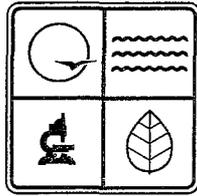


STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
MISSOURI AIR CONSERVATION COMMISSION



PERMIT BOOK

## 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: **122006-009**

Project Number: 2006-08-020  
141-0030

Owner: Siegel Quarry, LLC

Owner's Address: 9175 Bluebird Dr., Versailles, MO 65084

Installation Name: Siegel Quarry

Installation Address: 9175 Bluebird Dr., Versailles, MO 65084

Location Information: Morgan County, S29, T44N, R18W

Application for Authority to Construct was made for:

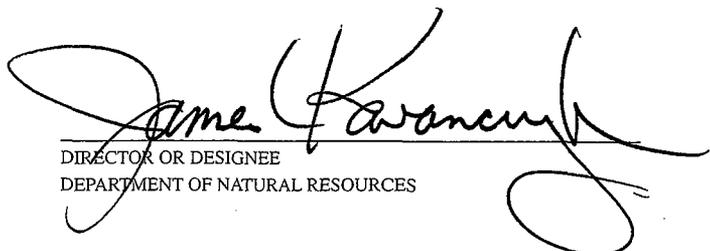
The modification of an existing rock crushing plant to consolidate all generators into one generator and to replace equipment to make the process less labor intensive. Rock is processed through 2 crusher(s), 3 screen(s), 15 conveyor(s), and a pug mill. The rock crushing plant has a maximum hourly design rate (MHDR) of 60 tons per hour (tph). 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 (listed as attachments starting on page 2) are applicable to this permit.

DEC 12 2006

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.** Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. 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 as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, 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 Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

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 Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

2006-08-020  
141-0030

Siegel Quarry, LLC

9175 Bluebird Dr., Versailles, MO 65084

Siegel Quarry

9175 Bluebird Dr., Versailles, MO 65084

Morgan County, S29, T44N, R18W

The modification of an existing rock crushing plant to consolidate all generators into one generator and to replace equipment to make the process less labor intensive. Rock is processed through 2 crusher(s), 3 screen(s), 15 conveyor(s), and a pug mill. The rock crushing plant has a maximum hourly design rate (MHDR) of 60 tons per hour (tph). This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

|             |             |
|-------------|-------------|
| Page No.    | 2           |
| Permit No.  |             |
| Project No. | 2006-08-020 |

**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); by the Missouri Rules listed in Title 10, Division 10 of the Codes of State Regulations (specifically 10 CSR 10-6.060); by 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority"; by 10 CSR 10-6.010 "Ambient Air Quality Standards" and 10 CSR 10-6.060 subsections (5)(D) and (6)(A); and by control measures requested by the applicant, in their permit application, to reduce the amount of air pollutants being emitted, in accordance with 10 CSR 10-6.060 paragraph (6)(E)3. Furthermore, one or more of the Subparts of 40 CFR Part 60, New Source Performance Standards (NSPS), applies to this installation.*

1. National Ambient Air Quality Standards (NAAQS) Limitation for Particulate Matter Less Than Ten Microns in Diameter (PM<sub>10</sub>)
  - A. The operator(s) for Siegel Quarry's rock crushing plant (141-0030) shall ensure, while operating at this site, that the ambient impact of PM<sub>10</sub> at or beyond the nearest property boundary does not exceed 150 µg/m<sup>3</sup> in any 24-hour period, in accordance with the Federal NAAQS requirements (40 CFR 50.6).
  - B. To demonstrate compliance, the operator(s) shall maintain a daily record of material processed. Attachment A, *Daily Ambient PM<sub>10</sub> Impact Tracking Record*, or other equivalent form(s), will be used for this purpose.
  
2. Moisture Content Testing Requirement for Inherent Moisture Content
  - A. The inherent moisture content of the rock will reduce particulate emissions. Siegel Quarry claimed the inherent moisture content of the processed rock to be greater than or equal to 1.5 wt%, which shall be verified by testing.
  - B. Testing shall be conducted according to approved methods, such as those prescribed by the *American Society for Testing Materials (ASTM D-2216 or C-566)*, EPA AP-42 Appendix C.2, or other method(s) approved by the Director. The first test shall be no later than 45 days after startup. Testing shall be conducted for three consecutive years during the months of June through September, while the rock crushing plant is active at this site. If the test results have been consistently greater than 1.5 wt% and there is no reported emission exceedances from the plant, then no further testing is required and this site shall be deemed to have met this condition on all subsequent permits. Verification of the results will be performed during a routine inspection. If the test results have been less than 1.5 wt% and/or there is substantial change in the emissions from the plant, then Siegel Quarry shall apply for a new construction permit to account for the revised information or operate a wet suppression system capable of maintaining visible emissions standards for each unit within 30 days.
  - C. The operator shall obtain test samples before processing (before entering the Primary Crusher, EP 1) and after processing (prior to load-in to bins and/or storage piles). During the sample processing run only, any spray devices shall be turned off during the processing from which test samples are obtained. The written analytical report shall include the raw data and moisture content (wt.%) of each sample, the test date, and the original signature of the individual performing the test. Within 30 days of completion of the required tests, the report shall be filed on-site.
  
3. Prohibition Against Concurrent Operations Without Further Review
 

The rock crushing plant (141-0030) is prohibited from operating whenever any other plant(s) are located at this site.
  
4. Restriction on Process Configuration of Primary Emission Point(s)
 

The maximum hourly design rate of the plant is equal to the sum of the design rate(s) of the primary emission point(s). Siegel Quarry has designated the following unit(s) as the primary emission point(s) of the rock crushing plant: primary crusher (EP 1). Bypassing the primary emission point(s) for processing is prohibited.
  
5. Restriction on Minimum Distance to Nearest Property Boundary
 

The primary emission point of the rock crushing plant, which is the primary crusher (EP 1), shall be located at least 1000 feet from the nearest property boundary whenever it is operating at this site.

|             |             |
|-------------|-------------|
| Page No.    | 3           |
| Permit No.  |             |
| Project No. | 2006-08-020 |

**SPECIAL CONDITIONS:**

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

---

6. Record Keeping Requirement  
The operator(s) shall maintain all records required by this permit for not less than five (5) years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
7. Reporting Requirement  
The operator(s) shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any exceedances of the limitations imposed by this permit.
8. Superseding Condition  
The conditions of this permit supersede all special conditions found in the previously issued construction permit(s) (082000-024) from the Air Pollution Control Program.
9. Power Generation  
The plant is powered with diesel generator(s)/engine(s) that may not run unless the rest of the plant is running.

# TECHNICAL REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT

## **PROJECT DESCRIPTION**

The purpose of this project is to allow Siegel Quarry to replace equipment. Seven conveyors will be added, two crushers will be replaced as like-kind, and three generators will be replaced by one generator. The (conditioned) PTE of the project was therefore calculated for the seven new conveyors and new generator. A total of 15 conveyors will be used at the plant with a combined MHDR of 60 tons per hour. Seven of these conveyors are new, and eight are existing. Assuming the conveyors have equal capacity, the seven new conveyors will have a combined MHDR of 28 tons per hour, giving a conditioned PTE of 0.00383 tons per year of PM<sub>10</sub>. The generator, rated at 0.0320 Mgal/hour, has a conditioned PTE of 0.72 tons per year of PM<sub>10</sub>, giving a total conditioned PTE of the project of 0.72 tons per year of PM<sub>10</sub>.

Rock, composed of non-metallic minerals, is drilled/blasted, loaded into haul trucks, and transported to processing. Rock is processed through feeder(s), crusher(s), screen(s), conveyor(s), and bin(s). Processing equipment is powered with diesel engine(s). The emission points are listed in the attached spreadsheet summary. This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2]. The installation is located in Morgan County, an attainment area for all criteria air pollutants.

**Table 1. Other Permits Issued for Site 141-0030**

| Permit Number | Completed | Description             |
|---------------|-----------|-------------------------|
| 082000-024    | 2000      | New rock crushing plant |

## **EMISSIONS EVALUATION**

Criteria air pollutants will be emitted from this operation. The main air pollutant of concern is NO<sub>x</sub>. The potential emissions were calculated from the maximum hourly design rate (MHDR) of the equipment, appropriate emission factors, control device efficiencies, and the limiting operating hours at MHDR. The sources of the emission factors and control efficiencies are listed in the section "Permit Documents". Based on the conditioned potential emissions, the operation is considered a de minimis source under 10 CSR 10-6.060 section (5).

The Emission Inventory Questionnaire (EIQ) for this site is not filed with the Air Pollution Control Program.

**Table 2: Emissions Summary (tons per year)**

| Air Pollutant    | Regulatory <i>De Minimis</i> Levels | Potential Emissions of the Application | **New Installation Conditioned Potential | Emission Factor (lb/ton) |
|------------------|-------------------------------------|--|--|--------------------------|
| PM <sub>10</sub> | 15.0                                | 1.10                                   | 24.52                                    | N/A                      |
| SO <sub>x</sub>  | 40.0                                | 7.76                                   | 5.90                                     | N/A                      |
| NO <sub>x</sub>  | 40.0                                | 61.45                                  | 46.72                                    | N/A                      |
| VOC              | 40.0                                | 1.57                                   | 1.20                                     | N/A                      |
| CO               | 100.0                               | 16.32                                  | 12.41                                    | N/A                      |
| HAPs             | 10.0/25.0                           | 0.03                                   | 0.02                                     | N/A                      |

Note: N/A = Not Applicable

\*\* Conditioned potential based on daily production limit from ambient impact analysis. Other pollutants proportionately reduced.

## **AMBIENT AIR QUALITY IMPACT ANALYSIS**

Screening tools were used to evaluate the ambient air impact of the hourly emissions from this operation. The ambient impact was evaluated at a distance of 1000 feet to the nearest property boundary. The ambient impact at this site shall not exceed the National Ambient Air Quality Standard (NAAQS) of 150 µg/m<sup>3</sup> of PM<sub>10</sub> at or beyond the nearest property boundary in any single 24-hour period. The screening tools were used to develop an ambient impact factor for the rock crushing plant. This ambient impact factor is incorporated into the daily record keeping table, Attachment A.

**Table 3: Ambient Air Quality Impact Analysis of PM<sub>10</sub>, 24-Hour Averaging Time**

| Operation   | Ambient Impact Factor (µg/m <sup>3</sup> /ton) | Modeled Impact (µg/m <sup>3</sup> ) | Background (µg/m <sup>3</sup> ) | NAAQS (µg/m <sup>3</sup> ) | Daily Production Limit (tons) |
|-------------|--|-------------------------------------|---------------------------------|----------------------------|-------------------------------|
| 1. Solitary | 0.1370   | 150.00                              | 0.00                            | 150.00                     | 1095                          |

Ambient air quality modeling was performed to determine the impact of nitrogen oxides (NO<sub>x</sub>). Ambient impact modeling was performed with the EPA Screen 3 Model. Shown in Table 4, the results of this modeling show the site complies with the annual average concentration of NO<sub>x</sub> at the property boundary.

**Table 4: Ambient Air Quality Impact Analysis of NO<sub>x</sub>, Annual Averaging Time**

| Pollutant       | Hourly Emissions (lb/h) | Annual Basis Screen3 (ug/m <sup>3</sup> ) | NAAQS (µg/m <sup>3</sup> ) | Time Period    |
|-----------------|-------------------------|---|----------------------------|----------------|
| NO <sub>x</sub> | 14.0                    | 26.7                                      | 100                        | Annual average |

### **APPLICABLE REQUIREMENTS**

The owner is subject to compliance with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements.

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- An Operating Permit application 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 10-3.090
- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260
- 40 CFR Part 60 Subpart "OOO", *Standards of Performance for Nonmetallic Mineral Processing Plants*, of the New Source Performance Standards (NSPS)
- The National Emission Standards for Hazardous Air Pollutants (NESHAPs) and the currently promulgated Maximum Achievable Control Technology (MACT) regulations do not 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.

\_\_\_\_\_  
Jeannie Kozak  
Environmental Engineer

\_\_\_\_\_  
Date

## **PERMIT DOCUMENTS**

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, designating Siegel Quarry, LLC as the owner and operator of the installation.
- Environmental Protection Agency (EPA) AP-42, *Compilation of Air Pollutant Emission Factors; Volume I, Stationary Point and Area Sources, Fifth Edition*.
- Noyes Data Corporation, Orlemann, et al. 1983, *Fugitive Dust Control*.
- EPA Factor Information Retrieval (FIRE) Version 6.21.
- Spreadsheet calculations of potential-to-emit and ambient impact.
- Southwest Regional Office Site Survey.



Mr. John Siegel  
President  
Siegel Quarry, LLC  
9175 Bluebird Dr.  
Versailles, MO 65084

RE: New Source Review Permit – PAMS Project: 2006-08-020

Dear Mr. Siegel:

Enclosed with this letter is your New Source Review permit. Please review your permit carefully and note the special conditions, if any, and the requirements in your permit.

Operation in accordance with the conditions and requirements in your permit, the New Source Review application submitted for project 141-0030, and your amended operating permit, is necessary for continued compliance. Please review your amended operating permit, as it will contain all applicable requirements for your rock crushing plant, including any special conditions from your New Source Review permit.

The section of the permit entitled “Technical Review of Application for Authority to Construct” should not be separated from the main portion of your permit. The entire permit must be retained in your files. 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 contact me at (573) 751-4817, or write the Department of Natural Resources’ Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102. Thank you for your attention to this matter.

Sincerely,

**AIR POLLUTION CONTROL PROGRAM**

Kendall Hale, P.E.  
New Source Review Unit Chief

KH: jkk

Enclosures

c: Southwest Regional Office  
PAMS File: 2006-08-020  
Permit Number: