



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: 012017-007

Project Number: 2016-11-021
Installation Number: 119-0022

Parent Company: Anchor Stone Company

Parent Company Address: 4124 S. Rockford Avenue, Suite 201, Tulsa, OK 74105

Installation Name: Anchor Stone Company

Installation Address: 420 Stagecoach Road, Jane, MO 64856

Location Information: McDonald County (S16, T21N, R31W)

Application for Authority to Construct was made for:

The installation of a stationary rock-crushing plant. 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.

Prepared by
Ryan Schott
New Source Review Unit

Director or Designee
Department of Natural Resources

JAN 11 2017

Effective Date

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup 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's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 using the contact information below.

Contact Information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

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."

Anchor Stone Company
McDonald County (S16, T21N, R31W)

1. **PM₁₀ Emission Limitation**
 - A. Anchor Stone Company shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation (see Table 1).
 - B. Attachment A or an equivalent form, such as an electronic form approved by the Air Pollution Control Program, shall be used to demonstrate compliance with Special Condition 1.A.
2. **Best Management Practices (BMPs) Requirement**

Anchor Stone Company 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 B.
3. **Moisture Content Testing Requirement**
 - A. Anchor Stone 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 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. 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 the test. The report shall be filed on-site or at the Anchor Stone Company main office within 30 days of completion of the required test.

SPECIAL CONDITIONS:

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

- F. If the moisture content of either of the two tests is less than the moisture content specified in Special Condition 3.A, another test may be performed with 15 days of the noncompliant test. If the results of that test are also less than the limit, Anchor Stone 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, Anchor Stone Company may obtain test results from the supplier of the aggregate that demonstrate compliance with the moisture content specified in special condition 3.A.

- 4. **Primary Equipment Requirement**
Anchor Stone Company shall process all rock through the primary crusher (EP-13). Bypassing the primary crusher is prohibited.

- 5. **Record Keeping and Reporting Requirements**
 - A. Anchor Stone Company shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

 - B. Anchor Stone Company shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

**REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW**

Project Number: 2016-11-021
Installation ID Number: 119-0022
Permit Number:

012017-007

Installation Address:
Anchor Stone Company
420 Stagecoach Road
Jane, MO 64856
McDonald County (S16, T21N, R31W)

Parent Company:
Anchor Stone Company
4124 S. Rockford Avenue, Suite 201
Tulsa, OK 74105

PROJECT DESCRIPTION

Anchor Stone Company is constructing a new stationary rock-crushing plant at their quarry located near Jane, Missouri. The facility will be comprised of the emission points listed in Table 1. (Emission point numbering starts at EP-11 to prevent confusion with Anchor Stone Company's existing portable crushing plant, PORT-0715, which will periodically relocate to this site.)

Table 1. Facility Emission Units

Emission Point	Description	MHDR (tons/hr)	Emission Point	Description	MHDR (tons/hr)
EP-11	Pit Haul Road (Unpaved)	300	EP-23	Screen S-2	200
EP-12	Hopper Loading	300	EP-24	Conveyor C-8	67
EP-13	Primary Crusher CR-1	300	EP-25	Conveyor C-9	67
EP-14	Conveyor C-1	300	EP-26	Conveyor C-10	50
EP-15	Conveyor C-2	300	EP-27	Conveyor C-11	50
EP-16	Screen S-1	300	EP-28	Stacker ST-1	100
EP-17	Conveyor C-3	100	EP-29	Stacker ST-2	67
EP-18	Conveyor C-4	200	EP-30	Stacker ST-3	67
EP-19	Conveyor C-5	200	EP-31	Stacker ST-4	67
EP-20	Secondary Crusher CR-2	200	EP-32	Stock Piles	300
EP-21	Conveyor C-6	200	EP-33	Product Haul Road (Unpaved)	300
EP-22	Conveyor C-7	200	EP-34	Product Haul Road (Paved)	300

Anchor Stone Company will construct a new pit haul road (EP-11), which will be a 1,200 foot unpaved road used to transport shot rock from the quarry pit to the crushing plant. The existing product haul road is divided into two segments, one unpaved (EP-33) and one paved (EP-34). These haul roads are 1,600 feet and 1,500 feet, respectively, and will be used to transport crushed product offsite. BMPs will be used to control fugitive particulate emissions from all haul roads and vehicular activity areas.

The plant will be powered by one 440 horsepower and two 129 horsepower diesel engines; however, they meet the definition of nonroad engine, as defined in 40 CFR 89.2 (1)(i). Therefore, emissions from the engines were not included in this analysis.

The inherent moisture content of the processed rock is greater than 1.5% by weight, which will be verified by moisture content testing.

The installation is located in McDonald County, an attainment area for all criteria pollutants.

The 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.

Anchor Stone Company is allowed to operate concurrently with any portable plants that may relocate to Jane Quarry, as long as those plants do not have ambient impact limits based on the Air Pollution Control Program's nomographs. If a portable plant wishes to relocate to the Jane Quarry, please refer to the special conditions of that plant's permit, which may need to be amended in order to allow concurrent operation with this stationary plant.

EMISSIONS/CONTROLS EVALUATION

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 processed rock is greater than 1.5% by weight.

Particulate emissions from haul roads and vehicular activity areas were calculated using the predictive equations from AP-42, Section 13.2.1 *Paved Roads* (January 2011) and Section 13.2.2 *Unpaved Roads* (November 2006). A 90% control efficiency for PM and PM₁₀ and a 74% control efficiency for PM_{2.5} was applied to the emissions calculations for the use of BMPs. Particulate emissions from the 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. Particulate emissions from the 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*.

The following table provides an emissions summary for this project. Because this is a new facility, it has no existing potential emissions or existing actual emissions. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). New installation conditioned potential emissions account for a voluntary PM₁₀ de minimis limit.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	N/A	N/A	103.81	44.46
PM ₁₀	15.0	N/A	N/A	35.02	<15.0
PM _{2.5}	10.0	N/A	N/A	7.95	3.41
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

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 but below the major source level, and potential emissions of all other pollutants are conditioned below their respective de minimis levels.

APPLICABLE REQUIREMENTS

Anchor Stone Company 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.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Operating Permits*, 10 CSR 10-6.065
 - Because NSPS OOO applies to the equipment, submittal of a Basic Operating Permit application is required within 30 days after the issuance of this construction permit; however, there is a proposed rule change taking place, which may remove the requirement for de minimis installations to obtain a Basic Operating Permit if the only criteria triggering the Basic Operating Permit is NSPS applicability. Contact the Air Pollution Control Program's Operating Permit Unit for an update prior to submitting your Basic Operating Permit application.

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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 Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Nonmetallic Mineral Processing Plants*, 40 CFR Part 60, Subpart OOO

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*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 1, 2016, received November 7, 2016, designating Anchor Stone Company as the owner and operator of the installation.

Attachment A – PM₁₀ Compliance Worksheet

Anchor Stone Company
 McDonald County (S16, T21N, R31W)
 Project Number: 2016-11-021
 Installation ID Number: 119-0022
 Permit Number: **012017-007**

This sheet covers the period from _____ to _____
(month, year) (month, year)

A	B	C	D	E	F
Month	¹ Processed Rock (tons)	Composite Emission Factor (lb/ton)	² Current Monthly Emissions (tons)	³ Previous 11-Month Emissions (tons)	⁴ Current 12-Month Rolling Total Emissions (tons)
<i>Example</i>	<i>90,000</i>	<i>0.0267</i>	<i>1.20</i>	<i>13.22</i>	<i>14.42</i>
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¹ Enter the amount of rock processed in the given month
² Calculate the current monthly emissions using the following equation: $[D] = [B] \times [C] \div 2,000$
³ Add the previous 11 rows of [D]
⁴ Calculate the current 12-month rolling total emissions using the following equation: $[F] = [D] + [E]$
 A total of less than 15.0 tons of PM₁₀ is required to demonstrate compliance with Special Condition 1.

Attachment B: 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.

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.)

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu ...	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ..	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EIQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		



Eric R. Greitens, Governor • Todd Sampsell, Acting Director

DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

JAN 11 2017

Mr. Jesse McIntyre
Environmental Manager
Anchor Stone Company
4124 S. Rockford Avenue, Suite 201
Tulsa, OK 74105

RE: New Source Review Permit - Project Number: 2016-11-021

Dear Mr. McIntyre:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ao.mo.gov/ahc.



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Mr. Jesse McIntyre
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If you have any questions regarding this permit, please do not hesitate to contact Ryan Schott, at the Department of Natural Resources' 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:rsj

Enclosures

c: Southwest Regional Office
PAMS File: 2016-11-021

Permit Number: **01 2017 - 007**