



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

June 24, 2005

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Paul Mazak, President  
Florida Mining Corporation  
7000 SR 50  
Webster, Florida 33597

Re: Request for Additional Information  
DEP File No. 1190040-001-AC (PSD-FL-356)  
Proposed Portland Cement Plant in Sumter County, Florida

Dear Mr. Mazak:

On May 27 we received from Koogler and Associates your application for an air construction permit for a portland cement plant in the vicinity of State Road 50, Mabel, Sumter County.

Pursuant to Rules 62-4.055, and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of the additional information prior to processing the application. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. There does not appear to be any preliminary and original engineering of the kind typically associated with a cement project that has progressed to the stage where an air permit application is submitted. Typically at this point in cement project development, there is preliminary work by an engineering and design firm if not by the actual potential suppliers such as Polysius, F.L. Smidth, KHD Humboldt Wedag, CLE, etc. Please provide design information and engineering drawings.
2. The proposed project is virtually identical in layout, production capacity, and emission characteristics to another proposed project in Florida. Please confirm that the same emissions and assumed design make sense for the area and raw materials available where the project is planned.
3. The requested PM limits are 0.23 lb/ton of clinker and 0.1 lb/ton of clinker from the kiln and clinker cooler respectively. This equates to 0.33 lb/ton of clinker or roughly 0.2 lb/ton of feed. For reference, F.L. Smidth guaranteed combined kiln and cooler emissions of 0.125 lb/ton of feed through a single baghouse for the new Titan America kiln in Medley, Florida. Titan has requested lowering the limit to 0.09 lb/ton of feed. This equates to roughly 0.15 lb/ton of clinker for kiln and cooler PM emissions combined. This is less than half of the value proposed by Florida Mining Corporation. Please provide any comments regarding this issue.
4. It is possible to design the plant with a single stack and avoid some particulate emissions. Is such a configuration an option for this project? If not, please explain.
5. Will any raw materials, fuels, or products be shipped in or out by railroad? What efforts will be made to minimize truck traffic, dust emissions from vehicular traffic, and emissions from vehicular

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fuel combustion associated with the proposed project? Please provide a detailed discussion regarding truck traffic that will be generated from the construction and operation of the new facility.

6. Describe the primary fuel firing scenarios and describe the ratio of heat input at various fuel mixtures. Detail why heat input ratios might change under normal operating conditions and emissions. Provide an estimate of pollutant emissions under each scenario.
7. Typical fuel specifications were provided for the proposed fuels with the exception of used oil. Provide a description and expected analysis of the used oil to be combusted.
8. Recent testing conducted at other cement plants in Florida indicated that lower NO<sub>x</sub> emissions are possible by selective non-catalytic reduction (SNCR) than proposed. According to the application, the cost-effectiveness to achieve 1.95 lb NO<sub>x</sub>/ton was estimated at a little more than \$1,000 per ton of NO<sub>x</sub> removed. An application was recently received by the State of Arizona proposing a limit of 1.15 lb/ton based on modeling results. An existing Heidelberger (SCANCEM) facility in Sweden achieves 0.9 lb NO<sub>x</sub>/ton by SNCR. Please develop and submit a cost-effectiveness analysis to achieve 1.5 and 1.0 lb NO<sub>x</sub>/ton of clinker.
9. With reference to Pages 77 and 78, Has Florida Mining Corporation inquired of catalyst manufacturers whether or not catalyst poisoning is a given if a selective catalytic reduction (SCR) system is located prior to the baghouse? Note that the dust loading in the area (parallel to downcomer from the preheater) where an SCR system is located is much lower than in the preheater and much lower than after the raw mill. There is much experience now at coal fired power plants operating SCR systems prior to electrostatic precipitators.
10. With respect to Section 6.4.3, please explain how SCR would operate in a cement plant in tandem with overfire air (OFA) and Low NO<sub>x</sub> burners (LNB) described by Florida Mining Corporation as the "Top" control technique.
11. With reference to Page 75, reburn is actually incorporated into various staged combustion calciner designs. The procedure involves burning some or all of the calciner fuel in an aggressive reducing atmosphere. Arguably the F.L. Smidth Low NO<sub>x</sub> calciner, the Polysius Multistaged Combustion (MSC) calciner at Florida Rock, and the KHD Humboldt Wedag Pyroclon all incorporate reburn to some degree. Does the reburn design described operate within the kiln, the calciner, or after the calciner?
12. NO<sub>x</sub> control described in the application appears to rely on destroying thermal NO<sub>x</sub> after it is formed in the kiln, prevention of fuel NO<sub>x</sub> formation in the calciner, and/or destruction by reagent injection after the calciner. What consideration has been given to minimizing thermal NO<sub>x</sub> formation by flame cooling, Low NO<sub>x</sub> kiln burners, or "intelligent" automated expert control systems like Linkman or Polexpert?
13. The BACT proposal for CO is 3.6 lb/ton of clinker. For reference, F.L. Smidth guaranteed a value of 1.77 lb CO/ton for the Titan project in Medley. Titan has requested a lower value of approximately 1.33 lb CO/ton while achieving 2.1 lb NO<sub>x</sub>/ton of clinker. The Department's observation is that some designs provide insufficient residence time following introduction of tertiary burnout air to adequately reduce CO. Please evaluate (under your "Good Combustion Practices" proposal) the possibility of increasing the length of the ductwork from the top of the calciner to the bottom cyclone. The cost per ton of CO removed can be estimated from the construction and operational considerations associated with the residence time to complete burnout.
14. VOC control to achieve 0.12 lb/ton of clinker is given as "Good Combustion Practices". Regardless of combustion practices, VOC emissions can be high unless raw materials (especially additives) are selected that will not evolve VOC in the preheater. Please describe the raw material procurement

practices for mill scale, fly ash, etc. that can influence both VOC and CO emissions. The proposed value appears to be adequate.

15. SO<sub>2</sub> control to achieve 0.28 lb/ton of clinker is given as "dry scrubbing (hydrated lime injection)" as necessary when the raw mill is not operating and inherent "limestone scrubbing" when the raw mill is operating. Please address the nature of the raw materials and include this in the Top Down analysis.
16. The SO<sub>2</sub> limit for Florida Rock Kiln 1 is 0.16 lb/ton of clinker on a 24-hour basis. They do not practice hydrated lime injection. Please provide a rationale for the greater emission limit request given that hydrated lime injection is available if needed. Please provide data on sulfur in the raw material from the property.
17. What additives will be used to insure the correct alkali to sulfur ratio is maintained when using petroleum coke? Florida limestone is low in alkali. Use of high sulfur petroleum coke can upset the balance between alkali and sulfur that is needed to insure fuel sulfur is incorporated into the clinker rather than deposited within the internal cycle (calciner/bottom cyclone/kiln inlet). Submit a projected chemical analysis of the additives likely to be used at this plant.
18. Please provide a diagram showing the introduction points of mercury into the process and its fate including the internal cycle (calciner/kiln) and the external cycle (raw mill/preheater/dust control equipment). What measures have been considered to minimize emissions of mercury entering the process or emitted from the kiln stack?
19. Please provide the protocol for the mercury material balance to be relied upon to insure emissions are no greater than 122 lb/year. Include proposed process testing locations, frequency of testing, and methods. Please review the availability and capability of continuous mercury monitoring equipment in lieu of, or in addition to the material balance.
20. Has Florida Mining Corporation or affiliates had any violations (or warning letters) related to any Department regulations at any of their facilities? Have officers of Florida Mining Corporation also been officers of other companies that have had violations (or warning letters) of Department regulations at any facilities? Please provide all documentation in relation to any such violations.
21. Please list experience of company officers owning or operating industrial enterprises requiring air permits in the State of Florida or in other states.
22. Please provide information as to the experience of the operator/s of the proposed site. If the position of plant operator is still to be determined, please describe the minimum requirements for this position established by your company including, but not limited to, total years experience in the cement industry, total years experience as plant operator, educational background, etc.
23. Please provide information as to the experience of the plant manager of the proposed site. If the position of plant manager is still to be determined, please describe the minimum requirements for this position established by your company including, but not limited to, total years experience in the cement industry, total years experience as plant manager, educational background, etc.
24. A very cursory assessment was provided pursuant to Paragraph 62-212.400(h)5., F.A.C. The rule requires information relating to the air quality impacts of, and the nature and extent of, all general commercial, residential, industrial and other growth which has occurred since August 7, 1977, in the area the facility or modification would affect. While the applicant believes the largest area is a 3 kilometer radius, the Department believes the radius arguably includes the entire county and possibly the contiguous counties. The impacts include visibility impairment and effects on regional ozone concentrations. Please expand the write-up to include development in Sumter and surrounding counties as well as ambient air quality trends in and near Sumter County.

25. Please provide a detailed discussion of the truck traffic that will be generated from the construction and operation of the kiln. Some of this information has already been provided on your spreadsheets describing the road sources. Please show where the values of 6.8 for init lat and 1.84 for init vert came from in your spreadsheet describing the paved roads emissions estimation. Please discuss how the release height of 0 meters was chosen. Please provide a diagram showing each road segment, its location and its emission parameters.
26. The facility plot plan on page 11 does not show the dimensions and location of the buildings and structures on the property. Please provide a plot plan with UTM coordinates overlaid in a 100 meter grid showing the locations and the dimensions of the buildings and structures
27. Please provide a nitrogen deposition analysis for the Chassahowitzka PSD Class I area.
28. Please provide a table in Section 4 summarizing all of pollutant emission rates that were included in the Class I area PSD increment and visibility modeling.
29. Predicted impacts from all applicable PSD pollutants on soils, vegetation and wildlife should be included in the Additional Impact Analysis. In the application, the Additional Impact Analysis includes impacts to soils and vegetation from PM<sub>10</sub> only. Please provide an analysis for the other PSD pollutants subject to review for this project. Please also include impacts to wildlife in your analysis.

We will forward any comments received from other agencies as soon as we receive them. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call Cindy Mulkey at 850/921-8968. Matters regarding modeling issues should be directed to Cleve Holladay at 850/921-8986.

Sincerely,



A.A. Linero, Program Administrator  
Bureau of Air Regulation  
New Source Review Section

AAL/cm

cc: Paul Mazak, FMC\*  
Jim Little, EPA  
John Bunyak, NPS  
Jim Cleary, DEP SWD  
Joey Chandler, Sumter County Board of County Commissioners  
Steve Cullen, Koogler and Associates  
Ed & Wanda Gallagher

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**1. Article Addressed to:**

Mr. Paul Mazak  
 Florida Mining Corporation  
 7000 SR 50  
 Webster, Florida 33597

**2. Article Number**

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