ADEQ
OPERATING
AIR PERMIT

Pursuant to the Regulations of the Arkansas Operating Air Permit Program, Regulation #26:

Permit #: 635-AOP-R1

IS ISSUED TO:

Porocel Corporation
10300 Arch Street Pike
Little Rock, AR 72206
Pulaski County
CSN: 60-0004

THIS PERMIT AUTHORIZES THE ABOVE REFERENCED PERMITTEE TO INSTALL, OPERATE, AND MAINTAIN THE EQUIPMENT AND EMISSION UNITS DESCRIBED IN THE PERMIT APPLICATION AND ON THE FOLLOWING PAGES. THIS PERMIT IS VALID BETWEEN:

November 16, 1998 and November 15, 2003

AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Keith A. Michaels

Date Modified

SECTION I: FACILITY INFORMATION

PERMITTEE:	Porocel Corporation
CSN:	60-0004
PERMIT NUMBER:	635-AOP-R1
FACILITY ADDRESS:	10300 Arch Street Pike, Little Rock, AR 72206
COUNTY:	Pulaski
CONTACT NAME:	Gerald Ashford
TELEPHONE NUMBER:	(501) 888-1357
REVIEWING ENGINEER:	M. Lloyd Davis, P. E.
UTM North-South (Y):	Zone 15 [3834.7 km]
UTM East-West (X):	Zone 15 [563.3 km]

SECTION II: INTRODUCTION

Summary of Permit Activity

Porocel Corporation owns and operates a facility at 10300 Arch Street Pike, Little Rock, Arkansas, which processes various nonmetallic minerals and product materials (these include bauxite ore and montmorillonile clay - SIC Code 2819). This facility expanded operations to include alumina tri-hydrates, activated alumina, bentonite, Fuller's earth, etc.

Porocel has been operating under Permit #635-AOP-R0. This permit was issued on November 16, 1998. Subsequent to the issuance of this permit, ADEQ inspections have revealed inconsistencies with the regulatory applicability of certain New Source Performance Standards (NSPS), operating conditions, operational flexibility, and unpermitted emission sources. As a result of these inspections, Administrative Order (CAO) LIS: 2000-019 was issued to Porocel and became effective on April 10, 2000.

The individual sources are now identified by different numbers than those used in the previous permit, corresponding to plant usage.

The CAO stated that Porocel would perform a comprehensive emissions inventory and regulatory review in order to establish a baseline of emissions. In addition, the CAO stated that Porocel would submit a comprehensive Title V permit application on or before July 10, 2000. This app1ication addresses all applicable regulatory requirements for the facility and all sources of emissions. This permit application fulfills the obligations of the aforementioned CAO.

The first phase of this permitting process was to identify all sources of emissions and to quantify them. In addition, a comprehensive review of the compliance and regulatory applicability status of Porocel with all pre- and post-CAAA regulations (NSPS, PSD, NESHAP, Regulations 18, 19, and 26, etc.) was completed.

The only change in processing with this modification will be the installation of a small thermal oxidizer to scavenge trace amounts of phenol and formaldehyde from the gases vented from source A-14.

Process Description

Bauxite ore is processed in the Bauxite Plant and alumina tri-hydrates and activated alumina are processed in the Active Plant.

Mineral product processing involves a variety of changing complexities during production. Regardless of whether material is processed in the Active Plant or the Bauxite Plant, there are some operations and emission sources common to both plants. The following process descriptions will address the common sources, the Bauxite Plant and ancillary operations, and the Active Plant and ancillary operations.

Plantwide Sources

The first emission sources to discuss are the various raw material stockpiles (PW-0l). The primary raw materials are bauxite ore, which is transported by truck to the facility from land which Porocel owns, and alumina hydrate which is brought in by truck from barges. An additional material stockpiled is called "ammonia hold," but its processing is identical to bauxite.

From the staging areas, coarse bauxite or hydrate is next fed into the inlet hopper (PW-02), processed through a precrusher (PW-03) and then fed into the dryer (PW-04). The dryer is controlled by a baghouse. After exiting the dryer, the material will be processed in either the Bauxite Plant (bauxite/ ammonia hold) or the Active Plant (hydrate).

Bauxite Plant

Upon exiting the dryer (PW-04), bauxite is discharged into a drag conveyor and pulled to a bucket elevator. The elevator then picks up the ore, carries it to the top of the mill house and discharges onto the hot rock belt. The belt then carries the material and drops it into either the #1 or #2 Hot Rock Tanks (also referred to as the mill feed tanks). The drag belt, conveyor, elevator, and tanks are all controlled by a complex aspiration system that is exhausted through a baghouse (B-0l).

As material is withdrawn from the Hot Rock Tanks, it drops onto belts and is carried to one of eleven (11) elevators. These transfer systems are also tied into the same baghouse system (B-01).

The material is next introduced into the #2 Kiln. Particulate emissions from the kiln are controlled by a baghouse (B-02). The collected fines from this baghouse and Kiln #1 (B-15) are routed to the Receiver Tank (B-03) which is controlled by a bin vent and bagfilter. Kiln #2 then discharges onto a drag conveyor, bucket elevators, and cooling tube before taking the material to screens for various sizing steps and eventually to storage for product loadout (B-05*)*.

As stated, dust and calcined fines from the #1 and #2 Kilns are routed to the Receiver Tank (B-03). These fines can then be bagged in supersacks for shipment *(*B-05*)* or loaded into trucks to carry to the dust pile (B-04).

Loadouts and shipping (B-05) can occur in multiple locations throughout the Bauxite Plant. Porocel seeks to simplify the recordkeeping and emissions tracking of loading by "bubbling" all shipping for the Bauxite Plant under one source number (B-05).

There are three (3) ancillary or side products operations that can also occur in the Bauxite Plant: dedusting, pellet formation, and speciality milling (Elliott Mill).

Elliott Mill

The Elliott Mill is an independent operation and can perform specialty milling or can be used in hydrate service. In hydrate service, the material will go to 28 Bin (B-07). There are two sources associated with using the Elliott Mill in the Bauxite Plant. The #2 Tank (not to be confused with the #2 Hot Rock Tank) is filled and controlled by a bin vent (B-06). Material is then drawn down from the tank and fed to the Elliott Mill. The mill is controlled by the same baghouse used to control 28 Bin (B- 07). For non-hydrate service, the material can either be loaded out as a finished product (B-05) or calcined.

Raymond Mill

The second process involves the Raymond Mill. Hydrate from the Dryer (PW-04) is blown into the 26 Bin. This bin is controlled by a baghouse (B-08). The 26 Bin can be filled by railcar (B-18) and can also transfer material to the Active Plant via pneumatic transfer or railcar. From the 26 Bin, hydrate is then introduced into the Raymond Mill. Material from the mill is then passed through a cyclone, classifier, and introduced into the 27 Bin. This process step is controlled by a baghouse (B-09). The 27 Bin (B-10) also discharges to atmosphere. From the 27 Bin, hydrate is then fed into Flash Calciner #1, which is controlled by a baghouse (B-11). The purpose of the calciner is to burn off chemically combined water in the hydrate, converting it from aluminum tri-hydrate to aluminum oxide. The calcined material is then fed into either the #4 or #5 Tanks (B-12), the #1 Tank (B-20), or Tub 4 (B-17) and then to the #4 or #5 Tanks. Tub 4 is used only in hydrate mode and is equipped with a baghouse. Flashed hydrate that enters Tub 4 (B-17) is formed into spheres and loaded into supersacks.

Currently, #5 Tank is controlled both by the baghouse and an individual bin vent. The calculations for B-12 recognize the complete throughput and combine the bin vent and baghouse as "bubbled" sources.

Pellet Forming

Pellet forming involves the pug mill, the Dennard kiln, and finished product collection /shipping.

This entire process will be classified under one emission source number (B-13). This is a process that Porocel currently is not employing. Maximum usage has been estimated to be three (3) or four (4) times a year for periods of three (3) or four (4) days.

Dedust Process

For the dedusting process, spheres are introduced into a feed hopper (B-14). From the feed hopper belt and bucket elevator, the spheres enter Kiln #1. Particulate emissions from the kiln are controlled by a baghouse (B-15). The collected fines from this baghouse are routed to the Receiver Tank (B-03). Kiln #1 then discharges onto a belt conveyor which takes the material to screens for various sizing steps and eventually to product loadout (B-05) into supersacks.

Active Plant

Milled hydrate enters the active plant via a pneumatic transfer line. Powder can be extracted from Bin 26, a railcar, or from truck unloading. The transfer line discharges into the unground hydrate storage bin (UGSB) which is controlled by a baghouse (A-01).

The hydrate is then fed to the four (4) Elliott Mills (A-02 through A-05). Two of the mills are installed and two remain to be installed. Each of these mills is controlled by a baghouse. Powder is next transferred to the Flash Calciner #2 Feed Tank (A-06). This tank is equipped with a bin vent filter. From this tank, material is metered into Flash Calciner #2 (A-07). Particulate emissions from the calciner are controlled by a baghouse. The calciner is used to convert the hydrate to aluminum oxide and to storage.

From the storage bins, the calcined powder is conveyed to a feeder that empties into a tub powder feed stream and then on to the tub feed bin. This is controlled by a bagfilter (A-08). The tub feed stream enters the tub feed accumulator via air flow. There is pneumatic control (A-09) as the powder enters the rotating tub where it is combined with water or a water and promoter solution. The tub forms the powder into spheres of varying sizes. These spheres then discharge from the tub via a discharge chute which allows them to fall onto the curing belt.

The belt is a covered slow-moving belt that maintains an atmosphere of warm, moist air at approximately 180 ^{0}F. Additional heat is provided by a heat exchanger. The curing belt discharges the spheres to the belt activator. The activator generates temperatures up to 1000 ^{0}F, but typically will run no higher than 850 ^{0}F to remove any moisture gained in the tub. Emissions from the activator are controlled by a baghouse (A-10). The spheres are then sent to an elevator which takes them to the Sweco screen, depending on the final product desired. Spherical materials of the proper size and type are loaded into supersacks or drums as product. The screening, crushing, and loading operations are controlled by a baghouse (A-11).
One special type of processing that takes place in the Active Plant is impregnation. This process

involves the mixing of catalyst carrier materials, typically alumina based, with liquid solutions of varying compositions and concentrations. These compositions depend on customer specifications and may include hazardous air pollutants (HAPs). Feed material may enter in the form of powders, granules, spheres, or extrudates. Essentially, feed is introduced into the Munson mixer (A-12) and sprayed with the catalyst of choice. This is performed in a closed system, similar in nature to a washing machine. The spheres are then caught in a supersack. If necessary, the spheres could be routed directly into the Utility Activator (A-13). This, essentially, is a natural gas-fired dryer and would possibly require a baghouse for fugitive dust control.

It should be noted that the spheres absorb a significant volume of liquid and exit the system with a high enough moisture content so as to not be a dust source. The primary emission from this source is steam.

Calciner #5 (A-14) is used for specialty or toll processing. The two (2) Calciner #5 Feed Tanks (A-20) are controlled by a common bin vent. The calciner is natural gas fired and processes a variety of materials. However, the majority are alumina-based materials. Product exiting this calciner is stored in the Calciner #5 Product Tanks (A-19). These tanks are controlled by bin vents and a bagfilter.

Lastly, there is a Feed Blender (A-21). This is simply a stainless steel tub. The vessel is opened, powders and other materials are poured in, the lid closed, and then the dry mixture is "blended". Emissions are expected from this source only when the tub/blender is filled.

Regulations

The facility is subject to Arkansas Air Pollution Control Code (Regulation 18), Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19), and Regulations of the Arkansas Operating Air Permit Program (Regulation 26). The facility is also subject to NSPS Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries*.

NSPS Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants,* does not apply to this facility as the cumulative rate of all crushers is less than 25 tons per hour. NSPS Subpart LL -*Standards of Performance for Metallic Mineral Processing Plants* does not apply to this facility as Porocel does not produce metallic mineral products or metallic concentrates.

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The following table is a summary of emissions from the facility. Specific conditions and emissions for each source can be found starting on the page cross referenced in the table. This table, in itself, is not an enforceable condition of the permit.

EMISSION SUMMARY					
Source No.	**Description**	**Pollutant**	**Emission Rates**		**Cross Reference Page**
			lb/hr	**tpy**	
Total Allowable Emissions		PM	22.1	94.8	
		PM_{10}	22.1	94.8	
		VOC	11.1	13.7	
		CO	12.8	56.6	
		NO_x	15.4	67.3	
HAPs*		Unspeciated	10.0	10.0	
Air Contaminants **		None	----	----	
PW-01	Ore Piles	PM	0.1	0.4	**15**
		PM_{10}	0.1	0.4	
PW-02	Inlet Hopper	PM	0.1	0.1	**Raw Material Processing**
		PM_{10}	0.1	0.1	
PW-03	Precrusher	PM	0.1	0.6	
		PM_{10}	0.1	0.6	
PW-04	Dryer	PM	1.9	8.4	
		PM_{10}	1.9	8.4	
		VOC	0.1	0.4	
		CO	1.3	5.9	
		NOx	1.6	7.0	

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EMISSION SUMMARY					
Source No.	**Description**	**Pollutant**	**Emission Rates**		**Cross Reference Page**
			lb/hr	**tpy**	
B-01	Mill	PM_{10}	0.1	0.4	**18**
B-02	#2 Kiln	PM_{10} VOC CO NOx	2.0 0.2 2.5 3.0	8.9 0.7 11.0 13.1	**Bauxite Process**
B-03	Receiver Tank	PM_{10}	0.2	0.7	
B-04	Fines Pile	PM_{10}	0.1	0.1	
B-05	Shipping/Loading	PM_{10}	0.8	3.6	
B-08	26 Bin	PM_{10}	0.2	0.7	**21**
B-09	Raymond Mill	PM_{10}	0.2	0.8	**Hydrate Process**
B-10	27 Bin	PM_{10}	0.2	0.7	
B-11	Flash Calciner #1	PM_{10} VOC CO NOx	1.9 0.1 1.3 1.6	8.4 0.4 5.9 7.0	
B-12	#4 and #5 Tanks	PM_{10}	0.2	0.7	
B-19	Convey Point (Bin 26 to Railcar)	PM_{10}	0.2	0.8	

EMISSION SUMMARY					
Source No.	**Description**	**Pollutant**	**Emission Rates**		**Cross Reference Page**
			lb/hr	**tpy**	
B-06	#2 Tank	PM_{10}	0.2	0.7	**24** **Bauxite Plant Side Products**
B-07	Elliot Mill #5/28 Bin	PM_{10}	0.3	1.5	
B-13	Pellet Forming (Dennard Kiln & Plug)	PM_{10} VOC CO NOx	0.1 0.1 1.3 1.6	0.5 0.4 5.9 7.0	
B-14	Feed Hopper	PM_{10}	0.2	0.7	
B-15	#1 Kiln	PM_{10} VOC CO NOx	2.0 0.2 2.5 3.0	8.9 0.7 11.0 13.1	
B-16	Dedust belt Conveyor	PM_{10}	0.2	0.7	
B-17	Tub 4 (Baghouse and Bin Vent)	PM_{10}	0.2	0.7	
B-18	Rail Unloading for Hydrate	PM_{10}	0.1	0.1	
B-20	#1 Tank	PM_{10}	0.2	0.7	**28** **Active Plant**
A-01	Hydrate Transfer to Bins	PM_{10}	0.2	0.7	
A-02	Elliott Mill #1	PM_{10}	0.2	0.7	
A-03	Elliott Mill #2	PM_{10}	0.2	0.8	
A-04	Elliott Mill #3	PM_{10}	0.2	0.8	
A-05	Elliott Mill #4	PM_{10}	0.2	0.7	
A-06	Flash Calciner #2 Feed Tank	PM_{10}	0.2	0.7	

EMISSION SUMMARY					
Source No.	**Description**	**Pollutant**	**Emission Rates**		**Cross Reference Page**
			lb/hr	**tpy**	
A-07	Flash Calciner #2	PM_{10} VOC CO NOx	1.9 0.1 1.3 1.6	8.4 0.4 5.9 7.0	
A-08	Tub Feed System	PM_{10}	0.2	0.7	
A-09	Tub Stand	PM_{10}	0.1	0.4	
A-10	Activator #1	PM_{10} VOC CO NOx	1.9 0.1 0.5 0.6	8.3 0.1 2.2 2.6	
A-11	Screening & Crushing	PM_{10}	0.4	1.8	
A-12	Munson Mixer	PM_{10}	0.1	0.4	
A-13	Utility Activator	PM_{10} VOC CO NOx	0.1 0.1 0.3 0.3	0.1 0.1 1.1 1.3	
A-17	Activator #2	PM_{10} VOC CO NOx	1.9 0.1 0.5 0.6	8.3 0.1 2.2 2.6	
A-18	Activator #2 Screening, Crushing, and Product Tanks	PM_{10}	0.4	1.8	

EMISSION SUMMARY					
Source No.	**Description**	**Pollutant**	**Emission Rates**		**Cross Reference Page**
			lb/hr	**tpy**	
A-14 + A-21	Calciner #5 and Tub Feeder	PM PM_{10} VOC CO NO_x HAPs	2.0 2.0 10.1 1.3 1.5 10.0*	8.5 8.5 10.4 5.5 6.6 10.0*	**33** **Toll Processing**
A-19	Calciner #5 Product Tanks	PM PM_{10}	0.2 0.2	0.7 0.7	
A-20	Calciner #5 Feed Tanks	PM PM_{10}	0.2 0.2	0.7 0.7	

HAPs included in the VOC totals are indicated by an *. Other HAPs are not included in any other totals unless specifically stated. Maximum hourly emission rates for individual HAPs are limited by Specific Condition #25.

**Air Contaminants such as ammonia, acetone, and certain halogenated solvents are not classified as VOC or HAPs.

SECTION III: PERMIT HISTORY

Porocel was issued its first air permit on September 11, 1970. This was permit number 0006-A. It allowed for 39.4 lb/hr of PM emissions.

Air permit #635-A was issued on November 21, 1980. It was a SIP that allowed for a reduction to 30 lb/hr of PM emissions.

Air permit #635-AR-1 was issued on November 20, 1981. It also was a SIP that allowed for 9 lb/hr of PM emissions.

Air permit #0635-AR-2 was issued on October 17, 1990. It was a SIP that allowed for 14 lb/hr of PM emissions.

Air permit #635-AR-3 was issued on September 7, 1993. It was a modification which allowed for the addition of emissions from natural gas combustion and installation of a pneumatic unloading/transfer system (SN-29 to SN-32). Emission limits set in this permit were 16.78 tpy NO_x, 4.44 tpy CO, and 79.83 tpy PM.

Air permit #635-AOP-R0 was issued on November 16, 1998, and was the first permit for this facility under Regulation #26. PM/PM_{10} emissions were allowed at 100.6 tpy. HAPs were reported at 1.57 tpy. NO_x emissions, primarily from the calciners and auxiliary equipment, were limited to 209.5 tpy.

SECTION IV: EMISSION UNIT INFORMATION

PW-01, PW-02, PW-03, and PW-04

Raw Material Storage Piles, Inlet Hopper, Precrusher, and Dryer

Source Description

Raw materials, such as bauxite and alumina hydrate, are brought to the Porocel facility by trucks and stored in piles (PW-01) prior to processing. The moisture content of the piles is typically significant enough to control emissions.

The inlet hopper (PW-02) signifies the beginning of processing for both alumina hydrate and bauxite ores. The inlet hopper is simply a grated receiving pit where material may be fed either by trucks dumping into the hopper or by front end loaders.

From the inlet hopper, the bauxite, alumina hydrate, or other material is introduced into the Precrusher (PW-03). This would be classified as primary crushing. The primary crushing operating rate in the Precrusher (PW-03) is 15 tons/hr, and this is the limiting factor for production in the facility.

The primary raw materials processed at Porocel, alumina hydrate and bauxite, are high-moisture ores. Therefore, these materials need to be dried prior to further processing. The dryer (PW-04) lowers the moisture content of feed material by 20 to 25%. Porocel incorporates a natural-gas fired dryer for this purpose, which uses 16,000 Scf/hr of natural gas (16 MMBtu/hr capacity). A baghouse was installed in 1980 to control particulate emissions from the dryer. Emission from the four sources are combined below.

Specific Conditions

1. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) effective February 15, 1999 and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
PW-01 Storage Piles	PM_{10}	0.1	0.4
PW-02 Inlet Hopper	PM_{10}	0.1	0.4
PW-03 PreCrusher	PM_{10}	0.1	0.6
PW-04 Dryer/Baghouse	PM_{10} VOC CO NOx	1.9 0.1 1.3 1.6	8.4 0.4 5.9 7.0

2. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation #18) effective February 15, 1999, 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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
PW-01	PM	0.1	0.4
PW-02	PM	0.1	0.4
PW-03	PM	0.1	0.6
PW-04	PM	1.9	8.4

3. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 10% opacity at sources PW-02 and PW-03, and shall not exceed 5% opacity at source PW-04 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

4. Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source PW-04, the Dryer, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the Dryer shall not contain particulates in excess of 0.057 gram per dry standard cubic meter (g/dscm). Compliance with Subpart UUU has been demonstrated by reports dated July 19, 1999 and September 7, 2000, for different baghouses using EPA Method 5 (Appendix C).

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B-01, B-02, B-03, B-04, and B-05

Bauxite Process
Bauxite Mill House, #2 Kiln, Receiver Tank, Fines Pile, and Shipping/Unloading

Source Description

The mill house (B-01) holds several pieces of equipment. The primary pieces of equipment located within this structure are the roller mills used to reduce the size of oversized material. There are several dust pickup points located within the mill house. All of these controlled points are routed to a central dust collection system controlled by a baghouse.

The #2 Kiln, B-02, (sometimes referred to as Calciner #2) is natural gas fired and rated at 30 MMBTU/hr. Particulate emissions from the kiln are controlled by a baghouse.

Source B-03 is also referred to as the receiver exhauster and receives fines from the baghouses which control the calciners, mill, and dryer. The emissions from this source are controlled by a bin vent/ baghouse.

Dust and calcined fines from the Receiver Tank (B-03) can then be bagged in supersacks for shipment (B-05) or loaded into trucks to be carried to this source. The fugitive emissions from B-05 are "bubbled" with fugitive emission from loading operations associated with the Bauxite Process, the Hydrate process, and the Bauxite Plant Side Products. The majority of these emissions are also partially controlled by some type of enclosure or direct loading into supersacks. Control, based on the equipment, nature of the final product, and material handling operations, is estimated to be 90%.

Fines are stored in piles (B-04) prior to shipping or any additional processing. The moisture content of the piles is typically significant enough to control emissions.

Source B-05 represents "bubbled" emissions for all shipping and loadout points. It will be assumed in the calculations for this source that 100% of the material received and processed can be shipped out at that same rate. Emissions from most of the loadout and shipping points are fugitive in nature. The majority of these emissions are also partially controlled by some type of enclosure or direct loading into supersacks. Control efficiency, based on the equipment, nature of the final product, and material handling operations is assumed to be 90%.

Specific Conditions

5. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-01 Bauxite Mill House	PM_{10}	0.1	0.4
B-02 #2 Kiln/Baghouse	PM_{10} SO_2 VOC CO NOx	2.0 0.1 0.2 2.5 3.0	8.9 0.1 0.7 11.0 13.1
B-03 Receiver Tank Bin Vent/Baghouse	PM_{10}	0.2	0.7
B-04 Fines Pile	PM_{10}	0.1	0.1
B-05 Shipping/Unloading	PM_{10}	0.8	3.6

6. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-01	PM	0.1	0.4
B-02	PM	2.0	8.9
B-03	PM	0.2	0.7
B-04	PM	0.1	0.1
B-05	PM	0.8	3.6

7. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at sources B-01, B-02, and B-03 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

8**.** Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source B-02, the #2 Kiln, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the #2 Kiln shall not contain particulates in excess of 0.092 gram per dry standard cubic meter (g/dscm). Compliance with Subpart UUU has been demonstrated by reports dated July 19, 1999 and September 7, 2000, for different baghouses using EPA Method 5 (Appendix C).

B-08, B-09, B-10, B-11, B-12 and B-19

Hydrate Process
26 Bin, Raymond Mill, 27 Bin, Flash Calciner #1, #4 and #5 Tanks
(Baghouse and Bin Vent), and Convey Point (Bin 26 to Railcar)

Source Description

The 26 Bin, controlled by a baghouse, can be filled by railcar (B-18) and can also be used to transfer material to the Active Plant via pneumatic transfer or railcar. From the 26 Bin, hydrate is introduced into the Raymond Mill. Material from the mill is then passed through a cyclone, classifier, and introduced into the 27 Bin.

The Raymond Mill is used to reduce the size of various materials to the desired level. This would be considered as secondary crushing. Hydrate from the Dryer (PW-04) is blown into the 26 Bin. From the 26 Bin, hydrate is introduced into the Raymond Mill. Material from the mill is then passed through a cyclone, classifier, and introduced into the 27 Bin. These process steps are controlled by a baghouse.

Material from the Raymond Mill (B-09) is passed through a cyclone, classifier, and introduced into the 27 Bin (B-10). This bin is controlled by a bin vent. From the 27 Bin, hydrate is then fed into Flash Calciner #1, which is controlled by a baghouse (B-11). This source is natural gas fired and rated at 16 MMBTU/hr. Particulate emissions from the calciner are controlled by a baghouse.

Calcined material from Flash Calciner #1 (B-11) can be fed directly into the #4 or #5 Tanks (B-12), directly into the #1 Tank (B-06), or to the Agglomerator (B-17) and then to the #4 or #5 Tanks. Currently, #4 and #5 Tanks share a common baghouse and #5 Tank also has a bin vent. Future plans are to remove the baghouse and equip each tank with individual bin vents.

B-19 is a fugitive source, involving direct loading from 26 Bin into a Railcar, for transfer to the Active Plant.

Specific Conditions

9. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-08 26 Bin	PM_{10}	0.2	0.7
B-09 Raymond Mill	PM_{10}	0.2	0.8
B-10 27 Bin	PM_{10}	0.2	0.7
B-11 Flash Calciner/ Baghouse	PM_{10} VOC CO NOx	1.9 0.1 1.3 1.6	8.4 0.4 5.9 7.0
B-12 #4 and #5 Tanks/ Baghouse	PM_{10}	0.2	0.7

10. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-08	PM	0.2	0.7
B-09	PM	0.2	0.8
B-10	PM	0.2	0.7
B-11	PM	1.9	8.4
B-12	PM	0.2	0.7

11. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at sources B-08, B-09, B-10, B-11, and B-12 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

12. Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for calciners and dryers in Mineral Industries,* the permittee shall operate source B-11, the Flash Calciner, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the #2 Kiln shall not contain particulates in excess of 0.092 gram per dry standard cubic meter (g/dscm). Compliance with Subpart UUU has been demonstrated by reports dated July 19, 1999 and September 7, 2000, for different baghouses using EPA Method 5 (Appendix C).

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B-06, B-07, B-13, B-14, B-15, B-16, B-17 and B-18

Bauxite Plant Side Process
#2 Tank, Pellet Forming (Dennard Kiln & Pug Mill), Feed Hopper, #1 Kiln,
Dedust Belt Elevator, Tub 4 (Baghouse and Bin Vent), and Rail Unloading Pit for Hydrate

Source Description

The Elliott Mill is an independent operation and can perform speciality milling or can be used in hydrate service. In hydrate service, the material will go to Elliot Mill #5/28 Bin (B-07). There are two sources associated with using the Elliott Mill in the Bauxite Plant. The #2 Tank (not to be confused with the #2 Hot Rock Tank) is filled and controlled by a bin vent (B-06). Material is then drawn down from the tank and fed to the Elliott Mill. The mill is controlled by the same baghouse used to control 28 Bin. For non-hydrate service, the material can either be loaded out as a finished product (B-05) or calcined.

Pellet forming (B-13) involves the pug mill where pellets are formed, the Dennard kiln for drying, and finished product collection/ shipping. This entire process will be classified under this source number. This is a process that Porocel currently rarely uses. Maximum usage has been estimated to be three (3) or four (4) times a year for periods of three (3) or four (4) days. The pug mill is a wet process, therefore negligible emissions would be expected from the formation of the pellets. However, it is anticipated that some emissions will be present from the kiln, due to the products of natural gas combustion. The Dennard kiln is rated at 16.0 MMBTU/hr, and emissions have been based on full capacity.

For the dedusting process, spheres are introduced into the feed hopper (B-14) prior to entering Kiln #1 (B- 15). The spheres which are introduced into this process are solid, compact material. Minimal emissions are expected from the processing and handling of the spheres. Dedusting occurs after the spheres are introduced into the kiln and occurs via the natural abrasion from the spheres contacting other spheres. The #1 Kiln (sometimes referred to as Calciner #1) is natural gas fired and rated at 30 MMBTU/hr. Particulate emissions from the kiln are controlled by a baghouse.

