions. Unpaved haul roads in and around the plant site shall be watered at regular intervals (or, alternately, treated with chemical dust suppressants at regular intervals).
- A vacuum truck shall be maintained and operated at the plant to "immediately collect" any spilled cement kiln dust.
- Dry materials (moisture content less than 10%) shall be stored below grade, in silos, or in covered structures.
- Limestone and gypsum shall be stored in the existing covered A-frame storage structure.
- Fly ash shall be charged directly into the storage silo via tank truck.
- Coal stored at or above natural grade shall be shaped, compacted, turned and/or watered as necessary to minimize wind erosion.
- A water sprinkler system shall be maintained and operated at the coal storage area to wet high traffic areas during hopper charging operations The hopper and coal conveyor network shall be covered. Traffic in the coal storage area is limited to hopper charging operations.
- All cement products shall be transferred to transport vehicles with sealed pneumatic conveying systems which are either closed systems or exhausted through bag filters.

- All plant equipment operators shall be trained in basic environmental compliance, and shall perform visual inspections of materials before handling. If the visual inspections indicate a lack of excess surface moisture, the materials shall be wetted. Such wetting will continue until the materials can be handled without generating unconfined particulate matter emissions.

(c) FCS shall comply with applicable provisions of Rule 62-296.320(4)(c), F.A.C.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

2.3 General Pollutant Emission Limiting Standards: **[Rule 62-296.320, F.A.C.]**

(a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.

(b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Department of Environmental Protection, Bureau of Air Regulation and/or the Southwest District office in Tampa, for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. 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. *Routine maintenance of equipment will not constitute a modification of this permit.* **[Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]**

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Southwest District office in Tampa as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the

problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. **[Rule 62-4.130, F.A.C.]**

3.3 Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. **[Rules 62-210.650, F.A.C.]**

3.4 Excess Emissions Requirements **[Rule 62-210.700, F.A.C.]**

(a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Southwest District office for a longer duration. **[Rule 62-210.700(1), F.A.C.]**

(b) Excess emissions that are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700(4), F.A.C.]**

(c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify the Air Pollution Control Section of the Southwest District office within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. **[Rule 62-210.700(6), F.A.C.]**

4.0 MONITORING OF OPERATIONS

4.1 Determination of Process Variables

(a) The permitee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

(b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5), F.A.C]**

5.0 TEST REQUIREMENTS

5.1 Test Performance Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup and annually thereafter, the owner or operator

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

5.1 Test Performance Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup and annually thereafter, the owner or operator of this facility shall conduct performance test(s) pursuant to 40 CFR 60.8, Subpart A, General Provisions, 40 CFR 60, Appendix A and 40 CFR 51, Appendix M. No other test method shall be used unless approval from the Department has been received in writing. Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emission unit(s) operating at permitted capacity pursuant to Rule 62-297.310(2). F.A.C. **[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C.]**

5.2 Test Procedures and Test Reports shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. **[Rule 62-297.310, F.A.C.]**

5.3 Test Notification: The owner or operator shall notify the Southwest District office in Tampa in writing at least *30 days* (initial) and *15 days* (annual) prior to conducting compliance tests. The notification shall include the date of test, time and place of each test, and the test contact person who will be responsible for coordinating and conducting such test for the owner or operator. **[Rule 62-297.310, F.A.C.; 40 CFR 60.7 and 40 CFR 60.8]**

5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62 -212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Southwest District office in Tampa. **[Rule 62-297.310(7)(b), F.A.C.]**

5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with **Rule 62-297.310(6), F.A.C.**.

5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Monitoring and Mobile Sources in Tallahassee in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**

6.0 REPORTS AND RECORDS

6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. **[Rule 62-4.160(14)(b), F.A.C.]**

6.2 Emission Compliance Stack Test Reports:

(a) A test report indicating the results of the required compliance tests shall be filed with the Southwest District office in Tampa as soon as practical, but no later than 45 days after the last sampling run is completed. **[Rule 62-297.310(8), F.A.C.]**

(b) The report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310(8), F.A.C.**

6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Air Section of the Southwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. **[Rules 62-4.130 and 62-210.700(6), F.A.C.]**

6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. **[Rule 62-210.370(3), F.A.C.]**

7.0 OTHER REQUIREMENTS

7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS: 40 CFR 60 SUBPART A, GENERAL PROVISIONS

EMISSION UNITS

This permit addresses the following emission units.

EMISSIONS UNIT NO.	SYSTEM	EMISSIONS UNITS DESCRIPTION
031	Raw Materials Processed	Material Handling (Fugitive) Handling and Storage (Fugitive)
025	Raw Mill System	Filter Dust Bin Transport, Raw Meal Transport, Raw Meal Storage, Homogenizing Silos
026	Kiln System	Kiln Feed System Kiln & Cooler Main Stack
027	Clinker Cooler	Kiln & Cooler Main Stack
028	Finish Mill	Gypsum Storage Bin, Clinker Transport, Belt Conveyor, Finish Mill Discharge Vent, Finish Mill Sepal Separator, Clinker Storage Silo and Clinker Bin
029	Cement Handling	Cement Storage Silo A, Cement Storage Silo B, Cement Silo Discharge Hopper A, Cement Silo Discharge Hopper B
030	Coal Handling	Coal Handling and Storage (Fugitives) Coal Dust Bin, Coal Mill.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

A1. [40 CFR 60.7, Notification and record keeping]
A2. [40 CFR 60.8, Performance tests]
A3. [40 CFR 60.11, Compliance with standards and maintenance requirements]
A4. [40 CFR 60.12, Circumvention]
A5. [40 CFR 60.13, Monitoring requirements]
A6. [40 CFR 60.19, General notification and reporting requirements]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
026	Kiln System	Kiln No. 2, preheater, precalciner, clinker cooler, dryer, raw mill. Kiln & Cooler Main Stack : Baghouse 2E-40
027	Clinker Cooler	Kiln & Cooler Main Stack : Baghouse 2E-40

These emission units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Portland Cement Plants, Subpart F **[Rule 62-204.800, F.A.C].**

EMISSION LIMITATIONS

B1. The maximum allowable emission rates for the No. 2 kiln, clinker cooler, raw mill, shaft dryer heater and preheater/precalciner shall not exceed the limits listed in Table 1-2. Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

B2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

B3. These emission units are allowed to operate continuously (8760 hours/year) **[Rule 62-210.200(223), F.A.C.]** Definitions-Potential to emit (PTE).

B4. *PROCESS OPERATING RATES*

The No. 2 kiln clinker production rate shall not exceed 104.2 tons per hour (TPH), 2500 tons per day (TPD) and 912,500 tons per year (TPY) based upon 8,760 hours of operation per year. The permitted maximum preheater feed is 173.2 TPH, which is equivalent to a maximum kiln feed rate of 159.4 TPH. **[Rule 62-210.200(223), F.A.C.]**

B5. *FUEL COMBUSTION*

(1) Fuels fired in No. 2 kiln and precalciner shall not exceed a total heat input rate of 325 MMBtu/hr and shall consist only of:

a. Coal and whole tires, tire derived fuel (shredded tires), and natural gas for normal operation.

b. Natural gas, all grades (meeting 1.5% sulfur limit) of virgin fuel oil, and/or blends (meeting 1.5% sulfur limit) of virgin fuel oil and on-spec used oils for startup.

c. Fuels fired in the shaft dryer heater shall not exceed a total input of 30 MMBtu/hr and shall consist only of all grades of virgin fuel oil (meeting 1.5% sulfur limit) for startup and normal operation.

COAL

(2) The coal usage rate shall not exceed 13.8 TPH or 120,888 TPY based on continuous operation.

TIRES

(3) Whole tires and tire derived fuel may be fed continuously at the kiln inlet at the base of the precalciner at a rate not to exceed 48.75 MMBtu/hr (15% of total kiln and precalciner fuel input) or 1.44 TPH and 11,952 tons per year based on 8300 hours per year.

(4) Before initiating tire firing, the gases exiting the kiln shall reach a minimum temperature of 1400 degrees F for one hour and the oxygen level in the kiln, as measured at the cement plant induced draft fan, shall reach at least 3 percent (1-hour average). Upon reaching steady state conditions, and within 6 hours, gases exiting the kiln shall be maintained at an outlet temperature of at least 1750 degrees F.

FUEL OIL

(5) The sulfur content of the fuel oil blend shall not exceed 1.5% by weight. The constituents and properties of the on-spec used oil shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 266.40 (July 1, 1992 version), which is adopted by reference in **Rule 62-730.181, Florida Administrative Code (F.A.C.)**:

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	140 ° F minimum
Polychlorinated	Less than 2 ppm
Byphenyls (PCBs)	

(6) On-spec used oil to be blended and burned at this facility shall not be a hazardous waste as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261 (July 1, 1992 version). It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. The on-spec used oil shall be burned in compliance with Section 403.769(3), Florida Statutes.

(7) The on-spec used oil to be blended with the unused fuel oil in the cement kiln fuel storage tank shall be obtained only from the used oil storage tanks located at the FCS Gregg Mine and CPL Plant. The used oil sample from Specific Condition No. B5(5) and B22 shall be analyzed for the following constituent/property, associated unit, and using the test methods indicated:

Constituent/Property	Unit	Test Method
Cadmium	ppm	EPA SW-846(6010)
Arsenic	ppm	EPA SW-846(6010)
Chromium	ppm	EPA SW-846(6010)
Lead	ppm	EPA SW-846(6010)
Total Halogens	ppm	EPA SW-846(9252)
Sulfur	percent	ASTM D129 or ASTM D1552
Flash Point	degree F	EPA SW-846(1010)
Heat of Combustion	Btu/gal	ASTM D240
Density	lbs/gal	
Polychlorinated Byphenyls		
(PCB's)	ppm	

NOTE: Other test methods may be used only after receiving written prior approval from the Department.

(8) The maximum on-specification used oil concentration in the final storage tank blend of on-specification used oil and purchased virgin oil shall not exceed 15 percent by volume.

B6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit **[Rule 62-297.310, F.A.C. and 62-4.070(3), F.A.C.]**

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

MONITORING OF OPERATIONS

B7. The owner or operator shall record the daily production and the preheater-kiln system feed rate. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

B8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stack. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

B9. Continuous process monitors shall be installed for CO or O_2 to insure proper combustion practices and for use in determining plant operating parameters to optimize emissions of CO, NO_x, and SO_2. **[Rule 62-212.400(5), and 62-4.070(3) F.A.C.]**

B10. Continuous monitoring equipment shall also be installed, calibrated, maintained, operated, and used to determine compliance for NO_x and SO_2. Continuous emission monitors shall be installed and certified, before the initial performance test, and operated in compliance with 40 CFR 60, Appendix F, Quality Assurance Procedures (1994 version) or other Department approved QA plan; 40 CFR 60, Appendix B, Performance Specification 1, 2, and 3 (1994 version). **[Rule 62-204.800, F.A.C.]**

Compliance By Continuous Emission Monitoring System (CEMS)

B.11 Compliance with the emission limits for NO_x and SO_2 in Table 1-2 shall be demonstrated by the continuous emission monitoring system (CEMS). The CEMS shall calculate and record emission rates in units of pounds of NOx and SO_2 per hour. Clinker production rates shall be recorded daily. The permittee may establish a relationship between material feed rates and production rates of clinker if material feed rates are measured more accurately than clinker production rates and the relationship is accurate within 10%.

Every day, the 24-hour average NOx and SO2 emission rate for the previous day shall be calculated. Emissions shall be calculated in units of pounds per hour and pounds per ton of clinker. Daily averages are to be calculated as the arithmetic mean of each monitored operating hour. A monitored operating hour is each hour in which fuel is fired in the unit and at least two emission measurements are recorded at least 15 minutes apart. Data taken during periods of startup, or when fuel is not fired to the unit, or when the CEMS is not calibrated shall be excluded from the daily average.

For compliance with the emission limits in Table 1-2, the daily average shall not include data from periods of startup when no clinker is being produced. However, emissions during startup periods shall not exceed the pound per hour limits in Table 1-2. Data recorded during periods of shutdown, malfunction, load change, and continuous operating periods shall be included in the daily average.

To the extent the monitoring system is available to record emissions data, the CEMS shall be operated and shall record data at all operating hours when fuel is fired in the unit, including periods of startup, shutdown, load change, continuous operation and malfunction.
Monitor downtimes and excess emissions based on daily averages, which include startup emissions, shall be reported on a quarterly basis using the SUMMARY REPORT in 40 CFR 60.7. A detailed report of the cause, duration, magnitude, and corrective action taken or preventative measures adopted for each excess emission occurrence, and a listing of monitor downtime occurrences shall accompany the SUMMARY REPORT when the total duration of excess emissions is 1% or greater or if the monitoring system downtime is 5% or greater of the total monitored operating hours.

Mass emission rates (lb/hr, and lb/ton clinker) shall be calculated based on source specific and fuel specific F factors calculated using 40 CFR 60 Appendix A, Method 19. These F factors shall be recalculated when fuel properties vary significantly from those used in the previously calculated F factors but not less than once per year.

B12. The monitoring devices shall meet the applicable requirements of Chapter 62-204, F.A.C., 40 CFR 60, Appendix F, and 40 CFR 60.13, including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each monitor shall be provided to the Department's Southwest District office for review at least 90 days prior to installation of a new CEMS. **[Rule 62-204.800, F.A.C.]**

TEST METHODS AND PROCEDURES

B13. Compliance with the allowable emission limiting standards listed in Table 1-2 shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A (1994 version) and 40 CFR 61 Appendix B (1994 version) adopted by reference in Chapter 62-204, F.A.C.

Method 5 Determination of Particulate Matter Emissions from Stationary Sources (I) and (A).
Method 8 Determination of Sulfuric Acid Mist from Stationary Sources (I).
Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I) and (A).
Method 25 Determination of Volatile Organic Compound Emissions from Stationary Sources (I).
Method 29 Determination of Metals Emissions from Stationary Sources (I).

Emission testing shall be performed at the No. 2 kiln/cooler main stack (baghouse 2E-40) during a period when the No. 2 kiln precalciner, cooler, shaft dryer/heater, raw mill and preheater are operating simultaneously and under normal operating conditions. The measured emission rates shall be the combined rates from the kiln and clinker cooler determined at the stack. EPA reference methods for sampling pollutants shall consist of the average of 3 consecutive test runs, each of one hour duration.
These emission units (026 and 027) shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements and 40 CFR 60.8. Performance Tests. Table 2-1, Compliance Requirements (attached) also lists the EPA methods.

Testing of emissions shall be conducted with the emission unit operating at permitted capacity (85% coal and 15% tires). Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the unit may be tested at less than 90% of the maximum operating rate allowed by the permit; in this case, subsequent source operation shall be limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. **[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C., and 40 CFR 60 Appendix A and 40 CFR 60.8, Subpart A].**

B14. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur **[40 CFR 60.11 and Rule 62-297.310 (7), F.A.C.].**

B15. Compliance with the particulate matter standard contained in Table 1-2 (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (c_s \times Q_{sd})/(P \times K)$

where:

E = emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_s = concentration of particulate matter, g/dscm (g/dscf)
Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P = total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K = conversion factor, 1000 g/kg (453.6 g/lb)

B16. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. **[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)].**

B17. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate **[40 CFR 60.64(3)].**

B18. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.].**

RECORDKEEPING AND REPORTING REQUIREMENTS

B19. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in the BACT determination. The content of these reports must comply with the requirements in 40 CFR 60.7(d). Such reports shall be submitted quarterly pursuant to 40 CFR 60.7 (c). **[Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7].**

B20. In order to document compliance with Specific Condition No. B5(3) TIRES:

a. A log shall be established and maintained for the hours of operation using tires as supplemental fuels. The log shall include the daily tire usage (hours) as supplemental fuel at the facility, a monthly running total of the tire usage (hours), and a cumulative 12 month running total (hours), to ensure that the annual limit is not exceeded. The log shall be maintained on file for at least five (5) years and shall be made available to the Department upon request.

b. A log that includes the date of all tire deliveries to the facility, and the total quantity (nearest 0.1 tons) of tires received.

c. A tire usage-control system shall be installed to assure that the tire usage as supplemental fuel at the facility does not exceed the maximum of 15% of the total Btu heat input to the No. 2 kiln and precalciner or 1.44 tons per hour. The control system shall include a verification method and a log that insures and documents that the tires usage and heat input limits are not exceeded.

d. A log for the utilization rate (tons per hour) of tires. The utilization rate of tires as supplemental fuel shall be determined by a continuous weighing method and shall be recorded.

e. The logs shall be maintained on file for at least five (5) years and shall be made available to the Department upon request.

FCS shall record, as a minimum, the daily dry feed rate into the No. 2 kiln (TPH), and the clinker production rate. The above records shall be retained for a period of five (5) years and made available to the Department upon request.

B21. In order to document compliance with Specific Condition No. B5(2) COAL:

A coal usage control system shall be established to assure that the coal usage does not exceed a maximum of 13.8 TPH.

B22. In order to document compliance with Specific Conditions No. B5(5) through B5(8) FUEL OILS, the following used oil control system shall be used, as a minimum:

a. Record the transfer of used oil and virgin oil to the blend tanks (dates and gallons).

b. Record the final blend quantities of on-spec used oil and virgin oil (gallons)

c. Calculate and record the final percentage of on-spec used oil in the tank blend of on-spec used oil and virgin oil, and verify that the percentage does not exceed 15.0 percent, by volume.

These records shall be maintained on file for at least five (5) years and shall be made available to the Department upon request. **[Rule 62-4.070(3), F.A.C. and FCS letter on Used Oil Sampling].**

B23. Recordkeeping requirement when burning on-spec used oil shall be in accordance with 40 CFR 266.43 (b) and (6) (July 1, 1992 version). The results of each sample analysis shall be submitted to the Department's Southwest District office and the Hernando County Planning offices within 30-days after a sample is taken. The dates and quantities of on-spec purchased fuel oil transferred to the facility storage tank shall be reported quarterly (i.e., Jan-Mar, April-June, July-Sept, and Oct-Dec). The report is due in the month following the ending quarter. All records shall be kept for a minimum of five (5) years period for public and regulatory agency inspection.

B24. All measurements, records, and other data required to be maintained by the permittee shall be reported to the Southwest District office on a quarterly basis with the start of commercial operation in accordance with 40 CFR 60.7. All measurements, records and other data required to be maintained by the permittee shall be retained for at least 5 years following the date on which such measurements, records, or data are recorded. The data shall be available to Department staff as requested. **[40 CFR 60.7]**

B25. The owner or operator shall submit reports of the malfunction information required to be recorded by 40 CFR 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in de-energization of any device controlling kiln emissions or in the venting of emissions directly to the atmosphere. **[Rule 62-204.800, F.A.C., 40 CFR 60.65 (c)]**

Daily Operation and Maintenance (O&M) Log:

B26. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

The data collected from in-stack monitoring instruments.

The records on daily feed rates and clinker production rate.

The amount and type of fuel burned.

Total quantity (by weight) of tire used as supplemental fuel.

The results of all source tests.

Calibration logs for all instruments.

Maintenance/repair logs for any work performed on equipment or instruments, that is subject to this permit;

Total coal, natural gas, and oil usage.

All measurements, records, and other data required to be maintained by FCS shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by these specific conditions of certification in order to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C. SPECIFIC CONDITIONS

The following Specific Conditions apply to the following emission units:

EMISSIONS UNIT NO.	SYSTEM	EMISSIONS UNITS DESCRIPTION
031	Raw Materials Processed	Material Handling (Fugitive) Handling and Storage (Fugitive)
025	Raw Mill System	Filter Dust Bin Transport, Raw Meal Transport, Raw Meal Storage, Homogenizing Silos
028	Finish Mill	Gypsum Storage Bin, Clinker Transport, Belt Conveyor, Finish Mill Discharge Vent, Finish Mill Sepal Separator, Clinker Storage Silo and Clinker Bin
029	Cement Handling	Cement Storage Silo A, Cement Storage Silo B, Cement Silo Discharge Hopper A, Cement Silo Discharge Hopper B
030	Coal Handling	Coal Handling and Storage (Fugitives) Coal Dust Bin, Coal Mill.

EMISSION LIMITATIONS

C1. The permittee shall not cause or allow to be discharged into the atmosphere visible emissions which exceed the limits given in Table 1-1 Allowable Opacity Limits. **[Rule 62-210.200(198) and 62.212.400, F.A.C.]**

C2. In order to minimize excess emissions during startup/shutdown/malfunction these emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

C3. Cement Plant No.2 and associated equipment is allowed to operate continuously (8760 hours/year) **[Rule 62-210.200(223), F.A.C. Definitions-Potential to emit (PTE)].**

C4. *Process operating rates*:

The maximum material handling rates are as specified in Table 1-1. Allowable Opacity Limits.

TEST METHODS AND COMPLIANCE PROCEDURES

C5. The maximum permitted allowable particulate emission rate (lbs/hr and gr/dscf) from these emissions units are as stated in Table 1-1 Allowable Opacity Limits. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because these sources are equipped with a baghouse, the Department pursuant to the authority granted under Rule 62-297.620(4), F.A.C.,

with a baghouse, the Department pursuant to the authority granted under Rule 62-297.620(4), F.A.C., hereby establishes a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test. **[Rule 62-297.620(4), F.A.C.]**

In accordance with Rule 62-297.620(4), minor particulate sources equipped with baghouses with visible emissions that are greater than or equal to 5 percent opacity may result in the permittee being required to perform a stack test in accordance with approved methods to verify compliance with the 0.01 gr/dscf emission limits contained in Table 1-1.

C6. Compliance with the allowable emission limiting standards listed in Table 1-1 shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A (1995 version) adopted by reference in Chapter 62-204, F.A.C.

Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).

Testing of emissions shall be accomplished within 90 to 100% of the permitted capacity **[Rule 62-297.310(2), F.A.C]**. Failure to submit the input rates and actual operating conditions may invalidate the test **[Rule 62-297.310 (2), F.A.C.]**.

These emission units shall comply with all applicable requirements of Rule 62-297.310 General Test Requirements and 40 CFR 60.8, Subpart A, Performance Tests.

C7. The visible emissions test, EPA Method 9, shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[Rule 62-297.310, F.A.C.]**

C8. Should the Department have reason to believe the particulate matter standards set forth in Table 1-1 are not being met, the Department may require that compliance with the particulate emission standards be demonstrated by testing (applicable emission unit) in accordance with Rule 62-297.620 (4) F.A.C. **[Rule 62-297.620(4) and 62-297.310, F.A.C.]**

C9. Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.].**

C10. Particulate emissions from coal handling facilities related to the No. 2 kiln shall be minimized by following the procedures listed below: **[Rule 62-296.320(4)(c), F.A.C.]**

a. All conveyers and transfer points shall be enclosed to preclude particulate emissions (except those directly associated with coal stacking/reclaiming).

b. Coal storage piles shall be shaped, compacted and oriented to minimize wind erosion.

c. Water sprays or chemical wetting agents and stabilizers shall be applied to storage piles, handling equipment, etc during dry periods and as necessary to maintain an opacity of less than 10 percent, except when adding, moving or removing coal from the coal pile, during which the opacity shall be no more than 20%.

C11. The part of the fly ash handling system related to the No. 2 kiln (including transfer equipment, flyash bin, and pneumatic system exhaust) shall be totally enclosed and vented through fabric filters.

RECORDKEEPING AND REPORTING REQUIREMENTS

Daily Operation and Maintenance (O&M) Log:

C12. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

The results of all source tests.

Calibration logs for all instruments.

Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit.

All measurements, records, and other data required to be maintained by FCS shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by these specific conditions of certification in order to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

SECTION IV. PERMITTING HISTORY

CEMENT PLANT

06-13-83	PA 82-17	Original PPS Certification
07-25-83	PA 82-17	Modification, limestone injection
11-10-83	AC27-61016	Original air construction permit
03-27-84	PSD-FL-091	EPA PSD permit
06-29-86	PA 82-17	Modification, limestone calciner
08-26-86	AC27-118674 PSD-FL-091	Modification, reduced emission limits
04-30-90	AC27-118674 PSD-FL-091A	Intent to Issue, testing shredded tires
06-06-90	AC27-118674 PSD-FL-091A	Amendment, testing shredded tires
09-24-90	AC27-118674 PSD-FL-091	Amendment, testing JEA sediment
05-24-91	AO27-183508	Original air operation permit
08-30-91	AC27-118674 PSD-FL-091B	Intent to Issue, use of shredded tires
10-09-91	AC27-118674 PSD-FL-091	Amendment, testing shredded tires for NO_x measurements
10-25-91	AC27-118674 PSD-FL-091	Amendment, testing whole tires
07-20-92	AC27-118674 PSD-FL-091C	Amendment, additional testing with whole tires
11-18-92	AC27-118674 PSD-FL-091A	Modification, use of shredded tires
11-24-92	AC27-118674	Intent to Issue, use of whole tires

	PSD-FL-091	
12-21-92	AC27-118674	Modification, use of whole tires
12-17-93	AC27-222095 PSD-FL-091D	Modification, use of used oil
03-11-94	AO27-231888	Modification, use of used oil, and tires (whole and shredded)
08-10-94	AC27-222095 PSD-FL-091E	Modification, use of used oil w/ PCB limit condition
08-30-94	AO27-231888A	Modification, used oil test method
POWER PLANT		
06-13-83	PA 82-17	Original PPS Certification
07-25-83	PA 82-17	Modification, limestone injection
08-03-83	PA 82-17	Modification
03-27-84	PSD-FL-090	EPA PSD permit
02-20-85	PA 82-17	Modification
06-29-86	PA 82-17	Modification, limestone calciner
06-02-94	PA 82-17	Revision to transfer authorization from SWFWMD to DEP for dike construction
10-06-94	PSD-FL-090A	Amendment, testing at 133 MW
05-23-95	PSD-FL-090D	Intent to Issue, for operation of power at 1850 MMBtu/hr input

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.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, Florida Statutes. 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.

G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and 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 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.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment 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.

G.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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.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.

G.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 and 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.

G.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.

G.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 Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extend it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology *(X)*
(b) Determination of Prevention of Significant Deterioration *(X)*; and
(c) Compliance with New Source Performance Standards *(X)*.

G.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 or 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.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

G.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.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

FLORIDA CRUSHED STONE COMPANY
PORTLAND CEMENT PLANT NO. 2 AND ASSOCIATED EQUIPMENT
Brooksville, Florida
Hernando County

The applicant, Florida Crushed Stone Company (FCS), plans to construct a 104.2 ton per hour (maximum TPH as clinker) dry process portland cement kiln with a *preheater/precalciner design* at its existing cement plant approximately 3.5 miles northwest of Brooksville, Hernando County, Florida. The project includes a single kiln and clinker cooler along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. The facility will produce 912,500 tons per year (maximum TPY as clinker) and approximately 1,004,000 TPY of portland cement.

The Department issued a construction permit and a BACT determination for Cement Plant No. 2 utilizing the preheater (PH) design (1995). This revised BACT analysis will consider the proposed preheater/precalciner (PH/PC) design that may be utilized by FCS in lieu of the permitted PH kiln. An extensive analysis supporting the BACT determination requested by FCS was submitted with the original application and is included by reference along with the original BACT Determination made by the Department and the additional information submitted with the present application.

A detailed process description is included in the Technical Evaluation and Preliminary Determination.

Following is the BACT determination proposed by the applicant:

BACT DETERMINATION REQUESTED BY THE APPLICANT:

POLLUTANT	EMISSION LIMIT
Particulate Matter (kiln)	0.2 lb/ton of dry kiln feed
Particulate Matter (cooler)	0.1 lb/ton of dry kiln feed
Particulate Matter (material handling, conveying, storage	0.01 gr/dscf, baghouses
Sulfur Dioxide (kiln)	0.23 lb/ton clinker
Nitrogen Oxides (kiln)	2.8 lb/ton clinker
Carbon Monoxide (kiln)	2.0 lb/ton clinker

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

A single, large, fabric filter system (baghouse) will be used to capture particulate matter from the kiln and the cooler. Baghouses will also be used to limit particulate emissions from other process emission points. Table 1-1 is a list of the emission units to be controlled by baghouses.

Portland cement installations are among the major facilities listed in Table 212.400-1, F.A.C., "Major Facilities Categories." A BACT determination is required for each pollutant exceeding the significant emission rates in Table 212.400-2, "Regulated Air Pollutants Significant Emissions Rates," which in this case are particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen oxides (NOx).

This facility is also subject to the following requirements given in Rule 62-208.800, F.A.C., "Federal Regulations adopted by Reference:"

- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants.
- 40 CFR 51, Subpart P - Protection of Visibility.

Date of Receipt of a BACT Application:

September 11, 1996

Review Group Members:

Teresa Heron and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or

economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Particulate matter from kilns and coolers (PM/PM_{10}, and VE). Controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.

- Products of combustion and incomplete combustion (e.g., SO_2, NO_x, CO, VOC). Control is largely achieved by good combustion practices, reactions with clinker and raw materials and removal in add-on control equipment.

- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated "air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT DETERMINATION ANALYSIS:

PARTICULATE MATTER (PM/PM_{10})

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities. The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. According to FCS, virtually all of the cement kiln dust (CKD) generated from Cement Plant 1 is captured in the baghouse and returned to the pyroprocessing system as raw material. A small amount is removed every few weeks and sold to avoid build-up of thallium in the product. It is expected that most of the CKD from Cement Plant 2 will be recycled, while any excess will be stored in a silo for sale.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitators (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99%. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.

Small quantities of beryllium (Be), mercury (Hg) and lead (Pb) are generated by the combustion of coal and fuel oil blends. Be and Pb will be generated as particulate emissions from the combustion of fuels, and will be removed by incorporation into the product clinker or controlled by the kiln/cooler baghouse. Hg can exist in both particulate and gaseous form and can only be partially removed by the process and control equipment The applicant projects such low emissions of these metals that they will not be subject to BACT.

A review of the BACT Clearinghouse indicates that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT.

The applicant has proposed kiln particulate emissions of 0.2 pounds per ton of dry kiln feed (lb/ton kiln feed) and cooler particulate emissions equal to the New Source Performance Standards (NSPS) limit of 0.1 lb/ton kiln feed as BACT for this source. This compares with the proposed values in the original application for the PH kiln of 0.3 and 0.1 lb/ton kiln feed for the two units, respectively.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Nitrogen Oxides

Emissions of NO_x from dry process cement plants with a preheater/precalciner include the kiln, the calcining loop, and any fuel-fired support operation. NO_x is generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NO_x) and by thermal fixation of nitrogen in the combustion air (thermal NO_x). As flame temperature increases, the amount of thermally generated NO_x increases. Fuel type affects the quantity and type of NO_x generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NO_x than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

NO_x emissions represent a significant portion of the total emissions generated by this project, and shall be minimized using BACT.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

The emissions of NO_x can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NO_x generated during combustion (combustion modifications).

2. Reducing the quantity of NO_x in the flue gas stream (flue gas controls).

A review of EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_x emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_x emissions at this facility will be controlled through "proper combustion practices" such as burner design with primary combustion air control. Burning a portion of the fuel in the precalciner, introduction of tires in the material feed end of the kiln, and indirect firing will spread out the thermal load and will help minimize NO_x emissions.

In its original submittal, the applicant ruled out Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) as technically unfeasible or cost prohibitive. The applicant gave subsequent consideration to other possible control methods following a request by the Department for additional details justifying the selected method. The applicant rejected Low NO_x Burners, low Nitrogen Fuel, Flue Gas Recirculation, Fuel Reburning, and Contemporaneous Reductions from the on-site power plant and cement kiln as options which are allegedly ineffective, undemonstrated, or beyond the control of the applicant.

The applicant has proposed for this kiln with a preheater/precalciner design a NO_x emission rate of 292 lb/hr and 2.8 lb/ton clinker. This value is substantially less than the one FCS proposed in its original application (4.3 lb/ton clinker) and, on a unit basis, is equal to the BACT Determination made by the Department in 1995. It is compared below with previous determinations documented by the BACT Clearinghouse.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed
	Year 1978	Year 1981	Year 1996
lb/ton clinker	11.13	0.85	2.8

It is important to note that the facility which was given the 0.85 lb/ton clinker NO_x limit has not been able to meet it since construction. A dry process plant with a preheater/precalciner received a NO_x limit of 1.11 lb/ton clinker but was never built. Another dry process plant with a preheater/precalciner received a BACT determination of 2.09 lb NO_x/ton clinker. However, it appears that since that time a less stringent standard was applied. One dry process preheater/precalciner kiln in California received a NO_x BACT determination of 2.5 lb/ton clinker. The Department made a BACT Determination of 2.8 lb/ton clinker in 1995 for the proposed Florida Rock Industries Cement Plant in Newberry, Florida. The main reason it was higher than the one for the California plant was that Florida limestone is wetter and requires more heat input to dry. A claim by the kiln manufacturer that differences in volatility between Eastern and Western coal should be reflected in an even higher emission limit for the Florida kiln was rejected by the Department.

A review of the NO_x emission rate summary indicates that the applicant's proposal is representative of the most stringent BACT determinations made to date for plants utilizing dry processes. The dry process with a

preheater/precalciner is considered to be the most energy-efficient process. Therefore it is expected that the lower fuel use will result in relatively low NO_x. Additionally, the lower flame temperature realized when burning coal, spreading the thermal load over various burn points, indirect firing, as well as documented reductions from tire burning, are further reasons to a expect low emission rate from the proposed preheater/precalciner kiln.

The Department also reviewed a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_x Emissions from Cement Kiln/Calciner through the Use of the NOxOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington. However the process has not been demonstrated on a long term basis and FCS' kiln designer, Polysius, has not been willing to guarantee its performance or the quality of cement produced when using this control process.

Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NOxOUT process as BACT. The process relies on the reaction between ammonia and NO_x to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve 50% reduction of NO_x emissions. At that level there should be no ammonia slip while meeting a BACT limit of 3.1 lb/ton clinker.

A survey of stack test data from various kilns around the country, operating for more than three years, suggests that the proposed emission limit for NO_x is low but achievable

The USEPA Technology Transfer Network (TTN) BACT/LAER/RACT Clearinghouse database was reviewed for more recent data. Review of this data does not change the Department's original review.

Sulfur Dioxide

Sulfur dioxide (SO_2) may be generated both from sulfur compounds such as sulfates in the raw materials and from sulfur in the fuel. The sulfur content of both raw materials and fuels varies from plant to plant and with geographic location. Sulfur dioxide at this facility will be generated by the combustion of coal and tires in the kiln and generation of sulfur gases from the raw materials.

The exhaust gas from a cement kiln can contain varying amounts of SO_2. Under low oxygen conditions, sulfates in the raw materials can be converted to SO_2. At high temperature and excess air conditions, some of the sulfur introduced into the cement kiln with the raw materials, and most of the sulfur contained in the fuel, are converted to SO_2. Most of the SO_2 subsequently reacts with oxygen and alkali compounds (such as Na_2O and K_2O vaporized at sintering temperatures) to form alkali sulfates, which are found in cement clinker and in kiln dust. The amount of SO_2 released in the kiln flue gases will vary with the amount of excess alkali available for absorption. Additional SO_2 may be removed through contact with the incoming raw materials and, to some extent, in the particulate control equipment.

SO_2 control processes can be classified into five categories: fuel/material sulfur content limitations, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid.

FCS proposes to limit SO_2 emissions by taking advantage of the alkaline environment in the kiln, preheater, and raw mill to effect substantial removal of SO_2. Ultimately the sulfur is incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. Some additional SO_2 removal through contact with particulate matter may also take place in the kiln/cooler baghouse.

A review of the BACT determinations for cement plants as contained in the BACT Clearinghouse indicates SO_2 reduction levels from 70 to 96% (percent) from facilities utilizing the dry processes. The Department did not find instances of BACT involving measures beyond those proposed by FCS. Some plants use baghouses as proposed by FCS instead of Electrostatic Precipitators (ESPs) for particulate control. It is possible that the filter cake on the bags enhances SO_2 removal compared with an ESP. However, the difference is marginal compared with the primary removal mechanism involving oxidation of SO_2 to SO_3, alkali reactions, and subsequent removal of sulfates as particulate matter and with the clinker.

The SO_2 limit proposed by the applicant, 0.23 lb/ton clinker, is substantially less than the 0.55 lb/ton value proposed in the original application submitted by FCS in 1995 and is equal to the BACT emission limit (on a unit basis) set by the Department in its review of the previous preheater (PH) kiln proposal. A survey of stack test data from different facilities around the country operating for at least three years demonstrates that the proposed limit is low but achievable.

Carbon Monoxide and Volatile Organic Compounds

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

Emissions of CO can potentially be reduced at portland cement plants by two main methods: utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flue gas stream (flue gas control).

VOC is also a pollutant formed by the incomplete combustion of fuel or hydrocarbons contained in the raw materials. The temperatures of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can be controlled by add-on control devices by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for CO or VOC have been demonstrated for cement plants.

The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for control of products of incomplete combustion and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. The applicant estimates low emissions of VOC such that the new kiln will not be subject to BACT for this pollutant.

A review of the BACT Clearinghouse reveals that for CO and VOC, BACT from cement plants for these pollutants is proper combustion practices.

BACT DETERMINATION BY DEP:

Particulate Matter Determination

BACT for visible emissions was determined to be more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. With respect to the kiln, BACT for PM was also determined to be more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. This value of 0.2 lb/ton kiln feed is equal to the Department's previous BACT determination for the PH kiln and equal to the proposed determinations made for the Florida Rock Industries kiln in Newberry and the Southdown Cement Plants in Brooksville.

Based on actual data the kiln and cooler PM limits are considered to be low and achievable.

For each small baghouse in the material handling process the exhaust gases must not exhibit greater than 5 percent opacity. The Department has determined that 5 percent opacity is BACT, and is attainable with a baghouse.

Nitrogen Oxides Determination

The Department has determined that the NO_x level proposed by the applicant is similar to the lowest emission limits from plants already in operation throughout the country and reflects recent BACT determinations for Florida portland cement plants.

FCS previously ruled out SNCR as unfeasible for the previous PH design because the "optimum temperature range to drive the SNCR reactions between 1600-2000 degrees F is encountered in a typical kiln system only in the kiln itself." FCS contended that injection of ammonia/urea in the kiln will cause increases in NO_x. In the new PH/PC arrangement, the temperature range for SNCR will occur outside of the kiln and its use is at least plausible.

The Department believes that the proposed NO_x limit of 2.8 lb/ton clinker (at 104.2 TPH clinker production) is BACT for this plant. Therefore, BACT for NO_x emissions from the cement kiln is determined to be equal to 2.8 lb/tons of clinker. The Department believes that this limit can be achieved by the technology proposed by FCS. If it is not met within the time allotted in the proposed construction permit, then FCS must examine the option of employing SNCR or propose an alternative technology to accomplish the same end.

Sulfur Dioxide Determination

The Department has also determined that the SO_2 BACT limit proposed by the applicant is also one of the lowest in the country and is equal to recent BACT Determinations by the Department for this pollutant. It is the conclusion of the Department that the key factors in SO_2 removal are maintaining proper ratios of sulfur and alkali in the kiln environment and intimate contact between raw materials and exhaust gases. This is considered by the Department to be the mechanism by which the proposed limit of 0.23 lb/ton clinker will be achieved.

The Department believes that FCS will meet the SO_2 limits as proposed. This is substantiated by the letter of October 28, 1983 from Sholtes and Koogler, Environmental Consultants, regarding the existing PH kiln at FCS. Per page 13, "Polysius (cement plant designer) states that if only sulfur dioxide from the cement plant were considered, sulfur dioxide emissions as low as 20 pounds per hour could be expected from the cement plant." This is further proved by actual emissions tests from the original kiln which average about 10 lb of SO_2 per hour or approximately 0.1 lb/ton clinker.

The Department has also concluded that sulfuric acid mist emissions are not expected to be significant because free sulfite (SO_3) will preferentially react with clinker and kiln dust in the alkali environment of the kiln. Also, little water is available to complete the reaction to acid mist. No BACT determination was required for sulfuric acid mist (H_2SO_4).

An emission limit of 0.23 lb SO_2/ton clinker will insure that ambient SO_2 concentration increases will be less than the applicable National Park Service Significant Impact Level. Although it appears that FCS can achieve even lower values, it would be prudent to allow sufficient flexibility such that emissions of all combustion products can be minimized simultaneously. To provide further assurance that this limit will be met, the Department proposes a limit on the sulfur content of the coal of 1.25 percent.

CO Determination

BACT for CO was determined to be 2.0 lb/ton clinker. This value is equivalent to that proposed by FCS and the Department's previous BACT determination for Cement Plant 2. It is lower than the value given in AP-42 and will provide sufficient flexibility to minimize NO_x and SO_2 emissions. The Department requests that FCS continue to be judicious in its procurement of raw materials such as coal ash with low levels of unburned carbon to minimize CO generation in the PH.

Other Pollutants

No BACT determination was required for VOC as it will not be emitted in significant amounts.

No BACT determination was required for Pb. The limit requested by FCS insures BACT will not be triggered. Removal will be accomplished by the particulate control system and incorporation into the clinker matrix.

No BACT was required for Be. The adopted value will result in emissions less than the PSD significant threshold value. The particulate control system will remove Be which will also be largely incorporated into the clinker matrix.

No BACT was required for Hg. The estimate provided by FCS will result in emissions less than the applicable BACT threshold. This is consistent with information available to the Department on mercury levels in raw materials and coal as well as tests conducted at kilns in Florida.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

The BACT emissions established by the Department are summarized as follows:

SOURCE	POLLUTANT EMISSION LIMIT
KILN	
Kiln (PM/PM_{10})	0.2 lb/ton kiln feed (dry basis) and 0.3 lb/ton clinker - 1 hour average
Kiln (VE)	Visible emissions not to exceed 10 percent opacity
Kiln (SO_2)	0.23 lb/ton clinker 24 hr rolling average
Kiln (NOx)	2.8 lb/ton clinker - 24 hr rolling average
Kiln (CO)	2.0 lb/ton clinker - 1 hr average
Kiln (SO_3)	0.014 lb/ton clinker (non-BACT)
Kiln (VOC)	0.085 lb/ton clinker (non-BACT)
Kiln (Be)	8.5×10^{-7} lb/ton clinker (non-BACT)
Kiln (Hg)	2.4×10^{-5} lb/ton clinker (non-BACT)
Kiln (Pb)	5.2×10^{-4} lb/ton clinker (non-BACT)
Fuels	Coal (1.25 % S), blend of fuel oil and on-spec used oil (1.5 % S), tires (up to 15% of heat input), and natural gas are the only fuels allowed
COOLER	
Cooler (PM/PM_{10})	0.1 lb/ton kiln feed (dry basis) and 0.15 lb/ton clinker
Cooler (VE)	Visible emissions not to exceed 10% opacity

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

ASSOCIATED EQUIPMENT

Minor points with baghouses	Visible emissions not to exceed 5% opacity

FUGITIVES SOURCES

Fugitive sources	Visible emissions not to exceed 10% opacity

COMPLIANCE

Compliance with the particulate emission limitations shall be demonstrated using EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Compliance with opacity standards (minor sources controlled by baghouses) shall be determined by conducting observations in accordance with 40 CFR 60, Appendix A, Method 9.

Continuous Opacity Monitors (kiln and cooler) shall meet the requirements of the 40 CFR 60, Appendix B and 40 CFR 60, Subpart F, NSPS for Portland Cement Plants. Compliance with the opacity standard for the kiln and cooler shall be demonstrated by EPA Reference Method 9 as contained in Appendix A, 40 CFR 60.

Compliance with the opacity standards for fugitive sources shall be determined by EPA reference Method 9 as contained in Appendix A, 40 CFR 60.

Compliance with the SO_2 and NO_x emission limitations shall be demonstrated using CEMs. The CEMs shall meet all the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

Compliance with the CO limitations shall be demonstrated by 3 one-hour tests using EPA Method 10.

Pursuant to F.A.C. 62-4.070(3), 62-212.400(6) and 62-296.520, the kiln/cooler exhaust system shall be equipped with continuous monitors to record NO_x and SO_2 for the purposes of compliance; opacity at the stack to indicate proper maintenance and operation; and CO and/or O_2 to optimize combustion conditions for pollution control.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A to confirm emission rate is less than the PSD significant emission rate.

Compliance with the Pb, Hg, and Be limitations shall be demonstrated (on a one time basis) by three one-hour stack tests using EPA Method 29 to confirm emission rate is less than the PSD significant emission rate.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT/LAER/RACT CLEARINGHOUSE DATABASE COMPARISON

The following table is to be used for reference and comparison with portland cement facilities listed in the BACT/LAER/RACT Clearinghouse database:

POLLUTANT	lb/ton clinker	lb/ton $kiln_{ph}$ feed	lb/ton kiln feed	lb/MM BTU
PM/PM_{10} (kiln)	0.3	0.18	0.2	0.09
SO_2 (kiln)	0.23	0.14	0.15	0.07
NO_x (kiln)	2.80	1.68	1.83	0.89
CO (kiln)	2.0	1.20	1.31	0.64
VOC (kiln)	0.085	0.05	0.06	0.03
H_2SO_4 (kiln)	0.014	8.37 E-03	0.009	4.46 E-03
Be (kiln)	8.5 E-07	5.10 E-07	5.55 E-07	2.72 E-07
Hg (kiln)	2.4 E-05	1.44 E-05	1.57 E-05	7.69 E-06
Pb (kiln)	5.2 E-04	3.13 E-04	3.40 E-04	1.67 E-04
PM/PM_{10} (Cooler)	0.15	0.09	0.1	0.04

Based on the following FCS process rates:
Preheater feed rate ($kiln_{ph}$ feed) : 173.2 TPH
Kiln feed rate : 159.4 TPH
Clinker production : 104.2 TPH
Heat Input : 325 MMBTU/hr

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING

Teresa Heron, Review Engineer,
A. A. Linero, P.E., Administrator
New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

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

Date: 2/7/97

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

Date: 2/9/97

Table 1-1
Allowable Opacity Limits (Minor Particulate Sources)
Florida Crushed Stone

Description	Control	Emission Unit Equipment	Grain Loading (gr/dscf)	OPACITY	lb/hr
Emission Unit: Raw Material Processed Process Rate = 245 TPH					
Material Processing (Fugitive)				10	
Handling and Storage (Fugitive)				10	
Emission Unit: Raw Mill System Process Rate = 173.2 TPH Preheater Feed					
Filter Dust Bin Transport	Baghouse	2E-67	0.01	5	0.302
Raw Meal Transport	Baghouse	2F-02	0.01	5	0.208
Raw Mill Storage and Homogenizing Silos	Baghouse	2G-01	0.01	5	1.178
Emission Unit: Kiln Operations Process Rate = 159.4 TPH Kiln Dry Feed					
Kiln Feed System	Baghouse	2H-05, 2E-66	0.01	5	0.499
Emission Unit: Finish Mill Process Rate = 104.2 TPH Clinker					
Gypsum Storage Bin	Baghouse	2L-14	0.01	5	0.320
Clinker Transport	Baghouse	2L-03	0.01	5	0.253
Belt Conveyor	Baghouse	2M-04	0.01	5	0.485
Finish Mill Discharge Vent	Baghouse	2N-02	0.01	5	2.640
Finish Mill Sepol Separator	Baghouse	2N-08	0.01	5	8.270
Clinker Storage Silo	Baghouse	2L-05	0.01	5	0.253
Clinker Bin	Baghouse	2M-15	0.01	5	0.624
Emission Unit: Cement Handling Process Rate: ~ 115 TPH Portland Cement					
Cement Storage Silo A	Baghouse	2Q-18	0.01	5	0.499
Cement Storage Silo B	Baghouse	2Q-18	0.01	5	0.499
Cement Silo Discharge Hopper A	Baghouse	2Q-28	0.01	5	0.208
Cement Silo Discharge Hopper B	Baghouse	2Q-38	0.01	5	0.208
Emission Unit: Coal Handling Process Rate = 13.8 TPH					
Coal Mill	Baghouse	2S-15	0.01	5	1.745
Coal Dust Bin	Baghouse	2S-20	0.01	5	0.145
Coal Handling and Storage (Fugitive)				5/20	
TOTAL					18.336

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0530021

DRAFT Permit No.: AC27-274892(A)
and PSD-FL-227(A)

Permittee:
Florida Crushed Stone, Company
Portland Cement Plant No. 2 and Associated Equipment

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA/Reference Method/CMS *	Testing Time Frequency	Min. Compliance Test Duration	CMS * Compliance
026	Kiln No. 2	PM/PM_{10}	Oil/Coal /Gas/WTDF	5	initial/annual	3 one-hr run	
026	Kiln No. 2	VE	Oil/Coal/Gas/WTDF	9/COMS	initial/annual/COMS	3 one-hr run	No [4]
026	Kiln No. 2	SO_2	Oil/Coal/Gas/WTDF	CEMS	daily average	continuous	Yes [6]
026	Kiln No. 2	NOx	Oil/Coal/Gas/WTDF	CEMS	daily average	continuous	Yes [3]
026	Kiln No. 2	CO	Oil/Coal/Gas/WTDF	10 [5]	initial/annual	3 one-hr run	
026	Kiln No. 2	VOC	Oil/Coal/Gas/WTDF	25 or 25A [2]	initial	3 one-hr run	
026	Kiln No. 2	H_2SO_4 mist	Oil/Coal/Gas/WTDF	8	initial	3 one-hr run	
026	Kiln No. 2	Hg, Pb	Oil/Coal/Gas/WTDF	29	initial	3 one-hr run	
026	Kiln No. 2	Be	Oil/Coal/Gas/WTDF	29	initial	3 one-hr run	
031	Fugitive sources	VE		9	Protocol [7]		
025/028/029/030	Minor Sources	VE		9	initial/annual	3 one-hr run	
027	Cooler No. 2	PM/PM_{10}	Oil/Coal/Gas/WTDF	5	initial/annual	3 one-hr run	
027	Cooler No. 2	VE	Oil/Coal/Gas/WTDF	9/COMS	initial/annual/COMS	3 one-hr run	No [4]

Notes:

[1] Testing of emissions shall be conducted while burning coal, 85% coal and 15% tires (permitted capacity). The kiln is allowed to burn virgin fuel oil and a blend of virgin fuel oil and on-spec used oil for startup. See specific conditions No. 3.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided the CO allowable emission rate is reached.

[3] NO_x - The continuous emission monitor (CEM) data shall be used for Kiln No. 2 compliance requirement. The CEM calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[4] Pursuant to 40 CFR 60, Subpart F, the kiln/cooler exhaust system shall be equipped with continuous opacity monitor system (COMS) to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be demonstrated by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[5] Continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process.

[6] SO_2 - The continuous emission monitor (CEM) data shall be used for Kiln No. 2 compliance requirement. The CEM calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[7] Protocol as approved by the Southwest District Ofiice.

* CMS [=] compliance demonstrated by a continuous monitoring system: CEMS or COMS.

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530021

Permittee:
Florida Crushed Stone, Company

DRAFT Permit No.: AC27-274892(A) and PSD-FL-227(A)
Portland Cement Plant No. 2 and Associated Equipment

Emission Unit 026 - Kiln No. 2
Emission Unit 027 - Cooler No. 2

				Allowable Emissions			
E.U. ID#	Description	Pollutant ID	Fuel(s) [2]	BACT limits	lb/hr	TPY	Basis
026	Kiln No. 2	PM/PM_{10}	coal/gas/WTDF/oil	0.20 lb/ton kiln feed*	31.9	140.0	BACT
026	Kiln No. 2	SO_2	coal/gas/WTDF/oil	0.23 lb/ton clinker	24.0	105.0	BACT
026	Kiln No. 2	NO_x	coal/gas/WTDF/oil	2.8 lb/ton clinker	291.7	1280.0	BACT [3]
026	Kiln No. 2	CO	coal/gas/WTDF/oil	2.0 lb/ton clinker	208.3	913.0	BACT
026	Kiln No. 2	VOC	coal/gas/WTDF/oil	0.085 lb/ton clinker	8.85	38.8	FCS/DEP
026	Kiln No. 2	H_2SO_4	coal/gas/WTDF/oil	0.014 lb/ton clinker	1.46	6.39	FCS DATA
026	Kiln No. 2	Beryllium	coal/gas/WTDF/oil	8.5 E-07 lb/ton clinker	8.85 E-05	3.88 E-04	FCS/DEP
026	Kiln No. 2	Mercury	coal/gas/WTDF/oil	2.4 E-05 lb/ton clinker	2.50 E-03	1.10 E-02	FCS DATA
026	Kiln No. 2	Lead	coal/gas/WTDF/oil	5.2 E-04 lb/ton clinker	5.42 E-02	2.37 E-01	FCS DATA
026	Kiln No. 2	VE	coal/gas/WTDF/oil	10% opacity			BACT
027	Cooler No. 2	PM/PM_{10}	coal/gas/WTDF/oil	0.1 lb/ton kiln feed*	15.94	70.0	BACT-NSPS
027	Cooler No. 2	VE	coal/gas/WTDF/oil	10% opacity			BACT

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No.2
Hours of operation per year		8760	8760
Kiln preheater feed rate	TPH	173.2	
Kiln feed rate *	TPH	159.4	

Suitable methods shall be used to determine the kiln feed rate, except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate.

Kiln Heat Input	**MMBtu/hr**	325	
Clinker Production (1)	TPH	104.2	
Cooler throughput rate	TPH	104.2	

NOTES

(1) At a maximum design clinker production rate of 104.2 TPH and preheater feed rate of 173.2 TPH, utilizing a conversion factor of 0.602: (173.2 x 0.602 = 104.2).
(2) Fuel oil burning as specified in Specific Condition No. 8 is allowable for startup only. WDTF and whole tires (15% heat input) are allowed to be burned at this kiln.
(3) FCS shall have up to 18 months after startup of commercial operation to achieve the NO_x standard (2.8 lb/ton clinker).

Memorandum

Florida Department of
Environmental Protection

KIM

TO: Howard Rhodes

THRU: Clair Fancy
Al Linero 1/30 (repermitting of unbuilt plant with a process change)

FROM: Teresa Heron

DATE: January 31, 1997
2/7

SUBJECT: Florida Crushed Stone, PSD-Fl-227(A) and AC27-274892(A)
Project Modification and Production Increase

Attached is the final construction permit for this facility. The permit will provide for a change in the kiln technology (adds a precalciner) and a production increase for the previously proposed and permitted Portland Cement Plant No. 2.

The revised project includes a dry process kiln with a preheater/precalciner, clinker cooler, crushers, raw mill, finish mill, material and fuel handling equipment, silos, and shipping facilities. Pollution control equipment includes a common fabric filter system (baghouse) for particulate emissions from the kiln and cooler; absorption of sulfur compounds and metals into the product; combustion controls for volatile organic compounds (VOC) and CO; combustion controls for NO_x with additional controls to be specified as needed to meet permit limits; and baghouses for particulate emissions from other process emission units.

The BACT determination is the same on a unit basis as the one previously approved in the existing permit.

I recommend your approval and signature