

ADEQ MINOR SOURCE AIR PERMIT

Permit #: 492-AR-8

IS ISSUED TO:

Norton Proppants, Inc.
5300 Gerber Road
Fort Smith, AR 72904-1699
Sebastian County
CSN: 66-0219

THIS PERMIT IS YOUR AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND YOUR APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 ET SEQ.) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Keith A. Michaels

Date

SECTION I: FACILITY INFORMATION

PERMITTEE: Norton Proppants, Inc.

CSN: 66-0219

PERMIT NUMBER: 492-AR-8

FACILITY ADDRESS: 5300 Gerber Road
Fort Smith, AR 72904-1699

COUNTY: Sebastian

CONTACT POSITION: Process Engineer - Richard Lee

TELEPHONE NUMBER: (501)782-2001, Extension 223

FAX NUMBER: (501)782-9984

REVIEWING ENGINEER: Paul Osmon

UTM North-South (Y): 3921 km

UTM East-West (Y): 375 km

Zone 15

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SECTION II: INTRODUCTION

Summary

Norton Proppants, Inc., located in Fort Smith, Arkansas, operates a sintering plant for the manufacturing of proppants (SIC 3295). Proppants are small sintered high density spherical grains ranging in size from approximately 12 U.S. mesh to 70 U.S. mesh. These sintered ceramic like spheres are used in the oil and gas well industry to increase the well's flow rate.

Changes for this permit modification consist of seven changes requested by the permittee:

1. The permittee will be allowed to fire diesel fuel without usage restrictions in the existing fired equipment. The sulfur content in the diesel fuel will be limited.
2. The HAP emission limits will be removed from the permit since the process that generated HAPs at the facility has been discontinued.
3. The dust collector at SN-34 will be replaced with a new, more efficient unit.
4. The permit will allow for a test run with a new mineral that has a sulfur content less than 1.5 % by weight. The test run will take place through SN-10.
5. The permit will place a facility wide limit on sulfur dioxide emissions in the permit.
6. Sources SN-32 and SN-33 which are currently vented inside the building, will now be vented to atmosphere through a baghouse.
7. Two new above ground diesel storage tanks of 15,000 gallons capacity each will be added to the facility and listed as insignificant activities.

Process Description

Proppants are small sintered high density spherical grains ranging in size from approximately 12 U.S. mesh to 70 U.S. mesh. These sintered spheres are used in the oil and gas well industry to increase the well's flow rate. After the drilling of a new well is complete and the casing installed, the rock formation at the bottom of the well must be fractured to maximize the gas or oil flow. A viscous material mixed with the proper size proppants is pumped under very high pressure into the well. When the rock formation fractures the proppants enter the fissures and prevent them from closing when the pressure is relieved. The proppants prop open the fissures,

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therefore the name. Processes at the facility are described as follows:

Ore Receiving and Storage

The basic raw materials used to manufacture the product are heat treated and calcined bauxitic ore and metakaolin ore. The ores are delivered to the facility in covered dump trucks and unloaded at the receiving station at one of the two process buildings (SN-02 and SN-18). The ore is conveyed to an enclosed storage room in process building #1 or to concrete storage silos at process building #2.

Ore Milling

The calcined ores are conveyed to a mill feed tank [which vents through baghouse DC-219 (SN-22)], which in turn feeds the ore to a dry continuous ball mill for size reduction. The ball mill grinds the ore to fine particles in preparation for the forming operation. The milled ore is stored in either the north or south storage tank. The south tank is vented into the north tank which in turn is vented by bin vent SN-06. The DCF (Dust Collector Fines) vessel receives material collected in other dust collectors and is vented through Baghouse DC-220 (SN-23).

Forming

The milled ores are conveyed to the two plants forming areas where there are two mixing lines at each plant. Plant #1 utilizes two mixers per line. Emissions from mixing line #1 are controlled by SN-05. Emissions from mixing line #2 are controlled by SN-16. Plant #2 has one mixer per line and emissions from both lines are controlled by SN-28. All mixers are batch type. Milled ore, water, and cornstarch binder are introduced into the mixer, where high-energy rotors compact and pelletize the mix.

Drying and Screening

The moist spheres are conveyed from the forming area into one of four natural gas or low sulfur diesel fuel fired continuously fed dryers, SN-09 or SN-13 in Plant #1, SN26 or SN-27 in Plant #2, where the moisture content is reduced from approximately 21% by weight to 8%.

In Plant #1 hot air from an air swept rotary cooler at the end of the kiln is used to supplement the two dryers. Excess air from the rotary cooler is exhausted to the atmosphere through SN-12 vent.

From the dryers the product is sent to a screening deck to eliminate the oversized and undersized material. From this operation the material of optimum size is sent to the kiln feed tank and the screened off material is sent back to the forming area for reforming. Emissions from the

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screening area are controlled by the Forming Area Conveyor Dust Collector, SN-28.

Firing and Sizing

The “green” product is conveyed from the kiln feed tanks to one of the continuous feed kilns, SN-04 or SN-10 in Plant #1, SN-29 in Plant #2. The kilns are natural gas or low sulfur diesel fuel fired and heated to 1500°C. The spheres exit the kiln as white hot ceramic proppants.

From the kiln the product flows directly into an air swept rotary cooler. In Plant #1 both kilns feed a single product cooler, SN-12, and in Plant #2 the kiln and product cooler are listed as a single source, SN-29. From the cooler the product is conveyed to a screening deck where any remaining coarse or fine material outside specified ranges is screened off and discarded. Fired and sintered ceramic material cannot be reworked.

During start-up, a kiln will get to full temperature but will not be heated evenly throughout, therefore, the product will be under-fired and not fully sintered. The first three hours of production are diverted to a refire vessel. This product is blended back into the kiln at a later time.

The kilns and dryers are natural gas or low sulfur diesel fuel fired. Due to the high temperature, the kilns must be cooled or heated slowly to prevent the bricks from cracking or the drum from warping. It takes four days to bring a kiln from ambient to operating temperature. These conditions mandate that the kilns operate continuously, 24 hrs/day, 7days/wk, and that an alternate fuel be used during natural gas curtailment. The permittee maintains two 15,000 gallon diesel fuel tanks as an alternate fuel source, SN-35 and SN-36.

An alternate product is also produced at Rotary Kiln No. 2 (SN-10) using processed silica material with a sulfur content of less than 1.5% by weight and will be cured using a baghouse as a control device for particulate matter.

Storage and Shipping

The sintered and sized product is conveyed to finished product storage tanks. Any emissions from the finished product storage tanks in Plant #1 are contained within the building. Emissions from Plant #2 finished product storage are controlled by baghouse DC-512, SN-31. The product is packaged in 50 to 100 pound bags or in super sacks for truck or rail shipping. A majority of the product is shipped in bulk from the railcar loadout (SN-08) or one of five truck loadouts (SN-17 and SN-34).

Regulations

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The facility is subject to regulations under Regulation 18, *Arkansas Air Pollution Control Code*, dated February 15, 1999, and Regulation 19, *Regulations of the Arkansas Plan of Implementation for Air Pollution Control*, dated February 15, 1999.

The facility was expanded in 1985 with SN-18 through SN-34 added. SN-18, SN-19, SN-20, SN-21, SN-22, SN-23, SN-25, SN-28, SN-31, SN-34, and SN-38 are subject to 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants which had an effective date of August 31, 1983.

The following table is a summary of the facility's total emissions.

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	37.8	144.9
PM ₁₀	25.3	95.3
SO ₂	68.3	90.0
VOC	1.2	3.6
CO	12.7	54.2
NO _x	22.7	98.5

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SECTION III: PERMIT HISTORY

492-A was issued to Norton Company on May 26, 1978. 492-A permitted Norton to construct and operate a sintered aluminum oxide manufacturing plant at the present location with an annual production capacity of 20,000 tons per year.

492-AR-1 was issued to the Norton Company on May 22, 1981. 492-AR-1 permitted the installation and operation of a new sintering kiln (SN-10), a new ball mill (SN-11), mixing and sizing equipment (SN-16), and a product cooler system.

492-AR-2 was issued to the Norton Company on January 22, 1982. 492-AR-2 permitted the installation and operation of a new dryer (SN-13) with associated baghouse.

492-AR-3 was issued to Norton-Alcoa Proppants on July 24, 1985. 492-AR-3 permitted the construction and operation of new expanded facilities (SN-18 through SN-34). The permit also recognized the facility's name change from Norton Company to Norton-Alcoa Proppants.

492-AR-4 was issued to Norton-Alcoa Proppants on September 30, 1998 to reclassify the facility as a synthetic minor with annual PM₁₀ emissions of 91.3 tons per year. The permit also included two previously unlisted sources, the railcar loadout (SN-08), and the truck loadout (SN-17). The permit also includes the plant to plant pneumatic conveyor (SN-38) as a new source.

492-AR-5 was issued to Norton-Alcoa Proppants on September 30, 1999. The permit was issued to allow the installation of a back up bucket elevator which increased the operating efficiency of the facility, but with no increase in emissions. A new baghouse (SN-39) was added with this permit modification. Several sources were also listed for the first time as being subject to 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants.

492-AR-6 was issued to Norton Alcoa Proppants on February 16, 2000. The permit was issued to allow the manufacture of an alternate product at the facility. Permit limits were: PM - 135.7 tpy, PM₁₀ - 91.3 tpy, SO₂ - 0.8 tpy, VOC - 25.0 tpy, CO - 18.8 tpy, NO_x - 75.1 tpy, Formaldehyde - 4.61 tpy, Ethylene Glycol - 7.86 ypy, and Phenol 9.40 tpy.

An administrative amendment was issued to the above permit on March 10, 2000. It was determined during testing for the above permit that SN-24 did not vent to atmosphere and was not an emission source. Its emission limits were removed from the permit. Permit limits were: PM - 134.4 tpy, PM₁₀ - 90.1 tpy, SO₂ - 0.8 tpy, VOC - 25.0 tpy, CO - 18.8 tpy, NO_x - 75.1 tpy, Formaldehyde - 4.61 tpy, Ethylene Glycol - 7.86 tpy, and Phenol 9.40 tpy.

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492-AR-7 was issued to Norton Alcoa Proppants on July 12, 2000. The permit was issued to allow the manufacture to revise cycle times to increase throughput. Permit limits were: PM - 139.8 tpy, PM₁₀ - 94.3 tpy, SO₂ - 0.8 tpy, VOC - 25.0 tpy, CO - 18.8 tpy, NO_x - 75.1 tpy, Formaldehyde - 4.61 tpy, Ethylene Glycol - 7.86 ypy, and Phenol 9.40 tpy.

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SECTION IV: EMISSION UNIT INFORMATION

Specific Conditions

1. Pursuant to §19.501 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control, effective February 15, 1999 (Regulation 19) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the emission rates set forth in the following table.

SN (Old No.)	Description	Pollutant	lb/hr	tpy
Facility	Plantwide Combustion Emission Sources	PM ₁₀ SO ₂ VOC CO NO _x		5.5 ** 3.6 54.2 98.5
Facility	Plantwide Sulfur Dioxide Limit	SO ₂	–	90.0
01 (E1)	Ore Convey/Crush Tank	PM ₁₀	0.5	2.2
02 (E2)	Ore Dump Station	PM ₁₀	0.5	2.2
03 (E3)	Ball Mill #1	PM ₁₀	0.6	2.5
04 (E4)	Kiln #1 - Process (DC-15)	PM ₁₀	1.2	5.3
04 (E4)	Kiln #1 - Combustion 7.7 MMBTU/hr (DC-15)	PM ₁₀ SO ₂ VOC CO NO _x	0.1 0.5 0.1 0.7 1.2	
05 (E5)	Mixers #1 and #2	PM ₁₀	0.5	2.1

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
06 (E6)	North/South Tanks Bin Vents	PM ₁₀	0.1	0.3
07 (E7)	Kiln Feed Area	PM ₁₀	0.7	2.8
08	Railcar Loadout	PM ₁₀	0.1	0.1
09 (E9)	Plant 1 - Dryer #1 - Process	PM ₁₀	0.6	2.2
09 (E9)	Plant 1 - Dryer #1- Combustion 5.25 MMBTU/hr	PM ₁₀ SO ₂ VOC CO NO _x	0.1 0.3 9.1 0.5 0.8	
10 (E10)	Rotary Kiln #2 - Process (DC-7 & DC-12)	PM ₁₀ SO ₂	1.9 60.0	2.6 **
10 (E10)	Rotary Kiln #2 - Combustion 20.0 MMBTU/hr (DC-7 & DC-12)	PM ₁₀ SO ₂ VOC CO NO _x	0.2 1.1 0.1 1.7 3.1	
11 (E11)	Ball Mill #2	PM ₁₀	1.2	4.9
12 (E12)	Plant 1 - Product Cooler (Heat recovery by-pass)	PM ₁₀	0.3	1.0
13 (E13)	Plant 1 - Dryer #2 - Process	PM ₁₀	0.8	3.2

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
13 (E13)	Plant 1 - Dryer #2 - Combustion 5.25 MMBTU/hr	PM ₁₀ SO ₂ VOC CO NO _x	0.1 0.3 9.1 0.5 0.8	
14 (E14)	Ball Mill #1 Bin Test Tank	No Longer in Service		
15 (E15)	South Tank Bin Vent	Rerouted to SN-06		
16 (E16)	Mixers #3 and #4	PM ₁₀	0.7	3.0
17	Truck Loadout (DC-13)	PM ₁₀	0.1	0.3
18 (A1)	Plant #2 Ore Truck Unloading (DC-112)	PM ₁₀	1.3	5.6
19 (A2)	Raw Material Silo Vent	PM ₁₀	1.3	5.6
20 (A3)	Convey Transfer Points and Silo Loadout	PM ₁₀	1.3	5.6
21 (A4)	Plant #2 Fuller Ball Mill (DC-204)	PM ₁₀	3.2	13.9
22 (A5)	Ball Mill Feed Vessel Vent	PM ₁₀	0.2	0.6
23 (A6)	DCF Vessel Vent (Dust Collector Fines)	PM ₁₀	0.3	1.2
24 (A7)	Source removed from permit - 2000			

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
25 (A8)	Binder Storage Vessel Vent (DC-328)	PM ₁₀	0.3	1.2
26 (A9)	Plant 2 - Dryer #1 - Process (DC-330-1)	PM ₁₀	1.0	3.5
26 (A9)	Plant 2 - Dryer #1 - Combustion 24.5 MMBTU/hr (DC-330-1)	PM ₁₀ SO ₂ VOC CO NO _x	0.2 1.4 0.2 2.1 3.8	
27 (A9-1)	Plant 2 - Dryer #2 - Process (DC-330-2)	PM ₁₀	1.0	3.5
27 (A9-1)	Plant 2 - Dryer #2 - Combustion 24.5 MMBTU/hr (DC-330-2)	PM ₁₀ SO ₂ VOC CO NO _x	0.2 1.4 0.2 2.1 3.8	
28 (A10)	Forming Area Conveyor Dust Collector	PM ₁₀	1.3	5.6
29 (A11)	Plant 2 - Kiln and Cooler Exhaust - Process (DC-414-1, DC-414-2, & DC- 410)	PM ₁₀	1.9	7.2
29 (A11)	Plant 2 - Kiln and Cooler Exhaust - Combustion 60.0 MMBTU/hr (DC-414-1, DC-414-2, & DC- 410)	PM ₁₀ SO ₂ VOC CO NO _x	0.5 3.3 0.4 5.1 9.2	
30 (A12)	Refire Vessel Vent	Vented to Interior of Building		

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
31 (A13)	Plant 2 - Sizing Area Vent	PM ₁₀	0.2	0.6
32 (A14)	Finished Product Tank Vent Filter	PM ₁₀	0.1	0.1
33 (A14-1)				
34 (A15)	Shipping Area Vent Filter (Truck Loadout)	PM ₁₀	0.6	0.6
35 (A16)	Diesel Fuel Storage Tank	Insignificant Activity		
36 (A17)	Diesel Fuel Storage Tank	Insignificant Activity		
37	Storage Silo Loadout Chute	Removed from Service 1998		
38	Plant to Plant Pneumatic Finished Product Conveyor	PM ₁₀	0.1	0.3
39	Baghouse (DC-350)	Vented to Interior of Building		

** - These emissions included in Plantwide limit for sulfur dioxide.

2. Pursuant to §18.1004 of the Arkansas Air Pollution Code dated February 15, 1999 (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the emission rates set forth in the following table.

SN (Old No.)	Description	Pollutant	lb/hr	tpy
Facility	Plantwide Combustion Emission Sources	PM	2.3	9.9

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
01 (E1)	Ore Convey/Crush Tank	PM	1.0	4.3
02 (E2)	Ore Dump Station	PM	1.0	4.3
03 (E3)	Ball Mill #1	PM	0.9	3.8
04 (E4)	Kiln #1 - Process (DC-15)	PM	1.3	5.8
04 (E4)	Kiln #1 - Combustion 7.7 MMBTU/hr (DC-15)	PM	0.2	
05 (E5)	Mixers #1 and #2	PM	0.8	3.2
06 (E6)	North/South Tanks Bin Vents	PM	0.1	0.5
07 (E7)	Kiln Feed Area	PM	1.0	4.3
08	Railcar Loadout	PM	0.1	0.2
09 (E9)	Plant 1 - Dryer#1 - Process	PM	0.8	3.2
09 (E9)	Plant 1 - Dryer#1 - Combustion 5.25 MMBTU/hr	PM	0.1	
10 (E10)	Rotary Kiln #2 - Process (DC-7 & DC-12)	PM	2.2	3.6

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
10 (E10)	Rotary Kiln #2 - Combustion 20.0 MMBTU/hr (DC-7 & DC-12)	PM	0.3	
11 (E11)	Ball Mill #2	PM	1.7	7.5
12 (E12)	Plant 1 - Product Cooler (Heat recovery by-pass)	PM	0.4	1.5
13 (E13)	Plant 1 - Dryer #2 - Process	PM	1.1	4.6
13 (E13)	Plant 1 - Dryer #2 - Combustion 5.25 MMBTU/hr	PM	0.1	
16 (E16)	Mixers #3 and #4	PM	1.0	4.4
17	Truck Loadout (DC-13)	PM	0.1	0.4
18 (A1)	Plant #2 Ore Truck Unloading (DC-112)	PM	2.0	8.5
19 (A2)	Raw Material Silo Vent	PM	2.0	8.5
20 (A3)	Convey Transfer Points and Silo Loadout	PM	2.0	8.5
21 (A4)	Plant #2 Fuller Ball Mill (DC-204)	PM	4.9	21.3
22 (A5)	Ball Mill Feed Vessel Vent	PM	0.2	0.9

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
23 (A6)	DCF Vessel Vent (Dust Collector Fines)	PM	0.4	1.7
24	Source removed from permit - 2000			
25 (A8)	Binder Storage Vessel Vent (DC-328)	PM	0.3	1.3
26 (A9)	Plant 2 - Dryer #1 - Process (DC-330-1)	PM	1.7	6.0
26 (A9)	Plant 2 - Dryer #1 - Combustion 24.5 MMBTU/hr (DC-330-1)	PM	0.4	
27 (A9-1)	Plant 2 - Dryer #2 - Process (DC-330-2)	PM	1.7	6.0
27 (A9-1)	Plant 2 - Dryer #2 - Combustion 24.5 MMBTU/hr (DC-330-2)	PM	0.4	
28 (A10)	Forming Area Conveyor Dust Collector	PM	2.0	8.5
29 (A11)	Plant 2 - Kiln and Cooler Exhaust - Process (DC-414-1, DC-414-2, & DC- 410)	PM	2.7	10.1
29 (A11)	Plant 2 - Kiln and Cooler Exhaust - Combustion 60.0 MMBTU/hr (DC-414-1, DC-414-2, & DC- 410)	PM	1.0	
31 (A13)	Plant 2 - Sizing Area Vent	PM	0.2	0.9

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SN (Old No.)	Description	Pollutant	lb/hr	tpy
32 (A14)	Finished Product Tank Vent Filter	PM	0.1	0.1
33 (A14-1)				
34 (A15)	Shipping Area Vent (Truck Loadout)	PM	0.6	0.6
38	Plant to Plant Pneumatic Finished Product Conveyor	PM	0.1	0.5

3. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, visible emissions shall not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9.

SN	Limit	Reg. Citation
01 - 13, 16 - 23, 25 - 29, 31, 34, and 38	5%	§18.501

4. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, if visible emissions are detected at the sources listed in Specific Condition No. 3, then the permittee shall immediately conduct a 6 minute opacity reading in accordance with EPA Reference Method #9. The results of these observations or readings shall be recorded in a log which shall be maintained on site and made available to Department personnel upon request.
5. Pursuant to §18.801 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303.
6. Pursuant to §18.901 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not conduct operations in such a manner as to

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unnecessarily cause air contaminants and other pollutants to become airborne.

7. Pursuant to §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not produce more than 127,000 tons of ceramic beads (standard proppant product) at the facility per consecutive 12 month period.
8. Pursuant to §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain monthly records which demonstrate compliance with Specific Condition 7. Records shall be updated by the fifteenth day of the month following the month for which the records pertain. These records shall be kept on site, and shall be made available to Department personnel upon request.

Combustion Products PAL Requirements:

9. Pursuant to §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, pipeline quality natural gas, LP gas, and low sulfur diesel fuel are the only fuels permitted for use in the fuel combusting production equipment. The fuel combusting production equipment is permitted at its theoretical maximum emission rates using either fuel. Therefore, no record keeping of natural gas or diesel fuel usage is required. Pipeline quality natural gas is defined as gas which contains less than 0.3 grains/100 SCF of H₂S and that H₂S constitutes greater than 50 % by weight of the sulfur by weight in the gas. The permittee shall use only low sulfur diesel fuel which has a sulfur content of less than 0.05 weight percent sulfur. The permittee shall maintain records of the sulfur content of all shipments of diesel fuel received at the facility. These records shall be maintained on site and made available to Department personnel upon request.

Sulfur Dioxide PAL Requirements:

10. Pursuant to §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, to demonstrate compliance with the Plantwide Sulfur Dioxide Limit in Specific Condition #1, the permittee shall complete the following material balance for sulfur dioxide emissions for each month the facility operates:

$$\text{TPY SO}_2 = (0.142)(A)(B) + (2)(C)(D) + 0.4^*$$

Where:

A = Weigh percent sulfur in the diesel fuel consumed.

B = Gallons of diesel fuel burned.

C = Percent sulfur in the processed silica media used at SN-10

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D = Tons of processed silica material used
 * = Sulfur dioxide emissions from natural gas combustion

The facility shall keep satisfactory usage and content records to complete the above equation on site. The facility shall also complete a summation of the resultant of the above equation for the previous 12 months operation each month. A rolling 12 month total in excess of 90 tons shall be a violation of this permit. The records of sulfur dioxide emissions from the above material balance shall be kept on site and made available to Department personnel upon request.

SN-10 Conditions (alternate product)

11. Pursuant to §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the processed silica media used in production at SN-10 shall not exceed 1.5 % sulfur content. The permittee shall maintain MSDS sheets or other satisfactory laboratory records to monitor and record the sulfur content of the material used. If laboratory analysis is used, intervals between testing shall not exceed one week for the first years operation with the alternate product during the time periods the processed silica media is being run.

NSPS Requirements

12. Pursuant to §19.304 of Regulation 19 and 40 CFR 60, Subpart OOO, SN-18, SN-19, SN-20, SN-21, SN-22, SN-23, SN-25, SN-28, SN-31, SN-34, and SN-38* are subject to NSPS 40 CFR 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. No additional limits are necessary at this time to assure compliance other than those previously listed. The sources have been tested to meet the following standards:

Test Method	Standard
EPA Method 5 or 17	Not in excess of 0.05 g/dscm particulate matter
EPA Method 9	Not in excess of 15% opacity

SN-18, SN-19, and SN-20 are non-stack emissions therefore testing for particulate was not required.

* - A special request for alternate testing for SN-38 was sent to EPA Region VI April 3, 2000. Letter dated May 11, 2000 from John R. Hepola waived

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requirement for particulate matter testing for the source.

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SECTION V: INSIGNIFICANT ACTIVITIES

The following types of activities or emissions are deemed insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in applications dated September 9, 1999 and April, 2000.

Description	Category
Gas Fired Pilot Plant Kiln	Group A1
Two Laboratory Vent Hoods	Group A5
Three emergency use electrical generators	Group B16
One Diesel Fuel Storage Tank	Group A3
Two 15,000 gallon Diesel Storage Tanks	Group A13

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SECTION VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*). Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. Pursuant to A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, this permit shall not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated thereunder.
3. Pursuant to §19.704 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19) and/or A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the Department shall be notified in writing within thirty (30) days after construction has commenced, construction is complete, the equipment and/or facility is first placed in operation, and the equipment and/or facility first reaches the target production rate.
4. Pursuant to §19.410(B) of Regulation 19 and/or §18.309(B) of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, construction or modification must commence within eighteen (18) months from the date of permit issuance.
5. Pursuant to §19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, records must be kept for five years which will enable the Department to determine compliance with the terms of this permit--such as hours of operation, throughput, upset conditions, and continuous monitoring data. The records may be used, at the discretion of the Department, to determine compliance with the conditions of the permit.

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6. Pursuant to §19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, any reports required by any condition contained in this permit shall be certified by a responsible official and submitted to the Department at the address below.

Arkansas Department of Environmental Quality
Air Division
ATTN: Compliance Inspector Supervisor
Post Office Box 8913
Little Rock, AR 72219

7. Pursuant to §19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, any equipment that is to be tested, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, shall be tested with the following time frames: (1) Equipment to be constructed or modified shall be tested within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source or (2) equipment already operating shall be tested according to the time frames set forth by the Department. The permittee shall notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. Compliance test results shall be submitted to the Department within thirty (30) days after the completed testing.
8. Pursuant to §19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the permittee shall provide:
 - a. Sampling ports adequate for applicable test methods
 - b. Safe sampling platforms
 - c. Safe access to sampling platforms
 - d. Utilities for sampling and testing equipment
9. Pursuant to §19.303 of Regulation 19 and/or §18.1104 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the equipment, control apparatus and emission monitoring equipment shall be operated within their design limitations and maintained in good condition at all times.

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10. Pursuant to §19.601 of Regulation 19 and/or §18.1101 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, if the permittee exceeds an emission limit established by this permit, they shall be deemed in violation of said permit and shall be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met:
 - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and that all reasonable measures have been taken to immediately minimize or eliminate the excess emissions.
 - b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
 - c. The permittee shall submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, it need not be submitted again.

11. Pursuant to A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the permittee shall allow representatives of the Department upon the presentation of credentials:
 - a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit
 - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act
 - c. To inspect any monitoring equipment or monitoring method required in this permit
 - d. To sample any emission of pollutants
 - e. To perform an operation and maintenance inspection of the permitted source

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12. Pursuant to A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, this permit is issued in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus.
13. Pursuant to §19.410(A) of Regulation 19 and/or §18.309(A) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, this permit shall be subject to revocation or modification when, in the judgment of the Department, such revocation or modification shall become necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated thereunder.
14. Pursuant to §19.407(B) of Regulation 19 and/or §18.307(B) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, this permit may be transferred. An applicant for a transfer shall submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. A transfer may be denied on the basis of the information revealed in the disclosure statement or other investigation or, if there is deliberate falsification or omission of relevant information.
15. Pursuant to A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, this permit shall be available for inspection on the premises where the control apparatus is located.
16. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit authorizes only those pollutant emitting activities addressed herein.
17. Pursuant to Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit supersedes and voids all previously issued air permits for this facility.

APPENDIX A
NSPS 40 CFR PART 60 - SUBPART OOO