

**KOOGLER & ASSOCIATES**  
**ENVIRONMENTAL SERVICES**

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KA 521-06-20  
November 16, 2006

Via Email and USPS

**RECEIVED**

NOV 20 2006

BUREAU OF AIR REGULATION

Ms. Cindy Mulkey  
Florida Department of Environmental Protection  
Bureau of Air Regulation  
2600 Blair Stone Road MS 5500  
Tallahassee, FL 32399-2400

**RE: FDEP File No. 0530010-026-AC**  
**CEMEX Cement Inc. Brooksville Cement Plant Kilns 1 and 2**  
**Comments on Draft Permit**

Dear Cindy,

The above captioned draft air construction permit was received electronically by CEMEX on November 3, 2006. The public notice for the permit was published on November 15, 2006. By this letter, we are providing comments on the draft permit within 14 days of receipt. The comments are consistent with those that I discussed with you recently by phone and relate to:

- The NO<sub>x</sub> emission limit,
- The ammonia injection rate,
- The requirement for a diluent [gas] monitor, and
- A few incidental comments and questions.

#### **NO<sub>x</sub> Emission Limit**

Specific Condition 5 of the draft permit limits NO<sub>x</sub> emissions from each kiln to 1.21 pounds per ton of dry preheater feed [2.02 pounds per ton of clinker] and 181.5 pounds per hour, 30-day rolling average. These emission limits are to become effective upon completion of the indirect firing system, but no later than June 30, 2007. Based on a permit limited preheater feed rate to each kiln of 1.3 million tons per year, the annual NO<sub>x</sub> emissions from each kiln are limited to 786.5 tons per year.

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In the application for the indirect firing system (received by the Department on August 22, 2006), we provided a table (Table 3) showing past actual NO<sub>x</sub> emissions plus a 10 percent demand increase to be 844.0 tons per year, each kiln. In the application we stated that projected actual NO<sub>x</sub> emissions from each kiln would not exceed the past actual emissions plus the demand increase; or 844.0 tons per year. Consistent with this intent, Specific Condition 18 of the draft permit sets forth monitoring requirements for PSD applicability to demonstrate that projected actual emissions do not exceed past actual emissions plus the demand increase.

This being the case, the permitted NO<sub>x</sub> emissions from each kiln should be limited to 844.0 tons per year, or to 1.30 pounds per ton of dry preheater feed [2.16 pounds per ton of clinker].

We are requesting that Specific Condition 5 be amended to show an NO<sub>x</sub> emission limit for each kiln of 1.30 pounds per ton of dry preheater feed, 30-day rolling average and to 194.8 pounds per hour (as NO<sub>2</sub>), 30-day rolling average. CEMEX has no objection to compliance with this emission limit being demonstrated by CEMS.

#### **Ammonia Injection Rate**

Specific Condition 4 of the draft permit limits the ammonia injection rate of the SNCR system on each kiln to 133 pounds per hour, 1-hour block average, as 100 percent ammonia. This injection rate is equivalent to an ammonia:NO<sub>x</sub> molar ratio of 1.0 assuming an uncontrolled NO<sub>x</sub> emission rate of 4 pounds per ton of clinker. The reason stated in Specific Condition 4 for limiting the ammonia injection rate is to minimize ammonia slip; and hence the potential for a visible plume.

CEMEX is appreciative of the fact that the Department does not want a condition to develop that could result in a visible plume and CEMEX shares this concern. But, it

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must be recognized that the NOx emission limit for each kiln is based on a 30-day rolling average. The reason for the 30-day rolling average is to allow normally occurring short-term NOx excursions to be averaged out by longer periods of normal kiln operation.

With the permitted NOx emission limit implicitly acknowledging that NOx emissions will fluctuate over the 30-day averaging period and the fact that the ammonia injection rates of the SNCR systems are set as a function of NOx emissions through a feedback loop combining the output of the NOx CEM and the ammonia injection pump, it follows as almost a certainty that the hourly ammonia average injection rate (set as a function of a 30-day average NOx emission rate) will at times, exceed 133 pounds of ammonia per hour.

It is requested that the ammonia injection rate averaging time be set equal to the NOx emission averaging time; or to a 30-day rolling average. To assure that the potential for the formation of a visible plume is minimized, a condition could be inserted into the permit stating that if a persistent visible plume develops, the ammonia injection rate is to be reduced to a rate that will minimize/eliminate the visible plume. Or, another alternative would be to simply state that the PCL controller that automatically adjusts the ammonia injection rate be configured in a manner that will not allow the hourly average NH<sub>3</sub>:NOx molar ratio to exceed 1.0.

### **Diluent Gas Monitor**

Specific Condition 11 of the draft permit requires among other things that an oxygen monitor (a diluent gas monitor) be installed to measure the oxygen concentration in the stack of each kiln. While it is true that the CEMS that CEMEX has installed on each kiln is capable of monitoring oxygen and CO<sub>2</sub>, CEMEX had not intended to monitor either oxygen or CO<sub>2</sub> as there is no permit condition or rule that requires either gas to be monitored.

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If at some future time a permit condition is imposed that requires the monitoring of a diluent gas or if a rule is developed that requires such monitoring, CEMEX has the capability of reactivating either or both monitoring systems.

**Incidental Comments**

Specific Condition 14 – This condition requires CEMEX to continuously monitor and record dry preheater feed rate and clinker production rate for each hour of operation. As with all cement plants in Florida, the clinker production rate at CEMEX is determined as a function of preheater feed rate. CEMEX does continuously monitor and record the dry preheater feed rate for both kilns on an hourly basis and calculates and records the clinker production rate. The purpose of this comment is to clarify the method used to determine clinker production rate.

Specific Condition 18, Net Emissions Increase – The second paragraph of this condition establishes the procedure to be used to calculate *baseline actual emissions*. The paragraph further states that subparagraph 62-210.200(35)(a)3 and 62-210.200(35)(b)4 shall not apply. The first subparagraph applies to electric utilities and obviously does not apply, but CEMEX questions why the second subparagraph does not apply.

Coal Grinding and Transferring, Specific Condition 7 – It is requested that the language in this condition be amended to require initial compliance testing on Emission Points PS-01 and PS-02 within 60 days following startup of the indirect firing systems.



We appreciate your efforts in getting this permit out in the timely manner that we discussed during our initial meeting to present this project to the Department, and we



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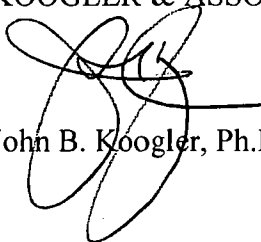
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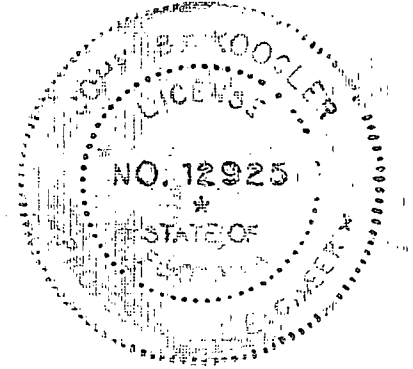
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appreciate your consideration of the comments provided herein. If there are any questions or if any other information is required, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

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



JBK/lt

cc: Trina Vielhauer, FDEP  
Al Linero, FDEP  
Jeet Gill, CEMEX  
Susan Murphy, CEMEX  
Michael Gonzales, CEMEX  
Charlie Walz, CEMEX

