

STATE OF MISSOURI

PERMIT BOOK



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: 102014-015

Project Number: 2014-07-051
Installation ID: 093-0033

Parent Company: Aggregate Holding, LLC

Parent Company Address: 1952 County Road 96, Ironton, MO 63650

Installation Name: Trap Rock & Granite, LLC

Installation Address: 11313 Highway N, Ironton, MO 63650

Location Information: Iron County, S12 T34N R3E

Application for Authority to Construct was made for:
Installation of a rock crusher and its associated equipment. 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.

OCT 29 2014

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 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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SITE SPECIFIC 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. **Best Management Practices Requirement**
Trap Rock & Granite, LLC 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.
2. **Annual Emission Limit**
 - A. Trap Rock & Granite, LLC shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation.
 - B. Trap Rock & Granite, LLC shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
3. **Wet Suppression Control System Requirement**
 - A. Trap Rock & Granite, LLC shall install and operate wet spray devices on all equipment as indicated in Table 3.
 - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, Trap Rock & Granite, LLC shall adjust the production rate to control emissions from these units. Trap Rock & Granite, LLC shall record a brief description of such events.
4. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EU1b, Lippman portable crusher) shall be located at least 700 feet from the nearest property boundary.
5. **Concurrent Operation Restriction**
Trap Rock & Granite, LLC is prohibited from operating whenever other plants are located at the site.
6. **Primary Equipment Requirement**
Trap Rock & Granite, LLC shall process all rock through the primary crusher (EU-1b). Bypassing the primary crusher is prohibited.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

7. Record Keeping Requirement
Trap Rock & Granite, LLC 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.

8. Reporting Requirement
Trap Rock & Granite, LLC shall report to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 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: 2014-07-051
Installation ID Number: 093-0033
Permit Number:

Trap Rock & Granite, LLC
11313 Highway N
Ironton, MO 63650

Complete: August 21, 2014

Parent Company:
Aggregate Holding, LLC
1952 County Road 96
Ironton, MO 63650

Iron County, S12 T34N R3E

PROJECT DESCRIPTION

Trap Rock and Granite Quarries, LLC is developing a new quarry in Iron County, Missouri near the town of Middle Brook. The site address is 11313 Highway N, Ironton, Missouri 63650. The project includes development of a new trap rock/rhyolite quarry that will construct an industrial railroad track loop with access to the Union Pacific Railroad. In order to complete site construction of the new quarry, initial rock blasting is required in order to construct the railroad track loop. Access to the inside of the track loop will be provided via access road from Missouri Highway N across the top of the railroad tracks as well as through a tunnel to be constructed beneath the railroad tracks. Rock blasting is required in order to install the tunnel road. The westerly half of the new industrial railroad loop will require rock blasting in order to get the design grades for the new track. A temporary crushing plant is proposed so the blasted rock can be crushed and utilized on the quarry site for both road base, railroad sub-ballast and railroad ballast. Once the initial blasting and crushing is completed, a permanent crushing plant will be installed at this facility.

The permanent plant components are still in the design phase and are not available at the time of this permit issuance. The primary crusher is a Lippman portable crusher, but since the timeline of this project will extend beyond 24 months, the plant will be permitted as a stationary plant. The entire plant will be powered off the grid. The MHDR will be 700 ton per hour (tph). The primary crusher, EU1b (Lippman) will be located not less than 700 feet from the nearest property boundary. The plant will consist of a primary, secondary, and tertiary crushers, two screens and associated conveyors and stackers as listed in Table 1. Water spray devices will be used to control particulate emissions.

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 Iron 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.

No permits have been issued to Trap Rock & Granite, LLC from the Air Pollution Control Program at this site.

Table 1: Trap Rock & Granite Quarry Equipment List

Emission Unit	Description of Unit	MHDR (tph)	Control Type
EU1a	Feeder	700	Water spray Device
EU1b	Primary crusher Lippman S/N 2011-08129	700	Water Spray Device
EU1c	Primary crusher under conveyor	700	Water Spray Device
EU4	36"x140 Screen feed radial stacker	700	Water Spray Device
EU5	8'x20' Deister 3-deck screen	700	Water Spray Carryover
EU6	36"x30' Transfer conveyor SC-2	700	Water Spray Carryover
EU7a	36"x20' Transfer conveyor SC-1	700	Water Spray Carryover
EU7b	36"x20' Transfer conveyor SC-3	700	Water Spray Carryover
EU8	36"x50' Reversing transfer conveyor SC-4	700	Water Spray Carryover
EU9a	36"x140' Radial Stacker	700	Water Spray Device
EU9b	36"x140' Radial Stacker	700	Water Spray Device
EU9c	36"x140' Radial Stacker	700	Water Spray Device
EU10	36"x100' Conveyor collection transfer	700	Water Spray Device
EU11a	Surge bin feeder (Secondary cone crusher)	700	Water Spray Device
EU11b	Surge bin feeder (Tertiary cone crusher)	700	Water Spray Device
EU12	Secondary crusher Sandvik CH660	700	Water Spray Device
EU13	Tertiary crusher Sandvik CH550	700	Water Spray Device
EU14a	42"x40' Under crusher conveyor (secondary)	700	Water Spray Device
EU14b	42"x40' Under crusher conveyor (tertiary)	700	Water Spray Device
EU15	36"x100' Collection transfer conveyor C-4	700	Water Spray Device
EU16	36"x140' Radial Stacker	700	Water Spray Device
EU17	8'x20' Deister 3-deck screen	700	Water Spray Carryover
EU18a	36"x30' Transfer conveyor SC-5	700	Water Spray Carryover
EU18b	36"x30' Transfer conveyor SC-6	700	Water Spray Carryover
EU19	36"x20' Transfer conveyor SC-7	700	Water Spray Carryover
EU20	36"x50' Reversing transfer conveyor SC-8	700	Water Spray Device
EU21	36"x140' Radial Stacker	700	Water Spray Device
EU22	36"x100' Radial Stacker	700	Water Spray Device

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. Since this is a new quarry, there are no existing actual emissions. 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 include emissions from sources that will limit their production to ensure compliance with the annual emission limit.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions Of Process Equipment (tons/yr)	Existing Actual Emissions (2013 EIQ)	^a Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	30.97	N/A	135.90	38.45
PM ₁₀	15.0	11.62	N/A	53.01	<15.0
PM _{2.5}	10.0	0.26	N/A	12.86	3.64
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
GHG (CO ₂ e)	100,000	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A	N/A

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

^aIncludes site specific haul road and storage pile emissions

Table 3 summarizes the ambient air quality impact analysis. The maximum modeled impact is the impact of each pollutant when the plant is operating continuously. The 24-hour limited impacts and daily limit are based on compliance with the NAAQS for PM₁₀.

Table 3: Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL (µg/m ³)	Averaging Time	^a Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	Daily Limit (tons/day)
^b PM ₁₀ (solitary)	150.0	24-hour	113.67	N/A	20.0	N/A

^aModeled impact at maximum capacity with controls.

^bSolitary operation

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States 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 equipment is control by water spray devices.

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 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 0.7% 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 NAAQS or 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.

OPERATING SENARIOS

The plant is not permitted to operate with other plants located at the site as stated in Site-Specific Special Condition 5.

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 and no refined modeling is required. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

APPLICABLE REQUIREMENTS

Trap Rock & Granite, LLC 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

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.
- *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 10-6.165

SPECIFIC REQUIREMENTS

- 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.

Kathy Kolb
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 July 21, 2014, received July 22, 2014, designating Aggregate Holding, LLC 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 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 emissions 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.

APPENDIX A

Abbreviations and Acronyms

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

Mr. Bill Emmendorfer
Site Superintendent
Trap Rock & Granite, LLC
1952 County Road 96
Ironton, MO 63650

RE: New Source Review Permit - Project Number: 2014-07-051

Dear Mr. Emmendorfer:

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 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 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, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions, please do not hesitate to contact Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office
PAMS File: 2014-07-051

Permit Number: