



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

November 23, 2004

CERTIFIED MAIL – Return Receipt Requested

Mr. Chris Horner  
Plant Manager  
Florida Rock Industries  
4000 NW CR 235  
Newberry, Florida 32669

RE: **Draft** Authorization for testing and evaluation of the addition of Flyash and Petroleum Coke to the Coal fired at the Thompson S. Baker Cement Plant. Air Construction Permit 0010087-012-AC

Dear Mr. Horner:

Attached is one copy of the proposed authorization, 0010087-012-AC, to conduct testing and parameter measurements for the evaluation of flyash and petroleum coke fired with coal at the Florida Rock Industries' Thompson S. Baker Cement Manufacturing Facility, which is located near Newberry, Alachua County. The data gathered will evaluate feasibility and benefits of introducing flyash and petroleum coke with the coal to the kiln and calciner, establish operating parameters and the impacts on clinker and cement quality. The pollutants and or parameters to be measured or monitored will include sulfur dioxide [CEM (continuous emission monitor)], nitrogen oxides (CEM), dioxin/furans, mercury, particulate matter, visible emissions, carbon monoxide (CEM), ash content of the fuel, ultimate fuel analyses, unit operational parameters including load, fuel flow, excess air, flue gas temperature, and other unit specific parameters that are needed for the evaluation. Particulate size distribution may be evaluated also. The testing is scheduled to run from December 15, 2004 through February 15, 2005.

The permitting authority's "INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" and the "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" are also included. The "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" must be published as soon as possible. Proof of publication, i.e., newspaper affidavit, must be provided to the permitting authority's office within 7 (seven) days of publication pursuant to Rule 62-110.106(5), F.A.C. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Please submit any written comments you wish to have considered concerning the permitting authority's proposed action to James K. Pennington, P.E., at the above letterhead address. If you have any other questions, please contact Bobby Bull at 850/921-9585.

Sincerely,

Trina L. Vielhauer  
Chief  
Bureau of Air Regulation

TLV/jkp/rlb

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Mr. Chris Horner, Plant Manager  
 Florida Rock Industries  
 4000 NW CR 235  
 Newberry, Florida 32669

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
 X *Angel Hornt*

B. Received By (Printed Name) C. Date of Delivery  
*Angel Hornt* *12/1/04*

D. Is delivery address different from Item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

2. Article Number **7000 1670 0013 3109 9175**  
 (Transfer from service label)

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

**U.S. Postal Service  
 CERTIFIED MAIL RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

7000 1670 0013 3109 9175

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$</b>

Postmark  
Here

Delivered To: Mr. Chris Horner, Plant Manager  
 Florida Rock Industries  
 4000 NW CR 235  
 Newberry, Florida 32669

PS Form 3800, May 2000

See Reverse for Instructions

In the Matter of an  
Application for Permit by:

Florida Rock Industries  
4000 NW CR 235  
Newberry, Florida 32669

Air Construction Permit No.: 0010087-012-AC  
Thompson S. Baker Plant  
Alachua County

**INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT**

The Department of Environmental Protection (permitting authority) gives notice of its intent to issue an air construction permit [copy of the draft permit enclosed] for the facility detailed in the application specified above, to authorize Florida Rock Industries to conduct testing and parameter measurements for the evaluation of flyash and petroleum coke fired with coal at Florida Rock Industries' Thompson S. Baker Cement Manufacturing Facility, which is located near Newberry, Alachua County.

The permittee, Florida Rock Industries, applied on October 21, 2004, for authorization, to conduct testing and parameter measurements for the evaluation of flyash and petroleum coke fired with coal at the Florida Rock Industries' Thompson S. Baker Cement Manufacturing Facility, which is located near Newberry, Alachua County. The data gathered will evaluate feasibility and benefits of introducing flyash and petroleum coke with the coal to the kiln and calciner, establish operating parameters and the impacts on clinker and cement quality. The pollutants and/or parameters to be measured or monitored will include sulfur dioxide [CEM (continuous emission monitor)], nitrogen oxides (CEM), dioxin/furans, mercury, particulate matter, visible emissions, carbon monoxide (CEM), ash content of the fuel, ultimate fuel analyses, unit operational parameters including load, fuel flow, excess air, flue gas temperature, and other unit specific parameters that are needed for the evaluation. Particulate size distribution may be evaluated also. The testing is scheduled to run from December 15, 2004 through February 15, 2005.

The permitting authority has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-210, F.A.C. This source is not exempt from permitting procedures. The permitting authority has determined that an Air Construction Permit is required for the proposed activity.

The permitting authority intends to issue this Air Construction Permit based on the belief that reasonable assurances have been provided to indicate that operation of the source will not adversely impact air quality, and the source will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-256, 62-257, 62-281, 62-296, and 62-297, F.A.C.

Pursuant to Sections 403.815 and 403.0872, F.S., and Rules 62-110.106 and 62-210.350(3), F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT." The notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the permitting authority at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax: 850/922-6979), within 7 (seven) days of publication pursuant to Rule 62-110.106(5), F.A.C. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

The permitting authority will issue the Final Air Construction Permit in accordance with the conditions of the enclosed Draft Air Construction Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The permitting authority will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT." Written comments should be provided to the permitting authority office. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this Draft Air Construction Permit, the permitting authority shall issue a Revised Draft Air Construction Permit and require, if applicable, another Public Notice.

The permitting authority will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S. Mediation under Section 120.573, F.S., will not be available for this proposed action.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the permit applicant or any of the parties listed below must be filed within 14 (fourteen) days of receipt of this notice of intent. Petitions filed by any other person must be filed within 14 (fourteen) days of publication of the public notice or within 14 (fourteen) days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207, F.A.C.

A petition must contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number, and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the permitting authority's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the permitting authority's action or proposed action;
- (d) A statement of the material facts disputed by the petitioner, if any;
- (e) A statement of the facts that the petitioner contends warrant reversal or modification of the permitting authority's action or proposed action;
- (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the permitting authority's action or proposed action; and,
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the permitting authority to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the permitting authority's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the permitting authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply to the Department of Environmental Protection for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542, F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information:


- (a) The name, address, and telephone number of the petitioner;
- (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;
- (c) Each rule or portion of a rule from which a variance or waiver is requested;
- (d) The citation to the statute underlying (implemented by) the rule identified in (c) above;
- (e) The type of action requested;
- (f) The specific facts that would justify a variance or waiver for the petitioner;
- (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and,
- (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2), F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the United States Environmental Protection Agency and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

**STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION**



Trina L. Vielhauer  
Chief  
Bureau of Air Regulation

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE and the Draft Permit and all copies were sent by certified mail before the close of business on 11/24/04 to the person(s) listed:

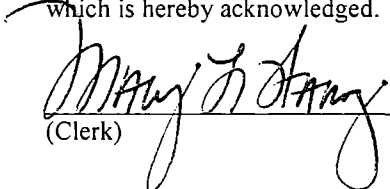
**Mr. Chris Horner, Plant Manager, FRI**

In addition, the undersigned duly designated deputy agency clerk hereby certifies that copies of this INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE and the Draft Permit were sent by U.S. mail on the same date to the person(s) listed:

- Mr. Henry Gotsch, FRI
- William A. Proses, P.E., Koogler and Associates
- Chris Kirts, DEP – NED
- Rick Banks, DEP – NED
- Rita Felton-Smith, DEP – NED
- Joe Kahn, DEP – BAMMS
- Chair, Alachua Co. BCC

Clerk Stamp

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

  
(Clerk) 11/24/04  
(Date)

**PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT**

Florida Department of Environmental Protection

Florida Rock Industries, Inc.  
Thompson S. Baker Cement Plant - Newberry  
Alachua County

Draft Air Construction Permit No.: 0010087-012-AC

The Florida Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Florida Rock Industries, Inc. (FRI) to authorize Florida Rock Industries to conduct testing and parameter measurements for the evaluation of flyash and petroleum coke fired with coal at the Thompson S. Baker Cement Plant located 2.5 miles Northeast of Newberry on County Road 235 in Alachua County. The applicant's name and address are: Florida Rock Industries, Inc., 4000 NW CR 235, Newberry, Florida 32669.

FRI requests permission to use flyash and petroleum coke in a test program from December 15, 2004 through February 15, 2005, that will allow the Department and FRI to evaluate feasibility and benefits of introducing flyash and petroleum coke with the coal to the kiln and calciner, establishing operating parameters and the impacts on clinker and cement quality. The proposed testing evaluation will not result in any emissions increases and a new evaluation under the rules for the Prevention of Significant Deterioration (PSD) is not required. If the results of this project are favorable, FRI will request the following revisions to their current Title V Permit: 1) The allowable fuels would be expanded to include coal blended up to 11% flyash and/or up to 30% petroleum coke, 2) Fuel limiting would be based upon total heat input, not maximum coal feed rate, and 3) The ratio of dry preheater feedrate to clinker might increase slightly as the flyash fraction of the dry preheater feedrate is reduced.

The plant has continuous emissions monitoring (CEM) equipment for NO<sub>x</sub>, SO<sub>2</sub>, opacity and total hydrocarbons as well as annual testing requirements for all of the regulated pollutants. The plant is subject to 40CFR63, Subpart LLL.

The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions must be filed within fourteen (14) days of publication of this Public Notice of Intent to Issue Air Construction Permit. Under Section 120.60(3), F.S., however, petitions submitted by person(s) who asked the Department for notice of agency action must be filed within fourteen (14) days of receipt of that notice or the date of publication of the public notice whichever occurs first. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the

proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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

Department of Environmental Protection  
Bureau of Air Regulation  
111 S. Magnolia Drive, Suite 4  
Tallahassee, Florida, 32301  
Telephone: (850) 488-0114  
Fax: (850) 922-6979

Department of Environmental Protection  
Northeast District Office  
7825 Baymeadows Way, Suite 200B  
Jacksonville, Florida 32256-7590  
Telephone: (904) 807-3233  
Fax: (904) 448-4363

The complete project file includes the technical evaluation, Draft Air Construction Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, North Permitting Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. The technical evaluation and draft permit can be viewed at [www.dep.state.fl.us/air/permitting/construct.htm](http://www.dep.state.fl.us/air/permitting/construct.htm) in the Florida Rock Newberry link.



**TECHNICAL EVALUATION**  
**AND**  
**PRELIMINARY DETERMINATION**

**FLORIDA ROCK INDUSTRIES, INC.**  
**NEWBERRY, ALACHUA COUNTY, FLORIDA**

**Portland Cement Manufacturing Facility**  
**Test Trials to Burn Flyash and Petroleum Coke with Coal in**  
**the Calciner and Kiln**

DEP File Nos. 0010087-012-AC

Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation

November 23, 2004

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

### I. APPLICANT NAME AND ADDRESS

Florida Rock Industries, Inc  
400 NW CR 235  
Newberry, Florida 32669  
Authorized Representative: Mr. Chris Horner, Plant Manager

### II. FACILITY INFORMATION

#### A. FACILITY LOCATION

Florida Rock Industries, Inc. (FRI), owns and operates the Thompson S. Baker Cement Plant in Newberry, Alachua County. The plant is currently permitted to produce 2650 tons per day and is located off of Alachua County Road 235, 2.5 miles northeast of Newberry, Florida. The UTM coordinates of the Florida Rock facility are Zone 17, 346.9 km East and 3285.0 km North.

#### B. FACILITY CLASSIFICATION CODE (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products  
Industry Group No. 324 Cement, Hydraulic  
Industry No. 3241 Cement, Hydraulic

#### C. FACILITY CATEGORY

FRI's Cement Plant directly emits more than 100 tons per year (TPY) of several regulated air pollutants and is, therefore, classified as a "Major Source of Air Pollution or Title V Source," per the definitions in Rule 62-212.200, Florida Administrative Code (F.A.C.).

This industry is listed in Table 212.400-1, "Major Facilities Categories", Section 62-212.400, F.A.C. Therefore, stack and fugitive emissions of over 100 TPY of carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), or particulate matter (PM/PM<sub>10</sub>) characterize the existing installation as a Major Facility per the definitions in Rule 62-210.200, F.A.C. and subject to applicability review for the requirements of Prevention of Significant Deterioration (PSD) per Rule 62-212.400, F.A.C. Accordingly, the original FRI project was subject to New Source Review (NSR) including the PSD provisions.

Per Table 212.400-2, "Regulated Air Pollutants – Significant Emission Rates", any further modifications at the facility resulting in emissions increases greater than 40 TPY of NO<sub>x</sub> or SO<sub>2</sub>, 7 TPY of sulfuric acid mist (SAM), 25/15 TPY of PM/PM<sub>10</sub>, 3 TPY of fluorides, 1200 pounds per year (lb/yr) of lead or 200 lb/yr of mercury require review per the PSD rules and a determination for Best Available Control Technology (BACT) per Rule 62-212.400, F.A.C.

The facility is also subject to a number of industry regulations and permit specific conditions enumerated in the Title V Operation Permit issued January 11, 2002. Among these is designation as a major source of hazardous air pollutants (HAPs) and applicability of the major source provisions of 40 CFR 63, Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

### III. ORIGINAL PROJECT

The Florida Department of Environmental Protection ("Department") issued a permit to FRI in December 1996 to construct the existing facility. The plant employs the modern dry process technology including a preheater and calciner along with indirect firing. The dry process preheater/calciner (PH/C) kiln is the most fuel-efficient cement pyroprocessing technology currently in use in the United States.

The originally authorized plant was permitted to make 2300 tons per day (TPD) of clinker. An hourly production rate of 95.83 TPD was included in the permit. An annual production limit of 712,500 TPY was also included.

The major equipment at the plant includes the PH/C kiln, a clinker cooler, raw mill, finish mill, silos, conveyers, and particulate control/dust collection and recycling equipment. The cement product is stored in silos and is shipped in bags or in bulk by rail or truck.

A more complete project and process description was provided in the Technical Evaluation and Preliminary Determination issued for the project in September 1995. FRI completed construction of the basic plant in late fall of 1999. Compliance tests were conducted during mid-2000. A subsequent project to convert the calciner to a multistage combustion (MSC) calciner to facilitate NOX control and tire introduction have also been completed.

### IV. PREVIOUS PERMIT MODIFICATIONS

The original construction permit issued in December 1996 set an initial limit for NOX emissions of 3.8 pounds per ton (lb/ton) of clinker. It provided for a two-year optimization period and installation of additional control equipment to insure compliance with a lower limit of 2.8 lb/ton by the end of the period (by January 2002). The permit also allowed the Department to further lower the NOX and SO2 limits and to set SAM and beryllium limits after evaluation of future stack testing or continuous emission monitoring results.

The permit was revised in August 2001 to modify the kiln in accordance with the final configuration chosen by FRI to reliably meet the lower NOX limit. The revision added a requirement to: continuously monitor total hydrocarbons (THC); provide reasonable assurance of compliance with the VOC limit; set a final limit for SAM emissions; and specify additional stack testing for beryllium emissions.

In November 2001 FRI completed a conversion of the calciner to the "PREPOL®-MSC calciner system" for the reduction of NOX emissions and co-firing of tires as fuel. The MSC calciner can reduce NOX emission by staggered introduction of fuel, tertiary air, and raw meal. This causes the combustion to take place in several stages. In the first stage, burning fuel near the kiln inlet reduces some of the NOX generated in the sintering zone of the rotary kiln. The fuel is injected against the direction of flow of the kiln gases and is pyrolyzed in its gas phase. In the reducing atmosphere that is formed, some of the NOX is converted into nitrogen.

In order to prevent new NOX from being generated in the calciner, the calcining fuel also has to be burned under reducing conditions. This is achieved by staggered introduction of combustion air such that fuel is first burned under reducing conditions, then additional fuel is burned under

**TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION**

oxidizing conditions. This minimizes the generation of additional NOX in the calciner and further reduces the nitrogen oxides coming from the rotary kiln. FRI can use tires as the fuel burned under reducing conditions in the lower section of the MSC calciner. Coal is burned under subsequent oxidizing conditions in the higher section of the MSC calciner. Additional tertiary air from the clinker cooler insures good burnout and conversion of most CO to carbon dioxide (CO<sub>2</sub>) without significant NOX formation. Finally by spreading the thermal load toward the lower temperatures of the calciner and from the higher temperatures of the kiln burner, the overall potential for NOX formation is further lowered.

In January 2002, The Department issued a Title V permit to the facility, and set the final limits for NOX, beryllium, and SO<sub>2</sub> as required by the present permit. Prior to completion of the effort, FRI submitted a permit application on June 14, 2002 to: 1) increase clinker production to 2650 TPD, 2) increase the preheater feed rate to 183.4 TPH on a 24-hour rolling average, 191.4 peak hourly rate, and 1,331,000 TPY, and 3) set the final emission limits. Table one and two summarize these opacity and allowable emissions modifications:

**Table 1- Opacity Limits**

Stack #	Description	Grain Loading	OPACITY
Emission Unit 1: Raw Material Process Rate = 1,331,000 TPY Dry Feed			
Fugitive	Material Processing		10
Fugitive	Handling and Storage		10
Fugitive	Crusher		15
Emission Unit 2: Raw Mill System Process Rate = 255 TPH Recycle Dust plus Raw Meal (peak)			
E-28	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
G-07	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
H-08	Raw meal + recycle dust to preheater	0.01 gr/dscf	5
Emission Unit 3: Kiln System Process Rate = 364 MMBTU/hr heat input			
E-21	Kiln Operations (ESP)		10
E-21	In-process fuel: coal		10
E-21	In-process fuel: tires		10
	Tires (30 % of total heat input)		
Emission Unit 4: Clinker Handling 115 TPH Clinker (peak)			
L-03	Clinker cooler discharge and breaker	0.01 gr/dscf	5
L-06	Clinker into clinker silos	0.01 gr/dscf	5
K-15	Clinker Cooler (ESP)		10
L-08	Clinker into clinker silos	0.01 gr/dscf	5
Emission Unit 5: Finish Grinding Operations Process Rate = 136 TPH Clinker			
M-08	Clinker to finish mill	0.01 gr/dscf	5
N-09	Finish mill air separator	0.01 gr/dscf	5

**TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION**

N-12	Finish mill	0.01 gr/dscf	5
N-19	Cement handling in finish mill	0.01 gr/dscf	5
Q-25	Cement storage silos	0.01 gr/dscf	5
Q-26	Cement storage silos	0.01 gr/dscf	5
Emission Unit 6: Cement Handling Process Rate = 500 TPH Cement Unloading			
Q-14	Cement silo loadout	0.01 gr/dscf	5
Q-17	Cement silo loadout	0.01 gr/dscf	5
Q-21	Cement silo loadout	0.01 gr/dscf	5
R-12	Cement bagging operation	0.01 gr/dscf	5
Emission Unit 7: Coal Handling and Grinding Process Rate = 14 TPH Pulverized Coal			
S-17	Coal Mill	0.01 gr/dscf	5
S-21	Pulverized coal storage bin	0.01 gr/dscf	5
Fugitive	Coal Handling and Storage		5/20

**Table 2- Allowable Emissions**

Pollutant	BACT Emission Limit		Emission Rate*		Basis <sup>++</sup>
	lb/ton clinker	lb/ton dry feed	lb/hr	ton/yr	
PM (kiln)	0.23	0.14	25.9	94	BACT
PM <sub>10</sub> (kiln)	0.20	0.12	22.1	80	BACT
PM (cooler)	0.14	0.08	15.4	56	BACT
PM <sub>10</sub> (cooler)	0.12	0.07	13.0	47	BACT
SO <sub>2</sub> (kiln) <sup>+</sup>	0.16	0.10	17.7	64	BACT
NO <sub>x</sub> (kiln)**	2.45	1.50	271	980	BACT
H <sub>2</sub> SO <sub>4</sub> (kiln)	0.0025	0.0016	0.25	1	BACT
CO (kiln)	2.50	1.55	276	1000	BACT
VOC (kiln)	0.11	0.075	11.8	43	BACT

Notes:

- \* The kiln emission rate includes fuel oil combustion emissions from the raw mill air heater.
- \*\* Represents revised NO<sub>x</sub> limit (30-day rolling average) based on continuous monitoring data.
- + Represents revised SO<sub>2</sub> limit (24-hour rolling average) based on compliance tests and continuous monitoring data.
- ++ BACT values are representative of kiln permitted in 1996 and reflective of as-built configuration and not as a new kiln.

**V. CURRENT PROJECT**

FRI has requested an air construction permit for authorization of tests to evaluate the addition of flyash and petroleum coke to the coal fired at the Thompson S. Baker Cement plant in Newberry. This project will allow FRI to evaluate the feasibility of adding flyash and petroleum coke to the coal in the calciner and the kiln. FRI believes that optimization of the rates of addition of flyash and petroleum coke to the coal fired in the kiln and calciner is expected to expand the selection of fuel while improving emissions of THC and CO associated with carbonaceous materials in the

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

feed and allow better NO<sub>x</sub> control by improving reducing-condition controls. Based upon the results of this project, FRI proposes the following revisions to their current Title V Permit: 1) The allowable fuels would be expanded to include coal blended up to 11% flyash and/or up to 30% petroleum coke, 2) Fueling limiting would be based upon total heat input, not maximum coal feed rate, and 3) The ratio of dry preheater feedrate to clinker might increase slightly as flyash fraction of the dry preheater feedrate is reduced.

### **Flyash Injection**

Fly ash is the finely divided residue from the combustion of ground or powdered coal and is usually obtained from electric power plants. Typical fly ash contains silica, aluminum, and iron compounds and even some calcium. High quality fly ash (for example low in ammonia and carbon) can be substituted for cement in certain types of concrete. Fly ash can also be used as a raw material in lieu of other potential sources such as clay, sand, bauxite, iron ore, etc. Fly ash is currently mixed with the other raw materials prior to being dried and ground to form the feed. The fly ash constitutes approximately 10 percent of the material mix and helps to provide the chemical composition of kiln feed required to produce clinker.

FRI proposes to inject fly ash directly into the calciner where the carbonaceous material can be completely combusted along with the fuel fired to the calciner. FRI believes that more complete combustion of the carbonaceous material will occur since less flyash would be subject to oxidation in the preheater. Therefore less Total Hydrocarbons (THC) and CO will be produced, and the emission of these gases to the atmosphere will be minimized.

FRI believes they will have greater flexibility to vary qualities of electric-power plant flyash, and provide more efficient heating as the raw material feed is slightly reduced on the front end of the process.

### **Petroleum Coke**

Petroleum coke, a high-carbon byproduct of the oil refining industry, is a fuel of high heat content and very low ash relative to coal.

Addition of the petroleum coke would make use of a high-Btu fuel that is a byproduct of the region's oil-refining industry. FRI believes the reduction in the use of coal would reduce the environmental costs associated with coal mining and delivery from more distant coal fields. Emissions would not increase with the use of the petroleum coke, and petroleum coke fired with coal would remain within the current limits of the Title V permit.

### **Testing**

During the trial period, flyash, and later, petroleum coke will be added to raw coal for processing in the coal mill and combustion in the kiln burner and calciner. Flyash and petroleum coke will be stored in the existing coal bunker and fed into the coal-feed hopper; coal will be transported on the coal conveyer from the railcar. The blended and crushed materials will be burned in the kiln and calciner. No additional equipment will be required. The trial will consist of several phases for each proposed material.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Flyash- Flyash Phase One will be based on 5% flyash (95% coal) for a test run of 72 hours. At the end of the first phase, the flyash addition to the coal will be discontinued. After an evaluation of the results of process, quality and data, Flyash Phase Two will begin. The flyash proportion will be stepped up incrementally to 11% over several hours, and run will last for 72 hours.

Petroleum Coke- Petroleum Coke Phase One will be based on 5% petroleum coke (95% coal). Petroleum Coke Phase Two and Three will be based on 10% petroleum coke (90% coal) and 30% petroleum coke (70% coal), respectively. Periods for step-up, testing, and evaluation, as described for the flyash phases, will be used.

### **VI. CONCLUSION**

The Department will authorize a 60-day period from December 15, 2004 to February 15, 2005 to conduct tests to 1) evaluate the technical feasibility of introducing flyash and petroleum coke with coal in the calciner and kiln, 2) establish stable and predictable operating parameters, 3) assess the impacts on clinker and cement quality, and 4) measure the benefits of introducing flyash and petroleum coke with coal into the calciner and kiln at the Thompson S. Baker Cement Plant.

This project will operate within the limits of the Title V air Permit. Only the kiln system will be affected, and no permitted limits on production, total heat input, or pollution emissions will be exceeded. Under the proposed trial, the sum of heat-input rate for the coal, tires, flyash, and petroleum coke will not be greater than the allowable, total heat-input rate. Clinker-production rates would remain within limits; preheater- feed rates will be slightly reduced as the flyash fraction fed with the fuel is increased. Emissions limits will not be exceeded.

# DRAFT PERMIT

## PERMITTEE

Florida Rock, Inc  
4000 NW CR 235  
Newberry, Florida 32008

Permit No. 0010087-012-AC  
Cement Plant (SIC No. 3241)  
Flyash and Petroleum Coke  
Testing as Fuels  
Expires: February 15, 2005

### *Authorized Representative:*

Chris Horner, Plant Manager

## PROJECT AND LOCATION

This permit authorizes Florida Rock, Inc. to conduct testing and parameter measurements for the evaluation of flyash and petroleum coke fired with coal at the Florida Rock Industries' Thompson S. Baker Cement Manufacturing Facility, located at 4000 NW County Road 235 in Alachua County, Florida. The UTM coordinates are: Zone 17; 346.9 km E and 3285.0 km N.

## STATEMENT OF BASIS:

This air construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct fuel tests for fly ash and petroleum coke injection capacities in accordance with the conditions of this permit and as described in the application. The permittee shall operate the facility in accordance with the previously approved permits, drawings, plans, and other documents on file with the Florida Department of Environmental Protection ("DEP" or "the Department").

## CONTENTS

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Unit Specific Conditions
- Section 4. Appendices

**DRAFT**

\_\_\_\_\_  
Michael G. Cooke, Director  
Division of Air Resource Management

\_\_\_\_\_  
(Date)



SECTION I. GENERAL INFORMATION

**FACILITY AND PROJECT DESCRIPTION**

The plant employs the modern dry process technology including a preheater and calciner along with indirect firing. The dry process preheater/calciner (PH/C) kiln is the most fuel-efficient cement pyroprocessing technology currently in use in the United States. The major equipment at the plant includes the PH/C kiln, a clinker cooler, raw mill, finish mill, silos, conveyers, and particulate control/dust collection and recycling equipment. The cement product is stored in silos and is shipped in bags or in bulk by rail or truck.

FRI has requested an air construction permit for authorization of tests to evaluate the addition of flyash and petroleum coke to the coal fired at the Thompson S. Baker Cement plant in Newberry. This project will allow FRI to evaluate the feasibility of adding flyash and petroleum coke to the coal in the calciner and the kiln. FRI believes that optimization of the rates of addition of flyash and petroleum coke to the coal fired in the kiln and calciner will expand the selection of fuel while improving emissions of THC and CO associated with carbonaceous materials in the feed and allow better NO<sub>x</sub> control by improving reducing-condition controls.

During the test period, flyash, and later, petroleum coke will be added to raw coal for processing in the coal mill and combustion in the kiln burner and calciner. Flyash and petroleum coke will be stored in the existing coal bunker and fed into the coal-feed hopper; coal will be transported on the coal conveyer from the railcar. The blended and crushed materials will be burned in the kiln and calciner. No additional equipment will be required. The test will consist of several phases for each proposed material.

Flyash- Flyash Phase One will be based on 5% flyash (95% coal) for a test run of 72 hours. At the end of the first phase, the flyash addition to the coal will be discontinued. After an evaluation of the results of process, quality and data, Flyash Phase Two will begin. The flyash proportion will be stepped up incrementally to 11% over several hours, and run will last for 72 hours.

Petroleum Coke- Petroleum Coke Phase One will be based on 5% petroleum coke (95% coal). Petroleum Coke Phase Two and Three will be based on 10% petroleum coke (90% coal) and 30% petroleum coke (70% coal), respectively. Periods for step-up, testing, and evaluation, as described for the flyash phases, will be used.

**EMISSION UNITS**

This permit addresses the following emission units.

<b>EU No.</b>	<b>Emission Unit Description</b>
-003	Kiln System
-xxx	Temporary fly ash and petroleum coke injection into the calciner and kiln

**REGULATORY CLASSIFICATION**

Title III: The Suwannee American Cement Facility is classified as a "Major Source" per 40 CFR 63.2, Definitions (adopted and incorporated by reference by the Department at Paragraph 62-204.800(11)(d)) because it consists of a group of stationary sources located within a contiguous area and under common control that emit or have the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. The facility is subject to the Major (Greenfield) Source requirements of National Emission Standards for Hazardous Air Pollutants (NESHAP)

## SECTION 1. GENERAL INFORMATION

from the Portland Cement Manufacturing Industry, Code of Federal Regulations (CFR) Title 40, Part 63, Subpart LLL.

Title V: Because potential emissions of at least one regulated pollutant exceed 100 tons per year, the existing facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC).

Prevention of Significant Deterioration (PSD): This facility is located in an area (Alachua County) designated as "attainment" for all criteria pollutants. The facility is considered a "Portland Cement Plant," which is one of the 28 PSD source categories with the lower PSD applicability threshold of 100 tons per year (see Table 212.400-1, Rule 62-212.400, F.A.C.). Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a Major Facility with respect to Rule 62-212.400, F.A.C.

New Source Performance Standards (NSPS): The facility is subject to: 40 CFR 60 Subpart F, Standards of Performance for Portland Cement Plants; 40 CFR 60, Subpart Y, Standards of Performance for Coal Preparation Plants; and 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.

State Rule: Some emissions units are subject to Rule 62-296.701, F.A.C., Portland Cement Plants.

### **RELEVANT DOCUMENTS**

The documents listed below are the basis of this permit. The permit application and additional information referenced are not a part of this permit, but the information is specifically related to this permitting action and the following documents are on file with the Department.

- 0010087-001: AC/PSD 228 issued on 12/23/1996. Initial PSD/Construction Permit for the Newberry Plant.
- 0010087-002-AV: Initial Title V Permit, issued 1/11/2002
- 0010087-003-AC: Issued on 7/17/2000, Incorporated into Project 002-AV; Amended permit to add EPA Test Method 25A to test for VOC Emissions
- 0010087-006-AC: Incorporates project 0-005-AC; Incorporated into 002-AV; Amended permit to increase clinker production rate, preheater feed rate, and emissions limitations modification.
- 0010087-007-AV: Incorporates, National Emission Standards for Hazardous Air Pollutants for Portland Cement Plants, 40 CFR 63, Subpart LLL.

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. **Permitting Authority:** All applications for permits to construct or modify an emission unit subject to the Prevention of Significant Deterioration or Nonattainment review requirements should be submitted to the Bureau of Air Regulation, Florida Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 (phone number: 850/488-0114). All documents related to applications for permits to operate and minor modifications shall be submitted to the Air Resource Section of the Department's Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590 (phone number: 904/807-3300).

2. **Compliance Authority:** All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590 (phone number: 904/807-3300).

3. **Appendices:** The following Appendices are attached as part of this permit: Appendix GC (General Conditions). [Rule 62-4.160, F.A.C.]

4. **Applicable Regulations, Forms, and Application Procedures:** Unless otherwise indicated in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the applicable permits and applications. The facility is subject to all applicable provisions of Chapter 403, F.S., Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; 40 CFR 60 (Subparts A, F, Y, and OOO); and 40 CFR 63 (Subparts A and LLL). The terms used in this permit have specific meanings as defined in the applicable chapters of the F.A.C. 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. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300, and 62-210.900, F.A.C.]

5. **New or Additional Conditions:** For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62- 4.080, F.A.C.]

6. **Modifications:** No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

### SECTION 3. EMISSION UNIT SPECIFIC REQUIREMENTS

This section of the permit addresses the following existing emissions units.

<b>EU No.</b>	<b>Emission Unit Description</b>
-003	Kiln System
-xxx	Temporary fly ash and petroleum coke injection into the calciner and kiln

#### **FUEL TEST EVALUATION PROGRAM**

1. Relation to Other Permits: The conditions of this permit will supplement and comply with conditions of all existing, valid, Department permits.  
[Rules 62-4.210, 62-4.030, and 62-210.300(1)(b), F.A.C.]

2. Schedule: At least 14 days before beginning the fuel test evaluation, the permittee shall submit to the Permitting and Compliance Authorities a preliminary schedule detailing the program phases, operating scenarios, operational data collection, emissions data collection, and emissions testing protocol. The permittee shall update the schedule as necessary. This includes scenarios listed and not listed in the permittee's application and preliminary determination.

Flyash- Flyash Phase One will be based on 5% flyash (95% coal) for a test run of 72 hours. At the end of the first phase, the flyash addition to the coal will be discontinued. After an evaluation of the results of process, quality and data, Flyash Phase Two will begin. The flyash proportion will be stepped up incrementally to 11% over several hours, and run will last for 72 hours.

Petroleum Coke- Petroleum Coke Phase One will be based on 5% petroleum coke (95% coal). Petroleum Coke Phase Two and Three will be based on 10% petroleum coke (90% coal) and 30% petroleum coke (70% coal), respectively. Periods for step-up, testing, and evaluation, as described for the flyash phases, will be used.

[Rule 62-4.070(3), F.A.C., Applicable Permit, Applicant Request]

3. Duration: The temporary fuel test evaluation is permitted from December 15, 2004 to February 15, 2005. The temporary fuel test evaluation is limited to no more than 60 operating days and shall end no later than February 15, 2005.

[Applicable Permit, Applicant Request]

4. Operating Scenarios: The permittee shall evaluate the following operating scenarios.

a. *Case 1*: Inject 5% flyash (95% coal) for a test run of 72 hours

b. *Case 2*: Incrementally increase the percent of flyash to 11% (89% coal) over several hours, and run will last for 72 hours.

c. *Case 3*: Inject 5% petroleum coke (95% coal) for a test run of 72 hours

d. *Case 4*: Incrementally increase the percent of petroleum coke to 10% (90% coal) over several hours, and run will last for 72 hours.

e. *Case 5*: Incrementally increase the percent of flyash to 30% (70% coal) over several hours, and run will last for 72 hours.

The permittee may evaluate other operating scenarios within the limits of all valid permits. All operation shall be within the electrical, structural, process, and mechanical capabilities of the kiln. If the above specified fly ash injection or petroleum coke rates are not possible, the permittee shall document this with the suspected reason. Whenever injecting flyash or petroleum coke into the kiln or calciner, the permittee shall continuously monitor and record the following information: dry feed material to the preheater (TPH); fly ash feed directly to the calciner (TPH); heat input rates (MMBtu/hour) to the kiln from each fuel in use; all required CEMS data; and all required COMS data.

[Rule 62-4.070(3), F.A.C.]

### SECTION 3. EMISSION UNIT SPECIFIC REQUIREMENTS

#### **EMISSIONS**

5. Emissions Standards: This permit does not change any emission standards or establish any new emissions standards for the in line kiln system. During the temporary evaluation program, the in line kiln system shall comply with the requirements of all existing, valid Department permits. At no time will there be an increase in production or capacity rates during the test evaluation.  
[Rules 62-4.030, 62-4.070(3), 62-210.300(1)(b), F.A.C.; General Conditions, Attachment GC]

6. Unconfined Particulate Emissions: During the evaluation program, unconfined particulate matter emissions shall be minimized by taking the reasonable precautions specified in the current air construction permit, as necessary.  
[Rule 62-296.320(4)(c), F.A.C.]

#### **EMISSIONS TESTING AND MONITORING REQUIREMENTS**

7. Test Notification: The permittee shall provide at least a 15-day advance notice of any scheduled stack tests to afford the Compliance Authority the opportunity to witness the tests. If unavoidable circumstances occur that would delay the stack tests, the permittee shall keep the Compliance Authority informed of the delays and the new schedule. At its discretion, the Compliance Authority may allow a shorter advance notice.  
[Rule 62-297.310(7)(a)9, F.A.C.]

8. Stack Tests – Within the electrical, structural, process, and mechanical capabilities of the in-line kiln system, the permittee shall conduct the stack tests in accordance with the following provisions.

- a. The permittee shall conduct stack tests (one for each pollutant) to determine compliance with the existing emissions standards for carbon monoxide and particulate matter. The tests shall be conducted at the maximum production rate during the performance tests.
- b. The permittee shall conduct dioxin/furan tests when the 11% flyash and 30% petroleum coke test limits have reached each run for each of the two scenarios performance tests. In addition, the permittee shall conduct dioxin/furan tests if there is a significant change in the feed that was used in the most recent performance test. A change in Loss on Ignition (LOI) value of 30 percent or more shall be considered a significant change in the feed.
- c. For mercury, the permittee shall calculate and report mercury emissions in accordance with the procedure specified in the current air construction permit.
- d. The permittee shall conduct each required stack test using the methods approved in the current air construction permit. Each required stack test shall consist of at least three test runs.
- e. For each required stack test, the permittee shall report the following continuous monitoring data: nitrogen oxides, sulfur dioxide, volatile organic compounds (total hydrocarbons), and opacity.
- f. For each required stack test, the permittee shall report the following information: dry feed material to the preheater (TPH); fly ash feed directly to the calciner (TPH); clinker production (TPH) by direct measurement using the installed weigh scale; and heat input rates (MMBtu/hour) to the kiln from each fuel in use.
- g. During each day that stack tests are conducted on the kiln and calciner, a representative sample of each fuel used shall be taken and analyzed for the following fuel properties: heating value (Btu/lb), moisture (% by weight), nitrogen (% by weight), sulfur (% by weight), chlorides (% by weight), ash (% by weight), and mercury (ppm by weight).
- h. During each day that stack tests are conducted on the kiln and calciner, a representative sample of the flyash and petroleum coke injected into the calciner shall be taken and analyzed for the

### SECTION 3. EMISSION UNIT SPECIFIC REQUIREMENTS

same constituents as preheater feed. In addition, the flyash shall be tested for ammonia, chloride, carbon, loss on ignition (LOI), and mercury.  
[Rules 62-4.070(3) and 62-297.310, F.A.C.]

9. Test Procedures: General stack test procedures are summarized in Appendix GT of this permit.  
[Rule 62-297.310, F.A.C.]

10. Monitoring: During the fuel test evaluation program, the permittee shall continuously monitor and record all information specified by the existing air construction permit including operational parameters, CEMS data, and COMS data. The permittee shall continuously monitor and record all information to verify compliance with the current and valid permit conditions including operational parameters, CEMS data, and COMS data.  
[Rule 62-4.070(3), F.A.C.]

### **RECORDS AND REPORTS**

11. Stack Test Reports: The permittee shall prepare and submit reports for all required stack tests in accordance with the requirements in Rule 62-297.310(8), F.A.C. The permittee shall submit a written report that summarizes the results within 45 days of completing each required stack test. All stack test data collected during the temporary testing program shall be submitted for review. For each test run, the report shall also indicate the following information: dry material feed to the preheater (TPH); flyash and petroleum coke injection directly to the calciner (TPH); clinker production (TPH); heat input rates (MMBtu/hour) from each fuel in use; CEMS and COMS data; and ambient conditions.

12. Fuel, Flyash, and Petroleum Coke Analyses: Within 45 days of taking a fuel, flyash, or petroleum coke sample required by this permit, the permittee shall submit a report detailing the results of the analyses.  
[Rule 62-4.070(3), F.A.C.]

13. CEMS Data: The permittee shall provide the Department with data disks containing all CEMS data and production data for the duration of the fuel test. The permittee shall provide a description to decipher and review the data. The data should indicate when the raw mill is on (compound operation) and when it is off.  
[Rule 62-4.070(3), F.A.C.]

14. Final Report on the Fuel Test Evaluation Program: Within 90 days of completing the fuel test evaluation program and no later than April 14, 2005, the permittee shall submit a technical report detailing the fuel test evaluation program and its findings. The report shall be comprehensive and include, but not be limited to, the following:

- For each day the plant directly injected flyash and/or petroleum coke into the calciner, an hour-by-hour summary of the following information: dry material feed to the preheater (TPH); flyash and petroleum coke injection directly to the calciner (TPH); clinker production (TPH); portland cement production (TPH); heat input rates (MMBtu/hour) from each fuel in use; CEMS data; and COMS data.
- For each emissions stack test conducted, a summary of the information required in Condition 11.
- A discussion of any operational problems encountered at the higher authorized rates.
- Details of any mechanical, electrical, structural, and process limitations that were identified during the course of the fuel test evaluation program.

SECTION 3. EMISSION UNIT SPECIFIC REQUIREMENTS

[Rule 62-4.070(3), F.A.C.]

15. Engineering Report on Kiln: Any future applications for permanent production modifications shall include an engineering report describing the full capability of the kiln to use flyash and petroleum coke as fuel while not exceeding current emission rates. The report shall be sealed by professional engineers or other experts as appropriate in structural, mechanical, electrical, process, and environmental disciplines. A single report from the kiln manufacturer would suffice to fulfill this requirement.

[Rule 62-4.070(3), F.A.C.]

**APPENDIX GC**  
**CONSTRUCTION PERMIT GENERAL CONDITIONS [RULE 62-4.160, F.A.C.]**

- 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,



**APPENDIX GC**  
**CONSTRUCTION PERMIT GENERAL CONDITIONS [RULE 62-4.160, F.A.C.]**

(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 extent 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 noncompliance 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 (not applicable to project);

(b) Determination of Prevention of Significant Deterioration (not applicable to project);  
and

(c) Compliance with New Source Performance Standards (not applicable to project).

**APPENDIX GC**  
**CONSTRUCTION PERMIT GENERAL CONDITIONS [RULE 62-4.160, F.A.C.]**

- 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.

**Table 1- Opacity Limits**

Stack #	Description	Grain Loading	OPACITY
Emission Unit 1: Raw Material Process Rate = 1,331,000 TPY Dry Feed			
Fugitive	Material Processing		10
Fugitive	Handling and Storage		10
Fugitive	Crusher		15
Emission Unit 2: Raw Mill System Process Rate = 255 TPH Recycle Dust plus Raw Meal (peak)			
E-28	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
G-07	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
H-08	Raw meal + recycle dust to preheater	0.01 gr/dscf	5
Emission Unit 3: Kiln System Process Rate = 364 MMBTU/hr heat input			
E-21	Kiln Operations (ESP)		10
E-21	In-process fuel: coal		10
E-21	In-process fuel: tires		10
	Tires (30 % of total heat input)		
Emission Unit 4: Clinker Handling 115 TPH Clinker (peak)			
L-03	Clinker cooler discharge and breaker	0.01 gr/dscf	5
L-06	Clinker into clinker silos	0.01 gr/dscf	5

**APPENDIX GC**  
**CONSTRUCTION PERMIT GENERAL CONDITIONS [RULE 62-4.160, F.A.C.]**

K-15	Clinker Cooler (ESP)		10
L-08	Clinker into clinker silos	0.01 gr/dscf	5
Emission Unit 5: Finish Grinding Operations Process Rate = 136 TPH Clinker			
M-08	Clinker to finish mill	0.01 gr/dscf	5
N-09	Finish mill air separator	0.01 gr/dscf	5
N-12	Finish mill	0.01 gr/dscf	5
N-19	Cement handling in finish mill	0.01 gr/dscf	5
Q-25	Cement storage silos	0.01 gr/dscf	5
Q-26	Cement storage silos	0.01 gr/dscf	5
Emission Unit 6: Cement Handling Process Rate = 500 TPH Cement Unloading			
Q-14	Cement silo loadout	0.01 gr/dscf	5
Q-17	Cement silo loadout	0.01 gr/dscf	5
Q-21	Cement silo loadout	0.01 gr/dscf	5
R-12	Cement bagging operation	0.01 gr/dscf	5
Emission Unit 7: Coal Handling and Grinding Process Rate = 14 TPH Pulverized Coal			
S-17	Coal Mill	0.01 gr/dscf	5
S-21	Pulverized coal storage bin	0.01 gr/dscf	5
Fugitive	Coal Handling and Storage		5/20

**Table 2- Allowable Emissions**

Pollutant	BACT Emission Limit		Emission Rate*		Basis**
	lb/ton clinker	lb/ton dry feed	lb/hr	ton/yr	
PM (kiln)	0.23	0.14	25.9	94	BACT
PM <sub>10</sub> (kiln)	0.20	0.12	22.1	80	BACT
PM (cooler)	0.14	0.08	15.4	56	BACT
PM <sub>10</sub> (cooler)	0.12	0.07	13.0	47	BACT
SO <sub>2</sub> (kiln) <sup>+</sup>	0.16	0.10	17.7	64	BACT
NO <sub>x</sub> (kiln)**	2.45	1.50	271	980	BACT
H <sub>2</sub> SO <sub>4</sub> (kiln)	0.0025	0.0016	0.25	1	BACT
CO (kiln)	2.50	1.55	276	1000	BACT
VOC (kiln)	0.11	0.075	11.8	43	BACT

Notes:

\* The kiln emission rate includes fuel oil combustion emissions from the raw mill air heater.

\*\* Represents revised NO<sub>x</sub> limit (30-day rolling average) based on continuous monitoring data.

+ Represents revised SO<sub>2</sub> limit (24-hour rolling average) based on compliance tests and continuous monitoring data.

++ BACT values are representative of kiln permitted in 1996 and reflective of as-built configuration and not as a new kiln.