

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: 032010-003

Project Number: 2009-08-016

Parent Company: Proppant Specialists, LLC

Parent Company Address: 2003 Nine Road, Brady, TX 76825

Installation Name: Proppant Specialists, LLC

Installation ID: 157-0037

Installation Address: Approximately one (1) mile north of Brewer, MO, north of County Road M, Between I-55 and Hwy 61

Location Information: Perry County, S28/33, T36N, R10E

Application for Authority to Construct was made for:

The installation of three (3) 1,250 tons capacity silos, two (2) elevators and two (2) enclosed conveyors. 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.

MAR 05 2010

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 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.

Page No.	3
Permit No.	
Project No.	2009-08-016

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. Ambient Air Impact Limitation
 - A. Proppant Specialists, LLC 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 in ambient air based on a 24-hour average.
 - B. During concurrent (same owner) and concurrent (same and separate owner) operations, Proppant Specialists, LLC shall demonstrate compliance with special condition 1.A using Attachment A or other equivalent forms that have been approved by the Air Pollution Control Program, including electronic forms. Proppant Specialists, LLC shall account for the impacts from these other sources of PM₁₀ as instructed in Attachment A. During solitary operations and concurrent (separate owner) operations, no record keeping is needed to show compliance with special condition 1.A.
2. Moisture Content Testing Requirement
 - A. Proppant Specialists, LLC shall verify that the moisture content of the aggregates processed by the crushing plant is greater than or equal to 1.5% by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted at least 45 day after the start of operations of the new equipment. 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 rock crushing plant. All spray devices must be turned off while samples are taken.
 - 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 Proppant Specialists, LLC 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 2.A, another test must be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Proppant Specialists, LLC shall either:

Page No.	4
Permit No.	
Project No.	2009-08-016

SITE SPECIFIC SPECIAL CONDITIONS:

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

- 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.
3. Impingement Scrubber Control System Requirement
- A. Proppant Specialists, LLC shall install and operate an impingement scrubber to control emissions from the following equipment as specified in the permit application:
- 1.) Two new elevators (EP36 and EP40)
 - 2.) Two new screw conveyor (EP37 and EP41)
 - 3.) Three new 1,250 ton capacity silos (EP38, EP39 and EP42)
4. Minimum Distance to Property Boundary Requirement
- The primary emission units, which are the crushing plant grizzly feeder (EP05) and the two (2) dryers (EP16 and EP27), shall be located at least 900 feet from the nearest property boundary.
5. Record Keeping Requirement
- Proppant Specialists, LLC 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.
6. Reporting Requirement
- Proppant Specialists, LLC 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.
7. Superseding Condition
- The conditions of this permit supersede special conditions 2, 4 and 9 found in the previously issued construction permit (No. 122006-003) from the Air Pollution Control Program.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2009-08-016
Installation ID Number: 157-0037
Permit Number:

Proppant Specialists, LLC
North of County Road M
Between I-55 and Highway 61
North of Brewer, MO

Complete: August 11, 2009

Parent Company:
Proppant Specialists, LLC
2003 Nine Road
Brady, TX 76825

Perry County, S28/33, T36N, R10E

PROJECT DESCRIPTION

Proppant Specialists, LLC owns and operates a sand drying installation in Perryville County (S28, T36N, R10E). The installation consists of three separate operations: An aggregate crushing and washing operation and two (2) sand drying operations. The aggregate crushing and washing operation has a maximum hourly design rate (MHDR) of 250 tons per hour. Sandstones are mined, crushed, washed and separated into coarse and fine sand. The separated sand is stored until its moisture content reaches approximately 4% and then loaded into one of two dryers at the facility. One of the sand dryers has a maximum hourly design rate (MHDR) of 100 tons per hour and the other has an MHDR of 40 tons per hour. The dry sand is then stored in silos and eventually shipped offsite.

For this project, the installation would like to add three (3) 1,250 tons capacity silos, two (2) elevators and two (2) enclosed conveyors. Furthermore, in permit 122006-003, the facility was required to limit its annual PM₁₀ emissions to 15.0 tons and was given an emission factor (0.01563 lbs/ton) to keep track of the PM₁₀ emissions. This emission factor was developed taking into account wet suppression control systems on the grizzly feeder (EP-05), the primary crusher (EP-06), and three quarry conveyors (EP-07, EP-09, EP11). Now, instead of using spray bars, the facility would like to perform moisture content testing to prove that the moisture content of rock processed by the crushing plant is greater than 1.5% by weight. Since wet suppression systems and moisture content testing are given the same control efficiency, no update to the emission factor is necessary. The facility should continue using 0.01563 lbs/ton to track PM₁₀ emissions to ensure compliance with the 15.0 ton limit. This emission factor is listed in Attachment C of Permit 122006-003 and the facility can continue using Attachment C of Permit 122006-003 to track PM₁₀ emissions.

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. The installation is a minor source for construction permits and a basic installation for operating permits.

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 Perry County, an attainment area for all criteria pollutants.

The following permits have been issued to Proppant Specialists, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
122006-003	Installation of a new sand crushing and drying plant.

EMISSIONS CALCULATIONS

Table 2 below summarizes the emissions of this project. The existing actual emissions were taken from the EIQ of the previous year. The potential emissions of the application represent the emissions of all new equipment and activities assuming continuous operation (8760 hours per year). Emissions from the new equipment were calculated using emission factors found in the Environmental Protection Agency Document, AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Chapter 11.19.1, *Sand and Gravel Processing*.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/ SMAL	¹ Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	² Potential Emissions of the Application	Conditioned Potential Emissions
PM ₁₀	15.0	18.05	5.72	0.57	N/A
SO _x	40.0	0.00	0.05	N/A	N/A
NO _x	40.0	10.46	6.66	N/A	N/A
VOC	40.0	0.38	1.14	N/A	N/A
CO	100.0	3.33	3.84	N/A	N/A
Total HAPs	25.0	0.18	0.09	N/A	N/A

N/A = Not Applicable

¹Existing potential emissions are the sum of emissions from projects 2006-09-020 (Permit No. 122006-003), 2008-01-024 (No permit required) and 2009-02-003 (No permit required)

²Includes only equipment added in this project.

PM₁₀ emissions from the new equipment were calculated to be 0.13 lbs/hr, which is less than the exemption level of 1.0 lbs/hr given in Missouri State Rules 10 CSR 10-6.-061, *Construction Permit Exemptions* (3)(A)3.A. However, the PM₁₀ emissions were calculated taking into account the scrubber used to control PM₁₀ emissions. The Air Pollution Control Program no longer takes into account control devices while making permit determinations. Therefore, since the PM₁₀ emissions are expected to be greater than 1.0 lbs/hr without the scrubber, a permit is needed for this project.

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of PM₁₀. The Air Pollution Control Program requires an AAQIA of PM₁₀ for all construction industry plants regardless of the level of PM₁₀ emissions if a permit is required. The AAQIA was performed using the Air Pollution Control Program's generic nomographs. Proppant Specialists, LLC conducted performance tests on the scrubber stacks in November, 2009 and asked that the emission factors developed from the stack tests be used to evaluate the ambient impact from the plant. According to the stack tests, which has been reviewed and approved by the Air Pollution Control Program's enforcement unit, the PM₁₀ emission factor for the 100 tph dryer scrubber is 0.0061 lbs/ton, for the 40 tph dryer scrubber is 0.0191 lbs/ton and from the handling equipment scrubber is 0.0008 lbs/ton.

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 20.0 µg/m³ of PM₁₀, in accordance with the Air Pollution Control Program's BMPs interim policy.

The installation is permitted to operate under the following four (4) scenarios.

- Solitary Operations: This is operations when the installation is the only installation located at the site. The facility can operate at maximum capacity for twenty-four (24) hours without exceeding the NAAQS. Therefore, no record keeping is necessary to ensure compliance with the NAAQS.
- Concurrent (Same Owner) Operations: This is operations when the installation is located at the site at the same time as other installations owned by Proppant Specialists, LLC. During this type of operation, Proppant Specialists, LLC shall track the daily PM₁₀ ambient impact of all installations at the site to ensure that the combined daily PM₁₀ ambient impact from these installations does not exceed the NAAQS of 150.0 µg/m³.
- Concurrent (Separate Owners) Operations: This is operations when the installation is located at this site at the same time as other installations owned by other companies. The sand drying installation is allowed 90.81 µg/m³ of daily PM₁₀ ambient impact while other installations are allowed 39.19 µg/m³. The remaining balance of 20.00 µg/m³ is used for BMPs. Since the 90.81 µg/m³ of daily PM₁₀ ambient impact allowed for the sand drying installation is based on maximum production at twenty-four (24) hours of operation, Proppant Specialists, LLC will not be required to track its daily PM₁₀ ambient impact for NAAQS compliance.
- Concurrent (Same and Separate Owners) Operations: This is operations when other installations owned by other companies and other installations owned by Proppant Specialists, LLC are located at the site. Installations owned by Proppant Specialists, LLC are allowed 90.81 µg/m³ while installations owned by other companies are allowed 39.19 µg/m³. The remaining balance of 20.00 µg/m³ is reserved for BMPs. Proppant Specialists, LLC is required to track the daily PM₁₀ ambient impact of all installation it owns to ensure that the combined daily PM₁₀ ambient impact of these installations does not exceed 90.81 µg/m³.

The ambient impact factors that should be used for showing NAAQS compliance is listed in

Attachment A.

Table 3: PM₁₀ Ambient Air Quality Impact Analysis, 24-Hour Averaging Time

Types of Operation	NAAQS (µg/m ³)	Modeled Impact (µg/m ³)	¹ Background (µg/m ³)	Daily Limit (tons/day)
Solitary	150.0	90.81	20.00	N/A
Concurrent (Same)	150.0	Note 2	20.00	Note 2
Concurrent (Separate)	150.0	90.81	59.19	N/A
Concurrent (Separate and Same)	150.0	Note 2	59.19	Note 2

N/A – Not Applicable

Note 1: Background of 20.00 µg/m³ from haul roads and storage piles and the remainder from operations of plants owned by other companies.

Note 2: The operators must balance production among concurrently operating installations such that NAAQS is not exceeded.

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 all pollutants are less than de minimis levels.

APPLICABLE REQUIREMENTS

Proppant Specialists, 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. 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 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

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to some of the equipment at this installation.
- 40 CFR 60 Subpart UUU, "Standards of Performance for Calciners and Dryers in Mineral Industries" applies to the dryers.
- 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.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 31, 2009, received August 11, 2009, designating Proppant Specialists, LLC 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 August 19, 2009.

Attachment BB: Emission Calculations
 Proppant Specialists LLC
 2009-08-016

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	³ Control Eff. %	Emissions (lb/hr)	⁴ Modeling Rate (lb/hr)
Drilling	250.0000	Tons	0.000000	Tons	0.00	0.0000	0.0000
Blasting	250.0000	Tons/Day	0.000000	Tons/Day	0.00	0.0000	0.0000
Loading of Fragmented Stone	250.0000	Tons	0.000016	Tons	0.00	0.0040	0.0040
Haul Road 1	4.0584	VMT	2.527839	VMT	90.00	1.0259	1.0259
Unloading of Fragmented Stone	250.0000	Tons	0.000016	Tons	0.00	0.0040	0.0040
Grizzly Feeder	250.0000	Tons	0.000016	Tons	0.00	0.0040	0.0040
Primary Crusher	150.00	Tons	0.002400	Tons	75.00	0.0900	0.0900
Conveyor	250.0000	Tons	0.001100	Tons	95.80	0.0116	0.0116
Quarry Conveyor QC-1	250.0000	Tons	0.001100	Tons	95.80	0.0116	0.0116
Scalping Screen	250.0000	Tons	0.008700	Tons	91.50	0.1849	0.1849
Conveyor	250.0000	Tons	0.001100	Tons	95.80	0.0116	0.0116
Quarry Conveyor QC-2	100.0000	Tons	0.001100	Tons	95.80	0.0046	0.0046
Secondary Crusher (VSI)	100.0000	Tons	0.002400	Tons	75.00	0.0600	0.0600
Quarry Conveyor QC-3	100.0000	Tons	0.001100	Tons	95.80	0.0046	0.0046
Quarry Conveyor QC-4	250.0000	Tons	0.001100	Tons	95.80	0.0116	0.0116
Conveyor QC-5	250.0000	Tons	0.001100	Tons	95.80	0.0116	0.0116
Storage Pile Wind Erosion	4.0000	Acres	0.089166	Acres	0.00	0.3567	0.3567
Storage Pile Vehicular Activity	100.0000	Tons	0.011731	Tons	90.00	0.1173	0.1173
Storage Pile Load Out	100.0000	Tons	0.004125	Tons	0.00	0.4125	0.4125
Handling Equipment with Scrubber	100.0000	Tons	0.000800	Tons	N/D	0.0800	0.0800
Dry Feed Conveyor DC-1	100.0000	Tons	0.001100	Tons	95.80	0.0046	0.0046
Fluid Bed Dryer, 20 MMBTU/hr, Propane, 0.2210 Mgal	100.0000	Tons	0.006100	Tons	0.00	0.6100	0.6100
Haul Road	4.0404	VMT	2.649425	VMT	90.00	1.0705	1.0705
New Elevator	100.0000	Tons	0.0013	Tons	N/D	0.13	0.13
New Enclosed Conveyor	100.0000	Tons					
New 1,250 ton silos (40/70)	100.0000	Tons					
New 1,250 ton silos (40/70)	100.0000	Tons					
New Elevator	100.0000	Tons					
New Enclosed Screw Conveyor	100.0000	Tons					
New 1,250 ton silo (100M)	100.0000	Tons					

Attachment BB: Emission Calculations

Proppant Specialists LLC

2009-08-016

Fluid Bed Dryer Combustion Products	0.2431	Mgal	0.600000	Mgal	0.00	0.1459	0.1459
Dry Product Silos Truck Loading	100.0000	Tons	0.069270	Tons	90.00	0.6927	0.6927
Storage Pile Vehicular Activity	40.0000	Tons	0.011731	Tons	90.00	0.0469	0.0469
Storage Pile Load out	40.0000	Tons	0.069272	Tons	0.00	2.7709	2.7709
Auxiliary Dryer Handling Equipment	40.0000	Tons	0.000800	Tons	N/D	0.0320	0.0320
Fluid Bed Dryer, 6 MMBTU/hr, Propane 0.0663 Mgal	40.0000	Tons	0.019100	Tons	N/D	0.7640	0.7640
Silo Loadout by Truck	40.0000	Tons	0.069272	Tons	90.00	0.2771	0.2771
Fluid Bed Dryer Combustion	0.0663	Mgal	0.400000	Mgal	0.00	0.0265	0.0265
Haul Road	1.6162	VMT	2.649425	VMT	90.00	0.4282	0.4282
Feeder	40.0000	Tons	0.000016	Tons	0.00	0.0006	0.0006
Conveyor	40.0000	Tons	0.001100	Tons	95.80	0.0018	0.0018

¹Maximum Hourly Design Rate (MHDR)

²Emission Factor (EF)

³For equipment whose device control efficiency is labeled as not determined (N/D), the emission factors already take into account control device efficiency.

⁴The Modeling Rate is the emission rate scaled to the daily hours of operation at MHDR allow by the permit.

Mr. Ronald Jordan
President
Proppant Specialists, LLC
2003 Nine Road
Brady, TX 76825

RE: New Source Review Permit - Project Number: 2009-08-016

Dear Mr. Jordan:

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 Chia-Wei Young, 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:cwyl

Enclosures

c: Southeast Regional Office
PAMS File: 2009-08-016

Permit Number: