

STATE OF 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: 07 2 0 0 9 - 0 1 9

Project Number: 2009-05-051

Parent Company: Fred Weber Inc.

Parent Company Address: 2320 Creve Coeur Mill Rd, Maryland Heights, MO 63043

Installation Name: Iron Mountain Trap Rock

Installation Address: 1325 Highway M, Iron Mountain, MO 63650

Location Information: St. Francois County, S30/31, T35N, R4E

Application for Authority to Construct was made for:

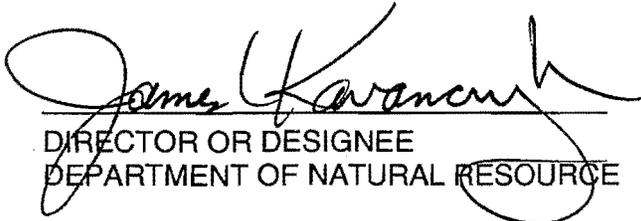
The modification of an existing rock crushing plant. Rock is processed through 4 crusher(s), 2 screen(s), and 37 conveyor(s). The rock crushing plant has a maximum hourly design rate (MHDR) of 500 tons per hour (tph). The rock-crushing plant (187-0006) is adding five new conveyers to their process. One conveyor has the MHDR of 500 tons per hour and the remaining four have to MDHR of 300 tons per hour. This review was conducted in accordance with Section (5), 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.

JUL 27 2009

EFFECTIVE DATE

  
 DIRECTOR OR DESIGNEE  
 DEPARTMENT OF NATURAL RESOURCE

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years/18 months 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/18 months 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 not more than 60 days but at least 30 days in advance of this date. 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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### **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); by the Missouri Rules listed in Title 10, Division 10 of the Codes of State Regulations (specifically 10 CSR 10-6.060); by 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority"; by 10 CSR 10-6.010 "Ambient Air Quality Standards" and 10 CSR 10-6.060 subsections (5)(D) and (6)(A); and by control measures requested by the applicant, in their permit application, to reduce the amount of air pollutants being emitted, in accordance with 10 CSR 10-6.060 paragraph (6)(E)3. Furthermore, one or more of the Subparts of 40 CFR Part 60, New Source Performance Standards (NSPS), applies to this installation.*

1. **Best Management Practices**  
Iron Mountain Trap Rock shall control fugitive emissions from all of the haul roads and stockpiles at this site by performing Best Management Practices, which include the usage of paving, chemical dust suppressants, or documented watering. These practices are defined in Attachment AA.
2. **National Ambient Air Quality Standards (NAAQS) Limitation for Particulate Matter Less Than Ten Microns in Diameter (PM<sub>10</sub>)**
  - A. The operator(s) for Fred Weber Inc. - Iron Mountain's rock-crushing plant (187-0006) shall ensure, while operating at this site, that the ambient impact of PM<sub>10</sub> at or beyond the nearest property boundary does not exceed 150.0 µg/m<sup>3</sup> in any 24-hour period, in accordance with the Federal NAAQS requirements (40 CFR 50.6).
  - B. The total daily ambient impact of PM<sub>10</sub> at this site shall include the combined impact of the rock-crushing plant and any ambient background concentration from installations or equipment located on the same site as the rock-crushing plant.
  - C. To demonstrate compliance, the operator(s) shall maintain a daily record of material processed for concurrent operations only. Attachment A, *Daily Ambient PM<sub>10</sub> Impact Tracking Record*, or other equivalent form(s), will be used for this purpose.
3. **Haul Road Requirement**
  - A. Iron Mountain Trap Rock shall maintain a silt percentage less than 2.5 percent on all haul roads at the installation.
  - B. Iron Mountain Trap Rock shall verify compliance with the limit in special condition 3.A. through testing. Tests shall be conducted once every 3 months for one 12-month period.
    - 1) Tests shall be conducted in accordance with the ASTM-C-136 method.
    - 2) Test results shall be maintained in accordance with special condition 7.
    - 3) If test results show that the silt percentage exceeds the limit in special condition 3.A., Iron Mountain Trap Rock shall report to the Air Pollution Control Program in accordance with special condition 8.
4. **Performance Testing for New Source Performance Standards (NSPS)**  
Iron Mountain Trap Rock shall comply with all requirements within the NSPS Subpart "OOO".
5. **Restriction on Process Configuration of Primary Emission Point(s)**  
The maximum hourly design rate of the plant is equal to the sum of the design rate(s) of the primary emission point(s). Iron Mountain Trap Rock has designated the following unit(s) as the primary emission point(s) of the rock-crushing plant: primary crusher (EP105). Bypassing the primary emission point(s) for processing is prohibited.
6. **Restriction on Minimum Distance to Nearest Property Boundary**  
The primary emission point of the rock-crushing plant, which is the primary crusher (EP105), shall be located at least 2000 feet from the nearest property boundary whenever it is operating at this site.
7. **Record Keeping Requirement**  
The operator(s) shall maintain all records required by this permit for not less than five (5) years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.

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**SPECIAL CONDITIONS:**

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

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8. Reporting Requirement  
The operator(s) shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any exceedances of the limitations imposed by this permit.
9. Superseding Condition  
The conditions of this permit supersede special conditions (3) and (12) found in the previously issued construction permit(s) (102006-007A) from the Air Pollution Control Program.

# TECHNICAL REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT

## **PROJECT DESCRIPTION**

Rock, composed of non-metallic minerals, is drilled/blasted, loaded into haul trucks, and transported to processing. Rock is processed through feeder(s), crusher(s), screen(s), conveyor(s), and bin(s). Processing equipment is powered with electric power. This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2]. The installation is located in St. Francois County, an attainment area for all criteria air pollutants

Fred Weber Inc. is adding five new conveyers to their process. Fred Weber Inc. has provided documentation showing their silt content of their haul roads to be  $\leq 2.5\%$ . Testing will be required to show the continuity of the silt content. Fred Weber Inc. has also provided meteorological data from Farmington, Missouri's surface station showing that on a hourly basis only 12 percent of the time during the year the wind goes above 12 miles per hour. This value is lower than our default value of 32 percent. The lower percent of days with 12 mile per hour wind is directly proportional with the PM<sub>10</sub> wind erosion emission factor which in turn lowers their PM<sub>10</sub> emissions caused by wind. Fred Weber has also broken down there installation more thoroughly than in previous projects and have distributed the rock throughput at each emission unit. This has increased the number emission units evaluated in the installation analysis but has not increased emissions. The only increase in emissions is from the new conveyors that are being added to the installation.

The potential emissions of the new conveyors are below de minimis levels but are above the Insignificant Emission Levels therefore a permit is required for these emission units.

**Table 1: Previous Permits**

Permit Number	Completed	Description
0498-010	4/10/1998	Section 5 Permit Issued
0299-003	2/1/1999	Section 5 Permit Issued
072001-014	7/16/2001	Section 5 Permit Issued
012006-008	1/11/2006	Section 6 Permit Issued
102006-007	10/10/2006	Section 6 Permit Issued

## **EMISSIONS EVALUATION**

Criteria air pollutants will be emitted from this operation. The main air pollutant of concern is PM<sub>10</sub>. The potential emissions were calculated from the maximum hourly design rate (MHDR) of the equipment, appropriate emission factors, control device efficiencies, and the limiting operating hours at MHDR. The sources of the emission factors and control efficiencies are listed in the section "Permit Documents". Based on the conditioned potential emissions, the operation is considered a minor source under 10 CSR 10-6.060 section (5).

**Table 2: Emissions Summary (tons per year)**

Air Pollutant	Regulatory De Minimis Levels	*Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	Potential Emissions of the Application	Application Conditioned Potential	Emission Factor (lb/ton)
PM <sub>10</sub>	15.0	39.0	17.45	5.88	5.88	N/A
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	N/A	N/A	N/A

Note: N/A = Not Applicable

\* Existing potential emissions taken from permit # 102006-007

## **AMBIENT AIR QUALITY IMPACT ANALYSIS**

The plant is permitted to operate under the following four conditions:

### **Solitary Operation:**

Solitary Operation is defined as operation when no other installations are present on the property. During Solitary Operation, the plant must record its daily production to insure that the National Ambient Air Quality Standard (NAAQS) is not exceeded.

### **Concurrent Same-Owner Operation:**

Concurrent Same-Owner Operation is defined as operation when other plants owned by Fred Weber Inc. are located on the property. During Concurrent Same-Owner Operation, Fred Weber Inc. may balance and record the daily production from all plants such that the NAAQS is not exceeded.

### **Concurrent Separate-Owner Operation:**

Concurrent Separate-Owner Operation is defined as operation when other plants not owned by parent company are located on the property. During Concurrent Separate-Owner Operation, the plant must reduce its ambient impact to address the impact for the non-owned plants.

### **Concurrent Same-and-Separate-Owner Operation:**

Concurrent Same-and-Separate-Owner Operation is defined as operation when plants owned by Capital Quarries and plants not owned by Fred Weber Inc. are located on the property. During Concurrent Same-and-Separate-Owner Operation, Fred Weber Inc. may balance the daily production from all owned plants with a reduced impact to account for the impact from the non-owned plants to insure that the NAAQS is not exceeded.

Screening tools were used to evaluate the ambient air impact of the hourly emissions from this operation. The ambient impact was evaluated at a distance of 2000 feet to the nearest property boundary. The ambient impact at this site shall not exceed the National Ambient Air Quality Standard (NAAQS) of  $150.0 \mu\text{g}/\text{m}^3$  of  $\text{PM}_{10}$  at or beyond the nearest property boundary in any single 24-hour period. The screening tools were used to develop an ambient impact factor for the rock crushing plant. This ambient impact factor is incorporated into the daily record keeping table, Attachment A.

For sources agreeing to use Best Management Practices (BMPs), as defined in Attachment AA, haul roads and stockpiles are not modeled with screening tools. Instead, they are addressed as a background level of  $20 \mu\text{g}/\text{m}^3$  of  $\text{PM}_{10}$ . To ensure conformity with NAAQS, the remaining process emissions are limited to an impact of less than  $130.0 \mu\text{g}/\text{m}^3$  of  $\text{PM}_{10}$  at or beyond the nearest property boundary.

**Table 3: Ambient Air Quality Impact Analysis of PM<sub>10</sub>, 24-Hour Averaging Time**

Operation	Ambient Impact Factor (µg/m <sup>3</sup> ton)	Modeled Impact (µg/m <sup>3</sup> )	*Background (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	Daily Production Limit (tons)
1. Solitary	0.00222	26.62	20.00	150.00	12000
2. Concurrent, Same Owner	0.00222	**	20.00	150.00	**
3. Concurrent, Separate Owners	0.00222	26.62	70.00	150.00	12000
4. Concurrent, Same and Separate Owners	0.00222	**	70.00	150.00	**

\* Background PM<sub>10</sub> level of 20.00 µg/m<sup>3</sup> from haul roads and stockpiles and 50.00 µg/m<sup>3</sup> from the operation of plants not owned by Fred Weber Inc.

\*\* The operator(s) must balance production among concurrently operating plants that are owned by Fred Weber Inc., with the ambient impact factors for each, such that NAAQS is not exceeded.

**APPLICABLE REQUIREMENTS**

The owner is subject to compliance with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements.

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *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 10-3.090
- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- 40 CFR Part 60 Subpart "OOO", *Standards of Performance for Nonmetallic Mineral Processing Plants*, of the New Source Performance Standards (NSPS)
- The National Emission Standards for Hazardous Air Pollutants (NESHAPs) and the currently promulgated Maximum Achievable Control Technology (MACT) regulations do not apply to the proposed equipment.

**STAFF RECOMMENDATION**

On the basis of this review conducted in accordance with Section (5), 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, designating Fred Weber Inc. as the owner and operator of the installation.
- Environmental Protection Agency (EPA) AP-42, *Compilation of Air Pollutant Emission Factors; Volume I, Stationary Point and Area Sources, Fifth Edition*.
- Noyes Data Corp. book, Orlemann, et al.1983, *Fugitive Dust Control*.
- EPA Factor Information Retrieval (FIRE) Version 6.21.
- Spreadsheet calculations of potential-to-emit and ambient impact.
- Southeast Regional Office Site Survey, June 23, 2009.
- Best Management Practices
- Fred Weber Sieve Analysis and Deleterious Content of Aggregate.
- Meteorological data from Farmington, Missouri surface station.



## Attachment AA: Best Management Practices (BMPs)- Construction Industry Fugitive Emissions

Construction Industry Sites covered by the Interim Relief Policy shall maintain Best Management Control Practices (BMPs) for fugitive emission areas at their installations when in operation. Options for BMPs are at least one of the following:

### For Haul Roads:

1. Pavement of Road Surfaces –
  - A. The operator(s) may pave all or any portion of the haul roads with materials such as asphalt, concrete, and/or other material(s) after receiving approval from the program. The pavement will be applied in accordance with industry standards for such pavement so as to achieve “Control of Fugitive Emissions<sup>1</sup>” while the plant is operating.
  - B. Maintenance and/or 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(s) shall periodically water, wash and/or otherwise clean all of the paved portions of the haul road(s) as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  
2. Usage of Chemical Dust Suppressants –
  - A. The operator(s) shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to all the unpaved portions of the haul roads. The suppressant will be applied in accordance with the manufacturer’s suggested application rate (if available) and re-applied as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  - B. The quantities of the chemical dust suppressant shall be applied, re-applied and/or maintained sufficient to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator(s) 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(s) shall keep these records with the plant for not less than five (5) years, and the operator(s) shall make these records available to Department of Natural Resources personnel upon request.
  
3. Usage of Documented Watering –
  - A. The operator(s) shall control the fugitive emissions from all the unpaved portions of the haul roads at the installation by consistently and correctly using the application of a water spray. Documented watering will be applied in accordance with a recommended application rate of 100 gallons per day per 1,000 square feet of unpaved/untreated surface area of haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating. For example, the operator(s) shall calculate the total square feet of unpaved vehicle activity area requiring control on any particular day, divide that product by 1,000, and multiply the quotient by 100 gallons for that day.
  - B. The operator(s) shall maintain a log that documents daily water applications. This log shall include, but is not limited to, date and volumes (e.g., number of tanker applications and/or total gallons used) of water application. The log shall also record rationale for not applying water on day(s) the plant is in operation (e.g., meteorological situations, precipitation events, freezing, etc.)
  - C. Meteorological precipitation of any kind, (e.g. a quarter inch or more rainfall, sleet, snow, and/or freeze thaw conditions) which is sufficient in the amount or condition to achieve control of fugitive emissions from these areas while the plant is operating.
  - D. 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. The operator(s) shall record a brief description of such events in the same log as the documented watering.
  - E. The operator(s) shall record the date and the amount of water applied for each application on the above areas. The operator(s) shall keep these records with the plant for not less than five (5) years, and the operator(s) shall make these records available to Department of Natural Resources personnel upon request.

<sup>1</sup> 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.)

**For Vehicle Activity Areas around Open Storage Piles:**

1. Pavement of Stockpile Vehicle Activity Surfaces –
  - A. The operator(s) may pave all or any portion of the vehicle activity areas around the storage piles with materials such as asphalt, concrete, and/or other material(s) after receiving approval from the program. The pavement will be applied in accordance with industry standards for such pavement so as to achieve control of fugitive emissions while the plant is operating.
  - B. Maintenance and/or 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(s) shall periodically water, wash and/or otherwise clean all of the paved portions of the vehicle activity areas around the storage piles as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  
2. Usage of Chemical Dust Suppressants –
  - A. The operator(s) shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to all the vehicle activity areas around the open storage piles. The suppressant will be applied in accordance with the manufacturer's suggested application rate (if available) and re-applied as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  - B. The quantities of the chemical dust suppressant shall be applied, re-applied and/or maintained sufficient to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator(s) 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(s) shall keep these records with the plant for not less than five (5) years, and the operator(s) shall make these records available to Department of Natural Resources personnel upon request.
  
3. Usage of Documented Watering –
  - A. The operator(s) shall control the fugitive emissions from all the vehicle activity areas around the storage piles at the installation by consistently and correctly using the application of a water spray. Documented watering will be applied in accordance with a recommended application rate of 100 gallons per day per 1,000 square feet of unpaved/untreated surface area of vehicle activity areas around the storage piles as necessary to achieve control of fugitive emissions from these areas while the plant is operating. (Refer to example for documented watering of haul roads.)
  - B. The operator(s) shall maintain a log that documents daily water applications. This log shall include, but is not limited to, date and volumes (e.g., number of tanker applications and/or total gallons used) of water application. The log shall also record rationale for not applying water on day(s) the plant is in operations (e.g., meteorological situations, precipitation events, freezing, etc.)
  - C. Meteorological precipitation of any kind, (e.g. a quarter inch or more rainfall, sleet, snow, and/or freeze thaw conditions) which is sufficient in the amount or condition to achieve control of fugitive emissions from these areas while the plant is operating.
  - D. 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. The operator(s) shall record a brief description of such events in the same log as the documented watering.
  - E. The operator(s) shall record the date and the amount of water applied for each application on the above areas. The operator(s) shall keep these records with the plant for not less than five (5) years, and the operator(s) shall make these records available to Department of Natural Resources personnel upon request.

Ms. Genevieve Bodnar  
Environmental Manager  
Fred Weber Inc.  
2320 Creve Coeur Mill Road  
Maryland Heights, MO 63043

RE: New Source Review Permit - Project Number: 2009-05-051

Dear Ms. Bodnar:

Enclosed with this letter is your New Source Review permit. Please review your permit carefully and note the special conditions, if any, and the requirements in your permit.

Operation in accordance with the conditions and requirements in your permit, the New Source Review application submitted for project 2009-05-051, and your amended operating permit, if required, is necessary for continued compliance. Please review your amended operating permit, as it will contain all applicable requirements for your rock crushing plant, including any special conditions from your New Source Review permit.

The section of the permit entitled "Technical Review of Application for Authority to Construct" should not be separated from the main portion of your permit. The entire permit must be retained in your files. 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 (573) 751-4817, or you may write to the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale.  
Permits Unit Chief

KBH:gfl

Enclosures

c: Southeast Regional Office  
PAMS File: 2009-05-051  
Permit Number: