

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: 022011-004

Project Number: 2010-12-060
Installation ID: PORT-0675

Parent Company: Schildberg Construction Company, Inc.

Parent Company Address: P.O. Box 358, Greenfield, IA 50849

Installation Name: Graham/Forcade Quarry

Installation Address: 34676 Elkhorn Trail, Graham, MO 64455

Location Information: Nodaway County, S36, T63N, R37W

Application for Authority to Construct was made for:

The installation of new portable 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.

FEB 15 2011

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James G. Karamanchuk".

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available 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.	2010-12-060

GENERAL 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. **Equipment Identification Requirement**
PORT-0675 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 start-up of the portable rock crushing plant.
2. **Relocation of Portable Rock Crushing Plant**
 - A. PORT-0675 shall not be operated at any location longer than 24 consecutive months.
 - B. A complete "Portable Source Relocation Request" application must be submitted to the Air Pollution Control Program prior to any relocation of this portable rock crushing plant.
 - 1) If the portable rock crushing plant is moving to a site previously permitted, and if the circumstances at the site have not changed (e.g. the site was only permitted for solitary operation and now another plant is located at the site), then the application must be received by the Air Pollution Control Program at least seven days prior to the relocation.
 - 2) If the portable rock crushing plant is moving to a new site, or if circumstances at the site have changed, then the application must be received by the Air Pollution Control Program at least 21 days prior to the relocation. The application must include written notification of any concurrently operating plants.
3. **Record Keeping Requirement**
PORT-0675 shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
4. **Reporting Requirement**
PORT-0675 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.

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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."

PORT ID Number: PORT-0675

Site ID Number: 147-0003

Site Name: Graham/Forcade Quarry

Site Address: 34676 Elkhorn Trail Graham, MO 64455

Site County: Nodaway S36, T63N, R37W

1. Best Management Practices Requirement
PORT-0675 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.
2. Ambient Air Impact Limitation
 - A. PORT-0675 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. PORT-0675 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. PORT-0675 shall account for the impacts from other sources of PM₁₀ as instructed in Attachment A.
 - C. PORT-0675 is exempt from the requirements of special condition 2.B when no other plants are operating at this site.
3. Annual Emission Limit
 - A. PORT-0675 shall emit less than 50.0 tons of PM₁₀ in any 12-month period from the entire installation.
 - B. PORT-0675 shall demonstrate compliance with special condition 3.A using Attachment B or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

4. Moisture Content Testing Requirement
 - A. PORT-0675 shall verify that the moisture content of the processed rock is greater than or equal to 1.5% 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 not 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 Schildberg Construction Company, Inc. 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 4.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, PORT-0675 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 Air Pollution Control Program Compliance Assistance 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, PORT-0675 may obtain test results that demonstrate compliance with the moisture content in special condition 4.A from the supplier of the aggregate.
5. Minimum Distance to Property Boundary Requirement
The primary emission point shall be located at least 450 feet from the nearest property boundary.
6. Primary Equipment Requirement
PORT-0675 shall process all rock through the primary crusher (EU-09). 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. Non-Road Engine Requirement
 - A. PORT-0675 shall only stay at the site listed above for only 12 consecutive months after the operational start-up date

 - B. If PORT-0675 plans to operate at the site listed above for more than 12 consecutive months PORT-0675 shall submit a new application for authority to construct 90 days prior to exceeding the 12 consecutive month requirement found in Site-Specific Condition 7.A.

8. Record Keeping Requirement
PORT-0675 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.

9. Reporting Requirement
PORT-0675 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: 2010-12-060
Installation ID Number: PORT-0675
Permit Number:

Graham/Forcade Quarry
34676 Elkhorn Trail
Graham, MO 64455

Complete: December 27, 2010

Parent Company:
Schildberg Construction Company, Inc.
P.O. Box 358
Greenfield, IA 50849

Nodaway County, S36, T63N, R37W

PROJECT DESCRIPTION

Schildberg Construction Company, Inc. is installing a new portable rock crushing plant (PORT-0675) at 34676 Elkhorn Trail in Graham, MO 64455. The plant will be drilling and blasting limestone at a rate of 500 tons per hour. The primary crusher has a maximum hourly design rate of 400 tons per hour. The plant will be powered by non-road diesel generator and engines. The emissions from the diesel engines and generators were not counted toward this project potential emissions because they are considered non-road and will not be at this site for more than 12 consecutive months. If Schildberg Construction Company, Inc. foresees PORT-0675 staying at this site for more than 12 consecutive months they will have to submit a new application for authority to construct 90 days prior to exceeding the 12 consecutive month requirement for permit re-evaluation to account for the diesel engine emissions. The moisture content of the rock being crushed is being claimed as 4%. PROT-0675 will have to test their rock to confirm the moisture content and if tested below 4% they will need to submit an amendment for this permit to account for the increase in emissions. Currently there are no other plants at this site. This permit does allow PORT-0675 to operate concurrently with other plants at this site. No operating permit is required for this plant because it is a portable plant. If PORT-0675 were to become a stationary plant a new construction permit and basic operating permit would be required

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 Nodaway 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 Graham/Forcade Quarry from the Air Pollution Control Program.

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 site specific should not vary from site to site. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). These conditioned potential emissions are based on a voluntary PM₁₀ limit of 50.0 tons per year to avoid refined modeling.

Table 1: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level	¹ Potential Emissions of the Process Equipment	Existing Actual Emissions	² Potential Emissions of the Application	³ Conditioned Potential Emissions
PM _{2.5}	10.0	0.69	N/A	69.53	26.98
PM ₁₀	15.0	6.66	N/A	128.84	<50.00
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

¹Excludes haul road and wind erosion emissions

²Includes site specific haul road and storage pile emissions

³Conditioned Potential Emissions are based on a voluntary limit to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6).

Table 2: Ambient Air Quality Impact Analysis

Pollutant	¹ NAAQS (µg/m ³)	Averaging Time	² Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	³ Daily Limit (tons/day)
⁴ PM ₁₀ (same)	150.0	24-hour	124.10	124	20.0	None
⁵ PM ₁₀ (separate)	150.0	24-hour	N/A	61.80	88.20	6,000

¹National Ambient Air Quality Standards (NAAQS)

²Modeled impact at maximum capacity with controls

³Indirect limit based on compliance with NAAQS.

⁴Solitary operation or operation with other plants that are owned by Schildberg Construction Company, Inc.

⁵Operation with other plants that are not owned by Schildberg Construction Company, 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 greater than 1.5% weight.

Emissions from the diesel engines/generators were not calculated because they are considered non-road engines and PORT-0675 is not staying at this site for more than 12 consecutive months. If PORT-0675 were to stay at this site for more than 12 consecutive months this permit must be re-evaluated and new application for authority to construct must be submitted for the engines.

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 is 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 1.5% 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 2. 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 SCREEN3. 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. In cases where the plant is providing material for a highway project, the ambient impact is evaluated in accordance with a memorandum issued by the Air Pollution Control Program titled "Permitting Asphalt/Concrete Plants for Temporary Highway Projects," dated April 10, 2000. This memorandum states that air quality should be analyzed at the nearest residence or location where the public could reasonably be expected to be found instead of all ambient air. This practice generally allows for a less restrictive daily production level while protecting the public.

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 $\mu\text{g}/\text{m}^3$ of PM_{10} in accordance with the Air Pollution Control Program's BMPs interim policy.

OPERATING SCENARIOS

The plant is permitted to operate with other plants located at the site as long as the NAAQS is not exceeded. The following scenarios explain how PORT-0675 shall demonstrate compliance with the NAAQS.

- When no other plants are located at the site except PORT-0675, no record keeping is required for NAAQS compliance.
- When plants that are owned by Schildberg Construction Company, Inc., which are referred to as same owner plants, are located at the site, Schildberg Construction Company, Inc. must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS.
- When plants that are not owned by Schildberg Construction Company, Inc., which are referred to as separate owner plants, are located at the site, Schildberg Construction Company, Inc. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Schildberg Construction Company, Inc. that are operating at the site. This total is limited below the NAAQS. Schildberg Construction Company, Inc. will limit the total impact of all plants they own and operate at the site to 61.80 $\mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. PORT-0675 is not permitted to operate with any plant that is not owned by Schildberg Construction Company, Inc. that has a separate owner background greater than 68.20 $\mu\text{g}/\text{m}^3$.

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_{10} are above de minimis levels.

APPLICABLE REQUIREMENTS

PORT-0675 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. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for a hard copy submittal or May 1 for online submittal for the previous year's emissions.

- *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.

Gerad Fox
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 22, 2010, received December 27, 2010, designating Schildberg Construction Company, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated January 11, 2011.

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.)

Attachment BB: Emission Calculations
 Graham/Forcade Quarry
 2010-12-060

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
Drilling	500.0000	Tons	0.000080	Tons		0.04	0.04
Blasting	12000.0000	Tons/Day	0.000000	Tons/Day		0.00	0.00
Truck Loading	500.0000	Tons	0.000016	Tons	0.00	0.0080	0.008
Hauling-Pit Road	28.9394	VMT	2.26	VMT	90.00	6.53	6.53
Truck Unloading	500.0000	Tons	0.000016	Tons	0.00	0.0080	0.008
Feeder	400.0000	Tons	0.000016	Tons	0.00	0.0064	0.0064
Truck Unloading	100.0000	Tons	0.0010	Tons	0.00	0.10	0.10
Rip Rap Stockpile Wind	0.5000	Acres	0.089	Acres	0.00	0.045	0.045
Rip Rap Stockpile VA	100.0000	Tons	0.082	Tons	90.00	0.82	0.82
Primary Crusher	400.0000	Tons	0.0024	Tons	77.50	0.22	0.22
Conveyor	400.0000	Tons	0.0011	Tons	95.82	0.018	0.018
Screen	480.0000	Tons	0.0087	Tons	91.49	0.36	0.36
Conveyor	52.0000	Tons	0.0011	Tons	95.82	0.0024	0.0024
Bin	52.0000	Tons	0.0011	Tons	95.82	0.0024	0.0024
Conveyor	52.0000	Tons	0.0011	Tons	95.82	0.0024	0.0024
Hauling to Stockpiles	52.0000	VMT	2.26	VMT	90.00	11.74	11.74
Truck Unloading 1.5" Clean	52.0000	Tons	0.0010	Tons	0.00	0.054	0.054
1.5" Clean Pile Wind	1.1000	Acres	0.089	Acres	0.00	0.098	0.098
1.5" Clean Pile VA	52.0000	Tons	0.076	Tons	90.00	0.40	0.40
Secondary Crusher	80.0000	Tons	0.0024	Tons	77.50	0.043	0.043
Conveyor	80.0000	Tons	0.0011	Tons	95.82	0.0037	0.0037
Conveyor	20.0000	Tons	0.0011	Tons	95.82	0.0009	0.00092
Conveyor	20.0000	Tons	0.0011	Tons	95.82	0.0009	0.00092
Conveyor	328.0000	Tons	0.0011	Tons	95.82	0.015	0.015
Secondary Screen	328.0000	Tons	0.072	Tons	96.94	0.72	0.72
Conveyor	24.0000	Tons	0.0011	Tons	95.82	0.0011	0.0011
Storage Bin	44.0000	Tons	0.0011	Tons	95.82	0.0020	0.0020
Conveyor	44.0000	Tons	0.0011	Tons	95.82	0.0020	0.0020
Hauling to Stockpiles	3.7879	VMT	2.26	VMT	90.00	0.85	0.85
Truck Unloading < 1/8	44.0000	Tons	0.0010	Tons	0.00	0.046	0.046
< 1/8" Stockpile Wind	1.1000	Acres	0.089	Acres	0.00	0.098	0.098
< 1/8" Stockpile VA	44.0000	Tons	0.076	Tons	90.00	0.34	0.34

Attachment BB: Emission Calculations
 Graham/Forcade Quarry
 2010-12-060

Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Conveyor	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Stacker	304.0000	Tons	0.0011	Tons	95.82	0.014	0.014
Stacker	304.0000	Tons	0.0010	Tons	0.00	0.32	0.32
1/8"-1" Stockpile wind	1.1000	Acres	0.089	Acres	0.00	0.098	0.098
1/8"-1" Stockpile va	304.0000	Tons	0.076	Tons	90.00	2.32	2.32
Loadout from Storage Piles	500.0000	Tons	0.0010	Tons	0.00	0.52	0.52
Loadout from Storage Piles	500.0000	Tons	0.0010	Tons	0.00	0.52	0.52
Loadout from Storage Piles	500.0000	Tons	0.0010	Tons	0.00	0.52	0.52
Loadout from Storage Piles	500.0000	Tons	0.0010	Tons	0.00	0.52	0.52
Sales Haul Road	11.1364	VMT	1.71	VMT	90.00	1.90	1.90

¹Maximum Hourly Design Rate (MHDR)

²Emission Factor (EF)

³The Modeling Rate is the emission rate scaled to the daily hours of operation at MHDR allow by the permit.

Mr. Greg Schildberg
Vice President
Graham/Forcade Quarry
P.O. Box 358
Greenfield, IA 50849

RE: New Source Review Permit - Project Number: 2010-12-060

Dear Mr. Schildberg:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 and 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 have any questions regarding this permit, please do not hesitate to contact Gerad Fox, at the Departments' 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

Kendall B. Hale
New Source Review Unit Chief

KBH:gfl

Enclosures

c: Kansas City Regional Office
PAMS File: 2010-12-060

Permit Number: