

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
13 February 2016

Construction Statement of Basis

Owner/Source: Kosmos Cement Company

Plant Location: 15301 Dixie Hwy, Louisville, Kentucky 40272

Date Application Received: 1/11/2016

Application Number: 74812

Public Comment Date: 02/13/2016

District Engineer: Yiqiu Lin

Permit No: C-0060-1053-16-V

Plant ID: 0060

SIC Code: 3241

NAICS: 32731

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 the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard 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
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

I. Source Information

1. Plantwide Overall Process Description: The source produces Portland cement.
2. **Project Description:** The source is replacing an airslide (U24: K-1468), a rail loading spout (U24: K-1485), and a baghouse (U24: C-1487) that controls emissions from the airslide and loading spout.
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-0060-1053-16-V	One (1) airslide (U24: K-1468) to rail loading spout, make Vortex, model TBD, capacity 9,251 ft ³ /hr, 278 tons/hr. This airslide replaces existing airslide K-1468; One (1) rail loading spout (U24: K-1485) to rail car or truck, make Vortex, model TBD, capacity 400 ft ³ /hr, 720 tons/hr. This loading spout replaces existing rail loading spout K-1485; One (1) baghouse (U24: C-1487) controlling emissions from K-1468 and K-1485, make Vortex, model VFS-70-A-A-E77546. This baghouse replaces existing baghouse C-1487.

5. Permit Revisions

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	C-0060-1053-16-V	0x/xx/2016	02/13/2016	Initial	Entire Permit	Initial Permit Issuance

6. **Fugitive Sources:** There are no fugitive emissions for this project.

7. Plantwide Emission Summary:

Pollutant	District Calculated Actual Emissions (tpy) 2014 Data	Major Source Pollutants (based on PTE)
CO	469.9	Yes
NO _x	1,454.1	Yes
SO ₂	207.0	Yes

Pollutant	District Calculated Actual Emissions (tpy) 2014 Data	Major Source Pollutants (based on PTE)
PM ₁₀	135.9	Yes
VOC	54.4	Yes
Total HAPs	27.89	Yes
Single HAP > 1 tpy		
Hydrochloric Acid	23.7	Yes
Greenhouse Gas*	>100,000 CO ₂ e	Yes

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

8. Applicable Requirements:

PSD 40CFR60 SIP 40CFR63
 NSR 40CFR61 District-Origin Other

9. Referenced MACT Federal Regulations:

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

10. Referenced non-MACT Federal Regulations:

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

II. Regulatory Analysis

- 1. Acid Rain Requirements:** This 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. Construction

The uncontrolled PM/PM₁₀/PM_{2.5} emission increases for this construction project cannot exceed PSD significant emission rate. This project is not subject to PSD permitting.

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.

Regulations 5.00, 5.01, 5.20, 5.21, 5.22 and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

b. Permit C-0060-1053-16-V: Replacement of airslide, rail loading spout, and baghouse

i. Equipment:

Emission Point	Description	Applicable Regulation	Basis for Applicability
U24: K-1468	One (1) airslide (U24: K-1468) to rail loading spout, make Vortex, model TBD, capacity 9,251 ft ³ /hr, 278 tons/hr.	2.03, 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08, 40 CFR 60, Subpart F 40 CFR 63, Subpart LLL	Regulation 2.03 applies to new construction project.
U24: K-1485	One (1) rail loading spout (U24: K-1485) to rail car or truck, make Vortex, model TBD, capacity 400 ft ³ /hr, 720 tons/hr.		Regulation 5.00, 5.01, 5.20, 5.21, 5.22, 5.23 establishes requirements for Environmental Acceptability for TACs.
U24: C-1487	One (1) baghouse (U24: C-1487) controlling emissions from K-1468 and K-1485, make Vortex, model VFS-70-A-A-E77546.		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 applies to equipment installed after August 17, 1971 at Portland cement plants. 40 CFR 63, Subpart LLL applies to each new and existing Portland cement plants.

ii. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.
- (b) 40 CFR 60.62 and 40 CFR 63.1345 establish opacity standard of less than 10%.
- (c) By demonstrating compliance with the 10% opacity standard in 40 CFR 60, Subpart F and 40 CFR 63 Subpart LLL, this also demonstrates compliance with the 20% opacity standard in Regulation 7.08.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM standards are determined by the following equations:

$$E = 3.59(P)^{0.62} \quad \text{if } P \leq 30 \text{ tons/hr}$$

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$
- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled.

3) **HAP**

40 CFR 63.1347 establish HAP standards for this equipment.

4) **TAC**

Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.

iii. **Monitoring and Record Keeping**

1) **HAP**

40 CFR 63.1348, 1350, and 1355 establish monitoring and record keeping requirements for this equipment.

iv. **Reporting**1) **HAP**

40 CFR 63.1353 and 1354 establish reporting requirements for this equipment.

v. **Testing**1) **HAP**

40 CFR 63.1349 establish testing requirements for this equipment.

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 these 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
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

Date	Regulation Violated	Result
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:

Uncontrolled emission factors for airside came from AP-42, 11.6, Portland Cement Manufacturing: PM/PM₁₀/PM_{2.5}=0.048/0.024/0.012 lb/ton. Uncontrolled emission factors for loading spout came from construction permit 36017-13-C: PM/PM₁₀/PM_{2.5}=0.098/0.049/0.025 lb/ton. Controlled emissions are calculated based on air flow rate (dscf) and emission rate (gr/dscf) at the outlet of the baghouse.

7. Insignificant Activities: There are no insignificant activities contained in this construction permit.

8. Permit Fee: The construction permit fees are based on the construction fee for a Title V source (\$2582.58), STAR fees (\$1549.55 + \$516.55), (subject to a MACT

(\$1,033.03), and subject to a NSPS (\$1033.03). The total permit fees are \$6714.74.