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NATURAL RESOURCES
Eric R. Greitens, Governor Carol S. Comer, Director

SEP 25 2017

Mr. Jason Bish
Vice President - Safety & Regulatory Management
Mississippi Sand, LLC
838 VFW Drive
Festus, MO 63028

RE: New Source Review Permit Amendment - Permit Number: 072014-007A
Project Number: 2017-06-030; Installation Number: 099-0008

Dear Mr. Bish:

On June 12th, 2017 we received Mississippi Sand, LLC's application to amend Construction Permit No. 072014-007 in order to accurately reflect paved haul road emissions at the frack sand drying facility in Festus, MO. The silt loading used in the original permit was based on EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition (AP-42) default loading of 70 g/m^2. The silt loading is being updated to 0.75 g/m^2 which is based on actual silt loading testing with a conservative safety factor added to it.

The silt loading factor for haul road #2 - paved sales haul road – was determined to be 0.14 g/m^2 through testing. Testing was performed using guidelines found in EPA document AP-42, Appendix C.1 *Procedures for Sampling Surface/Bulk Dust Loading* and C.2 *Procedures for Laboratory Analysis of Surface/Bulk dust Loading Samples*. Mississippi Sand, LLC has agreed to take a voluntary limit of 0.75 g/m^2 to conservatively calculate haul road emissions and give some margin for compliance above the tested limit of 0.14 g/m^2. In order to verify that the silt loading factor is less than 0.75 g/m^2, testing will need to be performed according to the special conditions within this amendment.

To reflect the new facility wide potential to emit which was changed with the decrease in paved haul road emissions, Mississippi Sand, LLC will now be required to track PM_{10} emissions in order stay below a 15 tpy PM_{10} limit. The limit is being placed in order for the facility to remain a de minimis source (the 10 tpy $PM_{2.5}$ limit within Construction Permit No. 072014-007 is no longer applicable since PM_{10} emissions constitute a much greater percentage of total particulate emissions with the new silt loading factor). Thus, Attachment A of this amendment which tracks PM_{10} emissions will replace Attachment C of Construction Permit No. 072014-007 which was used for tracking $PM_{2.5}$ emissions.

Construction Permit #072014-007 is also being amended to remove Site Specific Special Condition 2 from a National Ambient Air Quality Standards (NAAQS) limitation for particulate matter less the ten microns in diameter (PM_{10}) for solitary operation of the pre wash and post wash processes. This change reflects the Air Pollution Control Program's updated construction industry policy "Ceasing the Use of Nomographs" dated May 1, 2016.

Mississippi Sand, LLC cannot operate with any other plants that have ambient impact limits based on the Air Pollution Control Program's nomographs. Any plant with daily ambient impact limits that locates to this site will need to have their daily ambient impact limits replaced with daily production limits by amending their permit. In Construction Permit No. 072014-007, Table 3 lists the Modeled PM_{10} impact for post wash to be 8.49 $\mu g/m^3$ and pre wash to be 16.86 $\mu g/m^3$. With a total PM_{10} impact from the installation (pre and post wash) being 25.35 $\mu g/m^3$ and the default background impact being 20 $\mu g/m^3$, plants that locate to the installation must keep their ambient impacts below 104.65 $\mu g/m^3$ in order for the entire installation to not exceed the NAAQs limit of 150.0 $\mu g/m^3$. Therefore, plants that locate to this site are required to receive a permit amendment from the Department of Natural Resources which places a daily production limit corresponding to an ambient air impact less than or equal to 104.65 $\mu g/m^3$.

The table below summarizes the emissions of this project. The existing potential emissions were calculated during the review of Construction Permit 072014-007. The existing actual emissions were taken from the 2016 EIQ. The potential emissions of the application represent the emissions of all equipment and activities of the pre-wash and post-wash stages assuming continuous operation (8760 hours per year). The installation's conditioned potential emissions represent potential emissions of the pre-wash and post-wash stages with a voluntary 15.0 ton per year PM_{10} limit to avoid modeling requirements. Emissions of pollutants beside PM_{10} can fluctuate based on how much crushed rock from the pre wash supplies post wash. It's possible for the post wash to receive most of its crushed rock from off site. However, since the pre wash crushes rock near to the post wash a large percentage of crushed rock will be exchanged between the two operations. *Even though some throughput and emission fluctuations may occur, the calculations for this project revealed that no pollutant, besides PM, will exceed de minimis since pollutants are indirectly limited by the 15 tpy PM_{10} limit for both pre wash and post wash.*

Table 1: Potential to Emit of the Installation

Pollutant	Regulatory *De Minimis* Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application[1]	New Installation Conditioned Potential
PM	25.0	50.10	11.29	52.70	N/A
PM_{10}	15.0	13.92	11.29	16.95	< 15.0
$PM_{2.5}$	10.0	< 10.0	8.28	8.94	N/A
SO_2	40.0	0.06	N/D	0.09	N/A
NOx	40.0	18.89	N/D	27.16	N/A
VOC	40.0	0.54	N/D	0.78	N/A
CO	100.0	8.28	N/D	11.90	N/A
HAPs	10.0/25.0	0.19	N/D	0.27	N/A

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

[1]The potential emissions of the installation represent the emissions of all equipment and activities of the pre-wash and post-wash stages assuming continuous operation (8760 hours per year).

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions regarding this amendment, please do not hesitate to contact Hans Robinson, at the department's 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

Kendall B. Hale
Permits Section Chief

KBH:hrj

Enclosures

c: St. Louis Regional Office
PAMS File: 2017-06-030

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."

Mississippi Sand, LLC
Jefferson County, S16, T40N, RE

1. Superseding Condition
   A. The conditions of this permit supersede the following special condition(s) found in the previously issued construction permit 072014-007 issued by the Air Pollution Control Program.
      1) Special Condition 2 Ambient Air Impact Limitation
      2) Special Condition 3.A and 3.B Annual $PM_{2.5}$ emission limit

2. Annual Emission Limit
   A. Mississippi Sand, LLC shall emit less than 15.0 tpy of PM_{10} in any consecutive 12-month period from the entire installation.

   B. Mississippi Sand, LLC shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program (this includes equivalent electronic forms).

3. Concurrent Operation Requirement
   Mississippi Sand, LLC cannot operate with any other plants that have ambient impact limits based on the Air Pollution Control Program's nomographs. When other plants locate to the site, please refer to the special conditions of that plant's permit.

4. Haul Roads
   A. Silt loading shall not exceed 0.75 grams per square meter (g/m^2) on any paved haul road individual sample.

   B. Compliance with the silt loading limitation shall be demonstrated by conducting silt loading sampling (as defined in Appendix C.1 and C.2 of *AP-42 Compilation of Air Pollution Emission Factors*, Fifth Edition).

SPECIAL CONDITIONS:

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

1) Silt loading sampling shall be conducted using a vacuum equipped with HEPA filtration.
2) Each sample area shall be large enough to obtain 100 grams of material.
3) The sampling location shall be representative (as defined in Appendix C of AP-42). Sampling shall occur on haul road #2 – paved sales haul road.

C. Sampling shall be conducted after the midpoint of the cleaning cycle but prior to the next cleaning cycle (e.g. if cleaning is scheduled every 24 hours, then sampling shall be conducted between 12 hours and 24 hours). If rain exceeding 0.25 inches per day occurs, then sampling shall be conducted at the midpoint of the next cleaning cycle.

D. The cleaning method and frequency shall be maintained at the same method and frequency that corresponds to a compliant test, or more often. Cleaning may be temporarily suspended during adequate precipitation or inclement weather (i.e. rain exceeding 0.25 inches per day being sufficient to maintain no visible emissions, or roads covered in snow or ice). Record of the cleaning schedule, actual cleanings conducted, and daily precipitation shall be kept on site.

E. Analysis of samples shall be conducted in accordance with ASTM C 136 method. The silt calculation shall add all mass retained in the vacuum bag to the mass passing the #200 sieve.

F. Testing shall be conducted according to the following schedule:
1) Mississippi Sand shall not begin to use the emission factors listed on Attachment A of this permit until a second test has been performed (the test submitted with the application for this permit is considered the first, initial test.) Should the testing yield no exceedance of the limit during this period then,
2) Testing shall be conducted once a quarter for four consecutive quarters. Should the testing yield no exceedance of the limit during this period then,
3) Mississippi Sand shall develop a Standard Operating Procedure (SOP) for normal haul road operation. A physical copy of the SOP shall be kept on site and include (at minimum):
   a) Haul Road cleaning method;

SPECIAL CONDITIONS:

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

b) Cleaning schedule (frequency);
c) Number of trucks that traveled over the paved haul road during the 7-days prior to each quarterly test;
d) Production levels during the 7-days prior to each quarterly test;

4) Testing may cease so long as Mississippi Sand continues to operate according to the paved haul road Standard Operating Procedure (SOP). If the number of trucks or production levels increase more than twice as much (>100% increase) than those values established in the SOP, Mississippi Sand shall revert to testing in accordance with Special Conditions 4.F.b).

G. If the results show that the silt loading exceeds the 0.75 g/m^2 limit on two consecutive tests (i.e. if one or more of the three required samples per test shows an exceedance, then the entire test shows an exceedance, but two consecutive tests are needed to show an exceedance of the limit), then Mississippi Sand shall evaluate what effects the exceedance would have had on the ambient modeling of this project. Mississippi Sand shall submit the results of any such evaluation, in a complete Application for Authority to Construct to the Permits Section within 90 days of completing the silt loading test.

H. Two copies (one hardcopy, one electronic) of the full test report and results shall be submitted to the Compliance/Enforcement Section within 60 days of completion of the second test. At a minimum, the report shall include sample road segment locations, recent weather conditions, HEPA vacuum bag model number, cleaning method and schedule, sampling date/time, tons of material received and shipped on the sampling day compared to the permitted capacity, legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required EPA Method for at least one sample run. Subsequent test results shall be kept on site.

Attachment A: PM_{10} Annual Emissions Tracking Sheet
Mississippi Sand, LLC (099-0008)
Project Number: 2017-06-030
Permit Number: 072014-007A

Site Name: Mississippi Sand, LLC
Site Address: 838 VFW Drive, Festus, MO 63028
Site County: Jefferson County, S16 T40N RE

This sheet covers the period from _____ to _____ (Copy as needed)
(Month, Day Year) (Month, Day Year)

A. Step Description	(a) Monthly Throughput (tons, MMSCF)	(b) Composite Emission Factor (lb/ton, lb/MMSCF)	(c) Monthly PM_{10} Emissions (lbs)
Jaw Crusher Throughput (Pre-Washing Stage)		0.00575	
Dryer Throughput (Post-Washing Stage)		0.00946	
Fuel Throughput (Sand Dryer, Fluid Bed Dryer)		7.6	
(c) Start-up, Shutdown, and Malfunction PM_{10} Emissions			
(d) Total Monthly PM_{10} Emissions (lbs)			
(e) Total Monthly PM_{10} Emissions (tons)			
(f) 12-Month PM_{10} Emissions (i) from Previous Month's Attachment A (tons)			
(g) Total Monthly PM_{10}Emissions (f) from Previous Year's Attachment A (tons)			
(h) Current 12-Month PM_{10}Emissions (tons) (i) = [(f) + (g) – (h)]			

(a) Record this month's throughput. Pre-Washing and Post-Washing stages will be recorded in tons. Fuel throughput will be recorded in SCF (standard cubic feet) of natural gas.
(b) The Pre-Washing Stage emission factor and the Post-Washing Stage emission factor were calculated during the review of this permit in lb/ton. Fuel throughput emission factor is derived from SCC 1-02-005-03 using WebFIRE. Fuel through put is listed in lb/MMSCF, or pounds per million standard cubic feet.
(c) Multiply the Monthly Throughput (a) by the respective Composite Emission Factor (b).
(d) The sum of all start-up, shutdown, and malfunction PM_{10} emissions during the calendar month as reported to the Air Pollution Control Program's Compliance/Enforcement Section in accordance with the provisions of 10 CSR 10-6.050.
(e) Sum each individual Monthly PM_{10} Emissions.
(f) Divide the Total Monthly PM_{10} Emissions (d) by 2,000.
(g) Record the 12-Month PM_{10} Emissions (h) from the Previous Month's Attachment C.
(h) Record the Total Monthly PM_{10} Emissions (e) from the Previous Year's Attachment C.
(i) Calculate the Current 12-Month PM_{10} Emissions. A total less than **15.0** tons indicates compliance.