

Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

December 14, 2004

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ed Allsopp  
Vice President of Cement Operations  
CSR Rinker Materials Corporation  
1200 Northwest 137<sup>th</sup> Avenue  
Miami, Florida 33182

Re: DEP File No. 0250014-016-AC (PSD-FL-324A)  
Miami Cement Plant

Dear Mr. Allsopp:

Enclosed is one copy of the Draft Air Construction Permit for the proposed production increase at the Miami Cement Plant. The Department's Intent to Issue Air Construction Permit, the Technical Evaluation and Preliminary Determination, and the "Public Notice of Intent to Issue Air Construction Permit" are also included.

The "Public Notice" must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of Publication, such as a newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit modification. The Department reserves the right to publish the Public Notice at anytime. If the Department publishes the Public Notice, the applicant is relieved of this responsibility.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A.A. Linero, Administrator, South Permitting Section at the letterhead address. If you have any questions please call Mr. Linero at 850/921-9523.

Sincerely,

Trina L. Vielhauer, Chief  
Bureau of Air Regulation

TLV/al  
Enclosures

*"More Protection, Less Process"*

*Printed on recycled paper.*

In the Matter of an  
Application for Permit by:

CSR Rinker Materials Corporation  
1200 Northwest 137<sup>th</sup> Avenue  
Miami, Florida 33182

DEP File Nos. 0250014-016-AC (PSD-FL-324A)  
Production Increase and Revision of Emission Limits  
Miami Cement Plant  
Miami-Dade County

### **INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION**

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification (copy of DRAFT Permit Modification attached) for the proposed action, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The permittee, CSR Rinker Materials Corporation (Rinker), owns and operates the Miami Cement Plant in Miami-Dade County. Rinker applied for a construction permit on September 13, 2004 (complete November 17) to increase clinker production from their new cement kiln and revise emission limits.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit is required to increase clinker production.

The Department intends to issue this air construction permit based on the belief that the applicant has provided reasonable assurances to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit. The notice shall be published as soon as possible one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. 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 Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit modification 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 14 (fourteen) days from the date of publication of the Public Notice. 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 modification and require, if applicable, another Public Notice.

The Department will issue the permit modification 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.

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 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. 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 of the Florida Administrative Code.

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.

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.

In addition to the above, a person subject to regulation has a right to apply 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. Mediation is not available in this proceeding. 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, 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 EPA 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.



Trina L. Vielhauer, Chief  
Bureau of Air Regulation

**CERTIFICATE OF SERVICE**

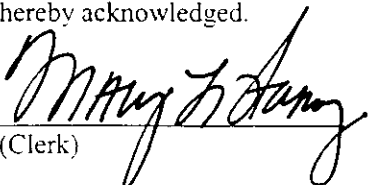
The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, and the DRAFT permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 12/15/04 to the person(s) listed:

Ed Allsopp, VP, Rinker\*  
Mike Vardeman, Rinker  
Gregg Worley, EPA  
John Bunyak, NPS

Tom Tittle, DEP SED  
H. Patrick Wong, Miami-Dade DERM  
John Koogler, PhD., P.E., K&A

Clerk Stamp

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

  
(Clerk) 12/15/04  
(Date)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

Florida Department of Environmental Protection  
CSR Rinker Materials Corporation  
Miami Cement Plant  
Miami-Dade County

DEP File Nos. 0250014-016-AC (PSD-FL-324A)

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to CSR Rinker Materials Corporation (Rinker) to increase production at the Miami Cement Plant. A review under the rules for the Prevention of Significant Deterioration of Air Quality (PSD) and a Best Available Control Technology (BACT) determination were not required. The applicant's name and address are CSR Rinker Materials Corporation, 1200 Northwest 137<sup>th</sup> Avenue, Miami, Florida 33182.

In 2000 Rinker replaced two wet process cement kilns and associated clinker coolers having an annual capacity of 650,000 tons per year (TPY) of clinker with a single dry process coal and petroleum coke-fired kiln with preheater, calciner, and clinker cooler with an annual capacity of 1,200,000 TPY. Rinker requests an increase in its hourly clinker production limit from 137 tons per hour (TPH) averaged over 24 hours to a peak production rate of 162 TPH. Rinker requests an increase in the annual clinker production to 1,300,000 TPY.

Pollution control equipment consists of 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 carbon monoxide (CO); indirect firing, multiple burn points and a Low NO<sub>x</sub> calciner for NO<sub>x</sub>; and baghouses for particulate emissions from other process emission units.

Although the capacity of the plant was increased and will further increase, actual and potential emissions of most pollutants will either decrease or will not increase significantly with respect to PSD compared to the original wet process. The primary reason is that substantially less fuel is required per unit of product when using the dry process rather than the wet process. This is because there is no need to make raw material slurry and then evaporate the water. The preheater/calciner technology offers better combustion control of the process and dry scrubbing of sulfur dioxide. The new baghouses are more efficient than previous particulate control equipment.

Following are the net emission increases and decreases over a contemporaneous five year period that includes the shutdown of the wet process kilns, startup of the new kiln and the requested production increase of the new kiln.

<u>Pollutant</u>	<u>Increases</u> <u>Dry Process at Proposed</u> <u>Capacity</u>	<u>Decreases</u> <u>Wet Process Actual</u> <u>Emissions</u>	<u>Net Emission Increases</u> <u>(Decreases)</u>	<u>PSD Significant</u> <u>Emission Rate</u>
PM	163	165	(2)	25
PM <sub>10</sub>	130	140	(10)	15
SO <sub>2</sub>	425	1383	(1058)	40
NO <sub>x</sub>	2600	2571	29	40
CO	1827	1735	92	100
VOC	78	47	31	40
H <sub>2</sub> SO <sub>4</sub>	13	13.4	-0	7
Hg	0.09	Assumed 0	<0.09	0.1
Pb	0.195	Assumed 0	<0.195	0.6

A PSD Review and BACT determination is not required because the net emission increases are less than the respective significant emission rates for all pollutants except for VOC. The Department conducted a BACT determination for VOC in 2002. The limit is 0.12 pounds of VOC per ton of clinker. A new BACT determination is not required. The present VOC BACT limit is low compared with recent BACT determinations for new kilns throughout the country. It is also much lower than the cement industry Maximum Achievable Control Technology (MACT) standard of approximately 0.3 pounds per ton applicable to new kilns at new sites.

Emission tests were authorized by the Department and conducted by Rinker at greater operating rates than currently permitted. One of the key findings is that SO<sub>2</sub> emissions are very low. Another is that NO<sub>x</sub> emissions are fairly constant in terms of pounds per hour at production rates between 100 and 150 TPH. NO<sub>x</sub> emissions in terms of pounds per ton of clinker are lower at production rates between 133 and 150 TPH than at production rates between 100 and 132 TPH. CO emissions will increase with increased production. NO<sub>x</sub>, SO<sub>2</sub>, VOC and visible emissions will be monitored by continuous emission monitoring systems (CEMS) at the stack. Set points will be adjusted by Rinker for an existing process CO monitor in the preheater so that a control room electronic alarm will be triggered when short-term CO concentrations at the preheater approach values equivalent to the allowable emission limits at the stack.

Additional changes allowed by the permit include introduction of fly ash directly into the calciner, replacement of an induced draft fan, and replacement of certain other minor equipment to more reliably achieve the requested production rate.

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 "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 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. 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 of the Florida Administrative Code.

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, as well as the rules and statutes which entitle the petitioner to relief; (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.

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  
Southeast District Office  
400 North Congress Avenue  
West Palm Beach, Florida 33401  
Telephone: 407/681-6600  
Fax: 407/681-6755

Miami-Dade County Department of  
Environmental Resources Management  
33 Southwest 2<sup>nd</sup> Avenue, Suite 900  
Miami, Florida 33150-1540  
Telephone: 305/372-6925  
Fax: 305/372-6954

The complete project file includes the application, technical evaluations, Draft 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, South Permitting Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/921-9523, for additional information. Key documents can be viewed at [www.dep.state.fl.us/air/permitting/construction.htm](http://www.dep.state.fl.us/air/permitting/construction.htm) by clicking on the Rinker Cement, Miami-Dade link.

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

**CSR RINKER MATERIALS CORPORATION**  
**MIAMI, DADE COUNTY, FLORIDA**

**Portland Cement Manufacturing Facility**  
**Production Increase and Revision of Emission Limits**

DEP File Nos. 0250014-016-AC  
PSD-FL-324A

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

December 14, 2004

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## **I. APPLICANT NAME AND ADDRESS**

CSR Rinker Materials Corporation  
1200 NW 137th Avenue  
Miami, Florida 33182  
Authorized Representative: Ed Allsopp, Vice President of Cement Operations

## **II. FACILITY INFORMATION**

### **A. FACILITY LOCATION**

CSR Rinker Materials Corporation (Rinker) operates a 1.2 million tons per year (TPY) clinker dry-process line at the Miami Cement Plant.

This site is approximately 8.2 kilometers from the Everglades National Park, a Class I Prevention of Significant Deterioration (PSD) Area, and in an ozone (O<sub>3</sub>) maintenance area in Dade County.

### **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**

The Rinker Miami Cement Plant directly emits more than 100 TPY of several regulated air pollutants and emits over 10 TPY of at least one hazardous air pollutant (HAP). Therefore it is classified as a "Major Source of Air Pollution or Title V Source," per the definitions in Rule 62-212.200, 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 pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD) at per Rule 62-212.400, F.A.C.

Per Table 212.400-2, "Regulated Air Pollutants – Significant Emission Rates", 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.

A previously approved Rinker modernization project was not subject to PSD and BACT because the differences between emission increases from the new line and emission reductions due to shutdown of the old wet process lines were less than the Significant Emission Rates given above. This is primarily due to the lower fuel requirements per unit of product characteristic of the dry processes, better particulate control equipment, and inherent dry scrubbing of sulfur dioxide in the calciner. In 2001, the Department conducted a BACT determination for VOC and required a continuous emission monitoring system (CEMS) for that pollutant.



# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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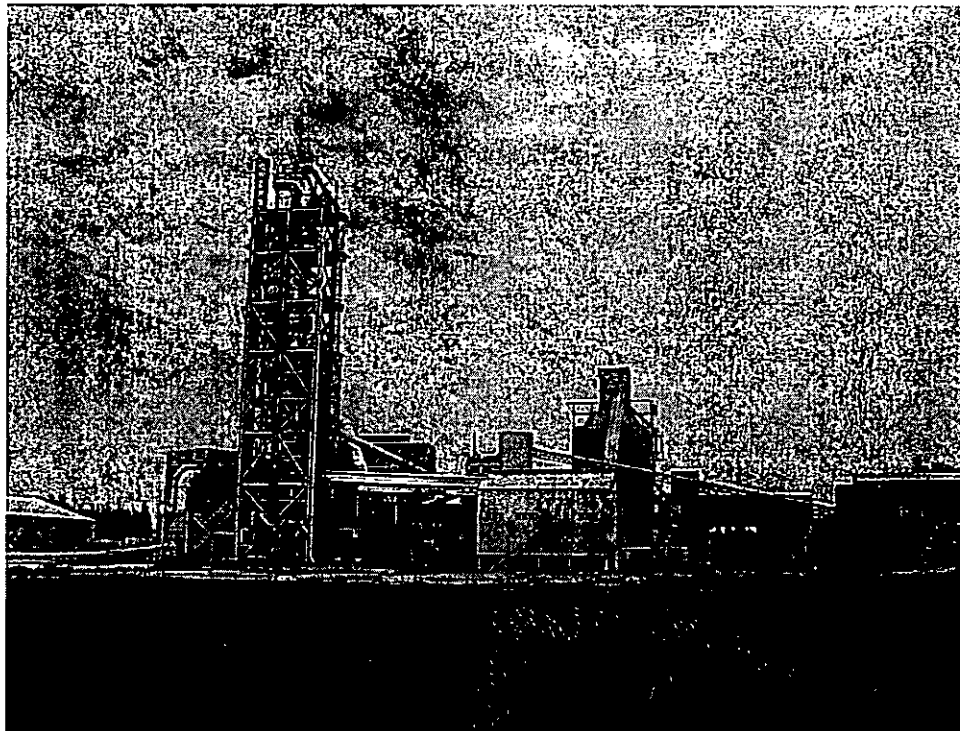
## III. MODERNIZATION PROJECT

The Department issued a permit to Rinker on September 11, 1997 to modify the existing wet process plant by incorporating the modern dry process technology including a preheater and calciner along with indirect firing. The dry process preheater/calciner (PH/C) kiln is one of the most fuel-efficient cement pyroprocessing technologies currently available. Thermal efficiencies are superior with the PH/C kiln and the amount of fuel combusted per ton of clinker produced is greatly reduced in comparison with the wet process.

The modernized cement plant was permitted to produce 137 tons per hour (TPH) of clinker (averaged over 24 hours) and an annual production rate of 1.2 million TPY of clinker. The major equipment at the plant includes a 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 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 modernization project on June 23, 1997. Rinker completed basic construction of the dry process kiln line in Spring of 2000. Compliance tests were conducted during the second half of the year. The plant operates under Title V Operation Permit 0250014-003-AV issued on November 7, 2000 and revised on October 26, 2004.

Following is a photograph of the constructed dry process plant taken in late June 2001.



**CSR Rinker Modernized Dry Process Cement Plant in Miami, Florida**

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

## IV. PERMITTED EMISSION AND PRODUCTION RATES

Following are the emission limits and production rates applicable to the dry process line. The values are from the original Air Construction Permit issued for the modernization project as modified by a subsequent PSD permit and BACT determination for VOC.

Parameter	Emission Limits (production basis)	Emission or Production Limits (mass per time basis)	Emissions or Production (Tons per Year)
PM	0.20 lb/ton kiln <sub>ph</sub> feed	44 lb/hour	193
PM <sub>10</sub>	0.17 lb/ton kiln <sub>ph</sub> feed	37.4 lb/hr	164
SO <sub>2</sub>	2.23 lb/ton clinker	306 lb/hr	1,340
NO <sub>x</sub>	4.9 lb/ton clinker	671 lb/hr	2,940
CO	3.01 lb/ton clinker	412 lb/hr	1,807
VOC	0.12 lb/ton clinker	16.4 lb/hr	72
H <sub>2</sub> SO <sub>4</sub>	0.014 lb/ton clinker	1.9 lb/hr	8.4
Mercury	2.4 x 10 <sup>-5</sup> lb/ton clinker	0.0033 lb/hr	0.091
Lead	7.5 x 10 <sup>-5</sup> lb/ton clinker	0.01 lb/hr	0.045
Kiln <sub>ph</sub> Feed		220 TPH (24-hr basis)	
Clinker		137 TPH (24-hr basis)	1,200,000
Heat Input		437 mmBtu/hr	

## IV. PRODUCTION CAPACITY TESTING REQUESTS

The Department received an application from Rinker on September 13, 2004 requesting production increase. Specifically Rinker requested the following:

- Increase the kiln preheater feed rate from 220 TPH to 267 TPH.
- Increase the clinker production rate from 137 TPH to 162 TPH.
- Increase the fuel heat input rate from 437 million Btu per hour (mmBtu/hr) to 485 mmBtu/hr.
- Revise emission limits to insure that there is not a "net significant emission rate increase" from all projects during a contemporaneous five year period that includes the shutdown of the old kilns, the startup of the new kiln and the requested production increase for the new kiln.
- Possible fly ash feed as a secondary raw material directly into the calciner instead of or in addition to the preheater.
- Possible like-kind replacement of the allegedly defective main induced draft fan.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Following is a tabulation of the emission limits and production rates requested by Rinker. The proposed emission limits are less than the existing limits in terms of lb/ton of feed or clinker as well as in terms of lb/hr for PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and VOC. The proposed emission rates are greater for sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>), lead (Pb), and mercury (Hg).

Parameter	Emission Limits (production basis)	Emission or Production Limits (mass per time basis)	Emissions or Production (Tons per Year)
PM	0.152 lb/ton kiln <sub>ph</sub> feed	40.6 lb/hour (from 44)	163 (from 193)
PM <sub>10</sub>	0.121 lb/ton kiln <sub>ph</sub> feed	32.3 lb/hr (from 37.4)	130 (from 164)
SO <sub>2</sub>	0.50 lb/ton clinker	81 lb/hr (from 306)	325 (from 1,340)
NO <sub>x</sub>	4.0 lb/ton clinker	648 lb/hr (from 671)	2,600 (from 2,940)
CO	2.81 lb/ton clinker	455 lb/hr (from 412)	1,827 (from 1,807)
VOC	0.17 lb/ton clinker	27.5 lb/hr (from 16.4)	110.5 (from 72)
H <sub>2</sub> SO <sub>4</sub>	0.020 lb/ton clinker	3.24 lb/hr (from 1.92)	13 (from 8.4)
Mercury	14 x 10 <sup>-5</sup> lb/ton clinker	0.023 lb/hr (from 0.0033)	0.091 (from 0.014)
Lead	30 x 10 <sup>-5</sup> lb/ton clinker	0.049 lb/hr (from 0.01)	0.195 (from 0.045)
Kiln <sub>ph</sub> Feed		267 TPH (1-hr) (from 220, 24-hr)	
Clinker		162 TPH (1-hr) (from 137, 24-hr)	1,300,000 (from 1,200,000)
Fuel		485 mmBtu (from 437)	

### V. EMISSIONS RESULTS FROM PRODUCTION CAPACITY TESTING PROGRAM

Prior to submitting the present application, Rinker requested permits to conduct testing for the purpose of determining the production capacity and bottlenecks in the pyroprocessing system and the effect of greater production on emissions. The testing was requested without replacement of the allegedly defective fan or injection of fly ash into the calciner.

The Department issued permits that allowed temporary operation at the kiln preheater feed rate and the clinker production rate that are now permanently requested. The permits required adherence to the previously permitted emission rates (lb/ton and lb/hr) regardless of production rates.

During the capacity testing program, the Department required that Rinker log NO<sub>x</sub>, SO<sub>2</sub>, and VOC by using the existing continuous emission monitoring systems (CEMS) for those pollutants. The Department also required the continuous recording of preheater feed and calculation of clinker production to relate emissions to production.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

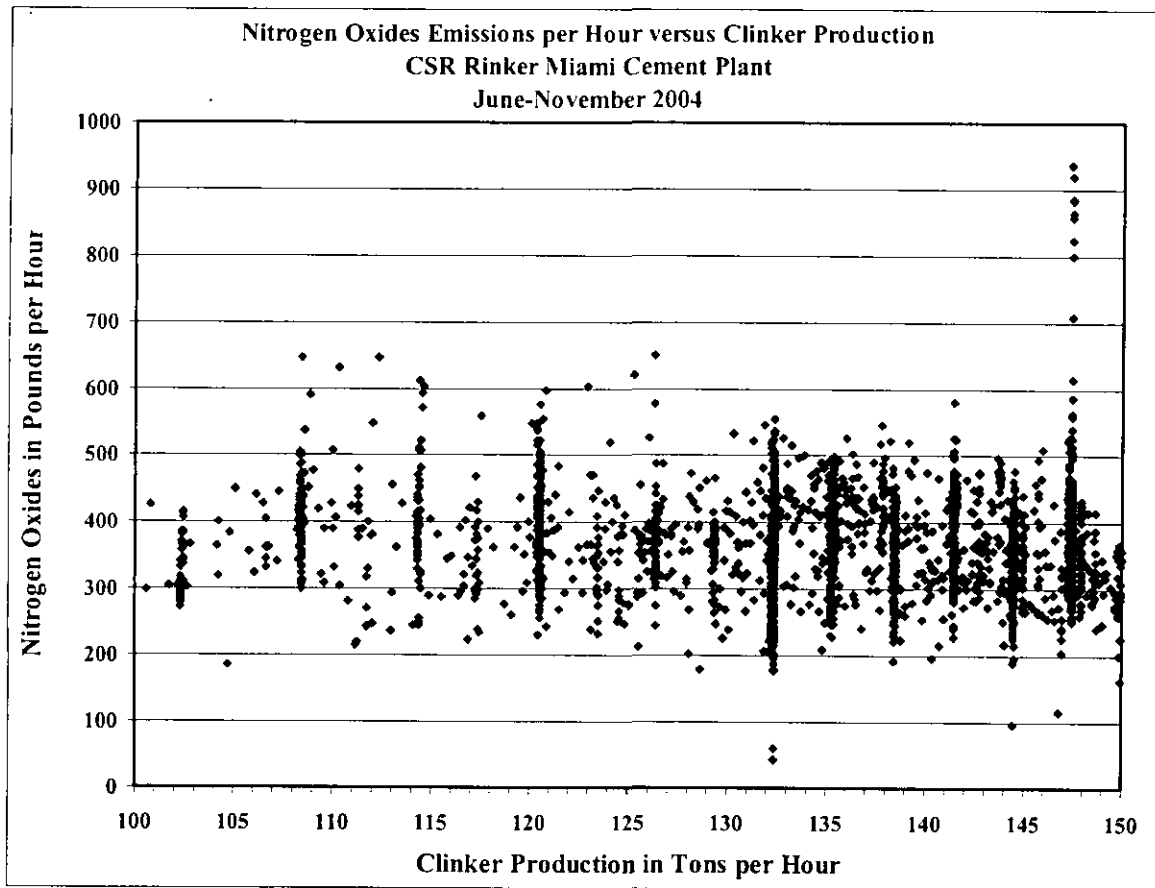
Separate stack testing was required to measure emissions of pollutants for which CEMS are not installed. These include PM, PM<sub>10</sub>, CO, H<sub>2</sub>SO<sub>4</sub>, Pb, and Hg. A continuous process CO monitor located in the preheater was also relied upon for determining CO emission trends.

The capacity testing was conducted between June and December 2004. The Department relied upon data as of early November in conducting the present analysis. Stack testing was conducted in August by the firm of Koogler and Associates.

The highest kiln preheater rate achieved during a single hour was 251 tons with a clinker production value of 151 TPH. There were various periods during which the feed was maintained at 246 TPH and clinker production at 147 TPH. Following are discussions relating emissions as measured by CEMS or process monitors to clinker production.

## Nitrogen Oxides (NO<sub>x</sub>)

The following graph includes all valid hourly NO<sub>x</sub> and clinker production values between June 7 and November 10, 2004.

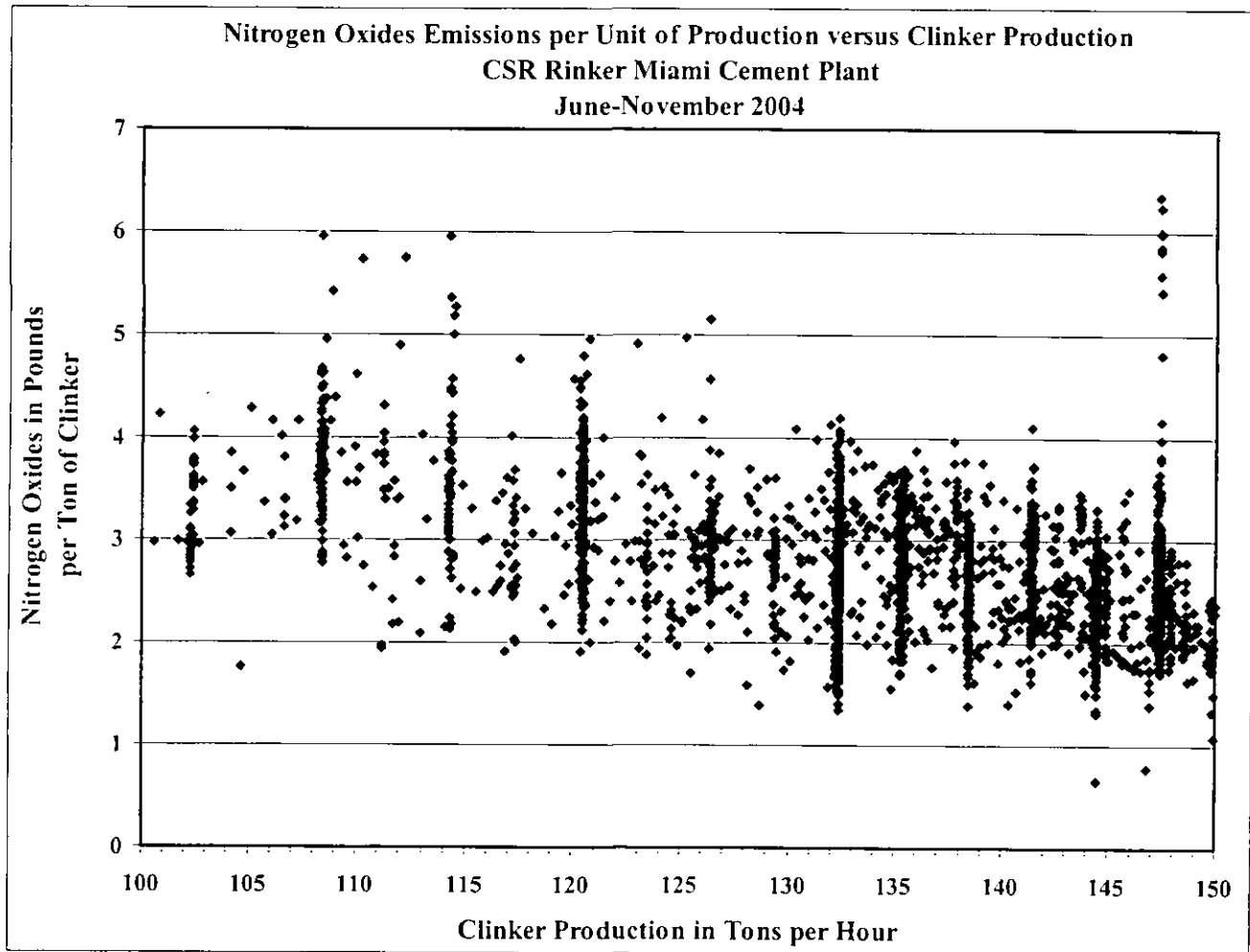


The mean NO<sub>x</sub> value when the kiln produced 132 TPH of clinker or less was 370 lb/hr. The present limit is 671 lb/hr on a **24-hour** average. There were very few **single hour** values that equaled or exceeded the 24-hour limit. It is apparent that the operation always complied with the 24-hour limit.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Interestingly, the mean  $\text{NO}_x$  value when the kiln produced more than 132 TPH of clinker was also 370 lb/hr. The Department performed a statistical analysis and was able to draw the inference that  $\text{NO}_x$  values are the same whether clinker production is greater than or less than the presently permitted rate of 132 TPH.

The following graph relates  $\text{NO}_x$  emissions in terms of lb/ton of clinker to the clinker production rate.



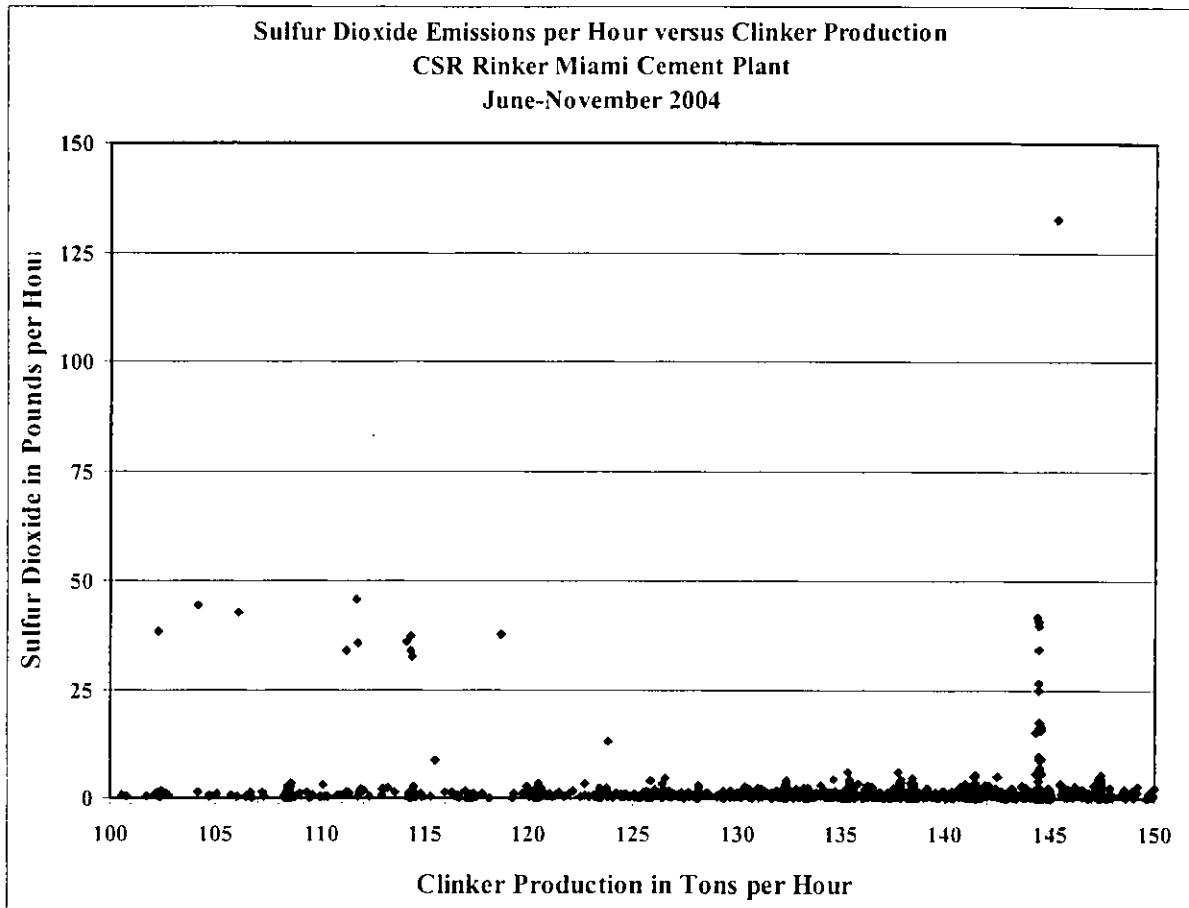
The mean  $\text{NO}_x$  value when the kiln produced 132 TPH of clinker or less was 3.01 lb/ton of clinker. The present limit is 4.9 lb/ton on a **24-hour** average. Some **single hour** values equaled or exceeded the 24-hour limit. It is apparent that the operation always complied with the 24-hour limit.

Remarkably, the mean  $\text{NO}_x$  value when the kiln produced more than 132 TPH of clinker was only 2.58 lb/ton of clinker. The Department performed a statistical analysis and was able to reject the null hypothesis that the means are equal with greater than 99 percent confidence. In other words,  $\text{NO}_x$  emissions in terms of lb/ton of clinker at production rates greater than permitted limit of 132 TPH are less than  $\text{NO}_x$  emissions at production rates equal to or less than the permitted limit.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

## Sulfur Dioxide (SO<sub>2</sub>)

Following is a chart relating SO<sub>2</sub> emissions in terms of lb/hr to clinker production.



Almost all the recorded SO<sub>2</sub> values were less than 10 lb/hr whether or not clinker production was less than or greater than 132 TPH. It is noteworthy that the present emission limit is 306 lb/hr on a 24-hour basis. There was only a single hourly reading in excess of 50 lb/hr.

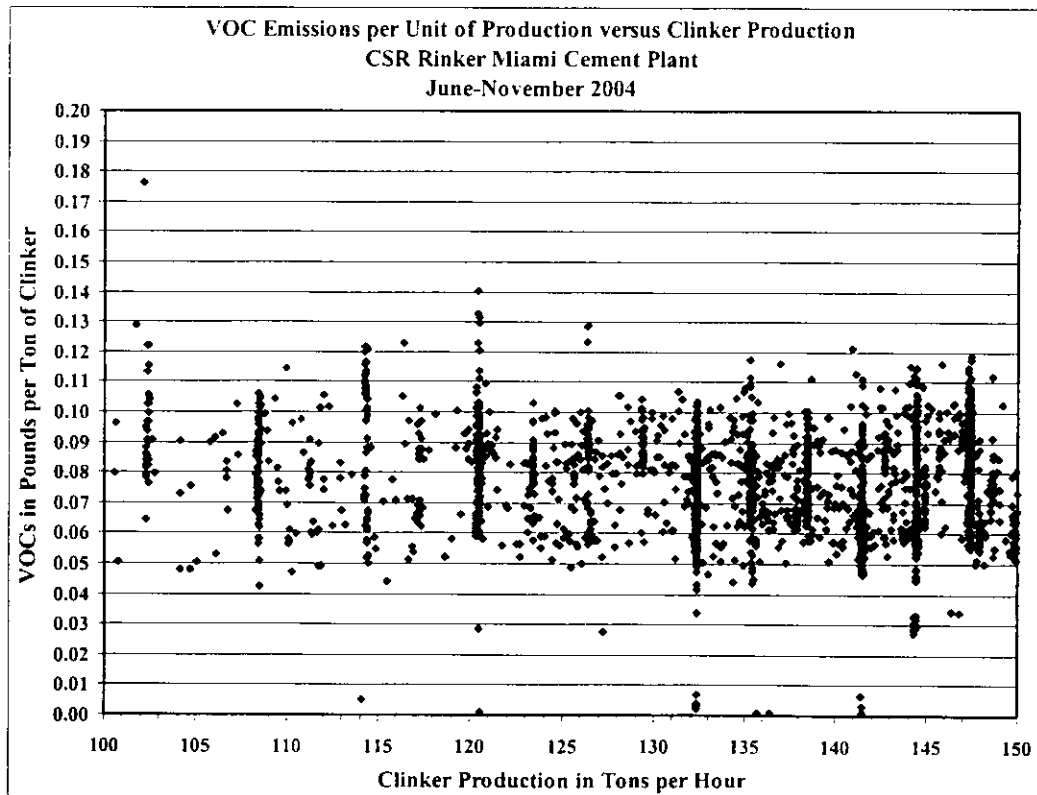
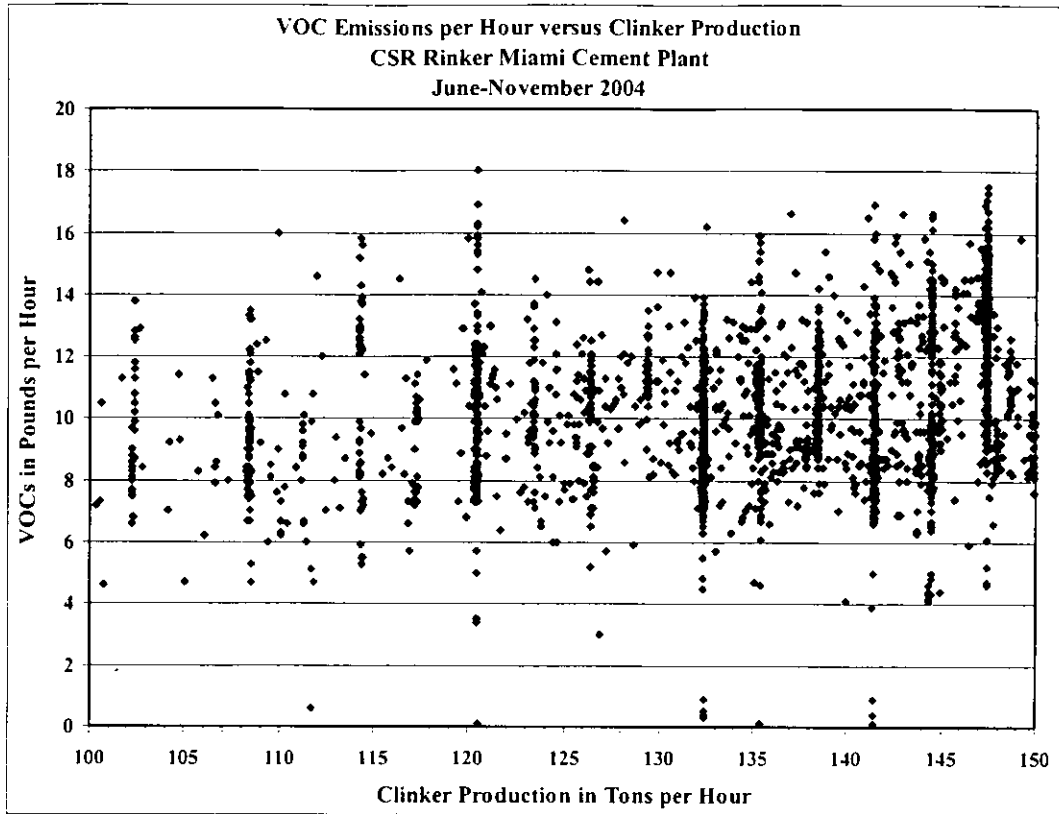
No further analysis of SO<sub>2</sub> emissions is necessary based on the inherently low emissions under both operating scenarios.

## Volatile Organic Compounds (VOC)

The graphs on the following page include all valid hourly VOC recorded during the testing program. The mean VOC emission value was 9.7 lb/hr when producing 132 TPH of clinker or less. The mean VOC value was 10.7 lb/hr when producing more than 132 TPH of clinker. The limit is 16.4 on a 30-day basis. Emissions of VOC were greater at higher production values with greater than 95 percent confidence.

VOC emissions were less on a lb/ton basis (0.076 versus 0.078 lb/ton of clinker) when operating at greater production than at lower production with greater than 95 percent confidence. The limit is 0.12 lb/ton of clinker on a 30-day basis.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

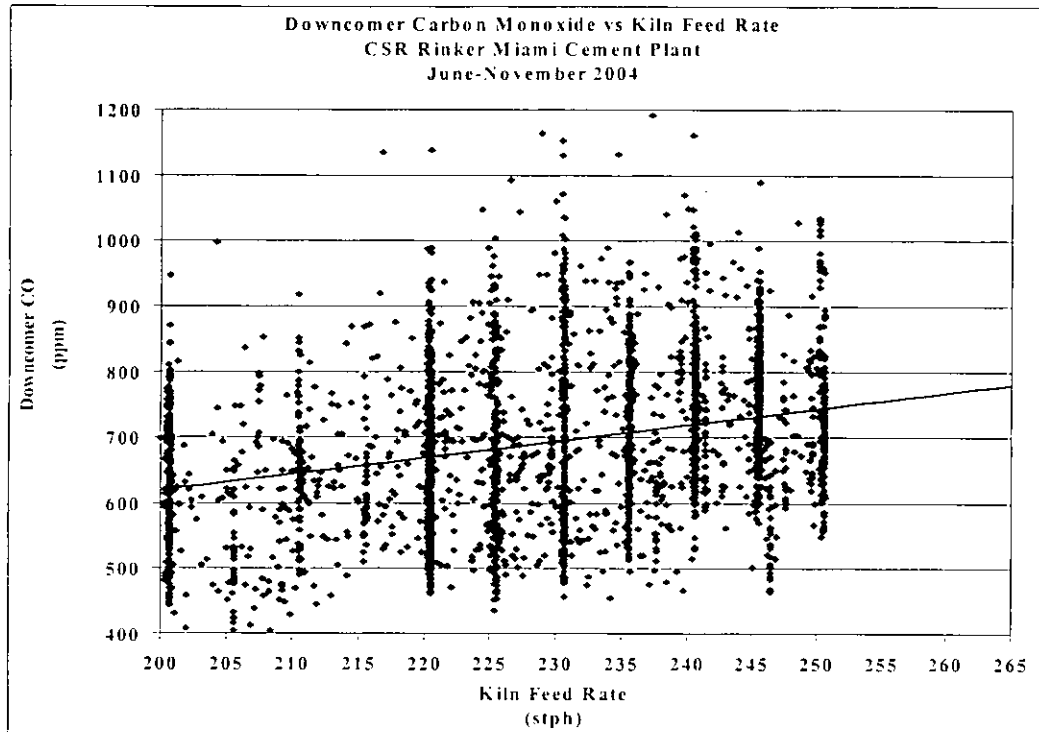


# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

## Carbon Monoxide (CO)

Carbon monoxide testing was conducted on August 4, 2004. At the time, the kiln feed was 247 TPH and the clinker production rate was 147 TPH. CO emissions ranged from 241 to 259 lb/hr with an average of 249 lb/hr. This equates to 1.69 lb/ton of clinker. The present emission limits are 412 lb/hr and 3.01 lb/ton of clinker.

CO emissions can vary substantially based on many factors including raw materials, fuels, production rate, etc. The Department requested process CO data from Rinker taken at a point on the process that can reasonably be expected to correlate with CO emissions from the stack.



The data in the above graph relate CO in the down comer of the preheater to kiln feed rather than to clinker production. However, kiln feed and clinker production are directly related. The Department compared CO concentrations in parts per million (uncorrected for oxygen values) to kiln feed. This comparison is similar to comparisons of lb/ton to clinker production.

The trend line in the graph suggests increasing ppm (and thus lb/ton of clinker). The increase in pounds per hour is probably more pronounced.

The Department compared the average CO values measured at the down comer with those measured at the stack on August 4. The uncorrected CO concentrations (at low O<sub>2</sub>) at the down comer were approximately 3.6 times the uncorrected concentration (at high O<sub>2</sub>) at the stack. The stack emissions equated to 1.69 lb/ton of clinker at a time when the CO instrument in the down comer measured approximately 800 ppm (uncorrected). Thus 1 lb CO/ton of clinker was equivalent to about 475 ppm CO at the down comer (during the stack testing). The present limit (3.01 lb/ton) is roughly equal to 1425 ppm CO in the down comer (at the time of the stack tests).



## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

According to the above graph, CO concentrations measured by the preheater process monitor were always less than 1,200 ppm (uncorrected on an hourly basis). Although CO emissions trended upward with respect to kiln feed and clinker production, it appears that the CO limit was probably never exceeded. This presumes that the relation between the existing process CO measurement and stack CO holds in general.

### Other Pollutants (PM, PM<sub>10</sub>, Dioxin/Furan, Hg, Pb)

During the period August 4 through August 8, 2004 Rinker conducted other tests as required by the testing protocol or the present Title V Operation permit. Following are the results of those tests that were typically conducted while feeding 246 TPH of raw materials to the preheater and producing 147 TPH of clinker.

Pollutant	Permit Limit	Result
Dioxin/Furan (Raw Mill up)	0.4 ng/dscm @7% O <sub>2</sub> *	0.122 ng TEQ/dscm @7% O <sub>2</sub>
Dioxin/Furan (Raw Mill Down)	0.2 ng/dscm @7% O <sub>2</sub> +	0.113 ng TEQ/dscm @7% O <sub>2</sub>
Lead (Pb)	7.5 x 10 <sup>-5</sup> lb/ton clinker	1.8 x 10 <sup>-5</sup> lb/ton clinker
Mercury (Hg)	2.4 x 10 <sup>-5</sup> lb/ton clinker	0.7 x 10 <sup>-5</sup> lb/ton clinker
PM/PM <sub>10</sub>	0.17 lb/ton ph kiln feed	0.067 lb/ton feed mill down
H <sub>2</sub> SO <sub>4</sub>	0.014 lb/ton clinker	0.0030 lb/ton clinker

\* Standard Baghouse Inlet Temperature < 400 F<sup>o</sup>

+ Standard Baghouse Inlet Temperature > 400 F<sup>o</sup>

All of the tests indicated compliance with the present permitted limits at production levels greater than presently permitted. It is noted that dioxin/furan emissions during tests conducted in 2002 were less than the more recent high load tests. Following is a comparison of the two sets of dioxin/furan tests.

Year and Mode	Baghouse Inlet Temperature (Degrees F)	Result (Limit) (ng TEQ/dscm @7% O <sub>2</sub> )
2004 (Raw Mill Up)	312 – 317	0.122 (0.4)*
2004 (Raw Mill Down)	508 – 515	0.113 (0.2)+
2002 (Raw Mill up)	277 – 286	0.00074 (0.4)
2002 (Raw Mill Down)	500 – 504	0.052 (0.2)

\* Standard Baghouse Inlet Temperature < 400 F<sup>o</sup>

+ Standard Baghouse Inlet Temperature > 400 F<sup>o</sup>

Measured dioxin/furan emissions were greater in 2004 than during testing conducted in 2002. The exact reasons are not known. The temperature at which tests were conducted with the raw mill on (up) was greater in 2004. While significant dioxin formation is not expected at less than 400 °F, formation is nevertheless a temperature-related phenomenon that is also promoted by the high residence time in the baghouse. Nevertheless, the dioxin value with the raw mill up is roughly 1/3 of the allowable rate.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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Dioxin/furan emissions were also greater in 2004 than 2002 with the raw mill down. The temperature increase over the previous tests was minimal. There is any number of theoretical explanations. However, the two values may simply be typical within the normal variation of dioxin/furan testing with the raw mill down.

Pursuant to the Federal Maximum Achievable Control Technology (MACT), after dioxin/furan testing Rinker must operate the process such that the three-hour rolling average of control equipment inlet temperature is no greater than the temperature established at performance test.<sup>1</sup> Given the possibility of large variations from one test to the next, it is necessary (and required by the MACT) that Rinker maintain good temperature control in any effort to operate at high capacity.

### **Emissions Compliance at Higher Production Rates**

Based on the Data reviewed by the Department, Rinker has demonstrated that it can consistently comply with the permitted emissions rates as well as the requested emission rates at feed rates (221 to 251 TPH) and production rates (138 to 150 TPH) in excess of those currently authorized (220 and 137 TPH). Compliance was generally demonstrated with a good margin of safety. If and when Rinker achieves and sustains the target production rates, reasonable extrapolation of the emission data trends suggests they can also comply with the requested emission limits at the target production rate.

## **VI. KILN PRODUCTION CAPACITY**

The kiln and key equipment were supplied by F.L. Smidth, one of the largest suppliers of kiln equipment in the world. The project was supervised by Holderbank (aka Holcim), which is one of the largest cement producers in the world.

The project was among the first in the United States after a period of approximately 12 years during which no kilns were built and a number were shut down. It started up in April 2000 – only a few months after the Florida Rock Plant in Alachua that was actually the first project after the lull.

### **Kiln Manufacturer's Evaluation of Production Capacity**

Following is a statement by the manufacturer F.L. Smidth regarding the requested production increase:<sup>2</sup>

“The kiln has already been producing clinker at its authorized production limit of 3288 short tons per day (137 TPH). Although this is well above the rated capacity of 2755 STPD (115 TPH), F.L. Smidth typically provides for additional capacity above and beyond the guarantees provided by the manufacturer.

F.L. Smidth provides reasonable assurance that the kiln system can physically produce substantially more clinker than allowed by the present production limitations. Apart from the inherent “overdesign” of the original configuration, F.L. Smidth provides reasonable assurance that the kiln system is physically capable of being fed at a preheater feed rate of up to 267 short tons per hour without major structural failure of the kiln, cooler and preheater, proper”.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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The evaluation included comments on the actual loading of the kiln, the capability of the main drive (that turns the kiln), reduced longevity of certain cooler components, higher clinker discharge temperatures, etc. F.L. Smidth included a caveat that states that their preliminary technical assessment “excludes commentary on process stability, burnability, adequacy of the auxiliary equipment, and the pounds per hour emission limits”. Of special interest to the Department is the following comment:

“The retention time in the existing calciner will decrease to approximately 2.6 seconds at 3,500 STPD (about 146 TPH of clinker). As a result, the pound per hour CO emissions should be carefully monitored to ensure compliance within the established emissions limits”.

In the estimation of the Department, the assessment by F.L. Smidth simply means that the equipment can handle the loads, but they don't vouch for operational ease, maintenance, sustained clinker production, or clinker quality and that CO emissions monitoring is recommended.

### **Rinker's Evaluation of Production Capacity**

Since Rinker, rather than F.L. Smidth, actually conducted the production capacity tests, their production manager, Mike Aller, submitted his analysis and findings, which are reproduced below:<sup>3</sup>

*The following observations were made during the production testing of Rinker Materials' Miami Cement plant during which the kiln was operated at feed rates as high as 255 TPH. It will address issues covered in the "Preliminary Technical Assessment" provided by FLS, the main process equipment manufacturer. During this testing, the plant has been able to operate at over 3500 ton of clinker per day and there appears to be no major hurdles that would prevent it being able to sustain these production levels.*

Rotary Kiln, Size  $\phi$ 4.15m x 48m:

- Considering the Kiln structure: By adjusting the main drive, a typical feed/speed ratio (~70 tph feed per revolution) has been maintained in the testing to date. Some adjustment to the feed/speed ratio may be required to obtain improved stability, but as FLS points out, the kiln cannot be structurally overloaded.
- Considering the Kiln main drive: Adjustment of the field of a direct current motor to increase the output speed results in reduced output torque. The highest torque requirement is at initial start of the kiln. To date, we have not experienced any difficulties starting the kiln with the field adjusted for a maximum speed of 3.6 rpm. There is further field adjustment available which will allow us to maintain the current feed/speed ratio at higher kiln feed rates.
- Considering the Kiln drive: There is sufficient field adjustment to take the kiln drive to 4.0 rpm. This will allow us to maintain the current feed/speed ratio at higher kiln feed rates.
- Aside: While the specific loading in the kiln is high, we have not experienced any significant kiln instability not related to swings in kiln feed chemistry. During such swings, the instability can be dampened by either decreasing (elevated C3S) or increasing (low C3S) the feed rate. Chemistry control procedures have been modified to minimize swings in C3S.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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### Clinker Cooler, Size 807CIS – 1014 CFG – 1006 RFT / 1025 RFT:

- Considering the Cooler structure: We have experienced elevated clinker discharge temperatures at higher production rates, but they are still acceptable.
- Considering the Cooler drives: During the testing to date, the cooler hydraulic drive motors have operated at approximately 40% of the full load amp limits, indicating more than adequate power at rates up to 3500 tpd.

### Preheater, Size ø5.7 m Stages 1 & 2, ø6.0 m Stages 3, 4, & 5, ILC Calciner ø6.9 m x 16.0 m:

- Considering the Preheater structure: To date we have not experienced any problems with the additional pressure drop across the preheater. While kiln ID fan power draw has increased, the power consumption per ton of clinker has only increased marginally due to the increased pressure drop. The kiln ID fan capacity appears to be adequate for the increased production rates. The kiln ID fan damper typically operated between 75% and 85% open when operating at a kiln feed rate of 245 tph and from 80% to 95% when operating at 250 tph. Higher damper positions have occurred during periods when there was excessive build up in the riser. This build up was caused by pitted refractory in the riser that was replaced during a recent kiln outage.
- Considering the Calciner structure: Stack testing performed during the testing period showed that CO emissions remained well within compliance. Additionally, CO readings on the down comer gas only increased approximately 100 ppm when the kiln feed rate was increased from 220 tph to 250 tph. No significant variations in down comer CO were observed at the increased production rates. Proportionally, CO emissions should remain within our permit limits at feed rates over 250 tph.

### Raw Mill – FRM 38/190:

- Considering the Raw Mill: During initial testing, the raw meal fineness target was reduced with no adverse effects on burnability or product quality. The raw mill averaged 256 tph dry raw meal at the current fineness target. This is adequate to support a kiln feed rate of 267 tph. If additional raw meal capacity is required, the fineness target can be reduced further, as it is still above the original design specification.

### Coal Mill – FRM 16/18:

- Considering the Coal Mill: The coal mill performed well during the testing, with production rates up to 17 tph of pulverized coal. This was more than adequate to support 3500 tpd clinker. Some adjustment to the fineness target was made during the testing.

### General:

During the testing to date, the kiln has operated at 3500 tpd clinker (245 tph kiln feed rate) or above for nearly 650 hours. There has been approximately 190 hours of operation at 3575 tpd (250 tph kiln feed rate). The feed rate was taken as high as 255 tph during the testing to date. During this testing, there were no problems with stack emissions or product quality and there were no mechanical/electrical problems that could be tied directly to the increased production rates.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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The raw mill production rates were more than adequate to sustain 3500 tpd clinker. The coal mill adequately sustained the increased production rates.

- There are two future projects that are currently under consideration. One is the implementation of the tire burning/alternate fueling system originally proposed in the construction permit. The second is the injection of elevated loss on ignition flyash directly into the calciner. However, both the main process equipment and the auxiliary support equipment have demonstrated the ability to maintain the requested production rate within the proposed emission limits.

Department personnel visited Rinker on December 7, 2004. Mr. Aller provided an orientation to the control room and the continuous process and emissions data that is monitored by him and the operators. At the request of the Department, Mr. Aller subsequently provided the entire record for process CO data with respect to preheater feed as well as the following statement:

*Rinker's Miami Cement plant has a carbon monoxide (CO) limit of 412 lbs per hour and compliance is demonstrated by annual main stack testing. Testing to date has shown that the plant operates well within this limit, but there is no continuous monitoring for CO. There is one process gas analyzer that monitors post-combustion gases for CO, however, it is located in the pre-heater exit, or downcomer duct. Before entering the main stack, this gas stream mixes with the cooler vent gases as well as ambient air from various fresh air dampers. As a result, the CO concentration in the main stack is significantly lower than in the downcomer. Although there is precise calculation relating downcomer CO and main stack CO, alarm points on downcomer CO could be installed to alert the operator that CO emissions are near the limit and that action is needed to correct the situation. Data from previous main stack testing could be used to determine an appropriate alarm set point for the downcomer CO that would provide additional reasonable assurance that the CO permit limit would not be exceeded during normal daily operations.*

### **Dr. Koogler's Summary on Production and Emissions**

In response to the Department's request for additional information, Dr. John Koogler (Rinker's environmental consultant) submitted his documentation and opinions regarding production and emissions.<sup>4</sup>

Dr. Koogler described some of the projects that Rinker may conduct in order to achieve the targeted feed rate of 267 TPH and production rate of 167 TPH. Rinker may install a fly ash injection system such that some of the feed (fly ash) entering the preheater will be introduced into the calciner. Rinker may also replace the existing main baghouse fan (or fan wheel) that has experienced resonance problems prior to reaching design capacity with one of equal capacity.

Dr. Koogler submitted the stack tests results for 2003 and 2004. He stated that: "Both the 2003 and 2004 emission measurements demonstrate that the plant routinely operates well within emission limiting standards. The 2004 measurements demonstrate that pollutant emission rates are not a limiting factor in increasing the production rate to 267 tons per hour of preheater feed and 162 tons per hour of clinker".

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## **Dr. Miller's Comments on Submittals**

The Department provided the reports from F.L. Smidth, Rinker's Production Manager, and Dr. Koogler to its own consultant, Dr. F. MacGregor Miller. Dr. Miller is an expert on cement raw materials, pyroprocessing, emission formation, and control. The Department requested that he review the documents to help the Department understand the environmental implications of the requested production increase.

On the basis of the three reports, Dr. Miller advised the Department by letter:<sup>5</sup> "the proposed production capacity increase is unlikely to affect emissions, other than possible minor increases in CO. There may be some quality effects arising from the higher production, but this will be an issue for the Rinker quality department, rather than an environmental effect".

Regarding Dr. Koogler's summary, Dr. Miller stated: "the replacement of the ID (induced draft) fan with another unit capable of the design revolution rate of 900 rpm does not seem to constitute a change". He also stated: "the injection of fly ash would probably reduce CO and VOC emissions".

He noted that Dr. Koogler gives actual emission data from the plant with higher production rates than normal but not as high as desired. All pollutants were well below the limits. We (the Department) will need to verify that this is still true at 162 STPH clinker production, as well as the documented rates at 147 STPH".

## **Department Comments on Production Capacity and Emissions**

Rinker demonstrated that it can achieve a short-term kiln preheater feed rate of 251 TPH (possibly 256 TPH) and a clinker production rate of 150 TPH using the raw material, fuel, and operational procedures that were used during the second part of 2004. Rinker is continually making raw materials, process adjustments, and is considering replacement of the induced draft fan components and injection of fly ash directly into the calciner to achieve the target feed and clinker production values of 267 and 162 TPH.

As previously stated, compliance was generally demonstrated with a good margin of safety, suggesting that they can also comply with the requested emission limits at rates as high as those requested.

## **VII. METHOD OF ESTIMATING EMISSION INCREASES AND DECREASES**

As a major source, a physical modification or change in method of operation of this facility resulting in no significant net emissions increases is not subject to PSD review and does not require a BACT determination. It is clear that the production increase is a physical change or change in method of operation because it involves relaxation of a federally enforceable production limit.

Significant net emissions increase is defined in Rule 62-212.400, F.A.C as follows:

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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*Significant Net Emissions Increase – A significant net emissions increase of a pollutant regulated under the Act is a net emissions increase equal to or greater than the applicable significant emission rate listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates.*

The significant emission rates are included in the table on the following page. The meaning of a net emissions increase is given in Rule 62-212.400, F.A.C. as:

*Net Emissions Increase – A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the actual emissions of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.*

Contemporaneous emissions increases and decreases are described in the following definition:

*Contemporaneous Emissions Changes – An increase or decrease in the actual emissions or in the quantifiable fugitive emissions of a facility is contemporaneous with a particular modification if it occurs within the period beginning five years prior to the date on which the owner or operator of the facility submits a complete application for a permit to modify the facility and ending on the date on which the owner or operator of the modified facility projects the new or modified emissions unit(s) to begin operation. The date on which any increase in the actual emissions or in the quantifiable fugitive emissions of the facility occurs is the date on which the owner or operator of the facility begins, or projects to begin, operation of the emissions unit(s) resulting in the increase. The date on which any decrease in the actual emissions or in the quantifiable fugitive emissions of the facility occurs is the date on which the owner or operator of the facility completes, or is committed to complete through a federally enforceable permit condition, a physical change in or change in the method of operation of the facility resulting in the decrease.*

The definition of actual emissions is given in Rule 62-210.200, F.A.C. (definitions) as follows:

*Actual Emissions – The actual rate of emission of a pollutant from an emissions unit as determined in accordance with the following provisions:*

- (a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.*

The contemporaneous creditable emissions changes are given in the following table. The primary basis of the creditable reductions is the shutdown of the old wet process pyroprocessing lines in 2000. The primary basis of the creditable increases is the startup of the dry process line as modified by the present request.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Pollutant	Increases Dry Process at Proposed Capacity	Decreases Wet Process Actual Emissions	Net Increases (Decreases)	PSD Significant Emission Rate
PM	163	165	(2)	25
PM <sub>10</sub>	130	140	(10)	15
SO <sub>2</sub>	425	1383	(1058)	40
NO <sub>x</sub>	2600	2571	29	40
CO	1827	1735	92	100
VOC	111	47	64	40
H <sub>2</sub> SO <sub>4</sub>	13	13.4	~ 0	7
Hg	0.09	Assumed 0	<0.09	0.1
Pb	0.195	Assumed 0	<0.195	0.6

The net emission increases are less than the significant emission rates for all pollutants with the exception of VOC. However, the Department conducted a PSD review and made a BACT determination for this pollutant in 2002. The BACT of 0.12 lb/ton of clinker would equate to 78 tons of VOC at the proposed capacity. Therefore, the net VOC increase will be  $78 - 47 = 31$  TPY and PSD will not be triggered.

For reference, the emissions estimated above are less than those estimated during the original project review conducted in 1997. For example, the present permit allows 1,340 TPY of SO<sub>2</sub> and 2940 TPY of NO<sub>x</sub>.

The proposed increase in production and the possible projects to reliably achieve the requested rates. The net emissions increases constitute a modification requiring a permit and that results in net emissions increases less than the significant emission rates. The Department has determined that PSD is not triggered for any pollutant and no BACT determinations are required.

### VIII. PROPOSED EMISSION AND PRODUCTION LIMITS

The table on the following page lists the emission limits proposed by the Department for comparison with the previously listed emission limits applicable to the plant. The proposed values are equal to those proposed by Rinker with the exception of VOC. The proposed VOC limit is less than proposed by Rinker in order to preserve the previous PSD review and BACT analysis and to avoid triggering a new PSD review and BACT analysis.

The proposed preheater feed and clinker production limits are based on a 1-hour average rather than a 24-hour average (that would not otherwise limit short term production).

Based on the concerns expressed by F.L. Smidth, the Department's consultant, and the Department's analysis, the Department will require that Rinker activate a CO process alarm. The alarm will rely on the existing continuous process CO monitor and shall be set at the level that corresponds to the emission limit above. The alarm will require Rinker to take the appropriate measures to return CO to a level less than the alarm trigger. By these measures, the Department has reasonable assurance that annual emissions will be less than 1,827 tons per year and will avoid requiring installation of a CO CEMS in the stack.



## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Parameter	Emission Limits (production basis)	Emission or Production Limits (mass per time basis)	Annual Emissions or Production (Tons per Year)
PM	0.152 lb/ton kiln <sub>ph</sub> feed	40.6 lb/hour	163
PM <sub>10</sub>	0.121 lb/ton kiln <sub>ph</sub> feed	32.3 lb/hr	130
SO <sub>2</sub>	0.50 lb/ton clinker (daily)	81 lb/hr (daily average)	325
NO <sub>x</sub>	4.0 lb/ton clinker (daily)	648 lb/hr (daily average)	2,600
CO	2.81 lb/ton clinker	412 lb/hr	1,827
VOC	0.12 lb/ton clinker (30-day)	19.4 lb/hr (30-day rolling)	78
H <sub>2</sub> SO <sub>4</sub>	0.020 lb/ton clinker	3.24 lb/hr	13.0
Mercury	1.4 x 10 <sup>-4</sup> lb/ton clinker	0.023 lb/hr	0.091
Lead	3.0 x 10 <sup>-4</sup> lb/ton clinker	0.049 lb/hr	0.195
Kiln <sub>ph</sub> Feed		267 TPH (1-hr)	
Clinker		162 TPH (1-hr)	1,300,000
Cooler Throughput		162 TPH (1-hr)	
Coal		18.7 TPH (24-hr)	
Petcoke		16.3 TPH (24-hr)	
Heat Input		485 mmBtu/hr	

### IX. APPROVED PROJECTS

In order to achieve the target 267 TPH feed rate and 162 TPH of clinker production, the Department recognizes that Rinker may determine that some of the following projects may be necessary:

- Replacement of the induced draft fan with another 900 rpm fan. No permit required.
- Replacement of any fan components or tipping (extending) the blades. No permit required.
- Implementation of fly ash injection in the calciner. Covered by this action.
- Modifications to the calciner to insure complete burnout of CO. Covered by this action.
- Replacement of the induced draft fan with a larger fan. Permit modification required.
- Replacement of kiln drive or any of its components. Permit modification required.
- Upgrading of raw mill or additional raw mill. Permit modification required.

Rinker may determine different projects are needed and shall consult with the Department regarding permitting requirements including PSD applicability.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## XI. CONCLUSION

Based on the Data reviewed by the Department, Rinker has demonstrated that it can consistently comply with the permitted emissions rates as well as the requested emission rates at feed rates (221 to 251 TPH) and production rates (138 to 150 TPH) in excess of those currently authorized (220 and 137 TPH). Compliance was generally demonstrated with a good margin of safety.

If and when Rinker achieves and sustains the target production rates, reasonable extrapolation of the emission data trends suggests they can also comply with the requested emission limits at the target production rate.

The large reduction in permitted sulfur dioxide emissions and the reduction in actual emissions compared with those characteristic of the old wet process expands increment in both the nearby Class I and Class II areas.

The permit will provide until December 31, 2006 for the approved projects to reach and maintain the target production rates. However, Rinker must comply with all of the terms of the attached permit upon issuance and with the provisions of the existing Title V permit except those superseded by this permitting action.

## References

- <sup>1</sup> Regulation. Subpart LLL - National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry. 64 FR 31925, June 14, 1999.
- <sup>2</sup> Short Report. Keefe, Brian P., V.P. of Engineering, F.L. Smidth. Preliminary Technical Assessment – Production Increase Evaluation for CSR Rinker Materials Corporation, Miami Florida. October 11 2004.
- <sup>3</sup> Short Report. Aller, Mike, Production Manager, Rinker Materials Corporation Miami Cement Plant. November 15, 2004.
- <sup>4</sup> Short Report. Koogler, John B., PhD., P.E. Summary of Emission Rates While Operating at Targeted Increased Production Rate. Rinker Materials Corporation, Miami Cement Plant. Prepared by Dr. Koogler and submitted together with his cover letter, References 1 and 2 and other material in support of previously submitted permit application. November 16, 2004.
- <sup>5</sup> Letter. Miller, F. MacGregor, PhD to Linero, A., Florida DEP. Proposed Production Increase at Rinker Materials Corporation Miami Cement Plant. November 23, 2004.

# DRAFT PERMIT

## PERMITTEE

Rinker Materials Corporation  
1200 NW 137th Avenue  
Miami, Florida 33182

Permit No. 0250014-016-AC  
Expires: December 31, 2006  
Miami Cement Plant  
Production Capacity Increase

## PROJECT AND LOCATION

This permit authorizes a production capacity increase and revises emission limits for the existing kiln and associated equipment at the Miami Cement Plant operated by Rinker Materials Corporation. The permit authorizes certain projects to reach and sustain the permitted production rate.

The existing plant is located in Dade County at 1200 Northwest 137th Avenue in Miami, Florida. The UTM coordinates are Zone 17; 558.20 km E; 2851.20 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 perform the work and make the changes specified 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. This permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits unless otherwise specified.

## APPENDICES

Appendix GC (General Conditions) is attached as part of this permit.

**(DRAFT PERMIT)**

\_\_\_\_\_  
Michael G. Cooke, Director (Effective Date)  
Division of Air Resource

## SECTION I. FACILITY INFORMATION

### FACILITY DESCRIPTION

Rinker Materials Corporation operates the existing Miami Cement Plant located in Dade County, Florida. The facility consists of raw material handling and storage, a raw mill system, kiln system, clinker handling, finish grinding operations, cement handling, loading, and bagging operations, and coal handling and grinding operations. The key component is the kiln that is presently permitted at the following maximum production and process rates: 220 tons per hour of dry preheater feed materials; 137 tons per hour of clinker; and 437 MMBtu per hour of total heat input to the kiln system. The original air construction permit for the kiln is Permit No. 0250014-002-AC. The kiln first produced clinker in 2000 and currently operates under the provisions of Title V Air Operation Permit No. 0250014-009-AV.

### PROJECT

The kiln system (Emissions Unit 018) is the key emission unit affected by this air construction permit. The project increases: the maximum process rate from 220 to 267 tons per hour (TPH) of preheater feed materials; the maximum production rate from 137 to 162 TPH of clinker; and total heat input to the pyroprocessing system from 437 to 485 million Btu per hour. During an authorized testing program, Rinker was able to achieve approximately 251 TPH of feed and 151 TPH of product with only operational process changes while complying with the proposed emission limits.

The project may include a number of physical changes such as equipment replacements, or upgrades to achieve and sustain the requested process and production rates.

### REGULATORY CLASSIFICATION

Title III: The facility is a major source of hazardous air pollutants (HAP) based on the current Title V permit.

Title V: The facility is a major source of air pollution in accordance with Chapter 62-213, F.A.C.

PSD: The plant is an existing PSD-major facility in accordance with Rule 62-212.400 F.A.C.

NSPS: This facility operates units subject to the following New Source Performance Standards in 40 CFR 60 adopted and incorporated by reference in Rule 62-204.800, F.A.C.: Subpart A (General Provisions); Subpart F (Portland Cement Plants); Subpart Y (Coal Preparation Plants); and Subpart OOO (Nonmetallic Mineral Processing Plants).

NESHAP: This facility operates units subject to the following National Emission Standards for Hazardous Air Pollutants in 40 CFR 63 adopted and incorporated by reference in Rule 62-204.800, F.A.C.: Subpart A (General Provisions); and Subpart LLL (Portland Cement Manufacturing Industry).

### RELEVANT DOCUMENTS

- Application No. 0250014-016-AC received on 9/13/2004 and all related supporting information and correspondence to make the application complete.
- Air construction Permit No. 0250014-011-AC issued on 01/16/04 authorizing a temporary production capacity testing period. Project Nos. 0250014-012-AC, 0250013-012-AC, 0250014-014-AC, and 0250014-017-AC extended the temporary capacity testing period through 12/31/04.
- Air construction Permit No. 0250014-008-AC (PSD-FL-324) issued on 03/01/02 to conduct a BACT review for VOC and require the installation of a THC continuous emissions monitoring system.
- Air construction Permit No. 0250014-007-AC issued on 03/01/02 to remove the beryllium emissions limit.
- Original air construction Permit No. 0250014-002-AC issued on 09/11/97 for the kiln modernization project.

## SECTION II. ADMINISTRATIVE REQUIREMENTS

### GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Florida Department of Environmental Protection's Bureau of Air Regulation located at 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400 and phone number 850/488-0114.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to: Air Quality Management Division, Miami-Dade County, Department of Environmental Resources Management, 33 Southwest Second Avenue, Suite 900, Miami, Florida 33130-1540. Copies shall also be submitted to: Air Resource Section, Southeast District Office, Florida Department of Environmental Protection, 400 North Congress Avenue, West Palm Beach, Florida 33401 (Telephone: 561/681-6600).
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403, F.S. [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 this project shall be in accordance with the capacities and specifications stated in the application. 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; and 40 CFR 63. 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 facility owner or operator 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. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. 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.]
7. 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.]
8. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

EU 018. Kiln System

The proposed project affects the following existing emissions unit:

ID No.	Emission Unit Description
018	In-Line Kiln, Raw Mill and Clinker Cooler

ADMINISTRATIVE REQUIREMENTS

1. **Previous Permit Conditions:** This permit authorizes a production increase from the kiln and associated equipment. As indicated herein, the following conditions are in addition to, or replace, those of the previous air construction permits. Unless otherwise specified, the emissions unit remains subject to all applicable conditions from previous air construction permits. [Rule 62-4.070(3), F.A.C.]

CONSTRUCTION ACTIVITIES

2. **Fly Ash Injection to Precalciner:** The permittee is authorized to install equipment necessary to inject fly ash into the precalciner. Within 60 days of selecting the final vendor for this project, the permittee shall submit the final design specifications. Before initiating construction activities related to fly ash injection into the precalciner, the permittee shall provide the following information: maximum LOI of the fly ash; monitoring equipment for determining the fly ash injection rate; and the method for determining the clinker production rate when injecting fly ash into the precalciner. [Application No. 0250014-016-AC; Rule 62-4.070(3), F.A.C.]
3. **CO Process Alarm:** The permittee shall add a control room alarm to the existing CO emissions process monitor to alert operators of elevated CO emissions. The alarm shall be set to activate when the process monitor records CO emissions of 1,200 ppmv or more. When an alarm occurs, operators shall take appropriate corrective actions to return CO emissions below the alarm set point. For each incident of an alarm, the operator shall record the following in a written log: date and time of alarm; amount of time above the alarm level; highest concentration above the alarm level; corrective action taken to regain appropriate operating levels. [Rules 62-4.070(3) and 62-212.400(2)(g), F.A.C.]
4. **Other Potential Construction Activities:** The following projects are authorized to achieve and sustain the full operational level allowed by this permit.
  - a. **I.D. Fan:** The permittee is authorized to replace components of the existing induced draft fan with functionally equivalent components. Also the fan blades may be "tipped" (extended) to improve performance. Optionally, entire induced draft fan may be replaced with a functionally equivalent 900 rpm induced draft fan.
  - b. **Calciner Modifications:** The permittee is authorized to modify the calciner to enhance the combustion efficiency (carbon burnout) by providing additional residence time.

The permittee shall submit a notification of commencement of construction within 30 days of beginning physical construction on either of the above projects.

*{Permitting Note: Other unidentified projects such as replacement of the I.D. fan with a larger unit; replacement or upgrade of the kiln drive; upgrade of the raw mill or addition of another mill; etc. may require additional permits. The permittee shall consult with the Department regarding the permitting requirements including PSD applicability for such projects.}* [Application No. 0250014-016-AC]

## SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

### EU 018. Kiln System

#### SPECIFIC CONDITIONS

5. Production Limits: The preheater dry feed rate shall not exceed 267 tons per hour (TPH, 1-hour average). The preheater dry feed rate is the mass of material (on a dry basis) entering the preheater/kiln as determined by the Pfister weighing/feeding system. The clinker production rate of the kiln shall not exceed 162 tons per hour (TPH, 1-hour average) and 1,300,000 tons during any consecutive 12 months. The clinker production rate shall be determined as a function of the preheater dry feed rate and a conversion factor (multiplier) for the kiln system of 0.607. Continuous operation is allowed (8760 hours per year) provided the annual clinker production limit is not exceeded. [Applicant Request - Application No. 0250014-016-AC; Rule 62-210.200, F.A.C. (PTE)]  
*{Permitting Note: The above condition revises/replaces the previous 24-hr productions limits and the 12-month clinker limits specified in Condition B.4 of Permit No. 0250014-002-AC.}*
6. Heat Input Limit: Fuels fired in the pyroprocessing system (kiln and precalciner) shall not exceed a total heat input rate of 485 MMBtu per hour and shall consist only of the fuels originally authorized in Permit No. 0250014-002-AC, as amended. The coal usage rate shall not exceed 18.7 tons per hour (TPH, 24-hour average) and the petroleum coke usage rate shall not exceed 16.3 tons per hour (TPH, 24-hour average). [Application No. 0250014-016-AC; Permit No. 0250014-002-AC; Rule 62-4.070(3), F.A.C.]  
*{Permitting Note: The above condition revises the maximum heat input rate, coal usage rate, and petroleum coke usage rate to the kiln system specified in Condition B.5 of Permit No. 0250014-002-AC.}*
7. Fly Ash Injection Limit: Fly ash injection to the precalciner shall not exceed 35 tons per hour (TPH, 24-hour average). [Application No. 0250014-016-AC; Rule 62-4.070(3), F.A.C.]
8. Revised Emissions Limits: Emissions from the kiln system shall not exceed the limits specified in revised Table 2-1, attached. [Application No. 0250014-016-AC; Rules 62-4.070(3), 62-210.200(PTE), and 62-212.400(BACT), F.A.C.]  
*{Permitting Note: The permit limits in Table 1-2 were originally specified in Condition B.1 of Permit No. 0250014-002-AC. This table was subsequently revised by Permit Nos. 0250014-007-AC and 0250014-008-AC (PSD-FL-324). The revised Table 1-2 replaces the previously specified limits and revisions. No changes are made to the methods of compliance.}*
9. Initial Testing at Increased Production Rate: Within 270 days of the effective date of this permit, the permittee shall conduct tests to demonstrate compliance with each emission standard specified in Table 1-2. A test report shall be submitted to the compliance authority within 45 days of completing the last required pollutant test. [Rules 62-4.070(3) and 62-297.310, F.A.C.]
10. Operating Rate During Initial Testing: Initial testing of emissions shall be conducted with the emissions unit operation at 95 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at 95 to 100 percent of the maximum operation rate allowed by this permit, testing may be conducted at less than 95 percent of the maximum operation rate; in this case, subsequent emissions unit operation is limited to 105 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

## SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

### EU 018. Kiln System

11. Operating Rate During Subsequent Testing. After conducting a compliance test at 95 to 100 percent of the maximum operation rate allowed by this permit, the following applies: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]
12. Additional Dioxin/Furan Testing: Pursuant to 40 CFR 63.1349 (b)(4)(e), the owner or operator is required to repeat the dioxin/furan performance tests for kilns or in-line kiln/raw mills within 90 days of initiating any significant change in the feed or fuel from that used in the previous performance test. Changes in fly ash use practices including, but not limited to, use of increased loss-on-ignition fly ash or injection of fly ash into the calciner shall be considered significant changes within the purview of this requirement. [40 CFR 63, Subpart LLL and Rule 62-4.070(3), F.A.C.]
13. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7, 1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]



**APPENDIX GC**  
**General Conditions**

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The permittee shall comply with the following general conditions from 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;
  - (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.

**APPENDIX GC**  
**General Conditions**

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

- 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 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 (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).
- 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.

**Revised Table 1-2. Air Pollutant Standards and Terms**  
**Rinker Materials Corporation**  
**Portland Cement Plant and Associated Equipment**

**Facility ID No. 0250014**

  
 Air Permit No. 0250014-016-AC  
 (Revision of Original Permit)

**Emission Unit ID No. 018 - Kiln/Cooler/Raw Mill System (Dry Process Technology)**

EU ID No.	Description	Pollutant ID	Fuels, [2]	Allowable Emissions [3], (5)		Equivalent Emissions TPY [4], (5)	Basis
				Permit Limits	lb/hr		
-018	Kiln/Cooler/Raw Mill	PM	coal/gas/WTDF/oil	0-20 0.152 lb/ton kiln <sub>ph</sub> feed *	-44 40.6	193 163	Avoid PSD
		PM <sub>10</sub>	coal/gas/WTDF/oil	0-17 0.121 lb/ton kiln <sub>ph</sub> feed *	37.40 32.3	164 130	Avoid PSD
		SO <sub>2</sub>	coal/gas/WTDF/oil	2-23 0.50 lb/ton of clinker	306 81.0	1340 325	Avoid PSD
		NO <sub>x</sub>	coal/gas/WTDF/oil	4.9 4.0 lb/ton of clinker	674 648	2940 2600	Avoid PSD
		CO	coal/gas/WTDF/oil	3-04 2.81 lb/ton clinker	442 455	1807 1827	Avoid PSD
		VOC	coal/gas/WTDF/oil	0.12 lb/ton clinker	16.4 19.4	72 78	PSD-BACT
		H <sub>2</sub> SO <sub>4</sub> mist	coal/gas/WTDF/oil	0-014 0.020 lb/ton clinker	1.92 3.24	8.4 13.0	Avoid PSD
		Mercury	coal/gas/WTDF/oil	2-4 14.0 x 10 <sup>-5</sup> lb/ton clinker	0.0033 0.023	0.014 0.091	Avoid PSD
		Lead	coal/gas/WTDF/oil	7.5 30.0 x 10 <sup>-5</sup> lb/ton clinker	0.01 0.049	0.045 0.195	Avoid PSD
		VE	coal/gas/WTDF/oil	10% opacity	---	---	NSPS

**ALLOWABLE OPERATING RATES**

Kiln/Cooler/Raw Mill			
Hours of operation per year	Hours	8760	
Kiln preheater feed rate (kiln <sub>ph</sub> )*	TPH	220 267	(1-hour average)
Kiln Heat Input	MMBtu/hr	437 485	(24-hour average)
Clinker Production [1]	TPH	137 162	(1-hour average)
Cooler throughput rate.	TPH	137 162	(1-hour average)

**NOTES**

[1] ~~At a maximum design clinker production rate of 137 TPH and preheater feed rate of 220 TPH, utilizing a conversion factor of 0.60, (220 x 0.60 = 137 TPH).~~

**Based on the maximum preheater feed rate of 267 TPH and a conversion factor of 0.607, the maximum clinker production rate is 162 TPH.**  
 (267 TPH, kiln<sub>ph</sub> x 0.607 = 162 TPH, clinker)

[2] Fuel combustion as specified in Specific Condition No. B.5, and the protocols established by DERM. See also Specific Condition B.13.

[3] Compliance Units. This facility shall demonstrate compliance based on these standards.

[4] "Equivalent Emissions" are annual emissions at 8760 hrs./yr. The "Equivalent Emissions" are also listed for informational purpose and for PSD and recordkeeping/tracking purposes. "Equivalent Emissions" represent annual emissions based on operation at the maximum permitted emissions and production rates. "Equivalent Emissions" are listed for informational purposes, PSD applicability, and recordkeeping/tracking purposes.

[5] The original air construction permit for the kiln modernization project is Permit No. 0250014-002-AC. Table 1-2 was modified by Permit No. 250014-007-AC to removed the beryllium emissions limit. It was subsequently modified by Permit No. 250014-008-AC to: revise the SO<sub>2</sub> limit from 0.7 lb/MMBtu to 2.23 lb/ton of clinker; revise the NO<sub>x</sub> emissions limit from 1.53 lb/MMBtu to 4.9 lb/ton of clinker; and revise the VOC emission limits from 0.1 to 0.12 lb/ton of clinker, 13.7 to 16.4 lb/hour, and 60 to 72 TPY (equivalent emissions).

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee
1. Article Addressed to: Mr. Ed Allsopp Vice President of Cement Operations CSR Rinker Materials Corporation 1200 Northwest 137th Avenue Miami, Florida 33182	B. Received by (Printed Name) Kelly G... C. Date of Delivery 12-17-04
2. Article Number (Transfer from service label) 7000 1670 0013 3110 2196	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

9812 011E E100 029T 0007

<b>U.S. Postal Service</b> <b>CERTIFIED MAIL RECEIPT</b> (Domestic Mail Only; No Insurance Coverage Provided)		
Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Encorsement Required)		
Restricted Delivery Fee (Encorsement Required)		
Total Postage & Fees	\$	
Mr. Ed Allsopp Vice President of Cement Operations CSR Rinker Materials Corporation 1200 Northwest 137th Avenue Miami, Florida 33182		
PS Form 3800, May 2000		See Reverse for Instructions