



Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

SEP 17 2015

Mr. Dan Niederhelm
Safety Manager
Magruder Limestone Company
330 Highway E
Silex, MO 63377

RE: New Source Review Temporary Permit Request - Project Number: 2015-08-015

Installation ID Number: 113-0060

Temporary Permit Number: **092015-010**

Expiration Date: December 1, 2015

Dear Mr. Niederhelm:

The Missouri Department of Natural Resources' Air Pollution Control Program has completed its review of your request to temporarily operate two temporary rock-crushing plants, an IROCK plant and a McCloskey plant at Silex Quarry (113-0060), located in Silex, Missouri. The Air Pollution Control Program is hereby granting your request to conduct this temporary operation at this location in accordance with Missouri State Rule 10 CSR 10-6.060(3).

Magruder Limestone Company (Magruder) is leasing these two plants and will operate them at the Silex Quarry on a trial basis to see which plant will meet the company's long-term needs. Whichever rock-crushing plant satisfies Magruder's needs will be purchased and will most likely be used as a portable plant. Once a plant is purchased and sites to operate it are chosen, Magruder will submit an Application For Authority To Construct and set this plant up as a generic portable plant.

Both plants will operate side by side and produce commercial grade aggregate that will be hauled offsite. Each plant will utilize a front end loader that will haul rock from the quarry face to the crusher and then from the crusher to the stock pile area. The loaders will also load the commercial trucks used to haul rock offsite. Each plant will also have its own stock piles.

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The Air Pollution Control Program originally received an application for the IROCK plant to go to the Shelbina Quarry in Shelby County (Project Number 2015-06-038), but that project was closed out and combined with this project.

Magruder plans on operating these plants at this site for one month, but 90 days (3 months) was granted to give Magruder flexibility in case unforeseen issues arise.

The tables below list equipment associated with the IROCK and McCloskey plants. This equipment is powered by a number of engines. But since this equipment will be located at this site for less than 12 consecutive months, these engines meet the definition of a nonroad engine as defined in 40 CFR 89.2 (1)(i). Therefore, the emissions of the engines were not included in the project emissions.

Table 1: IROCK Plant Equipment Summary

Emission Unit Number	Description of Unit	MHDR
EP-1	Drilling	400
EP-2	Truck loading in pit	400
EP-3	Customer Haul Road	400
EP-4	Unload to feeder	400
EP-5	Primary crusher	400
EP-6	Primary crusher discharge conveyor	400
EP-7	Scalping screen feed conveyor	80
EP-8	Scalping screen	400
EP-9	Scalping screen discharge conveyor	80
EP-10	Scalping screen side conveyor #1	80
EP-11	Scalping screen side conveyor #2	80
EP-12	Scalping screen side conveyor #3	80
EP-13	Secondary crusher	120
EP-14	Secondary crusher discharge conveyor	120
EP-15	Finish screen feeder conveyor	300
EP-16	Finish screen delivery conveyor	300
EP-17	Finish screen	300
EP-18	Finish screen fines conveyor	100
EP-19	Finish screen side conveyor #1	100
EP-20	Finish screen side conveyor #2	100
EP-21	Surge bin #1	400
EP-22	Surge bin #1 discharge conveyor	400
EP-23	Surge bin #2	400
EP-24	Surge bin #2 discharge conveyor	400
EP-25	Storage Piles	400

Table 2: McCloskey Plant Equipment Summary

Emission Unit Number	Description of Unit	MHDR
EP-26	Drilling	350
EP-27	Truck loading in pit	350
EP-28	Customer Haul Road	350
EP-29	Unload to feeder	350
EP-30	Primary crusher	350
EP-31	Primary crusher discharge conveyor	350
EP-32	Scalping screen feed conveyor	350
EP-33	Scalping screen	350
EP-34	Scalping screen side conveyor #1	117
EP-35	Scalping screen side conveyor #2	117
EP-36	Scalping screen side conveyor #3	117
EP-37	Storage Piles	350

Tables 3 and 4 summarize the emissions of this project for each plant. The potential emissions of process equipment exclude emissions from haul roads and storage piles. 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 plant operating at this site for 90 days (2160 hours). 10 CSR 10-6.060(3) states that temporary permits shall have "a potential to emit under one hundred (100) tons per year of each pollutant." Tables 3 and 4 shows that combined the conditioned potential emissions of the Magruder plants are less than 100 tons per year of each pollutant.

Table 3: IROCK Plant Emissions Summary (tons per year)

Pollutant	<i>De Minimis</i> Level	Potential Emissions of Process Equipment ^a	Potential Emissions of the Application ^b	Conditioned Potential Emissions ^c
PM	25.0	13.42	145.55	35.89
PM ₁₀	15.0	6.11	50.47	12.45
PM _{2.5}	10.0	0.40	20.34	5.02
SO _x	40.0	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A

N/A = Not Applicable

^a Excludes haul road and storage pile emissions

^b Includes site specific haul road and storage pile emissions

^c The conditioned potential emissions are based on the plant's 90 day operating limit at this site

Table 4: McCloskey Plant Emissions Summary (tons per year)

Pollutant	<i>De Minimis</i> Level	Potential Emissions of Process Equipment ^a	Potential Emissions of the Application ^b	Conditioned Potential Emissions ^c
PM	25.0	5.86	121.57	29.98
PM ₁₀	15.0	2.17	41.04	10.12
PM _{2.5}	10.0	0.17	17.63	4.35
SO _x	40.0	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A

N/A = Not Applicable

^a Excludes haul road and storage pile emissions

^b Includes site specific haul road and storage pile emissions

^c The conditioned potential emissions are based on the plant's 90 day operating limit at this site

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 equal to or greater than 1.5 percent (%) by weight.

PM, PM₁₀, and PM_{2.5} 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} were applied to the emission calculations for the use of Best Management Practices (BMPs), as defined in Attachment AA. PM, PM₁₀, and PM_{2.5} emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42, Section 13.2.4 "Aggregate Handling and Storage Piles," November 2006. The moisture content of the aggregate is 1.5% by weight. PM, PM₁₀, and PM_{2.5} 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."

10 CSR 10-6.060(3) states that temporary permits shall be granted "when the attainment or maintenance of ambient air quality standards is not threatened." As a result, an ambient air quality impact analysis (AAQIA) was performed to determine the impact of PM₁₀. The National Ambient Air Quality Standards (NAAQS) for PM₁₀ is 150.0 µg/m³. The results are listed below.

Table 5: AAQIA for PM₁₀

Pollutant	IROCK Plant		McCloskey Plant		Combined Limited Impact (µg/m ³)	*Background (µg/m ³)	*Daily Limit (tons/day)
	Maximum Ambient Impact (µg/m ³)	Ambient Impact Factor (µg/m ³ /ton)	Maximum Ambient Impact (µg/m ³)	Ambient Impact Factor (µg/m ³ /ton)			
^c PM ₁₀ (Solitary & Same)	133.07	0.0139	49.60	0.0059	130.0	20.0	N/A

^a Emissions from haul road, storage pile and vehicular activity emissions are addressed as a background concentration of 20.0 µg/m³.

^b The combined daily production limit of the Magruder plants is indirectly based on compliance with the NAAQS for PM₁₀. However, the daily production limit during the same owner operating scenario is not determined because Magruder can balance production between all plants they own and operate at this site.

^c Solitary operation is defined as when only the IROCK and McCloskey rock-crushing plants are located at this site; same owner operation is defined as when the IROCK and McCloskey rock-crushing plants operate with other plants owned by Magruder at this site.

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating Standards of Performance for New Stationary Sources (NSPS) Subpart OOO *Standards of Performance for Nonmetallic Mineral Processing Plants*, 10 CSR 10-6.045 *Open Burning Requirements*, 10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.165 *Restriction of Emission of Odors*, and 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*.

A copy of this letter and enclosed special conditions should be kept onsite or at Magruder's office and be made available to Department of Natural Resources' personnel upon request. If you have any questions regarding this determination, please do not hesitate to contact Daronn A. Williams at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by telephone at (573) 75 1-4817. Thank you for your time and attention to this matter.

Sincerely,
AIR POLLUTION CONTROL PROGRAM


Kyra L. Moore
Director

KLM:dwl

c: PAMS File: 2015-08-015
St. Louis Regional Office

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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."

Site ID Number: 113-0060

Site Name: Silex Quarry

Site Address: 330 County Highway E, Silex, MO 63377

Site County: Lincoln County, S2/11, T50N, R01W

1. Operational Requirement

Magruder Limestone Company's IROCK and McCloskey rock-crushing plants shall not operate at this site beyond December 1, 2015. If Magruder Limestone Company would like to operate at this site beyond this date, Magruder Limestone Company shall submit an Application For Authority To Construct to the Air Pollution Control Program 45 days before this date.

2. BMPs Requirement

Magruder Limestone Company shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs, as defined in Attachment AA.

3. Moisture Content Testing Requirement

A. Magruder Limestone Company shall verify through testing 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 30 days after the start of operation.

D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. each 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

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the test. The report shall be filed on-site or at the Magruder Limestone Company's main office within 30 days of completion of the required test.

- F. If the moisture content of the test is less than the moisture content in Special Condition 3.A, another test may be performed with 15 days of the noncompliant test. If the results of that test also does not meet the requirement in Special Condition 3.A, Magruder Limestone Company 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 section within 10 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 Company may obtain test results from the supplier of the aggregate that demonstrate compliance with the moisture content in Special Condition 3.A.
4. **Minimum Distance to Nearest Property Boundary Requirement**
The primary crushers of Magruder Limestone Company's IROCK and McCloskey plants (EP-5 of the IROCK plant and EP-30 of the McCloskey plant), shall be located at least 500 feet from the nearest property boundary.
5. **Concurrent Operation Restriction**
Magruder Limestone Company's IROCK and McCloskey plants are prohibited from operating whenever plants not owned by Magruder Limestone Company are located at the site.
6. **Record Keeping Requirement**
Magruder Limestone Company 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.
7. **Reporting Requirement**
Magruder Limestone Company 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.

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 and volume of water application 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.

¹ For 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.)