



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: 092013-010

Project Number: 2013-06-038
Installation ID: 131-0039

Parent Company: Magruder Limestone Co., Inc.

Parent Company Address: 255 Watson Road, Troy, MO 63379

Installation Name: Magruder Limestone Co., Inc. - Vaughn Quarry

Installation Address: 14 Highway V, Eldon, MO 65026

Location Information: Miller County, S8, T40N, R15W

Application for Authority to Construct was made for:
making portable rock crushing plant PORT-0149 stationary at Vaughn Quarry. 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.

SEP 13 2013

EFFECTIVE DATE

Handwritten signature of Kyrá L Moore in cursive script.

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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Project No.	2013-06-038

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. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued Construction Permit 022002-012 from the Air Pollution Control Program.
2. **Equipment Identification Requirement**
Magruder Limestone Co., Inc. - Vaughn Quarry shall maintain easily read permanent markings on each component of the plant. These markings shall be the equipment's serial number or a company assigned identification number that uniquely identifies the individual component. These identification numbers must be submitted to the Air Pollution Control Program no later than 15 days after the stationary rock crushing plant begins operation.
3. **Best Management Practices Requirement**
Magruder Limestone Co., Inc. - Vaughn 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.
4. **Ambient Air Impact Limitation**
 - A. Magruder Limestone Co., Inc. - Vaughn 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. Magruder Limestone Co., Inc. - Vaughn Quarry shall demonstrate compliance with Special Condition 4.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. Magruder Limestone Co., Inc. - Vaughn Quarry shall account for the impacts from other sources of PM₁₀ as instructed in the attachment.
 - C. Magruder Limestone Co., Inc. - Vaughn Quarry is exempt from the requirements of Special Condition 4.B when no other plants are operating at this site.
5. **Annual Emission Limit**
 - A. Magruder Limestone Co., Inc. - Vaughn Quarry shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation.

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SPECIAL CONDITIONS:

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

- B. Magruder Limestone Co., Inc. - Vaughn Quarry shall demonstrate compliance with Special Condition 5.A using Attachment B or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
6. Moisture Content Testing Requirement
- A. Magruder Limestone Co., Inc. - Vaughn Quarry shall verify that the moisture content of the processed rock is greater than or equal to 1.5% by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) 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 Magruder Limestone Co., Inc. - Vaughn Quarry main office within 30 days of completion of the required test.
 - F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 6.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Magruder Limestone Co., Inc. - Vaughn 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 Compliance/Enforcement Section of the Air Pollution Control Program 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, Magruder Limestone Co., Inc. - Vaughn Quarry may obtain test results that demonstrate compliance with the moisture content in Special Condition 6.A from the supplier of the aggregate.
7. Minimum Distance to Property Boundary Requirement
- The primary emission point (the primary crusher, EP4) shall be located at least 600 feet from the nearest property boundary.

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SPECIAL CONDITIONS:

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

8. **Concurrent Operation Restriction**
Magruder Limestone Co., Inc. - Vaughn Quarry is prohibited from operating whenever other plants not owned by Magruder Limestone Co., Inc. are located at the site.
9. **Primary Equipment Requirement**
Magruder Limestone Co., Inc. - Vaughn Quarry shall process all rock through the primary crusher (EP4). Bypassing the primary crusher is prohibited.
10. **Nonroad Engine Requirement**
 - A. To meet the definition of a nonroad engine as stated in 40 CFR 89.2, Magruder Limestone Co., Inc. - Vaughn Quarry's 825 horsepower engine, 425 horsepower engine, and 325 horsepower engine cannot remain in one physical location for longer than 12 months.
 - B. Magruder Limestone Co., Inc. - Vaughn Quarry shall keep records of the relocation within the site of the diesel engines listed in Special Condition 10.A using Attachment C, Attachment D, and Attachment E or other equivalent forms that have been approved by the Air Pollution Control Program, including electronic forms.
 - C. If any of the three engines remain in the same physical location for longer than 12 months, Magruder Limestone Co., Inc. - Vaughn Quarry shall apply for a new permit to account for the engine's revised status.
11. **Record Keeping Requirement**
Magruder Limestone Co., Inc. - Vaughn 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.
12. **Reporting Requirement**
Magruder Limestone Co., Inc. - Vaughn 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: 2013-06-038
Installation ID Number: 131-0039
Permit Number:

Magruder Limestone Co., Inc. - Vaughn Quarry Complete: June 19, 2013
14 Highway V
Eldon, MO 65026

Parent Company:
Magruder Limestone Co., Inc.
255 Watson Road
Troy, MO 63379

Miller County, S8, T40N, R15W

PROJECT DESCRIPTION

Magruder Limestone Co., Inc. is making portable rock crushing plant PORT-0149 stationary at Vaughn Quarry. The installation will consist of the following equipment:

- A grizzly feeder (EP3);
- A primary crusher (EP4);
- A secondary screen (EP5);
- A secondary crusher (EP6);
- A tertiary screen (EP7);
- A pit haul road and a customer haul road (EP8-1 and EP8-2);
- A tertiary crusher (EP9);
- Eleven conveyors (EP14, EP14A, and EP15 through EP23);
- A storage pile (EP10 through EP13));
- Load-out bins (EP26, EP27, and EP28); and
- A 2,500 gallon diesel storage tank, a 1,000 gallon diesel storage tank, and a 500 gallon storage tank (T1, T2, and T3).

Other plants may be located at Vaughn Quarry, but these other plants will also be owned by Magruder Limestone Co., Inc.

The minimum distance to the property line is 600 feet. The length of the pit haul road (EP8-1) is 250 feet and the length of the customer haul road (EP8-2) is 600 feet. The storage pile (EP10 through EP13)) covers a maximum of two acres. Haul roads and vehicular activity areas are unpaved.

The plant will be powered by an 825 horsepower engine, a 425 horsepower engine, and a 325 horsepower engine. Magruder Limestone Co., Inc. - Vaughn Quarry plans to move the rock crushing plant at least once a year in order to keep it close to the quarry rock face. Thus the

engines meet the definition of nonroad engine in 40 CFR 89.2. This permit requires Magruder Limestone Co., Inc. - Vaughn Quarry to document the engines' movements and to obtain a new permit if any of the engines remain in one physical location for more than 12 months. Therefore, the emissions of the engines were not included.

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 Miller 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.

A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.

TABLES

The following permits have been issued to Magruder Limestone Co., Inc. PORT-0149 from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0294-011	Original construction permit for portable rock crushing plant
EX199805026	Basic operating permit
0294-011 amendments	Three 21-day relocations and six 7-day relocations
022002-012	Replace primary crusher and add tertiary crusher
AP200208027	Basic operating permit renewal
AP200211047	"No Permit Required" letter for one new screen and two new conveyors.
022002-012 amendments	Five 21-day relocations and nine 7-day relocations

Magruder Limestone Co., Inc. PORT-0149 received a Basic Operating Permit in 1998 and renewed it in 2003. It has not been renewed again because operating permits are not required for portable rock crushing plants, per 10 CSR 10-6.065(1)(C)20. Since the plant is being made stationary, it will now require one.

No Notices of Excess Emissions or Notices of Violations have been issued for Magruder Limestone Co., Inc. PORT-0149 in the last five years.

The table below summarizes the emissions of this project. The existing actual emissions were taken from the previous year's Emissions Inventory Questionnaire (EIQ) for PORT-0149. 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 account for a voluntary limit of 15.0 tons per year of PM₁₀ to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6).

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Existing Actual Emissions (2012 EIQ)	^a Potential Emissions of the Application	^b Conditioned Emissions of the Application
PM	25.0	N/D	52.99	37.78
PM ₁₀	15.0	1.08	21.04	15.00
PM _{2.5}	10.0	0.00	5.34	3.81
SO _x	40.0	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A
VOC	40.0	0.00	0.0020	0.0020
CO	100.0	N/A	N/A	N/A
GHG (CO ₂ e)	100,000	N/A	N/A	N/A
Napthalene	10.0/10.0 ^c	N/D	6.0E ⁻⁵	6.0E ⁻⁵
Total HAPs	25.0	0.00	6.0E ⁻⁵	6.0E ⁻⁵

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

^aIncludes site haul road and storage pile emissions

^bAccounts for voluntary limit of 15.0 tons per year of PM₁₀. Since the effect of this limitation on VOC, and HAP is unknown, these figures were not adjusted.

^cScreening Model Action Level (SMAL)

Table 3: 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 (same)	150.0	24-hour	56.31	N/A	20.0	N/A

^aNational Ambient Air Quality Standards (NAAQS)

^bModeled impact at maximum capacity with controls

^cIndirect limit based on compliance with NAAQS.

^dSolitary operation or operation with other plants that are owned by Magruder Limestone Co., Inc.

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 controlled emission factors were used because the inherent moisture content of the crushed rock is at least 1.5% by weight.

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 for PM and PM₁₀ and a 40% control efficiency for PM_{2.5} are 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 at least 1.5% 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 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 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.

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 (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Magruder Limestone Co., Inc. - Vaughn 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.
- *Operating Permits*, 10 CSR 10-6.110. Submittal of a Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- *Restriction of Emission of Odors*, 10 CSR 10-6.165
- *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

SPECIFIC REQUIREMENTS

- New Source Performance Standards (NSPS) apply to the installation. 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 (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Cheryl Steffan
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 June 11, 2013, received June 14, 2013, designating Magruder Limestone Co., Inc. 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. Harold Bono
Secretary/Treasurer
Magruder Limestone Co., Inc.
255 Watson Road
Troy, MO 63379

RE: New Source Review Permit - Project Number: 2013-06-038

Dear Mr. Bono:

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 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 Cheryl Steffan, 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:cas

Enclosures

c: Southwest Regional Office
PAMS File: 2013-06-038

Permit Number: