

PERMIT BOOK

STATE OF MISSOURI



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: **032013-007** Project Number: 2013-01-015
Installation ID: 149-0022

Parent Company: King Quarry, LLC

Parent Company Address: North Highway 63 Junction OO, Thayer, MO 65791

Installation Name: King Quarry

Installation Address: North Highway 63 Junction OO, Thayer, MO 65791

Location Information: Oregon County, S18, T22N, R05W

Application for Authority to Construct was made for:
install a new crushing and screening plant along with the associated conveyors. 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.

MAR 11 2013

EFFECTIVE DATE

A handwritten signature in black ink, reading "Kya L Moore".

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 Department's 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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SITE SPECIFIC 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**
King 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. **Ambient Air Impact Limitation**
 - A. King Quarry shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter (PM₁₀) of 150.0 µg/m³ 24-hour average in ambient air.
 - B. King Quarry shall demonstrate compliance with Special Condition 2.A using Attachment A, Attachment B, or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. King Quarry shall account for the impacts from other sources of PM₁₀ as instructed in Attachment A and Attachment B.
3. **Wet Suppression Control System Requirement**
 - A. King Quarry shall install and operate wet spray devices on the crusher (EP-38).
 - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, King Quarry shall adjust the production rate to control emissions from this unit. King Quarry shall record a brief description of such events.
4. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EP-38) shall be located at least 300 feet from the nearest property boundary.
5. **Record Keeping Requirement**
King 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.
6. **Reporting Requirement**
King 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: 2013-01-015
Installation ID Number: 149-0022
Permit Number:

King Quarry
North Highway 63 Junction OO
Thayer, MO 65791
Oregon County, S18, T22N, R05W

Complete: January 7, 2013

PROJECT DESCRIPTION

King Quarry will install and operate a Canica vertical shaft impact crusher, a Cedarapids triple deck screen, and the associated conveyors. Limestone will be crushed from a maximum diameter of one inch into chips with a diameter of 5/16". The feedstock for the new crusher will be the product of the previously permitted crusher on site. The finished product will be sold as an agriculture product known as aglime. The impact crusher (EP-38) is the plant bottleneck with a maximum hourly design rate equal to 125.0 tons. All equipment was assumed to operate at a rate of 125.0 tons per hour for the calculation of potential to emit. Additionally, King Quarry operates a stationary crushing plant, a screening plant, and a grandfathered asphalt plant at this location. King Quarry currently operates under a Basic Operating Permit. Haul roads were not included in the PTE calculation for this project because the previous permit assumed all crushed rock would be shipped.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control particulate emissions from haul roads and vehicular activity areas.

This installation is located in Oregon County, an attainment area for all criteria pollutants.

This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250.0 tons per year and fugitive emissions are not counted toward major source applicability.

TABLES

The following permits have been issued to King Quarry from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
042004-011A	Allow Colocation
0420004-011	Rock Crushing Plant
042004-012	Screening Plant

The table below summarizes the emissions of this project. The existing potential emissions at this site were taken from permit numbers 042004-011 and 042004-012. The ambient impact of the asphalt plant will be considered for the record keeping of PM₁₀ ambient impact. The existing actual emissions were taken from the 2006 EIQ because 2006 was the last year the facility completed a full EIQ. The potential emissions of the application represent the emissions of all equipment and activities associated with this project, assuming continuous operation (8760 hours per year). The controlled potential emissions include emissions from sources that will limit their particulate emissions through the use of water spray bars. Potential emissions from this application are below the de minimis level.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level	Existing Potential Emissions	Existing Actual Emissions (2006 EIQ)	Potential Emissions of the Application
PM	25.0	N/D	N/D	13.46
PM ₁₀	15.0	<57.0	5.27	4.81
PM _{2.5}	10.0	N/D	0.0017	0.66
SO _x	40.0	0.4	N/D	N/A
NO _x	40.0	5.9	N/D	N/A
VOC	40.0	N/D	N/D	N/A
CO	100.0	7.0	N/D	N/A
Total HAPs	25.0	N/D	N/D	N/A

N/A = Not Applicable; N/D = Not Determined

Table 3: Ambient Air Quality Impact Analysis

Pollutant	^a NAAQS/RAL (µg/m ³)	Averaging Time	^b Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	^c Daily Limit (tons/day)
^d PM ₁₀ (same)	150.0	24-hour	195.73	130.0	20.0	N/A
^e PM ₁₀ (separate)	150.0	24-hour	N/A	^f 130.0	20.0	N/A

^aNational Ambient Air Quality Standards (NAAQS) and Risk Assessment Level (RAL)

^bModeled impact of the new screening and crushing plant at maximum capacity with controls

^cIndirect limit based on compliance with NAAQS.

^dSolitary operation or operation with other plants that are owned by King Quarry

^eOperation with other plants that are not owned by King Quarry

^fThe limited impact shall include the ambient impact of all process equipment owned by King Quarry

EMISSIONS CALCULATIONS

Emissions from the rock-crushing equipment 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 equipment is controlled by a water spray device. Emissions from vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 90% control efficiency for PM and PM₁₀ and a 40% control efficiency for PM_{2.5} are applied to the emission calculations for the use of BMPs. The moisture content of the aggregate is assumed to be 0.7% by weight.

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 3. The Air Pollution Control Program requires an AAQIA of PM₁₀ for all asphalt, concrete and rock-crushing plants regardless of the level of PM₁₀ emissions if a permit is required. An AAQIA is required for other pollutants if their emissions exceed their respective de minimis or screening model action level (SMAL). The AAQIA was performed using the Air Pollution Control Program's generic nomographs. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the National Ambient Air Quality Standard (NAAQS) or Risk Assessment Level (RAL) for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of 20 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

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 all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

King 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.
- A Basic Operating Permit amendment request is required for this installation within 30 days of equipment startup.
- *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

SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.

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.

J Luebbert
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 27, 2012, received January 7, 2013, designating King Quarry as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

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 portable 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.)

Mr. Calvin Crider
Partner
King Quarry
North Highway 63 Junction OO
Thayer, MO 65791

RE: New Source Review Permit - Project Number: 2013-01-015

Dear Mr. Crider:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions 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 J Luebbert, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:jl

Enclosures

c: Southeast Regional Office
PAMS File: 2013-01-015

Permit Number: