

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number:

022012-012

Project Number: 2011-11-028

Installation ID: 095-0030

Parent Company:

Lafarge North America, Inc.

Parent Company Address: 15100 East Courtney Atherton Rd., Sugar Creek, MO 64058

Installation Name:

Lafarge North America - Courtney Ridge Quarry

Installation Address:

2620 North Highway 291, Sugar Creek, MO 64058

Location Information:

Jackson County, S14 T50N R32W

Application for Authority to Construct was made for:

The installation of a screening plant, rated at 600 tons per hour. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

FEB 22 2012

EFFECTIVE DATE

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

1. **Best Management Practices Requirement**
Lafarge North America - Courtney Ridge Quarry shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing Best Management Practices as defined in Attachment AA.
2. **Annual Emission Limit**
 - A. Lafarge North America - Courtney Ridge Quarry shall emit less than 25.0 tons of particulate matter in any 12-month period from the screening plant of this permit.
 - B. Lafarge North America - Courtney Ridge Quarry shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
3. **Moisture Content Testing Requirement**
 - A. Lafarge North America - Courtney Ridge Quarry shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted no later than 45 days after the start of operation. A second test shall be performed the calendar year following the initial test during the months of July or August.
 - D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
 - E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Lafarge North America - Courtney Ridge Quarry main office within 30 days of completion of the required test.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Lafarge North America - Courtney Ridge Quarry shall either:
- 1) Apply for a new permit to account for the revised information, or
 - 2) Submit a plan for the installation of wet spray devices to the Air Pollution Control Program Compliance Assistance section within ten days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
- G. In lieu of testing, Lafarge North America - Courtney Ridge Quarry may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
4. **Minimum Distance to Property Boundary Requirement**
The primary emission point shall be located at least 750 feet from the nearest property boundary.
5. **Primary Equipment Requirement**
Lafarge North America - Courtney Ridge Quarry shall process all rock through the primary screens: Powergrid screens (EP-2) and the Gabion Stone screen (EP-4). Bypassing these primary screens is prohibited.
6. **Record Keeping Requirement**
Lafarge North America - Courtney Ridge Quarry shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources' personnel upon request.
7. **Reporting Requirement**
Lafarge North America - Courtney Ridge Quarry shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2011-11-028
Installation ID Number: 095-0030
Permit Number:

Lafarge North America - Courtney Ridge Quarry Complete: December 5, 2011
2620 North Highway 291
Sugar Creek, MO 64058

Parent Company:
Lafarge North America, Inc.
15100 East Courtney Atherton Rd.
Sugar Creek, MO 64058

Jackson County, S14 T50N R32W

PROJECT DESCRIPTION

Lafarge North America, Inc. operates a quarry (095-0321) and a Portland cement plant (095-0030) at this site. They both are considered one installation for permitting purposes and this installation is a major source under construction and operating permits.

Lafarge North America, Inc. has proposed to install a screening plant that utilizes one Powerscreen Powergrid and one Powerscreen Gabion Stone machine to screen aggregate at the Courtney Ridge Quarry. Per the applicant, the two machines attach and the top deck of the Gabion Stone machine becomes an extension of the top deck of the Power Grid, resulting in two total screens for this plant. Each screen is rated 600 tons per hour. This screening plant is powered by a diesel engine that is rated at 70 horsepower. The emission points of this screening plant are listed in Table 1.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control emissions from haul roads and vehicular activity areas. This installation is located in Jackson County, a maintenance area for ozone and an attainment area for all other criteria pollutants.

TABLES

Table 1: Summary of Emission Points of Project

Emission Point (EP) #	Description of EP
EP-159	Truck unloading from storage pile 1 to Powergrid
EP-160	Powergrid top & bottom deck screen
EP-161	Powergrid conveyors
EP-162	Gabion Stone deck screen
EP-163	Gabion Stone conveyors
EP-164	70 hp engine for Powergrid
EP-165a	Storage pile 1 load in
EP-165b	Storage pile 1 wind
EP-165c	Storage pile 1 V.A.
EP-165d	Storage pile 1 loadout
EP-166a	Storage pile 2 load in
EP-166b	Storage pile 2 wind
EP-166c	Storage pile 2 V.A.
EP-166d	Storage pile 2 loadout
EP-167a	Storage pile 3 load in
EP-167b	Storage pile 3 wind
EP-167c	Storage pile 3 V.A.
EP-167d	Storage pile 3 loadout
EP-168	Haul Road 1

The following permits have been issued to Lafarge North America - Courtney Ridge Quarry from the Air Pollution Control Program.

Table 2: Previous Permits Issued to the Installation (095-0030 and 095-0321)

Permit Number	Description
0184-055	A Section (5) permit issued for the replacement of a finish mill with a higher capacity finish mill
0790-002	A Section (5) permit to replace up to 10% of the well water used for cooling with non-hazardous wastewater from other industries
0891-005	A Section (5) permit for the processing of non-hazardous separated solid industrial wastes
0891-005Am	Amendment to Permit No. 0891-005 to revise special conditions
1192-016	Section (5) permit for a new hopper and weigh feeder for clay
0891-005A	Amendment to Permit No. 0891-005 to revise special conditions
0596-027	Section (5) permit for the construction of a deep limestone mine
0897-019	Section (8) permit for the construction of a new preheater/precalciner cement plant at the existing installation

0897-019A	Amendment to Permit No. 0897-019 to revise special conditions to reflect design changes in the new cement plant.
0897-019B	Amendment to Permit No. 0897-019 to revise language in the permit to allow for an increase in the maximum daily amount of aggregate production
012002-004	Section (5) permit for the construction of a new clinker reclaim system at the old Portland Cement plant
112008-001	Section (5) permit to extend crushing activity
0897-019C	Amendment to Permit No. 0897-019 to revise the special conditions to address differences between the new cement plant as originally proposed and the as-built plant
082004-016	Section (5) permit for the use of alternate fuels in the preheater/precalciner cement kiln
072004-028	Section (5) permit issued for the installation of a chlorine bypass system on the preheater/precalciner cement kiln
112004-014	Section (5) permit for the installation of a hopper and screw conveyor to reclaim weathered clinker
0897-019D	Section (8) permit to amend PM ₁₀ limits
092005-015	Section (5) permit for the construction of a blended cement system
062006-002	Section (5) permit to add kiln dust loading
082004-016A	Amendment to Permit No. 082004-015 to increase the amount of landfill gas that can be combusted in the kiln
082004-016B	Amendment to Permit No. 082004-015 to allow the use of alternative fuels in the cement kiln
0897-019E	Amendment to Permit No. 0897-019E to update haul road emissions control
022009-005	Section (5) permit to add crushers and screens
082004-016B	Amendment to Permit No. 082004-016 to use an additional alternative fuel
082004-016C	Amendment to Permit No. 082004-016 to add chlorine limits
022009-005	Amendment to Permit No. 022009-005 to replace screens and correct original permit

The table below summarizes the emissions of this project. The existing potential emissions of this installation have not been determined. Installations whose existing actual emissions that are reported to be equal to or more than 250.0 tons per year are stated as "major." The existing actual emissions were taken from the previous year's Emissions Inventory Questionnaire (EIQ) for installations 095-0030 and 095-0321. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8,760 hours per year). The conditioned potential emissions are based on a voluntary de minimis limit on particulate matter (PM) emissions to 25.0 tons per year.

Table 3: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level	Existing Potential Emissions of Installation	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	Conditioned Potential Emissions of the Application
PM	25.0	N/D	N/D	188.54	< 25.0
PM ₁₀	15.0	N/D	100.38	80.98	10.74
PM _{2.5}	10.0	N/D	46.52	17.51	2.32
SO _x	40.0	Major	277.97	0.03	0.0043
NO _x	40.0	Major	1,063.06	9.83	1.30
VOC	40.0	N/D	74.73	0.80	0.11
CO	100.0	Major	571.55	2.12	0.28
Total HAPs	25.0	N/D	3.16	0.01	0.0012

N/D = Not Determined

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States Environmental Protection Agency document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the equipment handling the aggregate were calculated using emission factors from AP-42 Section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004. The controlled emission factors were used because the inherent moisture content of the crushed rock is equal to or greater than 1.5 percent by weight.

Emissions from the diesel engine were calculated using emission factors from AP-42 Section 3.3 Gasoline and Diesel Industrial Engines," October 1996.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 90 percent control efficiency is applied to the emission calculations for the use of Best Management Practices. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. The moisture content of the aggregate is 1.5 percent weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Lafarge North America - Courtney Ridge Quarry shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements.

Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165
- *Operating Permits*, 10 CSR 10-6.065

SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the screens and belt conveyors of this plant.
- 40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to the engine of this plant.
- 40 CFR Part 63 Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" applies to the engine of this plant.
- None of the National Emission Standards for Hazardous Air Pollutants apply to the proposed equipment of this plant.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Daronn Williams
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 8, 2011, received November 14, 2011, designating Lafarge North America, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated December 7, 2011.

Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the plant is operating.

1. Pavement
 - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions¹ while the plant is operating.
 - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.

2. Application of Chemical Dust Suppressants
 - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
 - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.

3. Application of Water-Documented Daily
 - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
 - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources personnel upon request.

¹For purposes of this document, Control of Fugitive Emissions means to control particulate matter that is not collected by a capture system and visible emissions to the extent necessary to prevent violations of the air pollution law or regulation. (Note: control of visible emission is not the only factor to consider in protection of ambient air quality.)

Ms. Sarah Wallace
Manager of Environmental & Public Affairs
Lafarge North America - Courtney Ridge Quarry
1300 South Route 31
South Elgin, IL 60177

RE: New Source Review Permit - Project Number: 2011-11-028

Dear Ms. Wallace:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Daronn Williams at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:dwk

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-11-028

Permit Number: