

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: 07 2008 - 014 Project Number: 2008-03-051

Parent Company: Vem Bauman Contracting

Parent Company Address: 21471 Hwy 32, Ste. Genevieve, MO 63670

Installation Name: Base Rock Minerals Quarry

Installation Address: 6801 Votech Road, Bonne Terre, MO 63628

Location Information: St. Francois County, S24/25, 19/30, T37N, R4/5E

Application for Authority to Construct was made for:

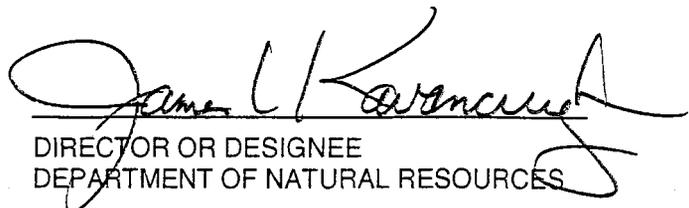
The installation of a new 500 KW diesel generator at an existing rock crushing/asphalt installation. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

JUL 31 2008

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 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 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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Project No.	2008-03-051

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 (PM₁₀)
 - A. The operator(s) for Base Rock Minerals Quarry's rock crushing/asphalt installation (187-0072) shall ensure, while operating at this site, that the ambient impact of PM₁₀ at or beyond the nearest property boundary does not exceed 150 µg/m³ in any 24-hour period, in accordance with the Federal NAAQS requirements (40 CFR 50.6).
 - B. The installation is permitted to operate under four (4) scenarios: Solitary, concurrent (same owner), concurrent (separate owners) and concurrent (same **and** separate owner) operations. The total daily ambient impact of PM₁₀ at this site shall include the combined impact of the rock crushing/asphalt installation and any ambient background concentration from other installations or equipment located on this site.
 - C. To demonstrate compliance, the operator(s) shall maintain a daily record of material processed. Attachment A, or other equivalent form(s), shall be used for this purpose during solitary and concurrent (same owner) operations. Attachment B, or other equivalent form(s), shall be used for this purpose during concurrent (separate owners) and concurrent (same and separate owners) operations.
2. New Source Performance Standards (NSPS) requirements
If the diesel engine to be installed by Base Rock Minerals is manufactured after April 1, 2006, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* of 40 CFR Part 60 would apply to the diesel engine. Base Rock Minerals shall comply with all appropriate monitoring, testing, reporting, and record keeping requirements of this subpart.
3. 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.
4. Reporting Requirement
The operator(s) shall report to the Air Pollution Control Program (APCP) 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.
5. Superseding Condition
The conditions of this permit supersede special conditions #2 found in the previously issued construction permit #032004-014A (Project #2007-05-106) from the Air Pollution Control Program.

TECHNICAL REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT

INSTALLATION DESCRIPTION

The installation consists of two (2) separate operations: A rock crushing operation with a maximum hourly design rate (MHDR) of 800 tons per hour, and an asphalt operation with an MHDR of 250 tons per hour. The asphalt operation was previously a portable plant (PORT-0219) owned by N. B. West Contracting Company, Inc. and was treated as a separate installation while it was operating at this site. After it was purchased by Base Rock Minerals, an amendment (Permit #032004-014A, Project #2007-05-106) was issued to the asphalt plant that regarded it as part of the same installation because the plants are located at the same site, have a common owner and have a common Standard Industrial Classification (SIC). The entire installation now operates under the installation ID number 187-0072.

Table 1. Other Permits Issued for Site 187-0072

Permit Number	Completed	Description
012002-008	1/14/2002	Increasing production(rock-crushing operation)
012002-008A	5/9/2002	Amend for concurrent operations (rock-crushing operation)
032003-034	4/16/2003	Amend for concurrent operations (rock-crushing operation)
032003-034A	10/16/2003	Amend control measures (rock-crushing operation)
0695-011B	5/2/2002	Relocate asphalt plant
0695-011C	4/17/2003	Amend for concurrent operations (asphalt operation)
032004-014	3/19/2004	Changing portable asphalt plant to stationary plant.
032004-014A	7/5/2007	Adding the asphalt plant as part of the installation and reevaluating production levels.

PROJECT DESCRIPTION

The installation proposes to install a new 500 KW diesel generator with maximum heat input of 4.5 mmBTU/hr. The generator will be used at the rock crushing operation and not the asphalt operation. The generator will be located at least 1,200 feet from the nearest property boundary. An existing 350 horsepower (hp) diesel engine used to power the primary crusher will be removed when the proposed generator is installed at the site. This existing diesel engine is listed in the facility Emissions Inventory Questionnaire (EIQ) as EP-57, but was permitted as EP-58. Additionally, a 600 hp crusher engine and a 500 KW generator were permitted for the rock crushing operation previously, but were removed from the installation more than two years ago. The new diesel generator will be the only diesel generator permitted to operate with the rock crushing operation. A new ambient impact analysis and emissions evaluation were performed to take into account the addition of the new generator and the removal of the old generators.

The installation has not bought the diesel engine that it will install and therefore, does not know the exact manufacturing date of the engine. Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* of the New Source Performance Standards, 40 CFR Part 60, would apply to the diesel engine if the engine that the installation eventually purchases is manufactured after April 1, 2006.

EMISSIONS EVALUATION

Criteria air pollutants will be emitted from this operation. The potential emissions were calculated from the maximum hourly design rate (MHDR) of the equipment, appropriate emission factors, 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 diesel generator is considered a *de minimis* source under 10 CSR 10-6.060 section (5).

Table 2: Emissions Summary (tons per year)

Air Pollutant	Regulatory <i>De Minimis</i> Levels	*Existing Potential Emissions	Existing Actual Emissions (2006 EI _Q)	Potential Emissions of the Application	**New Application Conditioned Potential	Emission Factor (lb/Mgal)
PM ₁₀	15.0	92.30	22.0	1.97	0.94	N/A
SO _x	40.0	22.60	5.0	9.95	4.75	N/A
NO _x	40.0	178.60	24.0	63.07	30.08	N/A
VOC	40.0	4.70	1.0	1.71	0.82	N/A
CO	100.0	47.4	15.0	16.75	7.99	N/A
HAPs	10.0/25.0	0.10	N/D	0.03	0.01	N/A

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

* Existing potential emissions of PM₁₀ are sum of emissions taken from permit # 032003-034 (for the rock-crushing plant) and from permit # 032004-014 (for the asphalt plant). Existing potential emissions from all other pollutants taken from permit #032003-034 and are only for the rock crushing operation. No existing potential emissions data is available for the asphalt operation.

** PM₁₀ conditioned potential based on daily production limit from ambient impact analysis of the entire installation. 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 1,200 feet to the nearest property boundary for the rock crushing plant and 2,030 feet to the nearest property boundary for the asphalt plant. The ambient impact at this site shall not exceed the National Ambient Air Quality Standard (NAAQS) of 150 µg/m³ of PM₁₀ 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.

In permit amendment 032004-014A (Project #2007-05-107), an ambient impact factor was given for the asphalt operation. This ambient impact factor (0.0088 µg/m³/ton) was to be used in conjunction with the ambient impact factor for the rock crushing plant (0.0176 µg/m³/ton) to track the ambient impact of all Base Rock Minerals operations at the site. The ambient impact factor for the rock crushing operation was recalculated for this permit because the added diesel engine will increase the emissions from the rock crushing operation. The ambient impact factor for the asphalt operation was also recalculated for this permit because the previous asphalt operation ambient impact factor of 0.0088 µg/m³/ton was based on 2,500 tons per day of operations. By recalculating the ambient impact factor, the asphalt operation will no longer have to limit its daily production to 2,500 tons per day. Instead, it may balance production with the rock crushing operation to ensure that the combined daily ambient impact of all installations at the site does not exceed 150 µg/m³. Attachment A and B in this permit are now to be used to track the daily PM₁₀ ambient impact of both operations to ensure compliance with NAAQS.

The installation is permitted to operate under four (4) separate scenarios:

- Solitary Operation: Operations when the installation (187-0072) is the only installation at the site. The installation (187-0072) shall track its own daily PM₁₀ ambient impact to ensure that NAAQS is not exceeded. Attachment A, or equivalent forms, shall be used for this purpose.
- Concurrent (Same Owner) Operations: Operations when the installation (187-0072) is located at this site at the same time as other installations owned by Base Rock Minerals. The installation (187-0072) shall track its own daily PM₁₀ ambient impact and the daily PM₁₀ ambient impact of other plants at the site to ensure that the combined daily PM₁₀ ambient impact does not exceed NAAQS. Attachment A, or equivalent forms, shall be used for this purpose.
- Concurrent (Separate Owners) Operations: Operations when the installation is located at this site at the same time as installations owned by other companies. The installation (187-0072) is permitted for 121.36 µg/m³ of daily PM₁₀ ambient impact. Installations owned by other companies are permitted for 28.64 µg/m³ of daily PM₁₀ ambient impact. The installation (187-0072) shall track its own daily PM₁₀ ambient impact to ensure that it does not exceed 121.36 µg/m³. Attachment B, or equivalent forms, shall be used for this purpose.
- Concurrent (Same **and** Separate Owners) Operations: Operations when the installation is located at this site at the same time as installations owned by Base Rock Minerals **and** installations owned by other companies. Plants owned by Base Rock Minerals are permitted for 121.36 µg/m³ of daily PM₁₀ ambient impact while plants owned by other companies are permitted for 28.64 µg/m³ of daily PM₁₀ ambient

impact. The installation (187-0072) shall track its own daily PM₁₀ ambient impact and the ambient impact of other plants owned by Base Rock Minerals to ensure that the combined daily PM₁₀ ambient impact from these plants does not exceed 121.36 µg/m³. Attachment B, or equivalent forms, shall be used for this purpose.

Table 3: Ambient Air Quality Impact Analysis of PM₁₀, 24-Hour Averaging Time

Operation	Ambient Impact Factor (µg/m ³ ·ton)	Modeled Impact (µg/m ³)	*Background (µg/m ³)	NAAQS (µg/m ³)	Daily Production Limit (tons)
1. Solitary	0.01638	150.00	0.00	150.00	9,156
2. Concurrent (Same Owner)	0.01638	**	0.00	150.00	**
3. Concurrent (Separate Owners)	0.01440	121.36	28.64	150.00	8,427
4. Concurrent (Same and Separate Owners)	0.01440	**	28.64	150.00	**

* Background PM₁₀ level of 28.64 µg/m³ from the operation plants owned by other companies.

** The operator(s) must balance production among concurrently operating plants, with the ambient impact factors for each, such that NAAQS is not exceeded. Ambient impacts from other plants owned by Base Rock Minerals can be obtained from the operators of these plants.

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
- A modification to the operating Permit application is required for this installation within 90 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 Sulfur Compounds*, 10 CSR 10-6.260
- 40 CFR Part 60 Subpart "IIII", *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, would apply to the diesel engine if the engine is manufactured after April 1, 2006.
- The National Emission Standards for Hazardous Air Pollutants (NESHAPs) does not apply to the proposed equipment.
- 40 CFR Part 63 Subpart "ZZZZ", *National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, apply to the diesel generator.

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.

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, designating Vem Bauman Contracting 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 Corp. book, Orlemann, et al.1983, *Fugitive Dust Control*.
- EPA Factor Information Retrieval (FIRE) Version 6.21.
- Spreadsheet calculations of potential-to-emit and ambient impact.
- Southeast Regional Office Site Survey dated 5/2/2008.

Mr. Kerry Bauman
Manager
Vem Bauman Contracting
21471 Hwy 32, Ste. Genevieve, MO 63670
Base Rock Minerals Quarry

RE: New Source Review Permit - Project Number: 2008-03-051

Dear Mr. Bauman:

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 2008-03-051, and your amended operating permit, if required, is necessary for continued compliance. Please review your amended operating permit, as it will contain all applicable requirements for your rock crushing/asphalt installation, 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 do not hesitate to contact Chi Wei Young at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by telephone, (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

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

KBH: cwyl

Enclosures

c: Southeast Regional Office
PAMS File: 2008-03-051
Permit Number: