

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: **062012-009**

Project Number: 2011-11-018
Installation ID: 003-0017

Parent Company: Uehlin Quarry

Parent Company Address: P.O. Box 214, Amazonia, MO 64221

Installation Name: Uehlin Quarry

Installation Address: Intersection of Route T and County Road 4412 near Amazonia

Location Information: Andrew County (S28, T59N, R36W)

Application for Authority to Construct was made for:

The permitting of an existing stationary rock crushing plant. This facility was constructed prior to receipt of a permit from the Missouri Department of Natural Resources. Obtaining this permit is part of a remedial action required by the Air Pollution Control Program. This review was conducted in accordance with Section (6), 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.

JUN 28 2012

EFFECTIVE DATE

Kyra 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.

Page No.	3
Permit No.	
Project No.	2011-11-018

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**
Uehlin 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. **Production Limits**
 - A. Uehlin Quarry shall not produce more than 4,625 tons of aggregates per day from the entire installation.
 - B. Uehlin Quarry shall not produce more than or equal to 334,947 tons of aggregates in any 12-month period from the entire installation.
 - C. Uehlin Quarry shall demonstrate compliance with Special Condition 2.A and 2.B. using Attachments A and B or other equivalent forms that have been approved by the Air Pollution Control Program, including electronic forms.
3. **Minimum Distance to Property Boundary Requirement**
The primary emission point, which is the primary crusher (EP-03), shall be located at least 900 feet from the nearest property boundary.
4. **Concurrent Operation Restriction**
Uehlin Quarry is prohibited from operating whenever other plants are located at the site.
5. **Primary Equipment Requirement**
Uehlin Quarry shall process all rock through the primary crusher (EP-3). Bypassing the primary crusher is prohibited.
6. **Crusher Restrictions**
Uehlin Quarry shall not operate more than two crushers at the same time.
7. **Diesel Engine Operational Restriction**
Uehlin Quarry shall only operate its diesel engine to power equipment during production.
8. **Record Keeping Requirement**
Uehlin 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.

Page No.	4
Permit No.	
Project No.	2011-11-018

SITE SPECIFIC SPECIAL CONDITIONS:

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

9. Reporting Requirement

Uehlin 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 (6) REVIEW

Project Number: 2011-11-018
Installation ID Number: 003-0017
Permit Number:

Uehlin Quarry
Intersection of Route T and County Road 4412
Near Amazonia, MO

Complete: November 9, 2011

Parent Company:
Uehlin Quarry
P.O. Box 214
Amazonia, MO 64221

Andrew County (S28, T59N, R36W)

PROJECT DESCRIPTION

Uehlin Quarry is an existing rock crushing plant located near Amazonia, MO. The facility was constructed prior to receipt of a permit from the Missouri Department of Natural Resources. Obtaining this permit is part of a remedial action required by the Air Pollution Control Program. The installation has a maximum hourly design rate of 400 tons per hour. The crushing is performed using two (2) diesel-powered crushing units. The diesel engines are rated at 375 and 400 horsepower. The aggregates are first processed by the primary crusher (a Hewitt Robins 365 impactor) and then a secondary crusher (an El-Jay cone crusher). The aggregates are then screened according to size using conveyor-loaded screening plants powered by electrical lines. The crushed aggregates are transported by either conveyors or trucks to storage piles until sold. There is a backup crusher at the site that may be used in case one of the other crushers cannot be operated, but the facility will not operate more than two crushers at one time. If the facility decides to operate all three crushers at the site at the same time, a new permit review will be required.

The facility will use 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 Andrew 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 tons per year and fugitive emissions are not counted toward major source applicability.

No permits have been issued to Uehlin Quarry from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions are based on the production limit of less than 334,947 tons per 12-month period which limits the PM₁₀ emissions below 15.0 tons per year to avoid modeling requirements.

Table 1: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	N/D	N/D	426.27	40.69
PM ₁₀	15.0	N/D	N/D	156.92	<15.0
PM _{2.5}	10.0	N/D	N/D	47.56	4.53
SO _x	40.0	N/D	N/D	7.15	0.68
NO _x	40.0	N/D	N/D	108.79	10.34
VOC	40.0	N/D	N/D	8.88	0.84
CO	100.0	N/D	N/D	2.23	2.23
HAPs	10.0/25.0	N/D	N/D	0.10	0.01

N/D = Not Determined

Table 2: Ambient Air Quality Impact Analysis

Pollutant	^a NAAQS (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	150.0	24-hour	398.1	130.0	20.0	4,625

^aNational Ambient Air Quality Standards (NAAQS)

^bModeled impact at maximum capacity with controls

^cIndirect limit based on compliance with NAAQS

^dSolitary operations only

EMISSIONS CALCULATIONS

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

- 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 uncontrolled emission factors were used because the inherent moisture content of the crushed rock is less than 1.5 percent (%) by weight.
- Emissions from the diesel engines/generators 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% control efficiency is applied to the emission calculations for the use of BMPs.
- 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 0.7% by 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."

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 2. 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 and when appropriate the EPA modeling software AERSCREEN. 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. In cases where the plant is providing material for a highway project, the ambient impact is evaluated in accordance with a memorandum issued by the Air Pollution Control Program titled "Permitting Asphalt/Concrete Plants for Temporary Highway Projects," dated April 10, 2000. This memorandum states that air quality should be analyzed at the nearest residence or location where the public could reasonably expected to be found instead of all ambient air. This practice generally allows for a less restrictive daily production level while protecting the public.

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 20.0 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

This plant is not permitted to operate with any other plants at this site. If Uehlin Quarry decides to allow other plants to operate concurrently at the site, a permit amendment will be required.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are above the *de minimis* level.

APPLICABLE REQUIREMENTS

Uehlin 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 is required for this installation within 30 days after receipt of this permit.
- *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.
- 40 CFR 63 Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines," of the Maximum Achievable Control Technology regulations (MACT) applies to the equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) apply to the equipment.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 1, 2011, received November 9, 2011, designating Uehlin Quarry 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 November 28, 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 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 manufacture'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 John Uehlin
Owner
Uehlin Quarry
P.O. Box 214
Amazonia, MO 64221

RE: New Source Review Permit - Project Number: 2011-11-018

Dear Mr Uehlin:

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 and your new source review permit application 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 Chia-Wei Young, 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: cyl

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-11-018

Permit Number: