STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2371-AR-1 AFIN: 38-00393

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

American Silica, LLC
85 Lawrence County Road 205
Black Rock, Arkansas 72415

3. PERMIT WRITER:

Lauren Featherston

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Industrial Sand Mining
NAICS Code: 212322

5. ALL SUBMITTALS:

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
8/29/2018	Modification	Changed dryer to one with higher TPH and with less monitoring requirements

6. REVIEWER'S NOTES:

American Silica is located off of County Road 210 in Black Rock, Arkansas. The site is known as the Black Rock Processing Plant/Site. The primary product of the facility is silica sand (NAICS 212322).

The facility has submitted a significant modification application to change the dryer from a fluid bed dryer to a direct heat rotary dryer.

This permit will change the emissions factors used in calculating the emissions from the dryer. Emissions factors for NO_x and PM will be changed to ones found for a sand dryer with a fabric

filter found in AP-42 11.19.1. This is a change from the emissions factors used in the initial permit for natural gas combustion in AP-42 1.4. The dryer will be combusting natural gas so the emission factors originally used to calculate CO, SO_2, and VOC will remain the same and in place. However, there are going to be using less natural gas, 2.2 billion gallons per year.

The new dryer will also be able to operate at a higher throughput than the previous one: 200 tph vs. 380tph.

The facility is subject to NSPS Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants* and NSPS Subpart UUU – *Standards of Performance for Calciners and Dryers in Mineral Industries*. The permitted emission rates are as follows: 46.7 tpy PM, 45.1 tpy PM_{10}, 0.1 tpy SO_2, 0.8 tpy VOC, 12.4 tpy CO, and 43 tpy NO_X.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The last inspection was done on July 7, 2017. No issues were reported at that time.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? N
- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01-08, 10	PM	NSPS Subpart OOO
09	PM	NSPS Subpart UUU

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

Based on Department procedures for review of non-criteria pollutants, emissions of non-criteria pollutants are below thresholds of concern.

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation. Please refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: No H_2S is present at this facility

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H_2S	20 parts per million (5-minute average*)		
	80 parts per billion (8-hour average) residential area		
	100 parts per billion (8-hour average) nonresidential area		

*To determine the 5-minute average use the following equation

$Cp = Cm\ (t_m/t_p)^{0.2}$ where

Cp = 5-minute average concentration
Cm = 1-hour average concentration
t_m = 60 minutes
t_p = 5 minutes

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01-08, and 10	AP-42 Table 11.19.1-1	0.0013 lb/ton PM	Wet Suppression	98%	Control Equipment included in AP-42 emission rate.
09	AP-42 Table 1.4-2	0.6 lb/MMscf SO_2 5.5 lb/MMscf VOC 84 lb/MMscf CO	Baghouse	99.8%	Using 2.2 billion gallons of natural gas per year
	AP-42 Table 11.19.1-1	0.031 lb/ton NO_x			Control Equipment included in AP-42 emission rate.
	Emission Factor Documentation for AP-42 11.19.1 Table 4.2	0.0089 lb/ton PM			Control Equipment included in AP-42 emission rate.
NPS	AP-42 Table 13.2.2-2	0.25 lb/VMT 8 lb/day	-	-	80 trucks a day, 0.4 miles travelled each.

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01-08, 10	PM	Perform inspections on wet suppression system.	Monthly	40 C.F.R. § 60.674(b)
01-08, 10	PM	Method 5 of Appendix A-3 or Method 6 of Appendix A-6	Within 60 days after achieving maximum production	40 C.F.R. § 60.672(a)
09	PM	Method 5 in	Initial, within	40 C.F.R. §

SN	Pollutants	Test Method	Test Interval	Justification
		Appendix A of part 60. Sampling time of at least 2 hours, sample volume of at least 1.70 dscm	180 days of startup	60.736 (b)(1)

14. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
N/A				

15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01-10	Silica Sand Throughput	3,650,000 tons per year	Monthly	N
01-08, 10	Each periodic inspection required under §60.674(b) or (c) in a logbook	-	As needed	N
09	Natural Gas Throughput	2.2 billion gallons per year	Monthly	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01-08, 10	7%	Table 3 to 40 C.F.R. Subpart OOO	Method 9 of Appendix A-4 and the procedures in §60.11 and §60.675(b)
09	10%	40 C.F.R. § 60.732 (b)	Method 9 of Appendix A and the

SN	Opacity	Justification for limit	Compliance Mechanism
			procedures in §60.11 and §60.736(b)(2)

17. DELETED CONDITIONS:

Former SC	Justification for removal
25	The type of dryer that replaced the previous dryer is not subject to these monitoring and recordkeeping practices. They went from an industrial sand fluid bed dryer to an industrial sand rotary bed dryer.
26	Same as above.

18. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
N/A								

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2371-A

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: American Silica, LLC
Permit Number: 2371-AR-1
AFIN: 38-00393

			Old Permit	New Permit
$/ton factor	23.93	Permit Predominant Air Contaminant	60.4	46.7
Minimum Fee $	400	Net Predominant Air Contaminant Increase	-13.7	
Minimum Initial Fee $	500			
		Permit Fee $	400	
Check if Administrative Amendment	☐	Annual Chargeable Emissions (tpy)	46.7	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	60.4	46.7	-13.7
PM_{10}	58.8	45.1	-13.7
$PM_{2.5}$	0	0	0
SO_2	0.1	0.1	0
VOC	1	0.8	-0.2
CO	15.5	12.4	-3.1
NO_X	22.7	43	20.3