Reynolds, John

From: Linero, Alvaro
Sent: Saturday, January 13, 2001 3:24 PM
To: Reynolds, John
Subject: FW: Florida Rock

-----Original Message-----
From: Linero, Alvaro
Sent: Saturday, January 13, 2001 3:22 PM
To: Maybin, Leslie
Cc: Kirts, Christopher
Subject: Florida Rock

Hi Leslie:

I received a call from Florida Rock reps advising that they will soon submit some information related to the construction permit extension. I will send you a rough draft of the construction permit modification soon.

I mentioned your comment regarding Condition 19 about a Contingent Management Plan for CKD. This applies to any CKD not reused in the process. I believe they have been able to recycle the CKD and will not need to store, sell or dispose of any.

FYI most cement plants generate varying amounts of CKD (some of which is wasted). At the time the facility was permitted, we believed (but were not certain) that they would generate waste no CKD. We knew e.g. that some plants in Florida wasted small quantities while at least one wasted much CKD over the years.

A number of solid waste-related conditions were included in the permit and that is why we included this permit condition. They might ask for a modification to reflect total recycle of CKD.

Thank you for bringing this matter to my attention.

Al Linero.

BERYLLIUM EMISSIONS (Year 2000 Stack Tests)						
FACILITY	**Lb/hr**	**Lb/yr**	**Ton/yr**	**PSD level (lb/yr)***	**PSD(level TPY)***	
Southdown 1	0.0141	123	0.0618	0.8	0.0004	
Southdown 2	0.0006	5.26	0.0026	0.8	0.0004	
Florida Rock	0.06	525	~0.25	0.8	0.0004	

* PSD Significant Rate Effective on 11-23-94

LAW OFFICES

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

301 SOUTH BRONOUGH STREET
SUITE 500
TALLAHASSEE, FLORIDA 32301

(850) 521-0700
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MAILING ADDRESS:
POST OFFICE BOX 1110
TALLAHASSEE, FLORIDA 32302-1110

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TIMOTHY P. ATKINSON
JEFFREY BROWN
M. CHRISTOPHER BRYANT
C. ANTHONY CLEVELAND
TERRY COLE
SEGUNDO J. FERNANDEZ
SCOTT W. FOLTZ
KENNETH F. HOFFMAN
CHRISTOPHER D. JOHNSTON
KENNETH G. OERTEL
PATRICIA A. RENOVITCH

January 17, 2001

Via Hand Delivery and U.S. Mail

Mr. Howard C. Rhodes, Director
Division of Air Resources Management
Department of Environmental Protection
111 S. Magnolia Drive, Suite 23
Tallahassee, Florida 32301

Re: FDEP Air Construction Permit No. AC01-267311 / PSD-FL-288
Facility No.: 0010087; Status Report

Dear Mr. Rhodes:

As you know, we represent Florida Rock Industries, Inc. with respect to its Thompson S. Baker Cement Plant in Newberry, Florida.

The new Continuous Emission Monitors (CEMs), including the CEM for SO2 emissions (replacing the previous "loaner" CEM's), at the cement plant will be certified by the end of this week. This information was previously transmitted by letter to the Department on January 5, 2001. See attached copy.

Florida Rock's environmental consultant, Koogler & Associates, will on January 24, 2001, be conducting emission measurements for beryllium on the kiln/raw mill stack at the cement plant using EPA Method 104. This information was previously transmitted by letter to the Department on January 11, 2001. See attached copy.

The company is working diligently to complete several other permitting informational requests from the Department, including information concerning SO2 emissions, beryllium emissions, tire compliance schedule, VOC testing protocol and sulfuric acid mist emissions. We are also diligently working to respond to the Department's proposed consent order, and hope to provide a response by the end of next week.

The requested information and responses will be transmitted to the Department as quickly as possible. Please do not hesitate to call me if you have any questions.

Sincerely,

Segundo J. Fernandez

SJF:bmg
Enclosures

c: John Baker
Fred Cohrs
Cary Cohrs
G. Reynolds
Doug Beason
John B. Koogler
Al Linero

F:\Document\TPA\LTR\Rhodes.ltr.wpd

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

KA 187-00-09

January 5, 2001

VIA FAX

Mr. Lalit Lalwani
Florida Department of
Environmental Protection
101 NW 75th Street, Suite 3
Gainesville, FL 32607-1609

Subject: Continuous Emission Monitoring Certification
Florida Rock Industries, Inc.
Newberry, Florida
Permit No. AC01-267311

Dear Mr. Lalwani:

Pursuant to our conversation, the certifying of the Continuous Emission Monitors (CEMs) at the Thompson S. Baker Cement Plant scheduled for January 8 has been postponed until Wednesday, January 17, 2001.

If you have any questions regarding this schedule, please do not hesitate to contact me at 352-377-5822.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler

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

JBK:wa

c: Mr. Christopher Kirts, FDEP, Jacksonville
Mr. Martin Costello, FDEP, Tallahassee
Mr. George Townsend, FRI
Mr. Cary Cohrs, FRI
Mr. Fred Cohrs, FRI
Mr. Segundo Fernandez

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

KA 187-00-09

January 11, 2001

VIA FAX AND MAIL

Mr. Lalit Lalwani
Florida Department of
Environmental Protection
101 N.W. 75th Street, Suite 3
Gainesville, FL 32607-1609

Subject: Florida Rock Industries, Inc.
Newberry, Florida
Permit No. AC01-267311

Dear Mr. Lalwani:

Koogler & Associates is scheduled to conduct emission measurements for beryllium (EPA Method 104) on the kiln/raw mill stack at the Thompson S. Baker Cement Plant on Wednesday, January 24, 2001. The test crew will arrive on site at 7:00 a.m.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:wa

c: Mr. Al Linero, FDEP, Tallahassee
Mr. Howard Rhodes, FDEP, Tallahassee
Mr. Chris Kirts, FDEP, Jacksonville
Mr. George Townsend, FRI
Mr. Cary Cohrs, FRI
Mr. Fred Cohrs, FRI
Mr. Segundo Fernandez, Oertel, Hoffman

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

KA 187-00-09

January 22, 2001

VIA FAX

Mr. Lalit Lalwani
Florida Department of
Environmental Protection
101 N.W. 75th Street, Suite 3
Gainesville, FL 32607-1609

Subject: Beryllium Emission Measurements
Florida Rock Industries, Inc.
Newberry, Florida
Permit No. AC01-267311

Dear Mr. Lalwani:

Due to an unscheduled plant shutdown, the emission measurements for beryllium (EPA Method 104) on the kiln/raw mill stack at the Thompson S. Baker Cement Plant have been postponed until February 6, 2001. The test crew will arrive on site at 7:00 a.m.

If you have any questions concerning this schedule change, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:wa

c: Mr. Al Linero, FDEP, Tallahassee
Mr. Howard Rhodes, FDEP, Tallahassee
Mr. Chris Kirts, FDEP, Jacksonville
Mr. George Townsend, FRI
Mr. Cary Cohrs, FRI
Mr. Fred Cohrs, FRI
Mr. Segundo Fernandez, Oertel, Hoffman

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

January 29, 2001

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC/PSD-FL-228A
Thompson S. Baker (Newberry) Cement Plant

Dear Mr. Baker:

Due to a typographical error on page 2 of 4 of the January 26, 2001 Technical Evaluation and Preliminary Determination for the above referenced project, the permit extension date was incorrectly stated. Please replace that page with the enclosed corrected page.

Sincerely,

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

CHF/pa

Enclosure

cc: Fred W. Cohrs, FRI
Gregg Worley, EPA
John Bunyak, NPS
Kris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
W. Douglas Beason, Esq. DEP OGC
James J. Konish, Esq., FPLW
Segundo J. Fernandez, Esq., OHF&C
Arthur Saarinen
Chair, Alachua County Commission
Chris Bird, Alachua County EPD
Rob Luna, NCFGP

NO_X in the calciner and further reduces the nitrogen oxides coming from the rotary kiln. Also, corresponding staggering of the raw meal infeed favorably influences the temperature in the reducing zone of the calciner. Operating results obtained with the multi stage combustion process prove that basic NO_X emissions is reduced by up to 50%."

An evaluation of the system described above was given in a report prepared by Schreiber, Yonley, & Associates for Alachua County.[5] According to the report, "the Newberry plant, on the other hand, has the advantage of an inherently low-NO_X design." "The plant does have the option of adding staged combustion as a NO_X contingency control. This method introduces fuel at the feed end of the kiln or at the precalciner vessel, creating a strongly reducing environment in which more NO_X is destroyed. The technology is used in both new construction and kiln retrofits. The Portland Cement Association Report on NO_X formation and Variability in Portland Cement Kiln Systems, Potential Control Techniques and Their Feasibility and Cost Effectiveness published in December 1998 reports that industry feedback indicated NO_X reduction potential with this control is 30 to 40 percent compared to conventional precalciner kilns."

The Department does not necessarily agree with all aspects of the Schreiber analysis, but does agree on the discussion regarding staged combustion. The full report may be viewed at the Alachua County website.[6]

FRI proposes to use tires with propane backup as fuel burned under reducing conditions in the lower section of the MSC. Coal will be burned under subsequent oxidizing conditions in the higher section of the MSC. Additional tertiary air from the clinker cooler will insure good burnout and conversion of most CO to CO_2 without significant NO_X formation.

Compliance with the NO_X limit by December 31, 2001 will be confirmed by the continuous emission monitoring system (CEMS). The permit will be extended until March 31, 2001 to allow conversion of the precalciner, conduct additional fine-tuning, and provide the Department and FRI with time to review the results. This review may allow the Department to exercise the condition in Table II of the permit to "revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on compliance test and continuous emissions monitoring data."

SO_2 Control. The interim SO_2 emission limit is 0.28 lb/ton or 28.8 lb/hr. The Department is required to issue the final SO_2 limits within 120 days following receipt of all test results required by this permit. An initial stack test conducted on the kiln indicated an emission rate of 1.4 lb/hr. This is an extremely low value. For example, kilns in certain parts of the country emit SO_2 at levels from 100 to 1000 times greater than indicated by the first FRI tests. Fortunately raw materials in Florida, such as the limestone, contain little iron pyrites that contribute to SO_2 formation. Early indications are that the kiln does indeed function as described in the original BACT determination. The sulfur is being removed in the alkaline environment of the kiln, preheater, and raw mill and ultimately incorporated into the clinker.

The single stack test results are not sufficient to set a final limit for SO_2. In fact, at the emission rate achieved to-date, the plant would not have been subject to a BACT-based SO_2 emission limit. The Department will wait until the applicant has submitted three months worth of CEMS data for this pollutant prior to revising the BACT limit for SO_2. The Department has reasonable assurance that the kiln is operating well within its interim permitted SO_2 limits.

Sulfuric Acid Mist Control.

FRI submitted stack test results for sulfuric acid mist (SAM). The tests indicated an emission rate of 0.000003 lb/ton of clinker or 0.0003 lb/hr. This equates to annual emissions of 0.0012 tons per year (TPY), which is much less than the threshold of 7 TPY normally requiring a BACT determination. Nevertheless the permit requires a limit.

Reynolds, John

From: Maybin, Leslie
Sent: Friday, March 16, 2001 1:38 PM
To: Fancy, Clair
Cc: Beason, Doug; Vielhauer, Trina; Reynolds, John; Linero, Alvaro; Sheplak, Scott; Mitchell, Bruce; Kirts, Christopher
Subject: March 14, 2001 teleconference, FRI AIRS I.D. #0010087

Clair,
This is in reference to the Koogler and Associates letter of March 8, 2001, and the teleconference of March 14, 2201. Here is what DARM and NED agreed on:

1.1. Include the word Combustion.
1.2. Added "s" to pollutants.
1.3. Added to both parts of the statement.
1.4. NED will do some combining of Common Conditions J and K.
1.5. Missing information will be added to both parts.
1.6. Al will check with Bruce on this issue.
1.7. Okay.
1.8. A.3 will be added.
1.9. The sentence will end after dry feed.
1.10. Dates will be included in C.10.
1.11. The sentence will end after dry feed.
1.12. NED will verify the information. If incorrect we will remove with DARMS approval; and the No. 7 footnote will read "VOC CEMs."
1.13. NED will remove Performance Specification 1, provided DARM sends a note that this is not applicable to the AC permit.
1.14. "Opacity" has been changed to "Emission". The Performance Specification reference is being checked by DARM.
1.15. NED is okay with the change.
1.16. End sentence after dry feed.
1.17. NED will remove Table II reference.
1.18. Will change revised Table II after DARM change the AC.
1.19. NED will change Table 1-1.
2.1. DARM will check the rule citation.
2.2. DARM will review, make a decision and inform NED.
2.3. Al okayed the change to 45 days.
2.4. As needed has been added.
2.5. DARM is checking the rule.
2.6. NED is okay with the change.
3.1. DARM will review, decide and inform NED.
3.2. If DARM changes, then NED will change.
3.3 The legal department will decide.
4.1. John will look this over.
4.2. DARM will change revised Table II. NED will reflect the AC change.

-Leslie

Reynolds, John

From: Heron, Teresa
Sent: Wednesday, February 14, 2001 9:03 AM
To: Linero, Alvaro
Cc: Reynolds, John
Subject: FW: extension requests

-----Original Message-----
From: Carter, Kathy
Sent: Wednesday, February 14, 2001 8:29 AM
To: Maybin, Leslie; Heron, Teresa
Cc: Ffolkes, Francine
Subject: extension requests

Hi:
FYI.
We received a request for extension of time from Alachua County re: Florida Rock Industries on two application numbers: 0010087-002-AV (OGC 01-0263), processor L. Mabin; and 0010087-003-AC (OGC 01-0264) processor T. Herron. The attorney is Francine Ffolkes.

Kathy

Call Trina Tues. P.M. re/Consent wording [Wednesday Mtg. - 10:00 P.M.] - Kirby not in favor of any more time. Tires - gasification unit later via separate application

Reynolds, John

From: Linero, Alvaro
Sent: Saturday, February 24, 2001 1:37 PM
To: Reynolds, John
Cc: Kahn, Joseph
Subject: FRI AC Draft Permit

John. Please review this language and and be ready to modify it in order that it can be more useful as a compliance condition - like 30-day block average. This will no doubt come up in our meeting with FRI on monday.

Consult with Joe and his group as necessary.

?

Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system in the kiln/raw mill stack to measure and record the emissions of VOC from the kiln/raw mill. The CEM system shall be installed, certified, operated and maintained in accordance with Performance Specification 8A of Appendix B of 40 CFR 60. The CEM system shall include an oxygen monitor, which shall be installed, certified, operated and maintained in accordance with Performance Specification 3 of Appendix B of 40 CFR 60. The CEM system's data shall be quality assured using the procedures of Appendix F of 40 CFR 60. The owner or operator shall report no later than the 10th day following each calendar quarter a summary of the daily average VOC emissions reported by the CEMS system for the days of that calendar quarter to the Department's Northeast District Office. These results should be reported as ppm of propane corrected to 7 percent oxygen, pounds per hour of VOC as propane, and pounds of VOC as propane per ton of clinker. [Rule 62-4.070, F.A.C.]

Thanks. Al.

permittee

change "multi-stage calciner" to multi-stage combustor.

(1) Expiration date too soon - put into Title V Compl. plan. - Kirby Green wanted end to construction permit - confused about another permit - clinker tires -

(2). Clarify meaning of rollover into Title V

(3) Konish hearing request - extended permit.

(4) gasifier included - "no" - gasifier originally intended to do away with fire at inlet to kiln. gasifier will require another construction permit.

(5) plus 10%

(6) O_2 monitor not necessary. Mass emission limit - not necessary to have O_2. VOC monitor not pursuant to MACT - constr. permit predated

Check with Joe Kahn - basis of Suwannee

(7) 30 day block average vs. 30-day rolling average.

(8) Spec. perf. "8" vs. "8A"

(9) Be - retested - 1000 times lower than before. - mistake made in original data. request no more quarterly tests. public notice final limit on Be. .. 297 Rule has reference to retest requirements in 5 yrs. 45 days for reports vs. 30 days.

need permit applic. ← (10). remove clinker prod. rate. (Since calc'd from preheater feed). adjust hourly and annual limits

Title V comments - ~~Scott~~ District will handle.

(1).

Excess emissions - 10% vs. 20% = another req'mt. to cover 10% (BACT) vs. 20% NSPS.

Process description not correct - Rotary valve with airlock. - different point for injection tires.

Alachua County requests extension

Department of
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Jeb Bush
Governor

David B. Struhs
Secretary

March 14, 2001

Segundo J. Fernandez, Esq.
Tim Atkinson, Esq.
Oertel, Hoffman, Fernandez & Cole, P.A.
301 S. Bronough St., 5th Floor
Tallahassee, Florida 32301

Via facsimile and regular mail

RE: Florida Rock Industries, Inc.-Alachua County

Dear Mr. Fernandez and Mr. Atkinson:

I am in receipt of letters from Mr. Fernandez and Mr. Cohrs both of which are dated March 12, 2001 and offer the following response.

First, we appreciate Mr. Cohrs' suggestion of a short form consent order to expedite the resolution of this matter. The Department is also hopeful that this settlement in principle can be documented in an agreeable fashion. However, based upon the nature of the case and representations made to the State Attorney's Office, we cannot proceed with a short form consent order. It remains our position that we can resolve this matter in a consent order format. In light of the fact that Florida Rock would not admit to violations in such a document, we believe that an acceptable findings section and consent order can be achieved. To that end, I am attaching a revised consent order for your review. If Florida Rock no longer wishes to negotiate an amicable resolution to this matter, please let me know as soon as possible.

Second, I must address briefly the statements contained in Mr. Fernandez's correspondence. While I recognize the time spent drafting the "Respondent's allegations" language, I also note that such time and drafting was not prompted by the Department. The six pages of "Respondent allegations" language was unanticipated by the Department. I reiterated at the meeting with Mr. Atkinson that numerous paragraphs contained therein remained unacceptable to the Department regardless of the structure of the consent order. However, I believe some language can be added to the consent order to address your client's concerns. [see attached]

In addition, the documents requested by the Alachua County Attorney's Office are public records the Department was obligated to

provide upon request. This facsimile transmission is the only correspondence I have had with the County. In the event there is any further correspondence, you will be on the cc. list.

Finally, you have reiterated your client's request for a meeting with Mr. Green. I have discussed your request and the outstanding issues [i.e. the format and language for the consent order] with Mr. Green and he is deferring to legal counsel on these legal issues.

If you have any questions, I can be contacted at 850/921-8875 or via facsimile at 850/488-2439.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer
Assistant General Counsel

pc: Howard Rhodes, Al Linero, Jim Pennington
Ernie Frey, Chris Kirts, Rick Banks
Doug Beason
Kirby Green

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, Complainant, v. FLORIDA ROCK INDUSTRIES, INC., Respondent.	)	IN THE OFFICE OF THE NORTHEAST DISTRICT OGC FILE NO.: _____

CONSENT ORDER

This Consent Order is entered into between the State of Florida Department of Environmental Protection ("Department") and Florida Rock Industries, Inc. ("Respondent") to reach settlement of certain matters at issue between the Department and Respondent. The Department finds and the Respondent neither admits nor denies:

Preliminary Findings:

1. The Department is the administrative agency of the State of Florida having the power and duty to protect Florida's air and water resources and to administer and enforce the provisions of Chapter 403 Florida Statutes ("F.S.") and the rules promulgated thereunder in Florida Administrative Code ("F.A.C.") Title 62. The Department has jurisdiction over the matters addressed in this Consent Order.

2. Respondent is a corporation and is a person within the meaning of Section of 403.031(5), F.S.

3. Respondent owns and operates Thompson S. Baker Cement Plant ("Facility") located on Alachua County Road 235, Newberry, Alachua County, Florida. The Facility is a portland cement plant that makes Types I and II cement.

4. On December 23, 1996, the Department issued permit # AC01-267311 (PSD-FL-228) ("Permit") for Respondent's Facility. At Respondent's request, the Permit was amended on July 13, 2000 to allow Respondent to demonstrate compliance with VOC emissions by either Method 25 or Method 25A ("amended Permit"). By letter dated July 17, 2000, Respondent requested an extension of the amended Permit.

5. Table II of the Permit and amended Permit establishes an emission limit for volatile organic compounds ("VOC") from the kiln/ precalciner stack of 11.55 pounds per hour and 0.12 pounds per ton of clinker.

6. Koogler & Associates Environmental Services ("Koogler") is the company that has conducted the stack testing referred to in the consent order on behalf of Respondent.

7. Koogler sent a letter dated May 22, 2000 to Mr. Lalit Lalwani of the Department, advising the Department that initial testing was being postponed to insure that the tests would be performed at a time when the plant was operating at permitted capacity.

8. On May 31 and June 1, 2000, Koogler conducted stack testing at the Facility. Respondent contends that these tests constitute preliminary in-house measurements conducted during the shakedown of the plant. The results of this test were submitted to the Department on September 22, 2000 and indicated an average emissions rate of 71.1 lbs/hr VOCs reported as total hydrocarbons ("THC").

9. On June 16, 2000, Koogler notified the Department that a compliance stack test would be conducted at the Facility beginning on July 5, 2000.

10. On July 13, 2000, Department personnel witnessed compliance stack tests at the Facility.

11. On August 28, 2000, the Department received the results of the July 13, 2000 compliance stack tests. The average VOC emission rate during the July 13, 2000 compliance stack test at the Facility was reported as 30.8 lbs/hr. Respondent contends that the methane fraction on July 13, 2000 was approximately 4.1 pounds per hour methane. The VOC emissions exceeded the VOC emission limit set forth in the Permit and amended Permit [see paragraph 16 above].

12. ***On ???*** Respondent met with the Department to discuss the results of the July 13, 2000 stack test.

13. Respondent notified the Department of an August 2, 2000 compliance stack test. Department personnel witnessed the compliance stack tests at the Facility.

14. On September 25, 2000, the Department received the results of the August 2, 2000 compliance stack tests. The average VOC emission rate during the August 2, 2000 compliance stack test at the Facility was reported as 37.4 lbs/hr. The VOC emissions exceeded the VOC emission limit set forth in the Permit and amended Permit.

15. Respondent contends that the VOCs measured in the stack during the July 13, 2000 and August 2, 2000 stack tests were not the result of incomplete combustion, but rather from an extraneous source of hydrocarbons that entered the process. Respondent contends it kept the Department abreast of its activities and acted diligently to identify the extraneous source of hydrocarbons.

16. On September 23, 2000 a stack test was conducted at the Facility. The average VOC emission rate was found to be 7.33 lbs/hr compared to the maximum permitted VOC rate for Respondent's Facility of 11.55 lbs/hr.

17. Respondent operated the Facility continuously from at least May 31, 2000 through present except a shutdown period due to a lightning strike from August 19 - 25, 2000.

18. On October 11, 2000, Respondent conducted an additional compliance stack test using mill scale with low total hydrocarbon content, and making Type II cement. The average VOC emission rate was found to be 8.51 pounds per hour compared to the maximum permitted VOC rate for Respondent's Facility of 11.55 pounds per hour.

Agreement to Settle

Representatives of Florida Rock Industries, Inc. and the Department have met in an effort to resolve their disputes as to air compliance issues and any alleged violation of Chapter 403, Florida Statutes. Entry into this agreement does not constitute an admission by Respondent to any violations. The parties have agreed to enter into this Consent Order in order to expeditiously address compliance issues without litigation and its attendant costs and delays.

Having reached a resolution of the matter, the Department and the Respondent mutually agree and it is,

ORDERED

19. Within thirty days of the effective date of this Consent Order, Respondent shall pay the Department $20,000 in settlement of the matters addressed in this Consent Order. This amount includes $10,000 in civil penalties for alleged violations of the Florida Statutes and of the Department's rules and $10,000 for costs and expenses incurred by the Department for costs and

investigation of this matter and the preparation and tracking of this Consent Order. Payment shall be made by cashier's check or money order. The instrument shall be made payable to the "Department of Environmental Protection" and shall include thereon the OGC number assigned to this Consent Order and the notation "Ecosystem Management and Restoration Trust Fund." The payment shall be sent to: Department of Environmental Protection, Northeast District, 7825 Baymeadows Way, Jacksonville, FL 32256-7590.

20. This Consent Order fully resolves all issues regarding the Department's civil enforcement action related to the matters addressed herein and in the Department's September 5, 2000, Warning Letter. The Department reserves the right to take appropriate enforcement action against Florida Rock Industries, Inc. for any future violation of the Department's rules or permit conditions. Florida Rock Industries, Inc. reserves its right to contest any such enforcement action in accordance with applicable law.

21. On or before December 31, 2001, Respondent shall install, calibrate, maintain and operate a continuous emission monitoring system in the kiln/calciner stack to measure and record the emissions of VOC from the kiln/calciner. The CEM system shall be installed, operated and maintained in accordance with Performance Specification 8 of Appendix B to 40 CFR 60. The owner or operator shall report no later than the 10th day following each calendar quarter a summary of the daily average VOC emissions reported by the CEMS system for the days of that calendar quarter to the Department's Northeast District Office. These results should be reported as pounds per hour of VOC, and pounds of VOC per ton of clinker.

22. In the event that Respondent determines it is out of compliance with air pollution control emission limits established in 40 C.F.R. 60, Chapter 403 of the Florida Statutes, Title 62 of the Florida Administrative Code, and/or construction or operation permits issued by the

Department, Respondent shall immediately notify the Department's Northeast District Office as required by Rule 62-4.130, F.A.C. In addition, Respondent shall immediately cease the violation of the air pollution control emission limits and undertake the appropriate diagnostic tests to determine the cause of the noncompliance with air pollution control emission limits. In the event the only manner in which such noncompliance can be alleviated is by ceasing operations, Respondent shall cease operations except to undertake the appropriate diagnostic tests to determine the cause of noncompliance with air pollution control emission limits. Upon identifying the cause of noncompliance with air pollution control emission limits, Respondent shall perform appropriate maintenance or repairs to return to compliance with such emission limits.

23. In the event that Respondent willfully commits a violation as defined in Section 403.161, F.S., Respondent may be subject to criminal prosecution as provided in Section 403.161(3) – (5), F.S. Respondent acknowledges that willful violation of its air pollution control emission limits established in 40 C.F.R. 60, Chapter 403 of the Florida Statutes, Title 62 of the Florida Administrative Code, and/or construction or operation permits issued by the Department and the terms of this Consent Order may be subject to a criminal prosecution as provided in 403.161(3)-(5), F.S. Nothing herein shall be deemed to affect Respondent's rights and obligations under the applicable provisions of the Florida Statutes or Florida Administrative Rules, including 62-4.130, 62-4.160 and 62-210.700, F.A.C., and general and specific conditions in its permits.

24. Respondent shall publish the following notice in a newspaper of daily circulation in Alachua County, Florida. The notice shall be published one time only within 10 days after the effective date of the Consent Order.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF CONSENT ORDER

The Department of Environmental Protection gives notice of agency action of entering into a Consent Order with Florida Rock Industries, Inc. pursuant to Section 120.57(4), Florida Statutes. The Consent Order addresses the air emissions violations at its Thomas S. Baker Cement Plant, Alachua County Road 235, Newberry, Alachua County, Florida. The Consent Order 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 the Department of Environmental Protection, Northeast District, 7825 Baymeadows Way, Jacksonville, FL 32256-7590.

Persons whose substantial interests are affected by this Consent Order have a right to petition for an administrative hearing on the Consent Order. The Petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS-35, Tallahassee, Florida 32399-3000, within 21 days of receipt of this notice. A copy of the Petition must also be mailed at the time of filing to the District Office named above at the address indicated. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the Department's identification number for the Consent Order and the county in which the subject matter or activity is located; (b) A statement of how and when each petitioner received notice of the Consent Order; (c) A statement of how each petitioner's substantial interests are affected by the Consent Order; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal

or modification of the Consent Order; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Consent Order; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Consent Order.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject Consent Order have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Sections 120.569 and 120.57, Florida Statutes, and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-106.205, Florida Administrative Code.

A person whose substantial interests are affected by the Consent Order may file a timely petition for an administrative hearing under Sections 120.569 and 120.57, Florida Statutes, or may choose to pursue mediation as an alternative remedy under Section 120.573, Florida Statutes, before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for pursuing mediation are set forth below.

Mediation may only take place if the Department and all the parties to the proceeding agree that mediation is appropriate. A person may pursue mediation by reaching a mediation

agreement with all parties to the proceeding (which include the Respondent, the Department, and any person who has filed a timely and sufficient petition for a hearing) and by showing how the substantial interests of each mediating party are affected by the Consent Order. The agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within 10 days after the deadline as set forth above for the filing of a petition.

The agreement to mediate must include the following:

(a) The names, addresses, and telephone numbers of any persons who may attend the mediation;

(b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;

(c) The agreed allocation of the costs and fees associated with the mediation;

(d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;

(e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;

(f) The name of each party's representative who shall have authority to settle or recommend settlement; and

(g) Either an explanation of how the substantial interests of each mediating party will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that each party has already filed, and incorporating it by reference.

(h) The signatures of all parties or their authorized representatives.

As provided in Section 120.573, Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above, and must therefore file their petitions within 21 days of receipt of this notice. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, Florida Statutes, remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

25. Entry of this Consent Order does not relieve Respondent of the need to comply with applicable federal, state or local laws, regulations or ordinances.

26. The terms and conditions set forth in this Consent Order may be enforced in a court of competent jurisdiction pursuant to Sections 120.69 and 403.121, Florida Statutes. Failure to comply with the terms of this Consent Order may constitute a violation of Section 403.161(1)(b), Florida Statutes.

27. Respondent is fully aware that a violation of the terms of this Consent Order may subject Respondent to judicial imposition of damages, civil penalties up to $10,000.00 per day per violation and criminal penalties.

28. Respondent shall allow all authorized representatives of the Department access to the property and Facility at reasonable times for the purpose of determining compliance with the terms of this Consent Order and the rules of the Department.

29. All plans, applications, penalties, stipulated penalties, costs and expenses, and information required by this Consent Order to be submitted to the Department should be sent to Florida Department of Environmental Protection, Northeast District Office, 7825 Baymeadows Road Suite 200B, Jacksonville, Florida 32256-7590.

30. The Department hereby expressly reserves the right to initiate appropriate legal action to prevent or prohibit any violations of applicable statutes or the rules promulgated thereunder that are not specifically addressed by the terms of this Consent Order.

31. The Department, for and in consideration of the complete and timely performance by Respondent of the obligations agreed to in this Consent Order, hereby waives its right to seek judicial imposition of damages or civil penalties for alleged violations outlined in this Consent Order. Respondent acknowledges but waive its right to an administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, on the terms of this Consent Order. Respondent acknowledges its right to appeal the terms of this Consent Order pursuant to Section 120.68, Florida Statutes, but waives that right upon signing this Consent Order.

32. With regard to any determination made by the Department regarding implementation of the requirements of this Consent Order, if Respondent objects to the Department's determination, Respondent may file a Petition for Formal or Information Administrative Hearing Proceeding, pursuant to Sections 120.569 and 120.57, Florida Statutes. The petition must be received by the Department's Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399, within 14 days after receipt of written

notice from the Department of any determination Respondent wishes to challenge. Failure to file a petition within this time period shall constitute a waiver by Respondent of its right to request an administrative proceeding under Sections 120.569 and 120.57, Florida Statutes.

33. The provisions of this Consent Order shall apply to and be binding upon the parties, their officers, their directors, agents, servants, employees, successors, and assigns and all persons, firms and corporations acting under, through or for them and upon those persons, firms and corporations in active concert or participation with them.

34. No modifications of the terms of this Consent Order shall be effective until reduced to writing and executed by both of the Respondent and the Department.

35. In the event of a sale of the Facility or of the property upon which the Facility is located, if all of the requirements of this Consent Order have not been fully satisfied, Respondent shall, at least 30 days prior to the sale or conveyance of the property or Facility, (1) notify the Department of such sale or conveyance, (2) provide to the Department the name and address of the purchaser, or operator, or person(s) in control of the Facility, and (3) provide a copy of this Consent Order with all attachments to the new owner. The sale or conveyance of the Facility or the property upon which the Facility is located shall not relieve the Respondent of the obligations imposed in this Consent Order.

36. This Consent Order is a settlement of the Department's civil and administrative authority arising from Chapters 403 and 376, Florida Statutes, to resolve the allegations addressed herein. This Consent Order is not a settlement of any criminal liabilities which may arise under Florida law, nor is it a settlement of any violation which may be prosecuted criminally or civilly under federal law.

37. Respondent does not admit, by signature of this Order or otherwise, any of the Department's allegations that its Facility, or the operation thereof, has caused any violation of any applicable Department standard or rule or any applicable provision of State or federal law, and enters this Consent Order to amicably resolve the Department's allegations without resort to litigation. Respondent hereby reserves all of its legal rights and defenses not otherwise waived in paragraph 31 in any legal action which may be initiated by the Department.

38. This Consent Order is a final order of the Department pursuant to Section 120.52(7), Florida Statutes, and it is final and effective on the date filed with the Clerk of the Department unless a Petition for Administrative Hearing is filed in accordance with Chapter 120, Florida Statutes. Upon the timely filing of a petition this Consent Order will not be effective until further order of the Department.

FOR THE RESPONDENT:

_____ _____

Mr. Fred W. Cohrs
Vice President
Florida Rock Industries Inc.
155 East 21st Street
Jacksonville, FL 32206

Date

Done and ordered this _____ day of _____, 2001 in Duval County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

_____

Ernest E. Frey
Director of District Management
7825 Baymeadows Way, Suite 200B

Jacksonville, Florida 32256-7590

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 Date

c: Larry Morgan
Segundo J. Fernandez
Timothy P. Atkinson

Reynolds, John

From: Vielhauer, Trina
Sent: Saturday, March 17, 2001 12:19 PM
To: Frey, Ernest; Rhodes, Howard; Kirts, Christopher; Banks, Richard; Benjamin, Morton; Gay, John
Cc: Green, Kirby; Donaldson, Teri L.; Morgan, Larry; Beason, Doug; Linero, Alvaro; Fancy, Clair; Reynolds, John; Sheplak, Scott
Subject: Florida Rock Consent Order is finalized!

I just spoke with Tim Atkinson. He is forwarding the final Florida Rock Consent Order to Fred Cohrs for signature. Fred will be sending it Fed-Ex to Ernie for signature. Ernie, if you could send a copy to me when you've signed it that would be great. Fred will have someone from his office pick up a signed copy from NED.

Ernie, Howard and Doug: can we talk Monday morning about who wants to contact the County on this [and the permit issues?] Thanks, everyone, for all of your assistance on this case.

Trina

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

KA187-99-08

March 8, 2001

Mr. C.H. Fancy
Florida Department of Environmental Protection
Division of Air Resources Management
111 S. Magnolia Drive, Suite 23
Tallahassee, Florida 32301

Subject: Florida Rock Industries, Inc.
Comments on Draft Amended Air Construction
Permit 0010087-003-AC/PSD-FL-228A
and Draft Title V Permit 0010087-002-AV

Dear Mr. Fancy:

We've had the opportunity to review the above captioned draft Air Construction Permit and draft Title V Permit both dated January 26, 2001, and would like to provide comments for your consideration. Many of the comments are editorial. Others are to provide consistency with the Consent Order presently being negotiated by Florida Rock and the Department, to provide consistency with the original Air Construction Permit Application or draft Amended Air Construction Permit, to account for rule requirement or new information, or for clarification.

1.0 EDITORIAL COMMENTS

1.1 In several places, both in the Draft Amended Air Construction Permit and the Draft Title V permit, the kiln system is referred to as a "Multi Stage Calciner." The correct terminology should be Multi-Stage Combustion Calciner. This terminology appears on the first page of the Joint Public Notice, on page 1 of 4 of the Technical Evaluation and Preliminary Determination of the draft Amended Air Construction Permit, on page 1 of the draft Amended Air Construction Permit, on page 2 of the Statement of Basis of the Draft Title V Permit, and perhaps other locations in both draft permits.

OK

1.2. Draft Title V Permit, Statement of Basis, page 1, third paragraph.

"hazardous air pollutant" should read, "hazardous air pollutants."

OK

1.3 Draft Title V Permit, Statement of Basis, page 2.

If the list of emission units is meant to be complete, Emission Unit 007-Coal Handling and Grinding, should be added.

Also on this page, the list of conditions clarifying the scope of activities that may continue following the issuance of the Title V Permit does not include a condition number 2.

1.4. Table of Contents and throughout Draft Title V Permit.

It is suggested that Common Conditions H through K be included either as Facility-Wide conditions or as Specific Conditions applicable to specific emission units. This would eliminate the ambiguity that exists as a result of the present formatting.

1.5. Draft Title V Permit, page 2, fourth paragraph.

This paragaraph should also reflect the fact that the facility is subject to 40 CFR 60, Subpart OOO, New Source Performance Standards for Non-Metallic Mineral Processing Plants.

Also, if the list of Emission Units is meant to be complete, Emission Unit 007-Coal Handling and Grinding, should be added. This same comment applies to Specific Condition 7 (page 5) of the Draft Title V Permit.

1.6 Draft Title V Permit, page 5, Compliance Plan.

As the Air Construction Permit has established opacity limits for the emission points subject to Subpart OOO, the Compliance Plan Condition 5 should be deleted. (Also see Comment 2.5.)

1.7. Draft Title V Permit, page 6, second set of bullet items.

The second bullet item should read, "The plant <u>area</u>..." In the 6th bullet item, third line, there appears to be text missing following the word, "excess."

1.8. Draft Title V Permit, page 9, Condition A.4.

The parenthetical expression should reference conditions A.2. <u>and A.3</u>.

1.9. Draft Title V Permit, page 14, Conditions C7,C8 and C9.

Followup

The PM, PM10, and SO_2 emission limits from the kiln/raw mill should be limited to pounds per ton of dry feed to the preheater (not kiln).

1.10. Draft Title V Permit, page 15, Conditions C.10.

It is suggested that this condition be worded:

> NOx emissions shall not exceed 3.8 pounds per ton of clinker (30-day rolling average) after startup and until December 20, 2001. After December 30, 2001, NOx emissions shall not exceed 2.8 pounds per ton of clinker (30-day rolling average). The permittee shall install any additional control equipment by December 30, 2001 to ensure compliance with the 2.8 pounds per ton of clinker limit. The startup date was December 31, 1999.

This proposed wording incorporates the specific dates included in the Amended Air Construction Permit.

1.11 Draft Title V Permit, page 15, Conditions C11, C12 and C14.

X

In all three conditions, it should be specified that the emission limits are related to tons of dry feed to the preheater.

1.12. Draft Title V Permit, page 16, box comments.

The term "Cooler" should be deleted from all entries in the Description column. This condition applies only to EU 003, which is the kiln/raw mill; not the clinker cooler.

OK

Under this same comment, Footnote No. 7 should be changed to specify the VOC CEMS as this is what has been agreed upon.

1.13. Draft Title V Permit, page 18, Condition C.30.

Performance Specification 1 applies only to opacity monitors and should be deleted from this condition.

1.14. Draft Title V Permit, page 18, Condition C.33.

Follows

The VOC monitor is a continuous emission monitor (not an opacity monitor).

The Performance Specification referenced should be 8 (not 8A). Performance Specification 8A does not appear to exist.

1.15. Draft Title V Permit, Page 18, Condition C.37.

OK

The title of this condition should read Coal, Tires, Fuel Oil, and Raw Materials as this condition specifies record keeping requirements for all four material categories.

1.16. Draft Title V Permit, Page 20, Condition D.3.

OK

The PM emission limit from the clinker cooler should be based on dry feed to the preheater, (not kiln).

1.17 Table II.

OK

The unrevised Table II should be deleted from the Title V Permit.

1.18. Table II (revised).

The footnote** should read:

> After startup and until December 30, 2001, the kiln shall not exceed an NOx limit of 3.8 lbs. per ton of clinker, and 2.8 pounds per ton of clinker thereafter. The Department may revise the emission limit to less than 2.8 pounds per ton of clinker (30-day rolling average) based on compliance tests and continuous emission monitoring data to be submitted by March 31, 2002.

OK.

These suggested changes will make Table II (revised) consistent with the Air Construction Permit and the revised Air Construction Permit. Changing the date for submitting NOx monitoring data to 2002 is only reasonable as changes to the MSC Calciner will not be complete until December 30, 2001.

ENVIRONMENTAL SERVICES

Remove (2)

1.19. **Table I-I.**

In the Standards column of all pages of this table, the standards should be stated as less than or equal to (rather than less than) the stated standard.

2.0 COMMENTS RELATED TO A CONSISTENCY WITH DEPARTMENT RULE OR WITH AIR CONSTRUCTION PERMIT REQUIREMENTS

2.1 Draft Amended AC Permit, page 2, Specific Condition No. 6 (modified).

The added language states, in part:

> If the kiln is tested while firing less than 30% tires, subsequent operation is limited to the percentage of tires burned during the test...

OK

To be consistent with the rule 62-297.310(2)(b), F.A.C., the cited rule requirement, the condition should read:

> ...subsequent operation is limited to 110% of the percentage of tires burned during the test, not to exceed 30% of the total heat input.

Operation at 10% above the tested rate is consistent with Rule 62-297.310 (2)(b), FAC.

This condition also appears in the Draft Title V Permit, page 17, first paragraph, and should be corrected there also.

2.2 Draft Amended AC Permit, page 2, Specific Condition 6.A (new).

OK

The continuous oxygen monitor is not a necessary component of the VOC CEMS. There is no rule requirement for an oxygen monitor nor are there any permit conditions requiring the VOC concentration in the stack gas to be corrected to a reference oxygen concentration. The MACT standard for Portland cement plants limits the VOC concentration in the kiln/raw mill stack to 50 ppm as propane, corrected to 7% oxygen. Such a standard would require an oxygen monitor. The FRI Air Construction Permit, however, limits VOC emissions only to mass emission rates (pounds per hour, tons per year and pounds per ton of preheater feed). Oxygen corrections are not needed

for these mass emission limits. Hence, the requirement for an oxygen monitor as a component of the VOC CEMS need to be deleted.

This same requirement appears in the Draft Title V Permit, page 18, Condition C.33. The requirement for an oxygen monitor needs to be deleted from this condition also.

2.3 Draft Amended AC Permit, page 2, Specific Condition 6b (new).

This proposed condition, if retained (see comment 3.3 regarding the need for additional beryllium tests), needs to be changed to require that test reports be provided to the Department within 45 days after completion of the last test run. This requirement is consistent with Rule 62-297.570, FAC. Furthermore, it has been our experience that often it is not possible to get analytical results for metals from a laboratory in sufficient time to meet the suggested 30 day reporting requirement.

ok

This same requirement appears in the Draft Title V Permit, page 18, Condition C.34 and needs to be corrected there also or, the condition deleted if further beryllium testing is not required.

2.4 Draft Title V Permit, Statement of Basis, page 1, paragraph 4.

It should be clarified that the control by application of water sprays is as needed. Neither the Air Construction Permit, nor the draft Amended Air Construction Permit require continuous water spray. New permit conditions cannot be imposed by Operating Permit.

ok

The same condition appears in the Draft Title V Permit, page 8, first paragraph, and needs to be corrected there also.

2.5 Draft Title V Permit, Statement of Basis, page 3, Condition No. 5.

Condition 5 requires Florida Rock to report to the Department the equipment, subject to 40 CFR 60, Subpart OOO, that is subject to wet processing visible emission limits (zero opacity) and what equipment is subject to dry processing limits (10% opacity). The Air Construction Permit has already made this determination. The opacity limits established in the Air Construction Permit are further reflected in the Draft Title V Permit, page 8 of 36, specific conditions A.2. and A.3. Specific Condition A.2. sets opacity

Cathcart

limits of 10% for raw material processing and raw material handling and storage (EP 01 and 02). Specific Condition A.3. establishes an opacity limit of 15% for the primary crusher (EP 03). This condition therefore needs to be deleted from the Title V Permit.

This same condition appears in the Draft Title V Permit, page 9, Condition 8.6, and needs to be deleted there also.

2.6. Draft Title V Permit, page 18, Condition C.35

The permitted opacity limit for the kiln/raw mill (Condition C.6.) is 10%. The reporting of excess visible emissions should include both the times when the 10% opacity limit is exceeded as well as times when the 20% opacity limit is exceeded. The 20% opacity limit is specified by 40 CFR 60.62(a)(2.)

3.0 COMMENTS TO PROVIDE CONSISTENCY WITH CONSENT ORDER AND WITH NEW INFORMATION.

3.1 VOC Averaging Time.

To provide the Department with reasonable assurance that compliance with the VOC emission limit will be achieved on a continuing basis and as a condition of the Consent Order negotiated by Florida Rock and the Department, Florida Rock will install a VOC CEMS in the kiln/raw mill stack. As agreed, the CEMS will be installed in accordance with the EPA Performance Specification 8 (40 CFR 60, Appendix B) and will be operated continuously. Also as agreed, by the Department and FRI, the kiln/raw mill stack gas VOC concentration measured and recorded by the VOC CEMS is to be reported as an hourly concentration averaged over a rolling 30-day period. Neither the 30-day rolling average VOC concentration nor the time factor used in calculating the 30-day rolling average will include data from periods when the kiln system is not operating. The 30-day rolling average VOC emission data will be reported as pounds per hour and pounds per ton of clinker.

In considering the averaging time for VOC emissions, FRI considered both a rolling 30-day average and a block 30-day average. The block 30-day

10% above 149 TPH.

OK

OK.

Cap included

require definition of "operating"

averaging time is specified in the MACT Standard for Portland Cement Plants and is the averaging time specified in the air construction permit issued to Suwannee American Cement (Permit 1210465-001-AC/PSD-FL-259). The Suwannee American Cement Permit specifies the block averaging time as that plant is subject to New Source MACT Standards; Florida Rock is not. Florida Rock and Department personnel familiar with the Suwannee American permit are both of the opinion that the rolling 30-day average as suggested herein is the most appropriate averaging time.

The VOC CEMS is referenced at several places in both the draft Amended Air Construction Permit and the draft Title V Permit. Wherever applicable, the 30-day rolling averaging period for VOC emissions needs to be specified.

3.2 Draft Title V Permit, page 14, Box, Whole Tire Conditions.

The second bullet item specifies that tires used as fuel shall be fed into the kiln system at the transition section between the base of precalciner and the point gases exit the kiln. This condition further describes the tire feed mechanism as anticipated at the time the original air construction permit was issued. The final design of the tire feed mechanism is now complete, and incorporates the critical concepts of the originally anticipated design; i.e., the double airlock system.

The design of the tire feed mechanism is best described as:

OK

> Whole tires will be received from state approved tire collection facilities or state approved tire collecting companies, and unloaded onto a conveyer which transports the tires to an elevator, and then to a combination conveyer/scale for correct proportioning of tires and fossil fuel. The tires will then be fed into the preheater/kiln through a patented rotary feeder, which seals the tire entry point at the preheater kiln from the atmosphere. The feeder is powered by a variable speed hydraulic drive for the desired proportioning of tires to fossil fuel. The feeder is protected against exposure to excessive heat radiating from the preheater by an air operating, fast acting slide gate.

3.3 Beryllium Test Requirements.

The original Florida Rock Permit (AC 01-267311/PSD-FL-228) required initial emission measurements for beryllium and further specified that a beryllium emission limit (representing BACT) would be determined from the results of these emission measurements. As required by permit condition, Florida Rock conducted beryllium emission measurements on the kiln/raw mill stack on July 24, 2000, and reported a beryllium emission rate of 0.06 pounds per hour. This reported emission rate appeared anomalous, and as a result, Specific Condition 6.b.(new) in the draft Amended Air Construction Permit requires Florida Rock to conduct quarterly beryllium emission measurements on the kiln/raw mill stack during calendar year 2001 by March 31, June 30, September 30, and December 31.

In compliance with this anticipated condition, Florida Rock conducted the first quarterly beryllium emission measurements on the kiln/raw mill stack on February 6-7, 2001. The results of these emission measurements demonstrated a beryllium emission rate of 0.000046 pounds per hour. This emission rate is nominally 1000 times lower than the emission rate reported for the July 24, 2000 emission measurements.

Suspecting a possible laboratory error, the laboratory that conducted the beryllium analyses on both sets of samples (Flowers Chemical Laboratories, Inc., Altamonte Springs, Florida) was contacted and asked to review both sets of data. Flowers responded that they had mistakenly reported the July 24, 2000 sample beryllium weights as milligrams of beryllium rather than the correct weight in micrograms. This accounts for the anomolous beryllium emission rate reported for the July 2000 test. The correct beryllium emission rate for the July 24, 2000 test should have been 0.000062 pounds per hour. This compares with the emission rate measured in February 2001 of 0.000046 pounds per hour.

Even at the emission rate of 0.000062 pounds per hour, the beryllium emissions from the FRI plant would be in the range of 0.5 pounds per year assuming the plant operated 100% of the time. This is less than the emission rate of 0.8 pounds per year which had been the PSD significant emission rate threshhold for beryllium prior to this metal being delisted. (See Draft Amended Air Construction Permit, Technical Evaluation and Preliminary Determination, page 3).

As a result of the fact that beryllium has been delisted as a PSD pollutant, Florida Rock requests that the requirement for a beryllium emission limit be deleted from all permits. As a basis for this request, we cite an EPA Guidance Memo dated March 11, 1991 addressing the 1990 amendments to the Clean Air Act as they relate to beryllium and other PSD pollutants that were delisted. In part, the guidance memo states that:

> "...States with an approved PSD Program may continue to regulate the ... air pollutants now exempted from Federal PSD... if the State PSD regulations provide an independent basis to do so..."

The Florida Air Rules do not regulate beryllium. As a result FRI requests that the Department remove the beryllium emission limit from all permits. This request is consistent with the referenced EPA Guidance Memo which states:

> "...For Federal PSD permits containing PSD requirements for the pollutants exempted [such as beryllium]...issued on or after November 15, 1990, the permittee may request a revision (e.g., removal of a BACT limit .....) to their PSD permit to reflect the... exemption from Federal PSD applicabilities." (Emphasis added.)

Consistent with this Federal guidance, and the fact that Florida presently has no regulations pertaining to beryllium, Florida Rock makes this request.

4.0 Comments Related to Clarification

4.1 Clarification of Preheater Feed Rate

Florida Rock requests that the hourly preheater feed rate and the hourly and daily clinker production rates specified in both the draft Amended Air Construction Permit and the draft Title V Permit be specified as 30-day average rates. That is, the hourly preheater feed rate would be specified as 149.9 tons per hour, 30-day rolling average, the hourly clinker production rate would be specified as 95.8 tons per hour, 30-day rolling average, and the daily clinker production rate would be specified as 2,300 tons per day, 30-day rolling average. In calculating these 30-day rolling averages, times when the kiln system is not operating will be excluded; in other words, the 30-day rolling average periods will include only periods of time when the kiln system was operating.

With the annual clinker production limited to 712,500 tons per year, a condition which will not change, the annual emission caps cannot be exceeded. Additionally, Florida Rock will continue to comply with the maximum permitted emission limits for NOx, SO_2, and VOCs, and demonstrate compliance with the CEMS for these pollutants. Thus, the Department will have assurance that even with the production limits being determined on a 30-day rolling average basis, the maximum permitted emission rates for NOx SO_2 and VOCS will not exceed the maximum permitted rates specified by permit.

4.2 Clarification of Compliance Plan

The draft Amended Air Construction Permit will extend the expiration date of construction permits until March 31, 2001, and authorizes the replacement and/or addition of continuous monitoring equipment and the conversion of the kiln system to a low NOx multi-stage combustion calciner. The replacement and/or addition of continuous monitoring equipment and the conversion of the kiln system to the low NOx multi-stage combustion calciner is to be completed by December 30, 2001. Work on these projects occurring after March 31, 2001 (the expiration of the Amended Air Construction Permit) is authorized by the Compliance Plan in the Title V Permit.

Certain statements made in the draft Amended Air Construction Permit and the draft Title V Permit related to the extension of the Air Construction Permit and the Compliance Plan in the Title V Permit require clarifications. For example, in the Technical Evaluation and Preliminary Determination of the draft Amended Air Construction Permit (page 2, 4th paragraph) it is stated:

> Compliance with the NOx limit by December 31, 2001 will be confirmed by the continuous emission monitoring system (CEMS). The [Amended Air Construction] Permit will be extended until March 31, 2001 to allow conversion of the precalciner, conduction additional fine-tuning, and provide the Department an FRI with time to review the results. This review may allow the Department to exercise the condition in Table II of the Permit to, "revise the [NOx] limit to less than 2.8 lbs/ton clinker (30-day rolling average) based on compliance test and continuous emission monitoring data."

It is quite apparent that if compliance with the NOx emission limit of 2.8 pounds per ton of clinker is not required until December 31, 2001, the review

of monitoring data and the Department's review of the permit limit can certainly not be completed by March 31, 2001. The earliest possible date for collecting and reviewing NOx emission data once the 2.8 lbs/ton of clinker NOx limit becomes effective would be March 31, 2002. This same date discrepancy appears in revised Table II of the draft Amended Air Construction Permit.

Both draft permits should be reviewed and references to the extended expiration date of the Air Construction Permit (March 31, 2001), the date for NOx Compliance Demonstration (December 30, 2001) and the date for reviewing NOx CEM data following the December 30, 2001 compliance date (March 31, 2002) need to be clarified. These dates should specifically be clarified in the Compliance Plan of the draft Title V Permit.

* * * * *

We appreciate your consideration of these comments. If there are questions, or if further information is required regarding these comments, please do not hesitate to contact me at 352-377-5822.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:jhm

C: Al Linero, FDEP Tallahassee
Scott Sheplak, FDEP Tallahassee
Chris Kirts, FDEP Jacksonville
Fred Cohrs, Florida Rock, Jacksonville
Cary Cohrs, Florida Rock, Newberry
Segundo Fernandez, OHFC
Tim Atkinson, OHFC

ALACHUA COUNTY
ENVIRONMENTAL PROTECTION DEPARTMENT

201 SE 2nd Avenue, Suite 201 • Gainesville, Florida 32601
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March 21, 2001

Mr. Clair Fancy, P.E., Bureau Chief
Division of Air Resources Management
Florida Department of Environmental Protection
111 S. Magnolia Drive, Suite 23
Tallahassee, Florida 32301

Re: Florida Rock Industries, Inc., Thompson S. Baker Cement Plant
DEP File No. 0010087-003-AC/PSD-FL-228-A (Draft Title V Construction Permit Modification No. 0010087-003-AC and Operation Permit No. 010087-002-AV)

Dear Mr. Fancy:

Alachua County would like to respond to the comments provided to you by Dr. John Koogler in his letter of March 8, 2001 regarding the above-referenced draft permits.

1) The proposed continuous emission monitoring may show hour-to-hour variations in VOC emissions. However, the lack of detail in the reporting procedures for the continuous emission monitoring does not provide reasonable assurance of compliance with volatile organic compounds (VOC) emission limits. Alachua County requests that one-hour averages of VOC continuous emission monitoring results be reported.

2) The proposal to report only a rolling 30-day average of the continuous VOC monitoring results strips the data of useful detail, making it helpful only in detecting long term trends well after the trends have begun to occur. In order to discern trends in the data, a rolling 24-hour average should be computed in addition to reporting the 1 hour averages.

3) Alachua County requests that all continuous emission monitoring results be provided and made accessible to the public as real-time data converted to terms that equate to the emission limits established in the permits.

4) The plant has apparently been unsuccessful in burning tires to date. The County is concerned that the described mechanism for injecting tires, the indistinct limits on the amount of tires that may be burned, and lack of clarity as to what tests must be performed before allowing burning of tires fail to provide reasonable assurance that tires may be safely burned in the plant

5) The plant operation process can be manipulated to emit less of a particular pollutant at the expense of emitting more of another pollutant. In order to assure that

this is not occurring, during additional testing, such as to verify VOC emissions or to allow burning of tires, Florida Rock should include testing for all of the pollutants of concern simultaneously.

6) Beryllium emissions were addressed in the construction permit. They should also be addressed in the operating permit and continue to be of concern until there is sufficient data to reasonably assure that beryllium emissions from this plant are not a significant problem for the area.

7) The County requests that the emission limits for mercury and total particulate matter (PM) be reduced to no more than 97 lbs. per year and 0.13 lbs. per ton of dry feed to the kiln, respectively, consistent with the similar Suwannee American Cement plant in Suwannee County.

8) Alachua County is opposed to reporting only rolling 30-day averages of hourly preheater feed rate and the hourly and daily clinker production rates. Such action will remove important detail from the record and obscure short-term exceedences of emission limits. Alachua County recommends that the averaging period be one hour for these two rates.

9) Alachua County has concerns regarding the definition of "times when the kiln is not operating" in computation of 30-day rolling averages because there are often significant releases associated with transient events that might be considered as "kiln is not operating". We recommend that the kiln be considered operating whenever feed or fuel is being provided to the unit.

10) The County agrees that a clearly defined timetable for compliance is important, and recommends the following schedule:

Installation of the continuous VOC monitoring system by June 1, 2001;
All additional construction related to the installation of the Multi-stage Combustion Calciner by September 30, 2001; and
All compliance testing for the Construction Permit Modifications completed and reported by December 31, 2001.

11) Alachua County believes that recent developments require that there be an additional permit condition providing a compliance schedule requiring modification of the Construction and Operating Permits to impose EPA emission limit(s) for fine particulate matter (smaller than 2.5 microns in effective diameter) immediately upon the date of implementation specified by EPA.

We look forward to meeting with FDEP, and Florida Rock Industries if available, at the earliest opportunity regarding the referenced permits and to discuss concerns raised in this letter.

Sincerely,

Chris Bird, Director
Alachua County Environmental Protection Department

cc: Douglas Beason, Esq.
Chris Kirtz, DEP Northeast District
Segundo J. Fernandez, Esq.
David C. Schwartz, Esq.

Reynolds, John

From: Reynolds, John
Sent: Monday, March 26, 2001 11:41 AM
To: Beason, Doug
Subject: RE: FRI

Last Thursday John Koogler and I discussed his March 16 memo summarizing the meeting on March 14. He agreed to submit a followup memo clarifying the following:
1. How emissions will be calculated on a mass basis from the concentration measurements (without requiring an oxygen monitor).
2. FRI's definition of "...when the kiln is not operating" (for calculating 30-day average).
3. Short-term "cap" to be incorporated with the 30-day average VOC limit (see Alachua County's March 21 response to Koogler's letter).
4. Inclusion of language requiring advance declaration of the feed-to-clinker ratio prior to emission testing.

I expect to receive his followup memo this week.
JR
-----Original Message-----
From: Beason, Doug
Sent: Monday, March 26, 2001 9:08 AM
To: Fancy, Clair; Reynolds, John; Linero, Alvaro; Kirts, Christopher
Subject: FRI

Good Morning. Where do we stand with respect to our agreed revisions to the PSD permit? It is my understanding that we (DARM) will issue a letter reflecting the agreed changes. Will the NED issue a separate letter with respect to the Title V? I received an e-mail from the NED but I assume that FRI will want something a little more formal.

Douglas Beason

Reynolds, John

From: Linero, Alvaro
Sent: Friday, May 04, 2001 4:59 PM
To: 'jkoogler@kooglerassociates.com'
Cc: Maybin, Leslie; Reynolds, John; Beason, Doug
Subject: Latest version of FRI permit modification

I took another look at the modification and here is (hopefully) the last version.

I added Performance Spec 6 that applies for Continuous Emission RATE Monitoring Systems (CERMS). It includes a requirement for a flow sensor. I note that FRI already certified a flow sensor in accordance with Performance Spec 6.

Performance Spec 8A discusses the options for hydrogen mixes. It also requires a flame ionization detector so I did not mention it specifically. The

Total hydrocarbons will be fine. Basically the monitor is a total hydrocarbon monitor reporting emission rates as propane.

I included 30-day averaging but with a requirement that we can see what happens on a daily basis.

The compliance method remains an annual stack test using Method 25 or 25A and converting the results to mass basis.

Table II is back to what it was before!

Attached is literature about the Bernath Atomic instrument that I understand both Suwannee and FRI will use.

Thank you. Al Linero.


PERMOD2.doc


TableII.xls


THCCEMS1.pdf


THCCEMS2.pdf

DRAFT

Date

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC (PSD-FL-228A)
Newberry Cement Plant – Permit Modification

Dear Mr. Baker:

The Department reviewed your July 17, 2000 request and the additional information subsequently submitted to extend and modify the referenced construction permit.

The existing permit also requires that the Department set certain emission limits based on test data. The Department has received sufficient data to set the final sulfuric acid mist limit, but does not yet have sufficient data to set final sulfur dioxide and beryllium limits.

The existing permit it hereby modified as follows:

EXPIRATION DATE

The expiration date is hereby extended until June 30, 2001. All physical construction required to make cement and to conduct initial testing is complete. This permit modification authorizes further work only for replacement or addition of continuous emission monitoring equipment and conversion of the precombustor to a Low NO_X Multi-Staged Combustor (MSC) to meet the lower nitrogen oxides emission limit as described in Table II of the original permit.

All additional construction related to installation of the MSC and short-term compliance testing for NO_X shall be completed by December 31, 2001. All compliance testing related to operation of the MSC to determine final long-term NO_X emission limits shall be completed by March 31, 2002.

SPECIFIC CONDITION 4 (First Paragraph)

Fuels fired in the pyroprocessing system (kiln and combustor) shall not exceed a total maximum heat input of 364 MMBtu/hr and shall consist only of coal, (usage rate shall not exceed 14.0 TPH), whole tires, propane, and unused No. 2 fuel oil which may also be fired in the Raw Mill Air Heater. Propane usage is limited to startup and in lieu of tires in the first stage of the MSC. All fuel usage shall be in compliance with the following limits and conditions: [Rule 62-210.200(225), F.A.C.]

SPECIFIC CONDITION 6 (Modified)

With respect to conducting manual stack tests, the relevant language in Specific Condition 6 is modified as follows:

The manual stack tests shall be conducted while firing both primary fuels at permitted capacity (70 to 100% coal and 0 to 30% tires) and while all continuous monitoring systems are functioning properly, and with all process units operating at their permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the units are so limited, then operation at higher capacities (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310(2)(b), F.A.C.]

If the kiln is tested while firing less than 30% tires, subsequent operation is limited to 110% of the percentage of tires burned during the test, not to exceed 30% of the total heat input. Once the kiln is so limited, then operation at greater tire burning rates (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. Operation at greater tire burning rates (with prior notification provided to the Department) is also allowed for no more than 45 consecutive days in conjunction with installation and testing of the MSC. [Rule 62-297.310(2)(b), F.A.C.]

SPECIFIC CONDITION 6, TABLE II (Revised)

The final H_2SO_4 emission limit and the final date for compliance with the lower NO_X limit of 2.8 pounds per ton of clinker is shown in Revised Table II.

SPECIFIC CONDITION 6.a. (New)

Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system (CEMS) in the kiln/raw mill stack to measure and record the emissions of total hydrocarbons (THC as propane). The CEMS shall be installed, certified, operated and maintained in accordance with Performance Specification 8A of Appendix B, 40 CFR 60. The CEMS shall be used in conjunction with a flow rate sensor certified in accordance with Performance Specification 6 of Appendix B, 40 CFR 60 to calculate THC emission rates. The owner or operator shall report no later than the 10th day following each calendar quarter a summary of the 30-day rolling average THC emission rates reported by the CEMS for the days of that calendar quarter to the Department's Northeast District Office. The daily averages used to compute the 30-day rolling averages shall also be provided in the summary. These results should be reported as pounds per hour of THC, and pounds of THC per ton of clinker. [Rule 62-4.070, F.A.C.]

SPECIFIC CONDITION 6.b. (New)

Permittee shall conduct quarterly beryllium tests on emissions from the kiln/raw mill stack by June 30, September 30, and December 31, 2001 using the methods described in Specific Condition 6. Test reports shall be submitted to the Department's Northeast District Office and the Bureau of Air Regulation in Tallahassee within 45 days after conducting the tests. [Rules 62-212.400 and 62-4.070, F.A.C.]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District

Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

John D. Baker, FRI*
Fred W. Cohrs, FRI
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
Rob Luna, NCFGP*
Chris Bird, Alachua County EPD
W. Douglas Beason, Esq., DEP OGC
James J. Konish, Esq., FPLW*
Segundo J. Fernandez, Esq., OHF&C*
Arthur Saarinen*
Chair, Alachua County Commission*

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) (Date)

Revised Table II
Allowable Emissions
Florida Rock Industries

Pollutant	Bact Emission Limit		Emission Rate *		Basis
	lb/ton clinker	lb/ton dry feed	lb/hr	ton/yr	
PM (kiln)	0.31	0.20	30.00	110.50	BACT
PM_{10} (kiln)	0.26	0.17	25.50	93.93	BACT
PM (cooler)	0.16	0.10	14.99	55.70	BACT-NSPS
PM_{10} (cooler)	0.13	0.09	12.71	47.34	BACT
SO_2 (kiln)+	0.28	0.18	28.82	108.55	BACT
NO_x (kiln)**	2.80	1.80	268.30	1018.00	BACT
H_2SO_4 (kiln)	**0.0025**	**0.0016**	**0.25**	**1**	BACT
CO (kiln)	3.60	2.30	346.38	1288.60	BACT
VOC (kiln)	0.12	0.08	11.55	42.90	BACT
Beryllium	TO BE DETERMINED BY FUTURE STACK TESTS				BACT

Notes:

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

** ~~During the first two years~~ Aafter startup and until December 30, 2001, the kiln shall not exceed a NO_x limit of 3.8 lb/ton clinker and 2.8 lb/ton clinker thereafter. The Department may revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on compliance test and continuous emission monitoring data to be submitted by March 31, 2001.

\+ The Department may revise the SO_2 limit to less than 0.28 lb/ton clinker based on compliance test and continuous monitoring data.

BERNATH ATOMIC®

COMPLIANCE REPORT

The EPA 25A Method and hydrocarbon analyzers of Bernath Atomic®.

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EPA25ComplianceReport.pdf

Preamble:

A protection of the environment requires measuring equipment to quantify emissions. First steps to measure emissions were made in the U.S.A. and in Germany in the end of the sixties. Several instrument manufacturers developed new instruments or modified pollution analyzers for emission monitoring. Analytical instruments have measuring errors of up to 10 times and more of the errors of pure electronic measuring equipment as voltmeter and frequency meter. The reason for this lays in the physics: for measuring a concentration a converter (detector) from the concentration to an electrical signal is necessary. The properties of these detectors depend and vary from manufacturer to manufacturer on geometry and construction.

At the beginning of the environmental control in the U.S.A. and in Germany each instrument monitored more or less different concentration values. Therefore, the governments of these states issued guidelines and standards for emission monitoring equipments.

In Germany a unique regulation is in force: the requirements for the instruments are strictly defined by the Federal Ministry of Environment. For a type's approval only 6 institutes are certified, these are the TÜVs (German Technical Control Association), and the customer is only allowed to use analyzers which are certified by the TÜV.

In the U.S.A. the rules are not as strict: the U.S. Environmental Protection Agency (EPA) developed measuring methods for environmental monitoring and the industry has to apply to it. The manufacturer of measuring equipments must guarantee the quality in compliance with the EPA-Rules. The technical requirements for measuring equipment are the same as in Germany or even more moderate.

In the European Community no common regulations are valid today. The European Committee for Standardisation (CEN = Comité Européen de Normalisation) is working on the definition of a standard for measurement of stationary source emissions. The draft of this standard was worked out by the Commission Air Pollution Control (KRdL) of the German Engineers Association (VDI) and German Industrial Standard (DIN).

Other countries in the world are expected to participate in the US-EPA or in the German rules, but the latter is not likely because the costs for certification of one type of instrument are roughly about 70,000.00 US $.

Summary:

- all certified instruments in Germany are in compliance with US-EPA Methods.

- sooner or later everywhere in the world suitable instruments will be used only.

- by using certified instruments made in Germany the customer has no risks for later on.

The EPA 25A Method was developed by the U.S. Environmental Protection Agency (EPA) for measuring hydrocarbons. This method prescribes the measuring equipment including the sample conditioning and the requirements to measure the mass concentration of total gaseous organic carbon concentrations in flue gases and the application of those in practice.

This report contains the description of the above mentioned method itself, written in italics, and the report informations about the BERNATH ATOMIC® components.

METHOD 25A-DETERMINATION OF TOTAL GASEOUS ORGANIC CONCENTRATIONS USING A FLAME IONISATION ANALYZER.

1. Applicability and Principle.

1.1 Applicability: This method applies to the measurement of total gaseous organic concentration of vapors consisting primarily of alkanes, alkenes, and/or arenes (aromatic hydrocarbons). The concentration is expressed in terms of propane (or other appropriate organic calibration gas) or in terms of carbon.

1.2 Principle: A gas sample is extracted from the source through a heated sample line, if necessary, and a glass fiber filter to a flame ionisation analyzer (FIA). Results are reported as volume concentration equivalents of the calibration gas or as carbon equivalents.

BERNATH ATOMIC® is extracting the sample through a heated sample line and uses a filter to a FIA, or is applying the inline solution (US-Pat.No.:4 342 234), and provides suitable, type approved FIA analy-zers for portable and stationary applications:
Model 3006 portable
Model 3001 stationary, inline
Model 3002 stationary, with heated line
Model 9900 stationary, with heated line
Model EuroFID(TM) stationary (new model, replacing the models 3001 and 3002)

2. Definitions.
2.1 Measurement system: The total equipment required for the determination of the gas concentration. The system consists of the following major subsystems:

2.1.1.Sample Interface: That portion of the system that is used once or more for the following: sample acquisition, sample transportation, sample conditioning or protection of the analyzer from the effects of the stack effluent.

2.1.2. Organic Analyzer: That portion of the system that senses organic concentration and generates an output proportional to the gas concentration.

2.2 Span Value: The upper limit of a gas concentration measurement range that is specified for affected source categories in the applicable part of the regulation. The span value is established in the applicable regulation and is usually 1.5 to 2.5 times the applicable emission limit. If no span value is provided use a span value equivalent to 1.5 to 2.5 times the expected concentration. For convenience, the span value should correspond to 100 percent of the recorder scale.

2.3 Calibration Gas: A known concentration of a gas in an appropriate diluent gas.

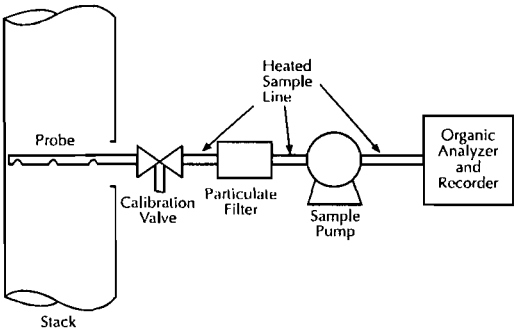
2.4 Zero Drift: The difference in the measurement system response to a zero level calibration gas before and after a stated period of operation during which no unscheduled maintenance, repair or adjustment took place.

2.5 Calibration Drift: The difference in the measurement system response to a mid-level calibration before and after a stated period of operation during which no unscheduled maintenance, repair or adjustment took place.

2.6 Response Time: The time interval from a step change in pollutant concentration at the inlet to the emission measurement system to the time at which 95 percent of the corresponding final value is reached as displayed on the recorder.

2.7 Calibration Error: The difference between the gas concentration indicated by the measurement system and the known concentration of the calibration gas.

3. Apparatus: A schematic of an acceptable measurement system is shown in Figure 25A-1. The essential components of the measurement system are described below:



3.1 Organic Concentration Analyzer: A flame ionization analyzer (FIA) capable of meeting or exceeding the specifications in this method. Please see the listed analyzer under item 1.2

3.2 Sample Probe: Stainless steel or equivalent, three-hole rake type. Sample holes shall be 4 mm in diameter or smaller and located at 16.7, 50 and 83.3 percent of the equivalent stack diameter. Alternatively, a single opening probe may be used so that a gas sample is collected from the centrally located 10 percent area of the stack cross-section.

3.3 Sample Line. Stainless steel or Teflon(R) tubing to transport the sample gas to the analyzers. The sample line should be heated, if necessary, to prevent condensation in the line.

BERNATH ATOMIC® provides both Teflon® and stainless steel tubing heated lines according to the application.
The maximum temperature for Teflon® is 200 degrees C and for stainless steel 220 degrees C.
Standard lenghts are 3 and 5 m. Individual lenghts are possible for up to 30 m in steps of 1 m. All heated lines and FIAs contain temperature regulators and temperature control units for heated lines.

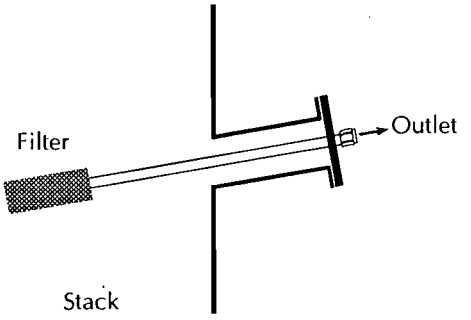
3.4 Calibration Valve Assembly: A three-way valve assembly to direct the zero and calibration gases to the analyzers is recommended. Other methods, such as quick-connect lines, to route calibration gas to the analyzers are applicable.

BERNATH ATOMIC® is not using a calibration valve assembly because it has to be heated, it contains moving parts and it is not protected against sample particle deposition. Therefore this part is susceptible to maintenace.

BERNATH ATOMIC® provides another suitable and maintenace free method. It is described below item 3.5.

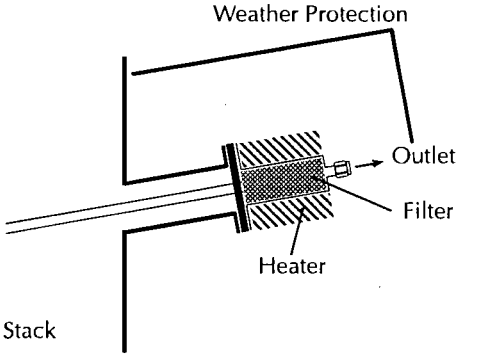
3.5 Particulate Filter: An in-stack or an out-of-stack glass fiber filter is recommended if exhaust gas particulate loading is significant. An out-of-stack filter should be heated to prevent any condensation.

BERNATH ATOMIC® offers both in-stack and out-of-stack heated prefilters. Filter materials are glass fibre and sintered stainless metal.



The in-stack prefilter has the advantage that no heating is necessary but it is not recommended to use it at stack temperatures higher than 400 degrees C, or if the stack is saturated with steam, like for example the exhaust of spray towers.

This restriction exists because above 400 degree C the cindering process of metals is beginning and in case of saturated stack the temperature of the sample is usually not higher than 40 to 70 degrees C, but the surface of the in-stak prefilter will be covered up by water drops.



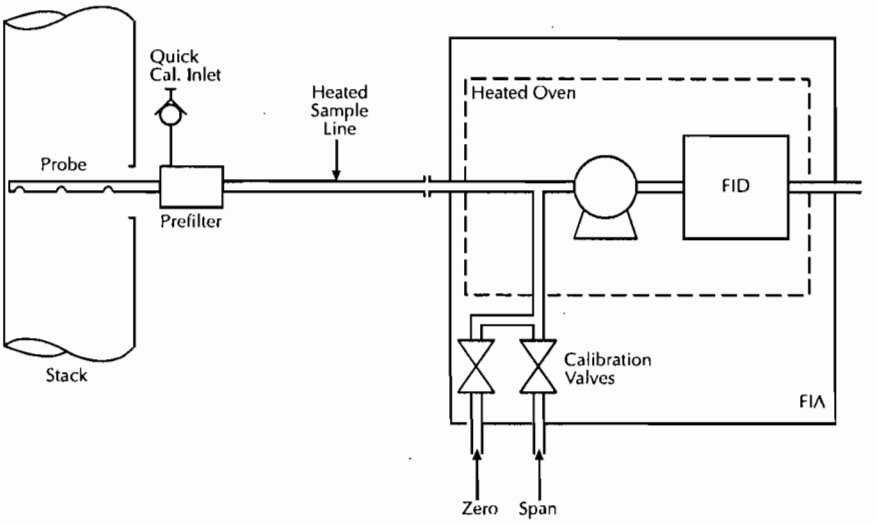
Out-of-stack filters will be used at temperatures from ambient temperature to 1300 degrees C. Disadvantages are the costs for heating and weather protection for the heating.

The probe of out-of-stack filter has materials depending on the stack:

saturated, up to 90 degrees C:
plastic (PVDF)
up to 600 degrees C:
stainless steel
upt to 900 degrees C:
hastelloy
up to 1300 degrees C:
kanthal

The BERNATH ATOMIC® out-of-stack prefilters have a quick connection which allows to check the sample way including prefilter for possible blockage.

All BERNATH ATOMIC® hydrocarbon analyzers contain a heated sample pump. Ahead of the sample pump there is a calibration connection. The equipment will be calibrated by setting of the zero and span gas solenoid valves.
The calibration gas volume is more than the supply of the sample pump. During the calibration the overflow is running back through the prefilter in the stack. This calibration method is giving correct results as long as the prefilter hasn't got a hang up effect, i.e. a part of hydrocarbons is setting on the surface of the filter with the result that the monitored value is below the true one.



This effect is rare and the check of it is simple by means of the quick connect of the prefilter.

Results are that the sample and calibration system of BERNATH ATOMIC® is conform to the Method 25A and has the advantage that calibration valves must not be heated and they are protected against particle deposition.

3.6 Recorder: A strip-chart recorder, analog computer, or digital recorder for recording measurement data. The minimum data recording requirement is one measurement value per minute. Note: This method is often applied in highly explosive areas. Caution and care should be exercised in choice of equipment and installation.

All BERNATH ATOMIC® FIAs have analog voltage and current outputs in industry standards like 0 to 10V,0 to 20mA or 4 to 20mA. Therefore the connection of any recorder is possible.

In addition to the FIA the EuroFIDTM has an internal digital data recorder.

4. Calibration and Other Gases: Gases used for calibrations, fuel and combustion air (if required) are contained in compressed gas cylinders. Preparation of calibration gases shall be done according to the procedure in protocol No. 1 listed in Citation 2 of Bibliography. Additionally, the manufacturer of the cylinder should provide a recommended shelf life for each calibration gas cylinder over which the concentration does not change more than #2percent from the certified value. For calibration gas values not generally available (i.e., organics between 1 and 10 percent by volume), alternative methods for preparing calibration gas mixtures, such as dilution systems, may be used with prior approval of the Administrator.

Calibration gases usually consist of propane in air or nitrogen and are determined in terms of the span value. Organic compounds other than propane can be used following the above guidelines and making the appropriate corrections for response factor.

BERNATH ATOMIC® is generally using and recommending propane calibration gas.

For the calibration of any sample compound of any calibration gas the formula is making:

$$c_{vp} = c_{vk} * (n_k * r_k)/(n_p * r_p)$$

in which

c_{vp} stack compound concentration range of the FIA by volume (ppmv)

c_{vk} cal. gas concentration range of the FIA by volume (ppmv)

n_k number of C atoms in the cal. gas molecule

n_p number of C atoms in the stack compound molecule

r_k, r_p are response factors of the cal. gas and the stack compounds

The response factor of propane is 1. The number of C atoms in propane (C3H8) is 3 . If the calibration is done by means of propane, the formula is the following:

$$c_{vp} = c_{vk} * 3/(n_p * r_p)$$

Response factors are the specifical sensi-tivities of different compounds. They depend on the construction of the FIA and especially on the geometry of the flame ionisation detector. BERNATH ATOMIC® has for all its analyzers correct response factors, available for customers of the company. Further knowledge of calibration procedures is to be found in the FIA instruc-tion manuals.

4.1 Fuel: A 40 percent H2/60 percent He or 40 percent H2/60 percent N2 gas mixture is recommended to avoid an oxygen synergism effect that reportedly occurs when oxygen concentration varies significantly from a mean value.

The Method 25A was finished in 1983. In the meantime BERNATH ATOMIC® develo-ped new flame ionisation detectors, which do not need a mixture of fuel gas. The ope-ration by means of pure hydrogen has a major advantage: the costs for pure hydrogen are about 5 times less than for hydrogen/helium or nitrogen mixing fuel gases. Nevertheless the operation with mixed fuel gas is possible, too. For other fuel gas operations only the exchange of the detector nozzle and an adjustment on the flue gas flow is necesarry. All service bases of BERNATH ATOMIC® on the world are able to handle this job.

4.2 Zero Gas: High purity air with less than 0.1 parts per million by volume (ppmv) of organic material (propane or carbon equivalent) or less than 0,1 percent of the span value, whichever is greater.

BERNATH ATOMIC® offers a catalytic gas purifier to produce high purity air out of pressured air. With this unit, the customer is able to save a lot of money.

4.3 Low-level Calibration Gas: An organic calibration gas with a concentration equivalent to 25 to 35 percent of the applicable span value.

4.4 Mid-level Calibration Gas: An organic calibration gas with a concentration equivalent to 45 to 55 percent of the applicable span value.

4.5 High-level Calibration Gas: An organic calibration gas with a concentration equivalent to 80 to 90 percent of the applicable span value.

5. Measurement System Performance Specifications:

5.1 Zero Drift: Less than ±3 percent of the span value.

All BERNATH ATOMIC® FIA analyzers have a zero drift less than ±0.25 percent of the span value!

5.2 Calibration Drift: Less than ±3 percent of the span value.

All BERNATH ATOMIC® FIA analyzers have a span drift less than ±1.4 percent of the span value!

5.3 Calibration Error: Less than ±5 percent of the calibration gas value.

All BERNATH ATOMIC® FIA analyzers have a calibration error less than ±1.5 percent of the calibration gas!

6. Pretest Preparations:

6.1 Selection of Sampling Site: The location of the sampling site is generally specified by the applicable regulation or purpose of the test;i.e., exhaust stack, inlet line, etc. The sample port shall be located at least 1.5 meters or 2 equivalent diameters (whichever is less) upstream of the gas discharge to the atmosphere.

6.2 Location of Sample Probe: Install the sample probe so that the probe is centrally located in the stack, pipe, or duct and is sealed tightly at the stack port connection.

6.3 Measurement System Preparation: Prior to the emission test, assemble the measurement system following the manufacturer's written instructions in preparing the sample interface and the organic analyzer. Make the system operable.
FIA equipment can be calibrated for almost any range of total organics concentrations. For high concentrations of organics (>1.0 percent by volume as propane) modifications to most commonly available analyzers are necessary. One accepted method of equipment modification is to decrease the size of the sample to the analyzer through the use of a smaller diameter sample capillary. Direct and continuous measurement of organic concentration is a necessary consideration when determining any modification design.

6.4 Calibration Error Test: Immediately prior to the test series, (within 2 hours of the start of the test) introduce zero gas and high-level calibration gas at the calibration valve assembly. Adjust the analyzer output to the appropriate levels, if necessary. Calculate the predicted reponse for the low-level and mid-level gases based on a linear response line between the zero and high-level responses. Then introduce low-level and mid-level calibration gases successively to the measurement system. Record the analyzer responses for low level and mid-level calibration gases and determine the

differences between the measurement system responses and the predicted responses. These differences must be less than 5 percent of the respective calibration gas value. If not, the measurement system is not acceptable and must be replaced or repaired prior to testing. No adjustments to the measurement system shall be conducted after the calibration and before the drift check (Section 7.3). If adjustments are necessary before the completion of the test series, perform the drift checks prior to the required adjustments and repeat the calibration following the adjustments. If multiple electronic ranges are to be used, each additional range must be checked with a mid-level calibration gas to verify the multiplication factor.

6.5 Response Time Test: Introduce zero gas into the measurement system at the calibratiion valve assembly. When the system output has stabilized, switch quickly to the high-level calibration gas. Record the time from the concentration range to the measurement system response equivalent to 95 percent of the step change. Repeat the test three times and average the results.

7. Emission Measurement Test:

7.1 Organic Measurement: Begin sampling at the start of the test period, recording time and any required process information as appropiate. In particular, note on the recording chart periods of process interruption or cyclic operation.

7.2 Drift Determination: Immediately following the completion of the test period and hourly during the test period, reintroduce the zero and mid-level calibration gases, one at a time, to the measuremnt system at the calibration valve assembly. (Make no adjustments to the measurement system until after both the zero and calibration drift checks are made.) Record the analyzer response. If the drift values exceed the specified limits, invalidate the test results preceding the check and repeat the test following corrections to the measurement system. Alternatively, recalibrate the test measurement system as in Section 6.4 and report the results using both sets of calibration data (i.e., data determined prior to the test period and data determined following the test period).

8. Organic Concentration Calculations:
Determine the average organic concentration in terms of ppmv as propane or other calibration gas. The average shall be determined by the integration of the output recording over the period specified in the applicable regulation.
If results are required in terms of ppmv as carbon, adjust measured concentrations using Equation 25A-1.
C_e = K Cmeas
Eq. 25A-1
Where:
C_e = Organic concentration as carbon, ppmv.
C_{meas} = Organic concentration as measured, ppmv.
K = Carbon equivalent factor.
K = 2 for ethane.
K = 3 for propane.
K = 4 for butane.
K = Appropiate response factor for other organic calibration gases.

9. Bibliography:

→ 1. Measurement of Volatile Organiic Compounds-Guideline Series. U.S. Environmental Protection Agency. Research Triangle Park, N.C. Publication No. EPA-450/ 2-78-041. June 1978. p. 46-54.

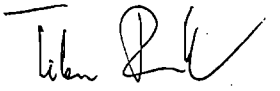
→ 2. Traceability Protocol for Establishing True Concentrations of Gases Used for Calibration and Audits of Continuous Source Emission Monitors (Protocol No. 1). U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory. Research Triangle Park, N. C. June 1978.

→ 3. Gasoline Vapor Emission Laboratory Evaluation-Part 2. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, N.C. EMB Report No. 75-GAS-6. August 1975.

SUMMARY: The BERNATH ATOMIC® FIAs are suitable equipment for hydrocarbon emission monitoring in compliance with Method 25A.

Wennigsen/Germany 11th August 1997

BERNATH ATOMIC GMBH&CO.KG



Remark: Teflon® is Registered Trademark of DuPont.

BERNATH ATOMIC®

HEATED TOTAL HYDROCARBON ANALYZER

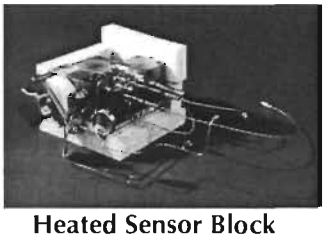
EuroFID™

Applications

The EuroFID™ is designed and constructed for continuous monitoring of total hydrocarbons in the air and in corrosive and condensable gases both in trace levels and concentrations of up to 100 percent by volume at process temperatures of up to 750 degrees C.

Process Monitoring and Control

The EuroFID™ measures the purity or quality of gases in production, controls the quality of raw materials (cleanliness of pre-products for respiratory auxiliary gases), or monitors the environment of production processes.
The equipment is able to detect the explosive gas atmosphere of high temperature solvent vapors, measuring a full range from far below the low explosion level (LEL) to above the high explosion level (HEL).
For measurment in hazardous locations requiring various safety precautions, the extensively equipped EuroFID-DUO guarantees reliable LEL monitoring.
The in-line type instrument is also suitable for outdoor installation in hazardous areas, as the instrument has an explosion-proof flame ionisation detector (FID) and is protected against spray water and natural elements.



Heated Sensor Block
EU-Patent No.: EP 0 344618

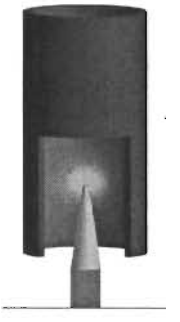
When integrated with a stripping unit, the EuroFID™ is also suitable for cooling and waste water monitoring.

Factory Monitoring

The health and safety of human resources in the workplace is essential. Approximately 85% of all toxic compounds can be measured at up to 1000 sample points with the EuroFID™ sample point scanner.

Emission Monitoring

EuroFID™ is ideally suited for continuous emission monitoring applications including power utilities, waste incinerator facilities, thermal and catalytic afterburners, activated carbon and spray towers and all other emission sources in compliance with Federal or State regulatory requirements including US EPA Method 25A.



Detector Geometry

The EuroFID-DUO measures raw inlet concentrations of gas purifiers and outlet concentrations of cleaned, scrubbed gas streams in exhaust stacks.

The instrument is also capable of measuring exhaust gases of combustion engines.

Benefits

Ultimate Technology

The culmination of internal and external research results is the development of the EuroFID™ as a state of the art instrument.

No Moving Parts - No Wear

The design of the EuroFID™ features no moving parts and therefore offers superior efficiency and long-life durability of internal parts. For example, the EuroFID™ sample pump, without mechanically moving parts, guarantees that only the sample gas will be moving through the instrument.

Detection Limit in the ppt Area

In contrast to conventional HC analyzers, the detection limit is reduced by a factor of ten since the baseline does not have the noise level of pressure fluctuations normally found with diaphragm sample pumps.

Integrated Sample Dilution

The standard EuroFID™ has a sample dilution ratio of 1:3. Therefore, particulate effects on the instrument are eliminated and maintenance requirements are minimal.

A prepared dilution rate of 1:10 or more makes it possible to measure concentrations of up to 100 Vol.%. Accordingly, the explosivity of flammable vapors can be measured at concentrations above the low explosion limit (LEL) without risk.

Optimal Detector Geometry

The location of the electrodes used to form the electric field of the FID are typically two half-cylinders or one full-cylinder with a bar electrode. Also, the research project[1] concludes that the correct geometry of the electrodes consists of a cylinder and the jet. For this reason, the EuroFID™ utilizes this intelligent solution.

Overpressure Method for Minimal Structural Failures

As a matter of principle, the sample is either pulled through or forced through the detector. In the first case, a vacuum is formed in the detector, and according to the research report[1], this method causes several hundred percent more structural failures than a FID with positive pressure sample delivery. As a result of this substantial research, the EuroFID™ employs the positive pressure method.

1. Final Report the Research Project: Improving the Method of Hydrocarbon Analysis, Hartmann & Braun, Dr. J.Staab, Dr. A.Kroneisen; Volkswagenwerk Dr. H. Klingenberg (Report can be acquired through Bernath Atomic)

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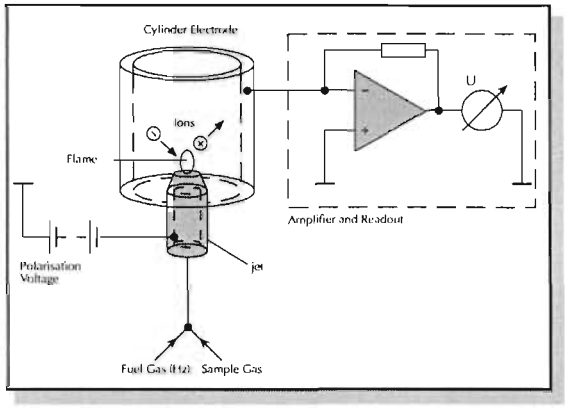
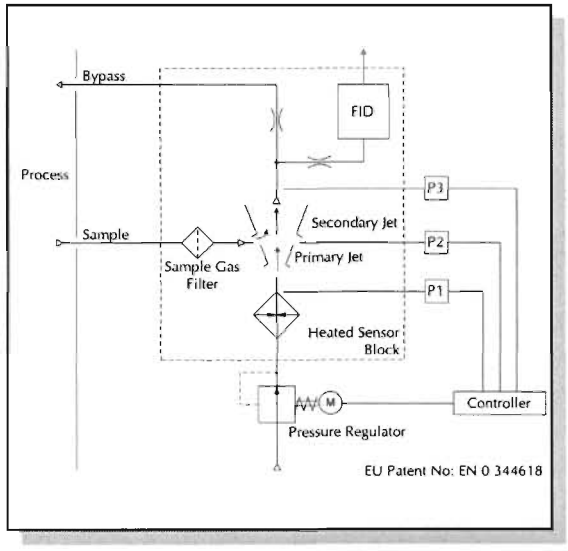
Measuring Principle



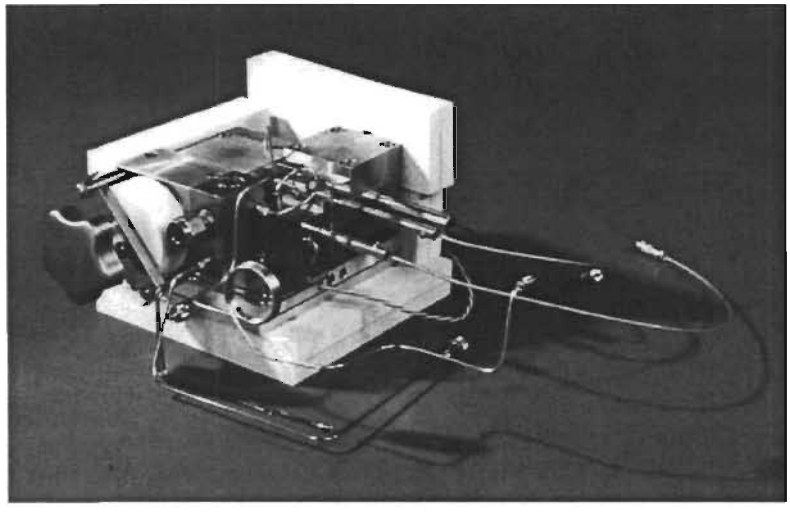
The gas concentration is converted into an electrical signal by means of a flame ionisation detector (FID). In the FID, a hydrogen flame burns in hydrocarbon-free air, called combustion air., An electric field is applied between jet and cylinder electrode by means of polarisation voltage. When the sample contains hydrocarbon molecules, they are heated in the flame and then cracked and stripped causing CH fragments to form. These fragments are oxidized by the oxygen in the combustion air and CHO^+ ions form. The ion current can be measured and is proportional to the quantity of carbon atoms of organic compounds.



The sample gas is pulled out of the process through the sample gas filter by means of a double stage jet. Sample gas is then diluted and compressed in the secondary jet paralled to the bypass. All parts of the sensor block in contact with sample gas are heated to a constant temperature.

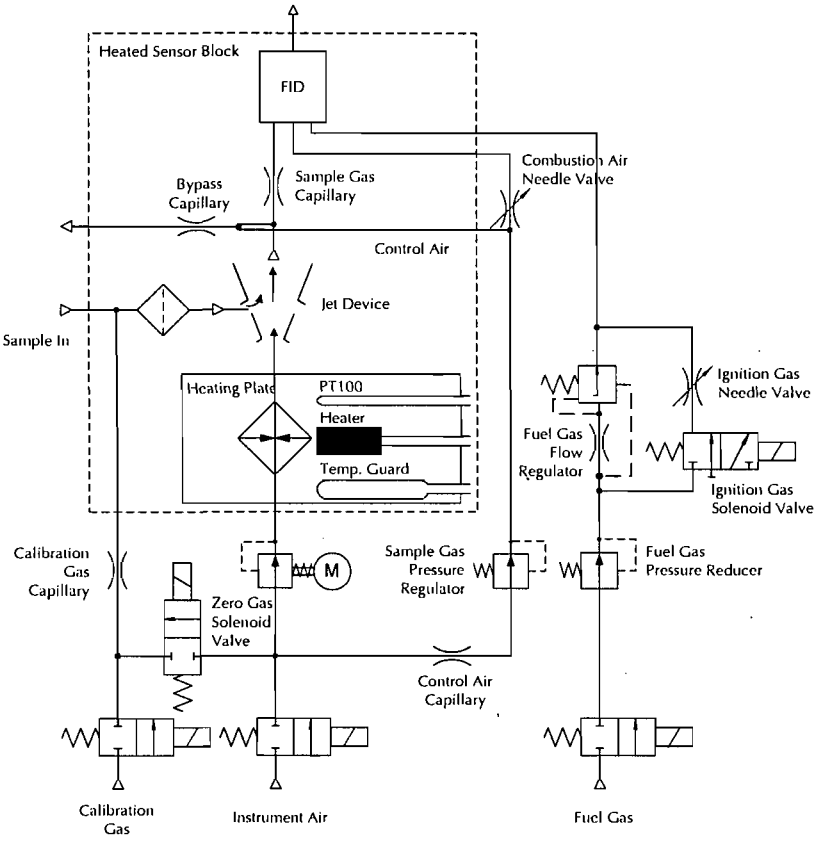
The dilution rate depends only on the pressures in the jet device. They are measured by pressure sensors P1, P2 and P3. The electrically adjustable pressure regulator is governed by a controller so that the dilution rate remains constant at variable sample input pressures.

The FID receives part of the diluted sample gas and continuously measures the concentration of hydrocarbons in this gas mixture.



Heated Sensor Block
EU-Patent No.: EP 0 344618

Function Principle of the EuroFID™



The double stage jet forces the constantly diluted sample back to the process through the bypass capillary. A portion of this is directed to the FID through the sample gas capillary. The fluctuation of the sample gas pressure on the inlet of both capillaries is balanced by the addition of control air. The control air circuit consists of the control air capillary and sample gas pressure regulator. Control air flow is inversely proportional to the sample gas flow. Flow compensation is limited by the control air capillary. If the flow of the control air is more than the limit, the increased pressure drop on the control air capillary reduces the input pressure of the sample gas pressure regulator and prevents the ability to hold a constant output pressure. The sample gas pressure drops and the continuous pressure sensor signals a failure.

During the calibration procedure two comparison gases - the zero and span gas - are fed to the sample input of the instrument through the zero and span gas solenoid valves.

The flow through the calibration gas capillary is higher than the suction power of the double stage jet. Therefore, the calibration gas overflow is fed back into the process during the calibration procedure and an accurate calibration is guaranteed.

The burner air flow is adjusted by the burner air needle valve.

The fuel gas flow is adjusted by the fuel gas pressure regulator and by the fuel gas flow regulator. The fuel gas flow is increased by opening the ignition gas solenoid valve during the flame ignition. The addition of fuel gas is adjusted by the ignition gas needle valve.

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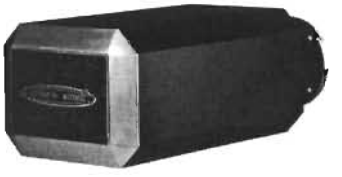
Modular Design

EuroFID™
Panel Mounting Type



EuroFID™
In-Line Analyzer Assembly

EuroFID™
I/O Terminal

EuroFID™
Remote Unit

Process
Control System

Printer

The EuroFID™ system is designed to be modular both electrically and mechanically, and consists of the analyzer assembly, the remote unit and the I/O terminal.

Analyzer Assembly

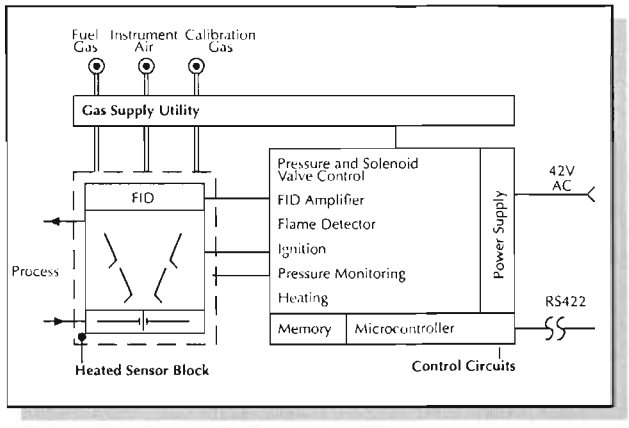
The analyzer assembly contains the heated sensor block, the gas supply section and the control circuitry.

The gas supply section supplies operating gases for ignition and continuous operation of the flame, constant sample dilution and delivery of zero and span calibration gases.

The control circuits contain an isolated power supply for all operating voltages. Analog and digital inputs and outputs in the analyzer assembly are processed by a microcontroller and provide data transfer via an isolated RS 422 serial output. All analyzer-specific data of the analyzer assembly, such as double stage jet characterisitics, are stored in the non-volatile memory.

The analyzer assembly is connected to the remote unit by means of the isolated RS 422 serial output

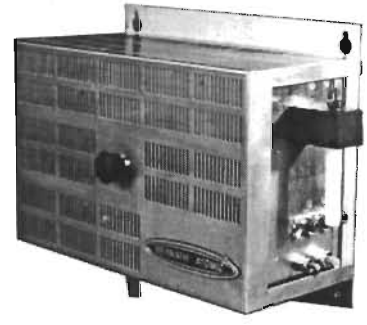
It is, however, possible to connect the unit to a computer instead of a remote unit and achieve a fieldbus connection.



In the explosion protected version, the heated sensor block is flameproof and a part of the control circuit is encapsulated to enhance the intrinsic safety.

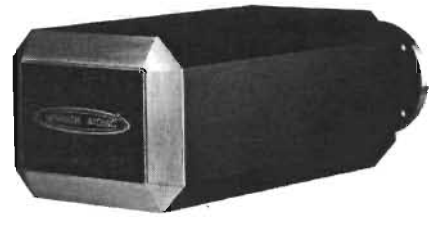
Panel Mounting Type Analyzer Assembly
This type is usually mounted on a rear cabinet panel. The sample is introduced to the analyzer via a heated sample line. This configuration allows creation of cost-effective continuous emission monitoring systems, if other components, such as CO, CO2 etc. require measurement.

Weight: 12,8 kg
Protection: IP 20
Ambient temperature: 0...40 degrees C
Dimensions: 401x340x188 (WxHxD in mm)



In-line Type Analyzer Assembly
This patented[2] instrument type is flanged directly to the process wall eliminating all typical sample processing components such as heated lines, prefilters and other devices. The extremely short sample tube results in a response time of less than 1.5 seconds.
Weight: 25kg
Protection: IP65
Ambient temperature: -20...50 degrees C
Dimensions: 273x210x540 (WxHxD in mm)
Flange: DN65; DIN 2573; pressure 6 bar

2: US Patent 4,432,234



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The Remote Unit

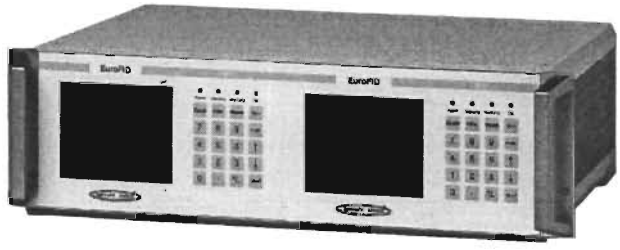
The remote unit was developed according to the proposal of the Standardisation Commission of the German Chemical Industry (NAMUR) and has all required features such as text-based menu controlled operation. Additional context sensitive information is available by means of the "help" key. The large backlight liquid cristal display and four light-emitting diodes (Alarm, Failure, Maintenance and Measure) offer the user complete measuring value and instrument status indications.

The remote unit is equipped, in addition to the analyzer assembly interface, with three other serial interfaces for connection to an I/O terminal or printer. For remote control a laptop or other computer and modem, or by a separate remote device can be used

The following operation modes are generally available for instrument functions:

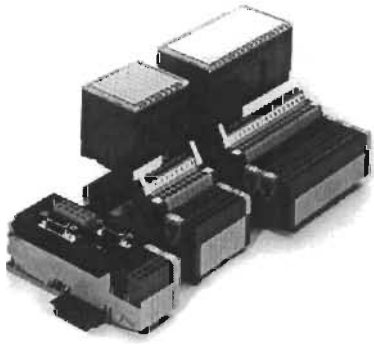
- manual
- fully automatic
- external control via I/O terminal
- external control via remote control

In addition to the operating functions, software is available for data processing such as averages, classification and storage (in preparation).



The remote unit has a 19 inch rack housing, height 3 units (133,5mm), depth 320mm. One rack can contain up to 2 remote units.

The I/O Terminal



The I/O terminal is an active assembly, electrically connected to the remote unit by RS 232C interface.

The I/O terminal has inputs and outputs as follows:

- sample point scanner, maximum 1000 sample points
- analog outputs, maximum 1000
- temperature control and observation, maximum 65 circuits
- change of product charge, maximum 32
- product counter for car manufacturing
- control mode internal/external
- control inputs for calibration and range select

The I/O terminal is mounted on a cabinet support rail and is equipped with clamp connections. Electromagnetic compatible inputs and outputs can be configured according to the requirements of the user. Traditionally expensive and complex hardware, like relays and other devices, are no longer necessary.

The EuroFID™ can be operated either manually, fully automatic by control of the I/O terminal, or by remote control via the RS232C interface.

The combination of the analyzer assembly and the remote unit, or additionally the I/O terminal, results in very cost-effective solutions for measuring applications.

If the inputs and outputs of the I/O terminal are not suitable, it is possible to connect a programmable logic controller (PLC) instead of the I/O terminal. With this design, absolute flexibility is guaranteed.

Not only are the internal instrument functions controlled by the EuroFID™ , but control of all connected peripheral units, such as gas supply up to the sample filter, are standard.

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Rack Mounting Type

The 19 inch rack mount instrument contains the analyzer assembly and remote unit. This model is designed for users desiring to replace old HC analyzers with the patented[1] state of the art EuroFID™ instrument.

Weight: 19kg
Protection: IP20
Ambient temperature: 0...40 degrees C
Dimensions: 483x133,5x400 (WxHxD in mm)

1: European Patent 0 344 618

Technical Data

Measurement properties

Optical readout:	4 1/2-digit, and bar graph
Range:	5 user defined ranges
◦ first range	1ppm C_3H_8 equivalent
◦ last range	100Vol%
Linearity:	up to 10.000 ppm ±1 % per decade, full range ±5%.
Detection limit:	< 1.5% of the meas. range value
Response time(90%):	< 1.5sec.
Reproducibility:	30 - 200
Zero drift:	< 0.5% of the meas. range value/month
Span drift:	< 2.8% of the meas. range value/month

Influence parameter

ambient air pressure:	< 0.5% of the meas. range value/10hPa
Sample pressure:	< 1.0% of the meas. range/10hPa
Ambient air temperature	
Zero value:	< 2% of the meas. range/10 K
Span value:	< 1% of the meas. range/10 K
Setup time:	< 1hour

Inputs and outputs of the remote unit

Analog outputs:	two 2 x 0/4...20 mA isolated, load resistor max. 500 Ohm
Binary outputs:	four isolated FET-switch, max. loading: AC/DC 24V 100mA for status outputs Measure, Failure, Calibration and Maintenance
Binary inputs:	three isolated inputs,control voltage 24V DC 10 mA for operation gas fault, calibration and maintenance locks
Analog inputs:	four 0/4...20 mA, isolated, for two complementary values and for two temperature values
Serial interfaces:	RS232c, isolated, for printer RS232c, isolated, for I/O terminal RS232c, isolated, for remote control (option fieldbus)

Sample gas

Pressure range:	atmospheric, ± 100hPa
Flow:	0.8l/min
Connection:	SS pipe, AD 6mm (panel mounting type)

Operation gases

Calibration gas:	depending on the measurement task approx. 80% HC-concentration propane equivalent of the measurement range in synthetic air, stored in a pressurized cylinder. Pressure: 3 bar, consumption: only during the calibration procedure, approx. 1.6l/min.
Instrument air:	from compressed air lines. The content of residual hydrocarbons has to be less than 0.5ppm without variation. The compressed air must be free of oils, fats and condensate(dew point -20 degrees Celsius). Pressure: 6 bar, consumption approx. 4l/min
Fuel gas:	pure hydrogen H_2 5.0 from pressurized cylinder. The residual hydrocarbon content required to be less than 0.5 ppm. Pressure: 3 bar, consumption: continuously, approx. 1.2 l/h
Gas connections:	1/8" NPT
Power supply:	AC 230V 48...63Hz or AC 120V 48...63Hz
Power consumption:	approximately 350 VA during setup and 90 VA in operation without a heated line

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187-00-09
May 9, 2001

Via Fax & USPS

Mr. Al Linero
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: **Florida Rock Industries**
Comments on Modified Permits 0010087-003-AC/PSD-FL-228A
as Received by Email Dated May 3, 2001.

Dear Al:

I have had the opportunity to review the above captioned permit modifications that you forward to me by email on May 4, 2001. I appreciate the opportunity to review the modifications and offer the following comments.

1. **EXPIRATION DATES**

The extension of the expiration date until June 30, 2001 is acceptable.

The date of December 31, 2001 for the completion of construction of all items related to the multi-stage combustor is acceptable. In my opinion, there is no need for the requirement for "short-term compliance for NO_X" as the above captioned permit (and original Permit AC01-267311) specifies that compliance with the NO_X emission standard is to be demonstrated by CEMS; there is no previous permit requirement for "short-term NO_X compliance testing." I suggest that the short-term compliance test reference be deleted, and to assure there is no confusion with the construction and compliance demonstration that will be authorized under the Title V permit, the following is suggested:

> All additional construction related to the installation of the MSC ~~and short term compliance testing for NO_x~~ shall be completed by December 31, 2001, under the compliance plan of the Title V Permit.

The date of March 31, 2002 for completion of compliance testing related to the operation of the MSC and the determination of the final long-term NO_X emission limit is acceptable.

2. **SPECIFIC CONDITION 4** (First paragraph)

The proposed language is acceptable.

3. **SPECIFIC CONDITION 6** (Modified)

The proposed language is acceptable.

4. **SPECIFIC CONDITION 6, TABLE II** (Revised)

The final sulfuric acid mist emission limit included in Table II (Revised) is acceptable.

It is my understanding that the final date for compliance with the NO_X emission limit of 2.8 pounds per ton of clinker as referenced in Table II (Revised) has been corrected to March 31, 2002.

5. **SPECIFIC CONDITION 6.a** (New)

Based upon our telephone conversations and my review of the proposed condition, I am suggesting the following language for SPECIFIC CONDITION 6.a.

SPECIFIC CONDITION 6.a. (New)

> Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system (CEMS) in the kiln/raw mill stack to measure and record the emissions of total hydrocarbons (THC as propane) to provide reasonable assurance that the facility will continue to meet the VOC emission limit established by permit.

This statement is added to specify that the THC CEMS is installed only to provide reasonable assurance of compliance with the VOC emission limit established by permit. This is in accordance with our telephone conversations and the basic agreement between Florida Rock and the Department in establishing conditions for the voluntary installation of the THC CEMS.

The remainder of Specific Condition 6.a. is acceptable, except that FRI requests that the quarterly reports be due the 15th day following the end of each calendar quarter. This will provide FRI with a bit more flexibility in providing the information to the Department. This reporting requirement is still much shorter than the 30 day reporting requirement established by Federal NSPS.

5. **SPECIFIC CONDITION 6.b (New).**

This condition is acceptable.

I appreciate the opportunity to comment on these proposed conditions. If there are any questions regarding these comments, please call me at 352-377-5822.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK/jm
cc: Fred Cohrs, FRI
Cary Cohrs, FRI
George Townsend, FRI
Segundo Fernandez, OHFC
Tim Atkinson, OHFC

Reynolds, John

From: Linero, Alvaro
Sent: Monday, May 07, 2001 9:21 AM
To: Reynolds, John
Subject: RE: FRI

John:

Thank you very much for your effort and for the comments. I think I understood these points before preparing the revised condition. Let's discuss at a convenient time.

Al Linero.

-----Original Message-----
From: Reynolds, John
Sent: Monday, May 07, 2001 8:44 AM
To: Linero, Alvaro
Subject: FRI

Just for the record, here are a couple of comments concerning the latest version.

Specification 8A discusses the options for fuels but doesn't tie it down specifically. It says "the fuel specified by the manufacturer should be used". Manufacturers typically leave this to the purchaser when the option between H2/He or pure H2 is available. In my opinion, we should go a step further and specify the H2/He fuel when we are dealing with processes involving variable rate burners such as cement kilns.

I didn't include Performance Specification 6 because it applies specifically to SO2 and NOx as does PS 2.For THC in a cement kiln, there are additional flow monitoring considerations (we have already discussed these). The recent EPA report on CEMS troubleshooting discusses the inherent biases from using a flow monitor without flue gas density correction.
Even though Method 25 or 25A will be used for compliance, the CEMS equation for calculating mass THC emissions should be specified in the permit since PS 8A reports only the concentration values.

Reynolds, John

From: Reynolds, John
Sent: Monday, May 07, 2001 8:44 AM
To: Linero, Alvaro
Subject: FRI

Just for the record, here are a couple of comments concerning the latest version.

Specification 8A discusses the options for fuels but doesn't tie it down specifically. It says "the fuel specified by the manufacturer should be used". Manufacturers typically leave this to the purchaser when the option between H2/He or pure H2 is available. In my opinion, we should go a step further and specify the H2/He fuel when we are dealing with processes involving variable rate burners such as cement kilns.

I didn't include Performance Specification 6 because it applies specifically to SO2 and NOx as does PS 2. For THC in a cement kiln, there are additional flow monitoring considerations (we have already discussed these). The recent EPA report on CEMS troubleshooting discusses the inherent biases from using a flow monitor without flue gas density correction.

Even though Method 25 or 25A will be used for compliance, the CEMS equation for calculating mass THC emissions should be specified in the permit since PS 8A reports only the concentration values.

Reynolds, John

From: Linero, Alvaro
Sent: Friday, May 04, 2001 4:59 PM
To: 'jkoogler@kooglerassociates.com'
Cc: Maybin, Leslie; Reynolds, John; Beason, Doug
Subject: Latest version of FRI permit modification

I took another look at the modification and here is (hopefully) the last version.

I added Performance Spec 6 that applies for Continuous Emission RATE Monitoring Systems (CERMS). It includes a requirement for a flow sensor. I note that FRI already certified a flow sensor in accordance with Performance Spec 6.

Performance Spec 8A discusses the options for hydrogen mixes. It also requires a flame ionization detector so I did not mention it specifically. The

Total hydrocarbons will be fine. Basically the monitor is a total hydrocarbon monitor reporting emission rates as propane.

I included 30-day averaging but with a requirement that we can see what happens on a daily basis.

The compliance method remains an annual stack test using Method 25 or 25A and converting the results to mass basis.

Table II is back to what it was before!

Attached is literature about the Bernath Atomic instrument that I understand both Suwannee and FRI will use.

Thank you. Al Linero.


PERMOD2.doc


TableII.xls

THCCEMS1.pdf

THCCEMS2.pdf

DRAFT

Date

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC (PSD-FL-228A)
Newberry Cement Plant – Permit Modification

Dear Mr. Baker:

The Department reviewed your July 17, 2000 request and the additional information subsequently submitted to extend and modify the referenced construction permit.

The existing permit also requires that the Department set certain emission limits based on test data. The Department has received sufficient data to set the final sulfuric acid mist limit, but does not yet have sufficient data to set final sulfur dioxide and beryllium limits.

The existing permit it hereby modified as follows:

EXPIRATION DATE

The expiration date is hereby extended until June 30, 2001. All physical construction required to make cement and to conduct initial testing is complete. This permit modification authorizes further work only for replacement or addition of continuous emission monitoring equipment and conversion of the precombustor to a Low NO_X Multi-Staged Combustor (MSC) to meet the lower nitrogen oxides emission limit as described in Table II of the original permit.

All additional construction related to installation of the MSC and short-term compliance testing for NO_X shall be completed by December 31, 2001. All compliance testing related to operation of the MSC to determine final long-term NO_X emission limits shall be completed by March 31, 2002.

SPECIFIC CONDITION 4 (First Paragraph)

Fuels fired in the pyroprocessing system (kiln and combustor) shall not exceed a total maximum heat input of 364 MMBtu/hr and shall consist only of coal, (usage rate shall not exceed 14.0 TPH), whole tires, propane, and unused No. 2 fuel oil which may also be fired in the Raw Mill Air Heater. Propane usage is limited to startup and in lieu of tires in the first stage of the MSC. All fuel usage shall be in compliance with the following limits and conditions: [Rule 62-210.200(225), F.A.C.]

SPECIFIC CONDITION 6 (Modified)

With respect to conducting manual stack tests, the relevant language in Specific Condition 6 is modified as follows:

Linero's

The manual stack tests shall be conducted while firing both primary fuels at permitted capacity (70 to 100% coal and 0 to 30% tires) and while all continuous monitoring systems are functioning properly, and with all process units operating at their permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the units are so limited, then operation at higher capacities (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310(2)(b), F.A.C.]

If the kiln is tested while firing less than 30% tires, subsequent operation is limited to 110% of the percentage of tires burned during the test, not to exceed 30% of the total heat input. Once the kiln is so limited, then operation at greater tire burning rates (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. Operation at greater tire burning rates (with prior notification provided to the Department) is also allowed for no more than 45 consecutive days in conjunction with installation and testing of the MSC. [Rule 62-297.310(2)(b), F.A.C.]

SPECIFIC CONDITION 6, TABLE II (Revised)

The final H_2SO_4 emission limit and the final date for compliance with the lower NO_X limit of 2.8 pounds per ton of clinker is shown in Revised Table II.

SPECIFIC CONDITION 6.a. (New)

Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system (CEMS) in the kiln/raw mill stack to measure and record the emissions of total hydrocarbons (THC as propane). The CEMS shall be installed, certified, operated and maintained in accordance with Performance Specification 8A of Appendix B, 40 CFR 60. The CEMS shall be used in conjunction with a flow rate sensor certified in accordance with Performance Specification 6 of Appendix B, 40 CFR 60 to calculate THC emission rates. The owner or operator shall report no later than the 10th day following each calendar quarter a summary of the 30-day rolling average THC emission rates reported by the CEMS for the days of that calendar quarter to the Department's Northeast District Office. The daily averages used to compute the 30-day rolling averages shall also be provided in the summary. These results should be reported as pounds per hour of THC, and pounds of THC per ton of clinker. [Rule 62-4.070, F.A.C.]

SPECIFIC CONDITION 6.b. (New)

Permittee shall conduct quarterly beryllium tests on emissions from the kiln/raw mill stack by June 30, September 30, and December 31, 2001 using the methods described in Specific Condition 6. Test reports shall be submitted to the Department's Northeast District Office and the Bureau of Air Regulation in Tallahassee within 45 days after conducting the tests. [Rules 62-212.400 and 62-4.070, F.A.C.]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District

Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

John D. Baker, FRI*
Fred W. Cohrs, FRI
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
Rob Luna, NCFGP*
Chris Bird, Alachua County EPD
W. Douglas Beason, Esq., DEP OGC
James J. Konish, Esq., FPLW*
Segundo J. Fernandez, Esq., OHF&C*
Arthur Saarinen*
Chair, Alachua County Commission*

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) (Date)

Revised Table II
Allowable Emissions
Florida Rock Industries

Pollutant	Bact Emission Limit		Emission Rate *		Basis
	lb/ton clinker	lb/ton dry feed	lb/hr	ton/yr	
PM (kiln)	0.31	0.20	30.00	110.50	BACT
PM_{10} (kiln)	0.26	0.17	25.50	93.93	BACT
PM (cooler)	0.16	0.10	14.99	55.70	BACT-NSPS
PM_{10} (cooler)	0.13	0.09	12.71	47.34	BACT
SO_2 (kiln)+	0.28	0.18	28.82	108.55	BACT
NO_x (kiln)**	2.80	1.80	268.30	1018.00	BACT
H_2SO_4 (kiln)	**0.0025**	**0.0016**	**0.25**	**1**	BACT
CO (kiln)	3.60	2.30	346.38	1288.60	BACT
VOC (kiln)	0.12	0.08	11.55	42.90	BACT
Beryllium	TO BE DETERMINED BY FUTURE STACK TESTS				BACT

Notes:

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

** ~~During the first two years~~ Aafter startup and until December 30, 2001, the kiln shall not exceed a NO_x limit of 3.8 lb/ton clinker and 2.8 lb/ton clinker thereafter. The Department may revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on compliance test and continuous emission monitoring data to be submitted by March 31, 2001.

\+ The Department may revise the SO_2 limit to less than 0.28 lb/ton clinker based on compliance test and continuous monitoring data.

Department of Environmental Protection

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

Jeb Bush
Governor

David B. Struhs
Secretary

DRAFT

May XX, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC (PSD-FL-228A)
Newberry Cement Plant – Permit Modification

Dear Mr. Baker:

The Department reviewed your July 17, 2000 request and the additional information subsequently submitted to extend and modify the referenced construction permit.

The existing permit also requires that the Department set certain emission limits based on test data. The Department has received sufficient data to set the final sulfuric acid mist limit, but does not yet have sufficient data to set final sulfur dioxide and beryllium limits.

The existing permit it hereby modified as follows:

EXPIRATION DATE

The expiration date is hereby extended until May 31, 2001. All physical construction required to make cement and to conduct initial testing is complete. This permit modification authorizes further work only for replacement or addition of continuous emission monitoring equipment and conversion of the precombustor to a Low NO_X Multi-Staged Combustor (MSC) to meet the lower nitrogen oxides emission limit as described in Table II of the original permit.

All additional construction related to installation of the MSC and short-term compliance testing for NO_X shall be completed by December 31, 2001. All compliance testing related to operation of the MSC to determine final long-term NO_X emission limits shall be completed by March 31, 2002.

SPECIFIC CONDITION 4 (First Paragraph)

Fuels fired in the pyroprocessing system (kiln and combustor) shall not exceed a total maximum heat input of 364 MMBtu/hr and shall consist only of coal, (usage rate shall not exceed 14.0 TPH), whole tires, propane, and unused No. 2 fuel oil which may also be fired in the Raw Mill Air Heater. Propane usage is limited to startup and in lieu of tires in the first stage of the MSC. All fuel usage shall be in compliance with the following limits and conditions: [Rule 62-210.200(225), F.A.C.]

SPECIFIC CONDITION 6 (Modified)

With respect to conducting manual stack tests, the relevant language in Specific Condition 6 is modified as follows:

The manual stack tests shall be conducted while firing both primary fuels at permitted capacity (70 to 100% coal and 0 to 30% tires) and while all continuous monitoring systems are functioning properly, and with all process units operating at their permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the units are so limited, then operation at higher capacities (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310(2)(b), F.A.C.]

If the kiln is tested while firing less than 30% tires, subsequent operation is limited to 110% of the percentage of tires burned during the test, not to exceed 30% of the total heat input. Once the kiln is so limited, then operation at greater tire burning rates (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. Operation at greater tire burning rates (with prior notification provided to the Department) is also allowed for no more than 45 consecutive days in conjunction with installation and testing of the MSC. [Rule 62-297.310(2)(b), F.A.C.]

SPECIFIC CONDITION 6, TABLE II (Revised)

The final H_2SO_4 emission limit and the final date for compliance with the lower NO_X limit of 2.8 pounds per ton of clinker is shown in Revised Table II. A 30-day rolling average for VOC emissions compliance by CEMS has also been established (see attached).

SPECIFIC CONDITION 6.a. (New)

Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system in the kiln/raw mill stack to measure and record the emissions of total hydrocarbons (THC) as the surrogate for VOCs limited by the permit. The CEM system shall be of the extractive type using flame ionization for monitoring THC. Fuel used for the flame ionization process shall consist of a hydrogen/ helium mix specified by the CEMS manufacturer. A compatible stack gas flow monitor shall also be installed. The system shall be installed, certified, operated and maintained in accordance with Performance Specification 8A of Appendix B of 40 CFR 60 and shall be quality assured using the procedures of Appendix F of 40 CFR 60. The permittee shall report no later than the 10th day following each calendar quarter a summary of the daily and the 30-day rolling average (covering only periods when raw meal is fed to the preheater) THC emissions reported by the CEMS system for the days of that calendar quarter to the Department's Northeast District Office. These results should be reported as pounds per hour (propane equivalence) and pounds per ton of clinker (propane equivalence) and shall be calculated according to the following method: [Rule 62-4.070, F.A.C.]

$$E_H = [PPMV_{P(WET)} * V_{SG}] * MW_P * (0.730 * T)^{-1}$$

$$E_C = [PPMV_{P(WET)} * V_{SG}] * MW_P * (0.730 * T)^{-1} * C^{-1}$$

Where,

E_H = pounds per hour (as propane)
E_C = pounds per ton clinker (as propane)
$PPMV_{P(WET)}$ = parts per million by volume wet (as propane)
V_{SG} = average actual volumetric stack gas flow rate based on gas density
MW_P = molecular weight of propane, 44
T = absolute temperature (degrees Rankine)
C = tons of clinker produced during period when emissions were generated

SPECIFIC CONDITION 6.b. (New)

Permittee shall conduct quarterly beryllium tests on emissions from the kiln/raw mill stack by June 30, September 30, and December 31, 2001 using the methods described in Specific Condition 6. Test reports shall be submitted to the Department's Northeast District Office and the Bureau of Air Regulation in Tallahassee within 45 days after conducting the tests. [Rules 62-212.400 and 62-4.070, F.A.C.]

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Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

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John Bunyak, NPS
Chris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
Rob Luna, NCFGP*
Chris Bird, Alachua County EPD
W. Douglas Beason, Esq., DEP OGC
James J. Konish, Esq., FPLW*
Segundo J. Fernandez, Esq., OHF&C*
Arthur Saarinen*
Chair, Alachua County Commission*

Clerk Stamp

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(Clerk) (Date)

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VOC (kiln)^	0.12	0.08	11.55	42.90	BACT
Beryllium	TO BE DETERMINED BY FUTURE STACK TESTS				BACT

Notes:

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

** ~~During the first two years~~ Aafter startup and until December 30, 2001, the kiln shall not exceed a NO_x limit of 3.8 lb/ton clinker and 2.8 lb/ton clinker thereafter. The Department may revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on compliance test and continuous emission monitoring data to be submitted by March 31, 2002.

\+ The Department may revise the SO_2 limit to less than 0.28 lb/ton clinker based on compliance test and continuous monitoring data.

^ Expressed as a 30-day rolling average only for periods when raw meal is fed to the preheater.

florida21

From: "florida21" <florida21@email.msn.com>
To: <jkoogler@kooglerassociates.com>
Cc: <alvaro.linero@dep.state.fl.us>; <martin.costello@dep.state.fl.us>;
Sent: Sunday, April 22, 2001 6:41 PM
Subject: Re: Florida Rock Industries

Thanks for your response to my e-mail. What I thought we had set out to accomplish is an acceptable method for calculating mass emissions that can be used in a cement kiln permit condition, rather than a demonstration that mass emissions are independent of diluent gas concentration. To calculate VOC mass emissions for a kiln on a sufficiently accurate basis to be used for compliance, more is involved than a simple conversion from stack gas VOC volume to mass.

To be accurate, a CEM and stack gas flow monitor must be specified and installed so as not to introduce biases from such conditions as concentration or velocity stratification or conflicting system components such as using line-averaging with ultrasonic sensors, etc. If the flow monitor is the type that doesn't determine the gas density in order to calculate the velocity (just measures temperature and assumes the molecular weight), bias is introduced into the mass calculation, particularly if the temperature profile is different from the velocity profile. Other considerations are involved such as the fuel used for the FID. I'm sure you're far more up to date on this than I am, but I remember a number of years ago when I was working in industry we found that hydrogen fuel (which at that time was universally used) can give erroneous readings in applications where the O2 content does not remain essentially constant. This would not cause much concern for a base-loaded boiler but it could for a cement kiln. In this case, H2/He fuel (though more expensive) will provide a substantial improvement in accuracy.

In regard to our discussion on the F-factor correction, consider the reasons for including diluent corrections for the criteria pollutants and the similarity with the potential for erroneous VOC mass determinations where an assumption of the composition and molecular weight of VOCs is involved. Diluent corrections were included for criteria pollutants to make actual concentrations comparable to a reference concentration thereby removing concentration biases from the calculation. A similar approach could be used for cement kiln mass emissions since lb/ton clinker and ton clinker/MMBtu constraints are included in the permit by way of fuel usage limitations. These effectively create a lb/MMBtu equivalency with F-factor-based standards. I'm not suggesting that we change the units to lb/MMBtu, but only that a common basis exists between the two approaches.

Granted, we are not specifying a Part 75 CEMS, and this permit modification does not involve a MACT limit. However, since CEM systems are application-dependent, we need to agree on the proper type of CEMS to be installed and the best method of calculating mass emissions and have this as part of the permit condition.

I plan to consult with Joe and Marty this week and hopefully we can propose a CEMS and a calculation method by week's end.

Thanks again for your input.
JR

----- Original Message -----
From: koogler
To: florida21
Sent: Monday, April 16, 2001 7:39 PM
Subject: RE: Florida Rock Industries

John,

I generally concur with your comments of 4/13/01. The only correction I would make is to the standard temperature you used in the third line of your calculations. The 520F should be 528F (20C or 68F plus 460 = 528F). This makes the 182,709 acfm @ 11% O2
180,000 acfm - which is what the stack gas flow in my original calculations should have been; rather than the 80,000 acfm @ 11%O2. I then agree with your calculations down through the 20.5 ppm VOC, dry @ 7% O2. I

also realize that in my calculations for oxygen correction, I was combining wet O2 and dry O2 concentrations.

In my first O2 correction calculation the stack gas O2 should have been 12.94% on a dry basis as you calculated. This would have placed all O2 concentrations on a dry basis and resulted in a VOC concentration on a wet basis @ 7% O2 of 17.5 ppm. Correcting for moisture would result in a VOC concentration of 20.5 ppm - the same value you arrived at.

In my second O2 correction calculation, if the stack gas O2 concentration is corrected to 12.94% the stack gas flow becomes 77,751 scfm, wet @ 7% O2 or 66,089 scfm, dry @ 7% O2.

In my final O2 calculation, if the corrected values are inserted for VOC concentration (17.5 ppm, wet @ 7% O2) and stack gas flow (77,751 scfm, wet @ 7% O2), the resulting VOC emission rate @7% O2, wet is 9.3 lb/hr. Similarly, if your VOC concentration of 20.5 ppm, dry @ 7% O2 is inserted in my final expression with the stack gas flow of 66,089 scfm, dry @ 7% O2, the resulting VOC emission is still 9.3 lb/hr.

This whole exercise demonstrates that for each O2 correction and for each moisture correction, the VOC concentration moves in one direction (either up or down) and the corrsesponding stack gas flow rate moves the opposite direction (either down or up) in the same ratio. Therefore, the resulting VOC mass emission rate remains the same; demonstrating that neither oxygen nor moisture corrections are nessary to calculate the correct mass emission rate (so long as the stack gas flow and the pollutant concentration are measured on the same moisture/O2 basis).

Let me have your comments.

John Koogler

Sent: Friday, April 13, 2001 1:44 PM
To: jkoogler@kooglerassociates.com
Subject: Fw: Florida Rock Industries

---- Original Message -----
From: florida21
To: jkoogler@kooglerassociates
Cc: alvaro.linero@dep.state.fl.us ; douglas.beason@dep.state.fl.us
Sent: Thursday, April 12, 2001 3:59 PM
Subject: Florida Rock Industries

Hello, I'm reviewing your FRI letters here at home since my back went out again. I'll be convalescing here at home for a few days. If necessary, you can call me here at 850-668-7685 or email me at florida21@msn.com.

I have a question about the oxygen correction calculations. First, let me describe how I've always done these and then we can discuss whether the differences are worth talking further about. (Keep in mind I'm doing this using my handy Mickey Mouse calculator so I may miss a significant number or two).

Your basis seems to be 135,771scfm @ 11% O2 wet and 15% moisture in the stack gas @ 240F with a measured VOC concentration of 10 ppm on a wet basis.
Then @ 240F, 135,771(700/520) = 182,769 acfm @ 11%.
And then 182,769 x 60 = 10,966,119 acfh
For stack gas @ 11% O2 wet and 15% H2O,
%O2 dry = 11/(1-0.15) = 12.94%.
Then for a measured VOC ppm of 10 on a wet basis,
the dry basis ppm is 10/(1-0.15) = 11.76 ppm.
The corresponding dry basis measured ppm corrected to 7% O2 is then 11.76(20.9-7.0)/(20.9-12.94) = 20.5

ppm.
This is the reference concentration corrected for moisture.
According to your calculations, there is a 29% change in flow in going from 11% to 7% O2. On an oxygen-free basis, the change is actually about 4.5%, so something appears awry. At any rate, the point is that stack gas oxygen (i.e. your 11% O2) must be measured somehow to properly convert concentration to mass. That is the reason for including the O2 monitor. As you know, this is the way NOx mass emissions are calculated, although in this case we have only a mass-based limit and not a concentration standard.
Look forward to discussing this at your earliest convenience. I am working on the other changes and hope to have them completed soon.
JR

The manual stack tests shall be conducted while firing both primary fuels at permitted capacity (70 to 100% coal and 0 to 30% tires) and while all continuous monitoring systems are functioning properly, and with all process units operating at their permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the units are so limited, then operation at higher capacities (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310(2)(b), F.A.C.]

If the kiln is tested while firing less than 30% tires, subsequent operation is limited to 110% of the percentage of tires burned during the test, not to exceed 30% of the total heat input. Once the kiln is so limited, then operation at greater tire burning rates (with prior notification provided to the Department) is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. Operation at greater tire burning rates (with prior notification provided to the Department) is also allowed for no more than 45 consecutive days in conjunction with installation and testing of the MSC. [Rule 62-297.310(2)(b), F.A.C.]

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The final H_2SO_4 emission limit and the final date for compliance with the lower NO_x limit of 2.8 pounds per ton of clinker is shown in Revised Table II. ~~A 30-day rolling average for VOC emissions has also been established (see attached).~~

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Where,

E_H = pounds per hour (as propane)
E_C = pounds per ton clinker (as propane)
$PPMV_{P(WET)}$ = parts per million by volume wet (as propane)
V_{SG} = average actual volumetric stack gas flow rate based on gas density
MW_P = molecular weight of propane, 44
T = absolute temperature (degrees Rankine)
C = tons of clinker produced during period when emissions were generated

25 or 25A

SPECIFIC CONDITION 6.b. (New)

Permittee shall conduct quarterly beryllium tests on emissions from the kiln/raw mill stack by June 30, September 30, and December 31, 2001 using the methods described in Specific Condition 6. Test reports shall be submitted to the Department's Northeast District Office and the Bureau of Air Regulation in Tallahassee within 45 days after conducting the tests. [Rules 62-212.400 and 62-4.070, F.A.C.]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

John D. Baker, FRI*
Fred W. Cohrs, FRI
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
Rob Luna, NCFGP*
Chris Bird, Alachua County EPD
W. Douglas Beason, Esq., DEP OGC
James J. Konish, Esq., FPLW*
Segundo J. Fernandez, Esq., OHF&C*
Arthur Saarinen*
Chair, Alachua County Commission*

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) (Date)

Department of
Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

May 3, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC (PSD-FL-228A)
Newberry Cement Plant – Permit Modification

Dear Mr. Baker:

The Department reviewed your July 17, 2000 request and the additional information subsequently submitted to extend and modify the referenced construction permit.

The existing permit also requires that the Department set certain emission limits based on test data. The Department has received sufficient data to set the final sulfuric acid mist limit, but does not yet have sufficient data to set final sulfur dioxide and beryllium limits.

The existing permit it hereby modified as follows:

EXPIRATION DATE

The expiration date is hereby extended until May 31, 2001. All physical construction required to make cement and to conduct initial testing is complete. This permit modification authorizes further work only for replacement or addition of continuous emission monitoring equipment and conversion of the precombustor to a Low NO_X Multi-Staged Combustor (MSC) to meet the lower nitrogen oxides emission limit as described in Table II of the original permit.

All additional construction related to installation of the MSC and short-term compliance testing for NO_X shall be completed by December 31, 2001. All compliance testing related to operation of the MSC to determine final long-term NO_X emission limits shall be completed by March 31, 2002.

SPECIFIC CONDITION 4 (First Paragraph)

Fuels fired in the pyroprocessing system (kiln and combustor) shall not exceed a total maximum heat input of 364 MMBtu/hr and shall consist only of coal, (usage rate shall not exceed 14.0 TPH), whole tires, propane, and unused No. 2 fuel oil which may also be fired in the Raw Mill Air Heater. Propane usage is limited to startup and in lieu of tires in the first stage of the MSC. All fuel usage shall be in compliance with the following limits and conditions: [Rule 62-210.200(225), F.A.C.]

SPECIFIC CONDITION 6 (Modified)

With respect to conducting manual stack tests, the relevant language in Specific Condition 6 is modified as follows:

SPECIFIC CONDITION 6.a. (New)

Permittee shall install, calibrate, maintain and operate a continuous emission monitoring system in the kiln/raw mill stack to measure and record the emissions of non-methane total hydrocarbons (THC) as the surrogate for VOCs limited by the permit. The CEM system shall be of the extractive type using flame ionization for monitoring THC. Fuel used for the flame ionization process shall consist of a hydrogen/ helium mix specified by the CEMS manufacturer. A compatible stack gas flow monitor designed to measure flow based on the gas density shall also be installed. The system shall be installed, certified, operated and maintained in accordance with Performance Specification 8 of Appendix B of 40 CFR 60 and shall be quality assured using the procedures of Appendix F of 40 CFR 60. The permittee shall report no later than the 10th day following each calendar quarter a summary of the daily average THC emissions reported by the CEMS system for the days of that calendar quarter to the Department's Northeast District Office. These results should be reported as pounds per hour (propane equivalence) and pounds per ton of clinker (propane equivalence) and shall be calculated according to the following method: [Rule 62-4.070, F.A.C.]

$$E_H = [PPMV_{P(WET)} * V_{SG}] * MW_P * (0.730 * T)^{-1}$$

$$E_C = [PPMV_{P(WET)} * V_{SG}] * MW_P * (0.730 * T)^{-1} * C^{-1}$$

Where,

E_H = average pounds per hour (as propane)
E_C = average pounds per ton clinker (as propane)
$PPMV_{P(WET)}$ = average parts per million by volume wet (as propane)
V_{SG} = average actual volumetric stack gas flow rate in cubic feet per hour
MW_P = molecular weight of propane, 44
T = average absolute temperature of stack gas (degrees Rankine)
C = average tons per hour of clinker produced during quarterly period

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KENNETH G. OERTEL
PATRICIA A. RENOVITCH

June 1, 2001

VIA FACSIMILE AND U.S. MAIL

Douglas W. Beason, Assistant General Counsel
Office of General Counsel
Florida Department of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, Florida 32399-3000

Re: Request for Confirmation Letters
Draft Modified Air Construction Permit Modification: FDEP File No.: 0010087-003-AC/PSD-FL-228-A
Draft Title V Permit No.: 0010087-002-AV
Thompson S. Baker Cement Plant, Newberry, Alachua County, Florida

Dear Doug:

As you know, we represent Florida Rock Industries, Inc. with respect to the Air Construction Permit and Title V Permit for the above-referenced facility. Pursuant to my telephone conversation with you on Tuesday, May 22, 2001, regarding the modifications to the proposed agency actions on the above-referenced permit contained in your e-mails dated May 11, 2001(Air Construction Permit Modification) and dated May 22, 2001 (Title V Permit), the company has reviewed the changes and finds them acceptable. Furthermore, Florida Rock Industries' consultant, Dr. John Koogler, spoke with Chris Kirts of the DEP-Jacksonville office today and finalized a number of minor changes to the descriptive wording of the proposed Title V permit. Consequently, I hereby request the Department send the company a letter modifying the Department's proposed agency action dated January 26, 2001 on the Air Construction Permit modification, and another letter modifying the Department's proposed agency action dated January 26, 2001 on the Title V Modification, reflecting the changes contained in your e-mails of May 11, 2001 and May 22, 2001 respectively and the minor changes worked out by Dr. Koogler with Mr. Kirts on May 31, 2001.

Upon receipt of the Department's letters modifying the proposed agency actions referenced above, I will send you a letter withdrawing the company's request for an extension of time to file

a petition for administrative hearing with respect to the draft Air Construction Permit Modification and with respect to the draft Title V Permit. Please note that Florida Rock Industries, Inc. does not waive its right to challenge any further changes or modifications to the permits beyond those specifically discussed above.

Thank you for your consideration. If you have any questions, please do not hesitate to call me.

Sincerely,

Segundo J. Fernandez

c: Kirby B. Green, III
Howard Rhodes
C. H. Fancy, P.E.
Al Linero, P.E.
Chris Kirts
Fred W. Cohrs
John Koogler, Ph.D., P.E.
Timothy P. Atkinson

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