



**LOUISVILLE METRO  
AIR POLLUTION CONTROL DISTRICT  
850 Barret Ave., Louisville, Kentucky 40204**



**01 26 2016**

**Federally Enforceable District Origin Operating Permit  
Statement of Basis**

**Company:** The Quikrete Companies, Inc. (Kentucky)

**Plant Location:** 3130 Millers Lane, Louisville, Kentucky 40216

**Date Application Received:** 03/31/2006; 04/16/2009; 09/26/2014

**Date of Public Notice:** 26 January 2016

**District Engineer:** Nantaporn Noosai

**Permit No:** O-0020-16-F

**Plant ID:** 0020

**SIC Code:** 3272

**NAICS:** 327390

**Introduction:**

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>); unclassifiable for the 2012 standard for particulate matter less than 2.5 micron (PM<sub>2.5</sub>) and partial non-attainment area for sulfur dioxide (SO<sub>2</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

**Compliance Summary:**

Compliance certification signed

Source is out of compliance

Compliance schedule included

Source is operating in compliance

**I. Source Information**

1. **Product Description:** Quikrete - Kentucky is packaged concrete products manufacturer.
2. **Process Description:** Wet aggregate is fed into the dryer. Dried aggregate is then deposited into the storage bins. Dried Masonry sand is fed to the play sand packaging system. The gravel and coarse sand mixture is transferred to a weight hopper. Cement is screwed into the weight hopper from the two silos. Once the weighting process is completed, the hopper dumps the material into a static mixer. After the mixer, the mixture is fed to the concrete mix bagging operation system.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Packaged concrete manufacturing process consists of: <ul style="list-style-type: none"> <li>- one (1) sand and aggregate dryer, make Fuller, capacity 6 MMBtu/hr and 40 tons sand /hr. Fuels: natural gas;</li> <li>- one (1) sand and aggregate bin with 4 compartments, capacity 40 tons/hr;</li> <li>- Silo #1: Portland cement silo with bin vent filter, make MAC Eq. capacity 25 tons/hr;</li> <li>- Silo #2: Portland cement silo with bin vent, make Arc West Fabricators, model 160, capacity 25 tons/hr;</li> <li>- one (1) concrete mix bagging operation consisting of: weigh hopper feeding and sealed holding bin, capacity 38 tons/hr.; mixer fed from the 2 silos and sand holding bin, capacity 40 tons/hr.; tube sand packaging system, capacity 3.5 tons/hr.; and play sand packaging system, capacity 8.75 tons/hr; and</li> <li>- one (1) play sand system with bin vent filter consisting of: Closed, sealed bin component holding play sand, capacity 10 tons/hr.; bagging operation, capacity 7.5 tons/hr.</li> </ul>

5. **Fugitive Sources:** There are fugitive PM emissions from transferring processes of sand, aggregate, and cement materials.

**6. Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	0126-01-F	06/30/2001	05/20/2001	Initial	Entire Permit	Initial Permit Issuance
Renewal	O-0020-16-F	xx/xx/2016	01/26/2016	Renewal	Entire Permit	Permit Renewal, incorporation of construction permit 299-03-C

**7. Construction Permit History:**

Permit No.	Issue Date	Description
257-86	12/30/1986	One (1) filtered vent, make Shanks industries, model # 16, used to control the emissions from cement silo# 2.
258-86	12/30/1986	One (1) concrete mix bagging operation.
259-86	12/30/1986	One (1) baghouse, make Fuller, 2 zone, used for controlling the dust generated by the concrete mix bagging operation.
8-92	11/26/1991	One (1) Fuller dust collector, model 6-48, with 3,000 ft <sup>2</sup> cloth and One (1) fuller dust collector, model 2-24, with 500 sq.ft <sup>2</sup> cloth.
299-03-C	07/15/2003	One (1) pulse-jet baghouse rated at 17,000 acfm.

**8. Emission Summary:**

Pollutant	District Calculated Actual Emissions (ton/yr) 2010 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	1.45	No
NO <sub>x</sub>	1.73	No
SO <sub>2</sub>	0.01	No
PM	3.2	No
PM <sub>10</sub>	1.82	Yes
VOC	0.1	No
Total HAPs	0.03	No
Single HAP	0.03	No

**9. Applicable Requirements:**

PSD       40 CFR 60       SIP       40 CFR 63  
 NSR       40 CFR 61       District-Origin       Other

**10. MACT Requirements:** The source has no future MACT requirements.

**11. Referenced Federal Regulations in Permit:**

40 CFR 60, Subpart OOO      Standards of Performance for Nonmetallic Mineral Processing Plants

**II. Regulatory Analysis:**

- 1. Acid Rain Requirements:** Quikrete - Kentucky 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. Quikrete - Kentucky 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):** Quikrete - Kentucky does not manufacture, process, use, store, or otherwise 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*, in a quantity in excess of the corresponding specified threshold amount.
- 4. 40 CFR Part 64 Applicability Determination:** Quikrete - Kentucky is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
- 5. Basis of Regulation Applicability**

- a. **Plant-wide**

Quikrete - Kentucky is a potential major source for the pollutants PM<sub>10</sub>. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the *plant-wide* potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutant PM<sub>10</sub> < 25 tons/year to be a FEDOOP STAR Exempt source as defined by Regulation 5.00, section 1.13.5.

Regulation 2.17, section 5.2, requires monitoring and recordkeeping 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.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit a Semi-Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

**b. Emission Unit: U1**

**i. Equipment**

<b>P/PE</b>	<b>Capacity</b>	<b>Installation Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E1: One (1) sand and aggregate dryer	6 MMBtu/hr	1973	6.09	Regulation 6.09 establishes emission standards for processes that emit PM which were constructed before September 1, 1976.
E2: One (1) sand and aggregate bin with 4 compartments, capacity 40 tons/hr.	40 tons/hr	1973		
E3: Silo #1: Portland cement silo with bin vent filter, make MAC Eq.	25 tons/hr	1980	7.08	Regulation 7.08 Establishes the requirements for PM emissions from new processes that commenced construction after September 1, 1976.
E4: Silo #2: Portland cement silo with bin vent, make Arc West Fabricators, model 160.	25 tons/hr	1980		

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
E5a: One (1) weigh hopper feeding and sealed holding bin (for a concrete mix bagging operation).	38 tons/hr	1989	7.08 40 CFR 60 Subpart OOO	Regulation 7.08 Establishes the requirements for PM emissions from new processes that commenced construction after September 1, 1976.
E5b: One (1) mixer fed from two silos and sand holding bin, capacity (for concrete mix bagging operation).	40 tons/hr	1989		40 CFR 60 Subpart OOO applies to a fixed or portable nonmetallic mineral processing plant that commences construction, modification, or reconstruction after August 31, 1983.
E5c: One (1) tube sand packaging system (for concrete mix bagging operation).	3.5 ton/hr	1989	7.08 40 CFR 60 Subpart OOO	Regulation 7.08 Establishes the requirements for PM emissions from new processes that commenced construction after September 1, 1976.
E5d: One (1) play sand packaging system (for concrete mix bagging operation)	8.75 ton/hr	1989		
E6a: One (1) closed, sealed bin component holding play sand with bin vent filter (for play sand system)	10 ton/hr	1996	7.08 40 CFR 60 Subpart OOO	40 CFR 60 Subpart OOO applies to a fixed or portable nonmetallic mineral processing plant that commences construction, modification, or reconstruction after August 31, 1983.
E6b: One (1) bagging operation with bin vent filter (for play sand system).	7.5 ton/hr	1996		

ii. **Standards/Operating Limits**

1) **PM/PM<sub>10</sub>**

- (a) For Emission Points subject to Regulation 6.09 and Regulation 7.08 for PM, the PM emission standards are calculated per section 3.2 and 3.1.2. The equation to calculate the hourly PM emission limit is  $E = 55^*$

$P^{0.11} - 40$  for 6.09 or  $E = 3.59 * P^{0.62}$  for 7.08, where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.

- (b) Regulation 2.03, section 6.1, requires the source to operate and maintain the control device at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards.

2) **Opacity**

- (a) Regulation 6.09, section 3.3.1 and Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.
- (b) Per 40 CFR 60, Subpart OOO, establishes opacity standards:

3) **NO<sub>x</sub>**

- (a) Per Regulation 6.09, section 4, limits the NO<sub>x</sub> emissions from the emission point E1.
- (b) The District has performed a one-time NO<sub>x</sub> compliance demonstration using AP-42, Chapter 1.4 Natural Gas Combustion, emission factors. The District has determined that the source cannot exceed emission standard uncontrolled.

### 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 operation flexibility.

**5. Compliance History:**

Incid. #	Date	Regulation Violated	Settlement
05233	06/05/09	Reg. 2.03, section 5.3, Failure to maintain records of visible emissions surveys as required in the permit.	Agreement with fine
06645	03/27/14	Reg. 2.17, section 7.2, Failure to submit the quarterly reports as required in the permit.	Agreement with fine
06747	04/15/15	Reg. 2.17, section 7.2, Failure to submit annual compliance certification as required in the permit.	Agreement with fine

**6. Calculation Methodology or Other Approved Method:**

a. **PM/PM<sub>10</sub>**

- i. The owner or operator shall calculate the PM<sub>10</sub> emissions based on the material throughput and emission factors from AP-42, Chapter 11 Section 11.12 Concrete Batching and Section 11.19.1 Sand and Gravel Processing, unless another method is approved in writing by the District.

Uncontrolled Source	Total PM <sub>10</sub> (Emission factors in lb/ton)	E.F. Rating
Aggregate transfer* (SCC 3-05-011-04, 21, 23)	0.0033	D
Sand transfer* (SCC 3-05-011-05, 22, 24)	0.00099	D

\*Use this emission factor for aggregate/sand transfer to conveyors, elevated storage bin, packaging system, and bagging operation.

Using the above emission factors calculating the ton per month of PM<sub>10</sub> emission as follows:

$$E_{PM10} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E<sub>PM10</sub> = uncontrolled PM<sub>10</sub> emissions (tons) during a month

X = the amount of material throughput (tons) processed by the unit during a month

Controlled Source	Total PM <sub>10</sub> (Emission factors in lb/ton)	E.F. Rating
Sand dryer with fabric filter (SCC 3-05-027-02)	0.01	D

Cement unloading to elevated storage silo cement (pneumatic) (3-05-011-07)	0.00034	D
Cement supplement unloading to elevated storage silo (pneumatic) (3-05-011-17)	0.0049	E
Weigh hopper loading (3-05-011-08)	ND* (0.0028)	D
Mixer loading (central mix) (3-05-011-09)	0.0055	B

\*AP-42 Chapter 11, section 11.12 does not have controlled emission factor for weigh hopper loading. The uncontrolled emission factor (0.0028 lb/ton) should be used for emission calculation for the equipment.

Using the above emission factors calculating the ton per month of PM<sub>10</sub> emission as follows:

$$EPM_{10} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: EPM<sub>10</sub> = controlled PM<sub>10</sub> emissions (tons) during a month

X = the amount of material throughput (tons) processed by the unit during a month

- ii. The owner or operator shall account for the minor PM<sub>10</sub> emissions from Insignificant Activities when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM<sub>10</sub> emissions as the monthly emissions. District calculated PM<sub>10</sub> potential to emit for the indirect heat exchanger and brazing equipment is 40.00 pounds per month.

**7. Insignificant Activities**

Equipment	Quantity	PTE (tpy)	Regulation Basis
Indirect heat exchanger less than 10 MMBtu/hr (7 MMBtu/hr)	1	NO <sub>x</sub> = 3.01 tpy; PM <sub>10</sub> = 0.23 tpy	Regulation 1.02, Appendix A, section 1.1
Brazing, soldering or welding equipment	1	PM <sub>10</sub> = 0.01 tpy	Regulation 1.02, Appendix A, section 3.4
Emergency relief vents, stacks and ventilating systems	5	N/A	Regulation 1.02, Appendix A, section 3.10
Diesel or fuel oil storage tanks that are not used for distribution, sale or resale, and that have less than two times the capacity of the vessel in annual turnover of the fluid contained. (1,000 gallon tank)	1	VOC = 0.01 tpy	Regulation 1.02, Appendix A, section 3.25

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.

- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15<sup>th</sup>.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

**8. Basis of Regulation Applicability for IA Units**

**a. Emission Unit IA1**

**i. Equipment**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation(s)</b>	<b>Basis for Applicability</b>
E7	One (1) natural gas indirect heat exchanger, 7 MMBtu/hr	7.06	Regulation 7.06 applies to indirect heat exchangers.

**ii. Standards/Operating Limits**

**1) PM**

- (a) Per Regulation 7.06, section 4.1.1, the source shall not cause to be discharged into the atmosphere from that Emission Point E7 particulate matter in excess of 0.56 lb/MMBtu actual total heat input.
- (b) The District has performed a one-time PM compliance demonstration for the equipment in this Emission Unit and the lb/hr standard cannot be exceeded uncontrolled. Therefore, there are no monitoring, record keeping, and reporting requirements with respect to PM lb/hr emission limits.

2) **Opacity**

- (a) Regulation 7.06, section 4.2 establishes an opacity standard of less than 20%.
- (b) The District has determined that using a natural gas fired boiler will inherently meet the 20% opacity standard. Therefore, the source is not required to perform periodic monitoring to demonstrate compliance with the opacity standard.

3) **SO<sub>2</sub>**

- (a) Per Regulation 7.06, section 5.1.1, the sulfur dioxide emissions from Emission Point E7 cannot exceed 1.0 lb/MMBtu actual total heat input for combustion of liquid and gaseous fuels.
- (b) The District has performed a one-time SO<sub>2</sub> compliance demonstration for the equipment in this Emission Unit and the standard cannot be exceeded uncontrolled. Therefore, there are no monitoring, record keeping, and reporting requirements with respect to SO<sub>2</sub> emission limits.

b. **Emission Unit IA2**

i. **Equipment**

Emission Point	Description	Applicable Regulation(s)	Basis for Applicability
E8	One (1) diesel storage tank (1,000 gallon)	7.12	Regulation 7.12 applies to each storage vessel for volatile organic compounds that commences construction or modification on or after April 19, 1972, and has a storage capacity greater than 250 gallons.

ii. **Standards/Operating Limits**

1) **VOC**

Per Regulation 7.12, section 3.3, if the storage vessel has a storage capacity greater than 946.25 liters (250 gallons), the owner or operator shall not store materials with an as stored

vapor pressure of greater than or equal to 1.5 psia in the storage vessel, unless the storage tank is equipped with a permanent submerged fill pipe.