

# PERMIT BOOK

## 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: **042010-007** Project Number: 2010-02-011

Parent Company: Van Buren Stone Company, L.L.C.

Parent Company Address: P.O. Box 970, Van Buren, MO 63965

Installation Name: Van Buren Stone Company, L.L.C.

Installation ID: 035-0020

Installation Address: Old Highway 60 & State Highway W, Van Buren, MO 63965

Location Information: Carter County, S8, T27N, R1E

Application for Authority to Construct was made for:  
The installation of a 250 ton per hour rock crusher and associated equipment at an existing rock quarry. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

APR 13 2010

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James L. Lawrence".

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.	2010-02-011

**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. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in all previously issued construction permits from the Air Pollution Control Program.
2. **Best Management Practices Requirement**  
Van Buren Stone Company, L.L.C. 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.
3. **Annual Emission Limit**
  - A. Van Buren Stone Company, L.L.C. shall emit less than 15.0 tons of PM<sub>10</sub> in any 12-month period from the entire installation. The emission units comprising the entire installation are listed in Attachment BB.
  - B. Van Buren Stone Company, L.L.C. shall demonstrate compliance with special condition 3.A. using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Moisture Content Testing Requirement**
  - A. Van Buren Stone Company, L.L.C. 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 Van Buren Stone Company, L.L.C. main office within 30 days of completion of the required test.

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**SITE SPECIFIC SPECIAL CONDITIONS:**

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

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- 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 exceeded the limit, Van Buren Stone Company, L.L.C. 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, Van Buren Stone Company, L.L.C. 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 250 ton per hour primary crusher (EU-5D) and the 205 ton per hour rock crusher (EU-5A) shall be located at least 500 feet from the nearest property boundary.
  
- 6. **Concurrent Operation Restriction**  
Van Buren Stone Company, L.L.C. is prohibited from operating whenever other plants are located at the site. However, Van Buren Stone Company, L.L.C. may operate its new and existing rock crushing circuits simultaneously.
  
- 7. **Record Keeping Requirement**  
Van Buren Stone Company, L.L.C. shall maintain all records required by this permit for five years and make them available to any Missouri Department of Natural Resources personnel upon request.
  
- 8. **Reporting Requirement**  
Van Buren Stone Company, L.L.C. 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 (5) REVIEW

Project Number: 2010-02-011  
Installation ID Number: 035-0020  
Permit Number:

Van Buren Stone Company, L.L.C.  
Old Highway 60 & State Highway W  
Van Buren, MO 63965

Complete: February 2, 2010

Parent Company:  
Van Buren Stone Company, L.L.C.  
P.O. Box 970  
Van Buren, MO 63965

Carter County, S8, T27N, R1E

PROJECT DESCRIPTION

Van Buren Stone Company, L.L.C. (Van Buren Stone) is an existing, electric-powered 205 ton per hour rock crushing facility. Van Buren Stone proposes to add a 250 ton per hour rock crushing circuit which will operate independently from its existing equipment. Van Buren Stone also plans to implement best management practices (BMPs) to control fugitive emissions from its vehicular activities. As BMPs have not previously been performed at this site, the potential emissions of the project include the existing facility and the proposed equipment. As the potential emissions of the project exceed the de minimis level, the facility has accepted a voluntary limit to emit less than 15.0 tons from the entire installation to avoid demonstrating compliance with the increment standard.

Although Van Buren Stone may operate both the new and existing rock crushing circuits concurrently, no other installations are permitted to operate at this site.

The facility has obtained a Basic State Operating permit because some of the existing rock crushing equipment is subject to 40 CFR 60 Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*. None of the new equipment being installed is subject to 40 CFR 60 Subpart OOO because all of the proposed equipment was manufactured prior to the applicability date for the rule.

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 Carter 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.

TABLES

The following permits have been issued to Van Buren Stone from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0895-032	Section (6) permit for the installation of a portable rock crushing facility
0895-032A	Removed total suspended particulate (TSP) limits and replaced water spray requirements with moisture content testing
OP	Basic State Operating Permit (Expires November 10, 2014)
112001-020	Section (6) permit for the installation of a permanent rock crushing facility

The table below summarizes the emissions of this project. The existing actual emissions were taken from the previous year's EIQ. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions are based on a voluntary limit of 15.0 tons per year to avoid demonstrating compliance with the increment standard.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level	<sup>1</sup> Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	<sup>2</sup> Potential Emissions of the Application	<sup>3</sup> Conditioned Potential Emissions
PM <sub>10</sub>	15.0	15.28	2.06	48.77	<15.0
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	0.93	N/D	3.68	1.13
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; N/D = Not Determined

<sup>1</sup>The existing potential emissions were obtained from permit number 112001-020. Existing potential emissions consider a daily impact limit to emit less than 150.0 µg/m<sup>3</sup> at the property boundary.

<sup>2</sup>Includes emissions from the entire installation, including the new and existing equipment. Emissions from the haul roads and storage piles are included and consider the use of BMPs.

<sup>3</sup>Conditioned potential emissions refers to the entire installation.

Table 3: Ambient Air Quality Impact Analysis

Pollutant	<sup>1</sup> NAAQS (µg/m <sup>3</sup> )	Averaging Time	<sup>2</sup> Maximum Modeled Impact (µg/m <sup>3</sup> )	Limited Impact (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Daily Limit (tons/day)
PM <sub>10</sub>	150.0	24-hour	96.00	N/A	20.0	N/A

N/A=Not Applicable

<sup>1</sup>National Ambient Air Quality Standards (NAAQS)

<sup>2</sup>Modeled impact at maximum capacity with controls. Assumes the new and existing rock crushing equipment are operating simultaneously.

## 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% by weight. 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% 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." Emissions of volatile organic compounds (VOCs), generated from the working and breathing losses associated with the diesel storage tank, were calculated using the emission factors obtained from AP-42 Section 7.1 "Organic Liquid Storage Tanks", November 2006.

#### AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of PM<sub>10</sub>. The Air Pollution Control Program requires an AAQIA of PM<sub>10</sub> for all asphalt, concrete and rock-crushing plants regardless of the level of PM<sub>10</sub> emissions if a permit is required. The AAQIA was performed using the Air Pollution Control Program's generic nomographs and 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) for the pollutant. The distance from the plant to the nearest site boundary is 500 feet.

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/m<sup>3</sup> of PM<sub>10</sub> in accordance with the Air Pollution Control Program's BMPs interim policy.

#### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis levels.

#### APPLICABLE REQUIREMENTS

Van Buren Stone Company, L.L.C. 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. 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 June 1 for the previous year's emissions.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- *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

## SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to some of the existing 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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Kathi Jantz  
Environmental Engineer

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 29, 2010, received February 2, 2010, designating Van Buren Stone Company, L.L.C. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated February 5, 2010.



## 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 emissions<sup>1</sup> 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

<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.)

**Attachment BB: Emission Calculations**  
 Van Buren Stone Company, L.L.C.  
 2010-01-022

Installation	Emission Unit ID	Description	<sup>1</sup> MHDR	MHDR (Units/hr)	<sup>2</sup> PM <sub>10</sub> EF	EF Units	Control Eff. %	<sup>3</sup> Modeling Rate (lb/hr)
Existing	1	Drilling	455.0	Tons	N/A	N/A	N/A	N/A
Existing	3	Haul from Pit to Feeder	11.5	VMT	2.86	lb/VMT	90.00	3.2883
Existing	4	Dump to Feeder	455.0	Tons	1.60E-05	lb/ton	0.00	0.0073
New	5D	Impact Crusher	250.0	Tons	2.40E-03	lb/ton	75.00	0.1500
New	8T	Conveyor Under Impact Crusher	250.0	Tons	1.10E-03	lb/ton	95.80	0.0116
New	7D	Screen	250.0	Tons	8.70E-03	lb/ton	91.50	0.1849
Existing	12	Customer Hauling	11.5	VMT	2.01	lb/VMT	90.00	2.3040
Existing	11	Storage Pile - Load In	455.0	Tons	4.13E-03	lb/ton	0.00	1.8771
Existing	11	Storage Pile - Wind Erosion	2.0	Acres	8.92E-02	lb/acre	0.00	0.1783
Existing	11	Storage Pile - Vehicular Activity	455.0	Tons	5.73E-03	lb/ton	90.00	0.2606
Existing	11	Storage Pile - Load Out	455.0	Tons	4.13E-03	lb/ton	0.00	1.8771
New	8U	Conveyor under Screen	250.0	Tons	1.10E-03	lb/ton	95.80	0.0116
New	8V	Conveyor	250.0	Tons	1.10E-03	lb/ton	95.80	0.0116
New	8W	Conveyor	250.0	Tons	1.10E-03	lb/ton	95.80	0.0116
Existing	5A	Jaw Crusher	205.0	Tons	2.40E-03	lb/ton	75.00	0.1230
Existing	8A	Conveyor to Screen	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	7A	Scalping Screen	205.0	Tons	8.70E-03	lb/ton	91.50	0.1516
Existing	8B	Feed Conveyor to Cone Crusher	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	5B	Cone Crusher	205.0	Tons	2.40E-03	lb/ton	75.00	0.1230
Existing	8C	Conveyor for Cone Crusher Discharge	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8D	Feed Conveyor to Screen	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	7B	Screen	205.0	Tons	8.70E-03	lb/ton	91.50	0.1516
Existing	8E	Feed Conveyor to Impact Crusher	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	5C	Impact Crusher	205.0	Tons	2.40E-03	lb/ton	75.00	0.1230
Existing	8F	Conveyor for Impact Crusher Discharge	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8G	Feed Conveyor to Screen	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	7C	Screen	205.0	Tons	8.70E-03	lb/ton	91.50	0.1516
Existing	8H	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	13A	Diesel Storage Tank	205.0	1000 Gal	N/A	N/A	N/A	N/A
Existing	13A	Diesel Storage Tank	205.0	1000 Gal	N/A	N/A	N/A	N/A
Existing	8I	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8J	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8K	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8L	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8M	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
Existing	8N	Conveyor	205.0	Tons	1.10E-03	lb/ton	95.80	0.0095
New	4B	Grizzly Feeder to Primary Crusher	250.0	Tons	1.60E-05	lb/ton	0.00	0.0040

<sup>1</sup>Maximum Hourly Design Rate (MHDR)

<sup>2</sup>Emission Factor (EF)

<sup>3</sup>The Modeling Rate is the same as the emission rate

Mr. Terry Gibbs  
Partner  
Van Buren Stone Company, L.L.C.  
P.O. Box 970  
Van Buren, MO 63965

RE: New Source Review Permit - Project Number: 2010-01-022

Dear Mr. Gibbs:

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, your new source review permit application and with your amended 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.

If you have any questions regarding this permit, please do not hesitate to contact Kathi Jantz, 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:kjl

Enclosures

c: Southeast Regional Office  
PAMS File: 2010-01-022

Permit Number: