

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
26 December 2014

Construction Statement of Basis

Company: Kosmos Cement Company

Plant Location: 15301 Dixie Hwy, Louisville, Kentucky 40272

Date Application Received: 07/31/2014
10/31/2014

Application Number: 66301
67803

Public Comment Date: 12/26/2014

Proposed Permit Date: 12/26/2014

District Engineer: Randy Schoenbaechler

Permit No: C-0060-1052-14-V

Plant ID: 0060

SIC Code: 3241

NAICS: 32731

AFS: 00060

Introduction:

This permit will be issued pursuant to District Regulation 2.03, *Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements*. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment for sulfur dioxide (SO₂).

Application Type/Permit Activity:

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Construction

Compliance Summary:

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

I. Source Information

1. **Product/Process Description:** The source produces Portland cement.
2. **Project Description:** The source is installing two new Separators, K-1008 in Unit 20 and K-1023 in Unit 21, to be controlled respectively by two (2) new replacement baghouses K-1014 and K-1030.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

Construction No.	Equipment Description
C-0060-1052-14-V	Two (2) new Separators K-1008 in Unit 20 and K-1023 in Unit 21 to be controlled respectively by two (2) new replacement baghouses K-1014 and K-1030.

5. Permit Revisions

Revision No.	Date or Reissuance	Public Notice Date	Type	Emission Unit	Description
Initial	xx/xx/2014	12/26/2014	Initial	Entire Permit	Installation of two (2) new Separators with baghouses

6. **Fugitive Sources:** Fugitive emissions of dust from any part of the plant are subject to Regulation 1.14, *Control of Fugitive Particulate Emissions*.

7. Plant-wide Emission Summary:

Pollutant	Actual Emissions (tpy) 2013 Data	Major Source Status (based on PTE)
CO	397.19	Yes
NO _x	1308.23	Yes
SO ₂	185.98	Yes
PM ₁₀	364.7	Yes
VOC	51.71	Yes
Total HAPs	26.01	Yes
GHGs*	>100,000 CO ₂ e	Yes
Single HAP > 1 tpy		
Hydrochloric Acid	22.134	Yes

*Note: The GHG are potential to emit (PTE) emissions not actual emissions.

8. Applicable Requirements:

<input type="checkbox"/> PSD	<input checked="" type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP	<input checked="" type="checkbox"/> MACT
<input type="checkbox"/> NSR	<input type="checkbox"/> NESHAPS	<input checked="" type="checkbox"/> District-Origin	<input type="checkbox"/> Other

9. MACT Requirements:

40 CFR 63 Subpart LLL National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry

10. Referenced non-MACT Federal Regulations in Permit:

40 CFR 60 Subpart F Standards of Performance for Portland Cement Plants

II. Regulatory Analysis

- 1. Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- 2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- 3. Prevention of Accidental Releases 112(r):** The source does use, store, or handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions. The source accepted a limit for ammonia in order to be exempt from Regulation 5.15.
- 4. 40 CFR Part 64 Applicability Determination:** This project and affected equipment is not major for any criteria pollutant. In accordance with 40 CFR 64, Compliance Assurance Monitoring for Major Stationary Sources, the source is not required to propose a CAM plan based on current process and control device requirements and practices.
- 5. Basis of Regulation Applicability**
 - a. Plant-wide**

Regulation 2.03, section 6.1 requires sufficient monitoring, record keeping, and reporting to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

b. **Applicable Regulations:**

Regulation	Title	Type
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	SIP
2.04	Construction or Modification of Major Sources In or Impacting Upon Non-Attainment Areas (Emission Offset Requirements)	SIP
2.05	Prevention of Significant Deterioration of Air Quality	SIP
5.00	Definitions	Local
5.01	General Provisions	Local
5.02	Adoption of National Emission Standards for Hazardous Air Pollutants	Local
5.14	Hazardous Air Pollutants and Source Categories	Local
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Local
5.21	Environmental Acceptability for Toxic Air Contaminants	Local
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Local
5.23	Categories of Toxic Air Contaminants	Local
7.08	Standards of Performance for New Process Operations	SIP
40 CFR 60, Subpart F	Standards of Performance for Portland Cement Plants	Federal
40 CFR 63, Subpart LLL	National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry	Federal

c. **Basis for Applicability**

Applicable Regulation	Basis for Applicability
2.03	Regulation 2.03 applies to new construction projects.
2.04	The requirements of this regulation shall apply to new major sources and major modifications commenced after April 21, 1982 and that will locate in or impact upon any area designated as non-attainment.
2.05	KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77.
5.00, 5.01, 5.20, 5.21, 5.22, 5.23	Regulations from Chapter 5 establish the requirements for Environmental Acceptability for TACs.
7.08	Regulation 7.08 establishes requirements for new processes that are subject to PM standards and were installed after September 1, 1976.
40 CFR 60 Subpart F	40 CFR 60, Subpart F applies to equipment installed after August 17, 1971 at Portland cement plants
40 CFR 63 Subpart LLL	40 CFR 63, Subpart LLL applies to each new and existing Portland cement plants

d. **Construction Project**

i. **Equipment**

Emission Point	Description	Applicable Regulations
K-1008	Separator	2.03, 2.04, 2.05, 7.08, 40 CFR 60 Subpart F, and 40 CFR 63 Subpart LLL
K-1023	Separator	

ii. **Standards/Operating Limits**

1) **PM**

(a) Regulations 2.04 (PM_{2.5}) and 2.05 (PM/PM₁₀) allows the District to specify operating limits. The source is limited to 65 tons per hour of material processed in each Separator.

(b) The lb/hr PM limits are calculated per Regulation 7.08, section 3.1.2. The equation to calculate the emission limits for process rates greater than 60,000 lb/hr is $E = (17.31) * (P)^{0.16}$, where P is expressed in tons/hr.

2) **Opacity**

Regulation 7.08, section 3.1.1 establish an opacity standard of less than 20%.

3) **HAP**

(a) 40 CFR 63.1345 and 40 CFR 60.62 establish an opacity standard of 10% or less for the loaders,

hoppers, feeders, and conveyors.

- (b) 40 CFR 63.1346 establishes operation and maintenance plan requirements for affected facilities.

4) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions shall not exceed environmentally acceptable levels.

iii. **Monitoring and Record Keeping**

HAP

- (a) 40 CFR 63.1348 establishes compliance requirements for the affected facilities.
- (b) 40 CFR 63.1350 establishes monitoring requirements for the affected facilities.
- (c) 40 CFR 63.1355 establishes record keeping requirements for the affected facilities.

iv. **Reporting**

HAP

- (a) 40 CFR 63.1353 establishes notification requirements for the affected facilities.
- (b) 40 CFR 63.1354 establishes reporting requirements for the affected facilities.

v. **Testing**

40 CFR 63.1349 establishes testing requirements for the affected facilities.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operational flexibility for the emission points.
5. **Compliance History:**

Date	Regulation Violated	Result
6/20/1993	Reg. 6.09, section 3 and Reg. 1.09	Agreement
9/14/1993	Reg. 1.14, section 2	Agreement
11/9/1993	Reg. 1.14, section 2	Agreement

Date	Regulation Violated	Result
12/19/1994	Reg. 1.14, section 2	Agreement
6/13/1995	Reg. 7.02, section 1/ Reg. 1.07 section 5	Board Order
11/1/1995	Reg. 6.42, section 5/ Reg. 2.03, section 5	Agreement
10/16/2000	Reg. 1.14, section 2/ Reg. 1.07, section 6	Agreement
10/23/2001	Reg. 1.14, section 2	Agreement
3/14/2002	Reg. 1.14, section 2	Agreement
8/1/2002	Reg. 1.14, section 2	Agreement
8/7/2002	Reg. 1.14, section 2	Agreement
5/19/2003	Reg. 1.14, section 2	Agreement
8/29/2003	Reg. 1.14, section 2	Board Order
9/15/2003	Reg. 1.14, section 2	Board Order
11/4/2003	Reg. 1.14, section 2	Board Order
10/16/2003	Reg. 1.14, section 2	Board Order
7/7/2003	Reg. 1.14, section 2	Board Order
5/10/2004	Reg. 1.14, section 2	Board Order
6/22/2004	Reg. 2.16, section 5	Board Order
6/10/2004	Reg. 1.14, section 2	Board Order
8/10/2004	Reg. 2.16, section 5	Board Order
7/6/2004	Reg. 1.14, section 2	Board Order
11/9/2004	Reg. 1.14, section 2	Board Order
1/5/2005	Reg. 1.14, section 2	Board Order
7/6/2005	Reg. 1.14, section 2	Board Order
6/14/2005	Reg. 1.14, section 2	Board Order
7/10/2006	Reg. 1.14, section 2	Board Order
9/14/2006	Reg. 1.14, section 2	Board Order
11/21/2007	Reg. 1.14, section 2	Board Order
10/12/2007	Reg. 1.14, section 2	Board Order
6/9/2008	Reg. 1.14, section 2	Board Order
6/18/2008	Reg. 1.14, section 2	Board Order
11/3/2008	Reg. 1.14, section 2	Board Order
4/15/2006	Reg. 2.03, section 5/ Reg. 2.16, section 5	Board Order
4/15/2012	Reg. 1.06, section 4	Agreement
12/01/2013	Reg. 2.03, section 5	Agreement

6. Calculation Methodology:

Kosmos uses a variety of methods to estimate air emissions. Most of the emission estimates are based on established calculation methodologies which are based on EPA's AP-42. The calculation methods include:

EPA emission factors.

The District approves the use of the EPA AP-42 factor of 0.028 lb PM per ton of cement throughput taken from Chapter 11, Section 6, Table 11.6-4, *Uncontrolled Emission Factor for Finish Grinding Mill air separator with fabric filter*.

7. Insignificant Activities:

There are no insignificant activities contained in this construction permit.

8. Permit Fee:

Construction permit fees are based on the construction fee for Title V source (\$2,542.40), subject to a MACT (\$1,016.96), subject to an NSPS (\$1,016.96), and EA Demo with Tier 4 Modeling (\$1,525.44). The total construction fees are \$6,101.76.