After the spheres exit the kiln, they are carried by a belt (B-16) and bagged in supersacks. It is anticipated that there would be fewer emissions associated with this source than the previously discussed feed hopper.

The Agglomerator is used in conjunction with the Raymond Mill (B-09) and only when the Raymond Mill is in hydrate service. The agglomerator essentially sizes the material prior to additional processing. Hydrate exiting the agglomerator is sent to storage in either the #4 or #5 bin. Agglomerator operations are controlled by a baghouse and a bin vent (B-17).

The Rail Unloading Pit For Hydrate is located near the back of the facility and can be used to transfer material from railcar to supersacks or into 26 Bin. This is simply a grated receiving pit where material may be fed by hopper bottom rail cars. This source is similar to PW-02, the inlet hopper. However, no crushing or grinding takes place at this source.

Specific Conditions

13. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-06 #2 Tank/Baghouse	PM_{10}	0.2	0.7
B-07 Elliot Mill #5/ 28 Bin/Baghouse	PM_{10}	0.3	1.5
B-13 Pellet Forming (Dennard Kiln & Pug Mill)	PM_{10} VOC CO NOx	0.1 0.1 1.3 1.6	0.5 0.4 5.9 7.0
B-14 Feed Hopper	PM_{10}	0.2	0.7
B-15 #1 Kiln/ Baghouse	PM_{10} VOC CO NOx	2.0 0.2 2.5 3.0	8.9 0.7 11.0 13.1

SN	Pollutant	lb/hr	tpy
B-16 Dedust Belt Elevator	PM_{10}	0.2	0.7
B-17 Tub 4 (Baghouse/Bin Vent)	PM_{10}	0.2	0.7
B-18 Rail Unloading Pit for Hydrate	PM_{10}	0.1	0.1

14. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-06	PM	0.2	0.7
B-07	PM	0.3	1.5
B-13	PM	0.1	0.5
B-14	PM	0.2	0.7
B-15	PM	2.0	8.9
B-16	PM	0.2	0.7
B-17	PM	0.2	0.7
B-18	PM	0.1	0.1

15. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at sources B-06, B-07, B-13, B-14, B-15, and B-17 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

16. Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source BW-15, the #1 Kiln, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the #1 Kiln shall not contain particulates in excess of 0.092 gram per dry standard cubic meter (g/dscm).

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B-19, B-20, A-01, A-02, A-03, A-04, A-05, A-06, A-07, A-08, A-09, A-10, A-11, A-12, A-13, A-15, A-17, and A-18

Active Plant Process

#1 Tank, Hydrate Transfer To Bins, Elliott Mills #1 - #5, Flash Calciner #2 Feed Tank, Flash Calciner #2 Feed Tank, Flash Calciner #2, Tub Feed System, Tub Stand, Activators #1 and #2, Activators #1 and #2 Screening and Product Tanks, Munson Mixer, and Utility Activator

Source Description

Material can be transferred to the Active Plant in different ways. One such method is to directly load 26 Bin into a railcar for transfer to the Active Plant. This source is fugitive.

The calcined material from Flash Calciner #1 is fed into either the #4 or #5 Tanks (B-12), Tub 4 (B-17) and then to the #4 or #5 Tanks, or the #1 Tank (B-20).

Pneumatic lines are used to feed various powdered materials to the Active Plant. Milled hydrate enters the active plant via a pneumatic transfer line. Powder can be extracted from Bin 26, a railcar, or from truck unloading. The transfer line discharges into the unground hydrate storage bin (UGSB) which is controlled by a baghouse (A-01).

Unground hydrate enters the active plant via a pneumatic transfer line. The transfer line discharges into the unground hydrate storage bin (UGSB). The hydrate is then fed to the four (4) Elliott Mills (A-02 through A-OS). Two of the mills (A-02 and A-03), #1 and #2, are installed and two (A-04 and A-05) remain to be installed. Each of these mills is controlled by a baghouse.

Prior to entering Flash Calciner #2, the powder from the Elliott Mills is next transferred to the Flash Calciner #2 Feed Tank (A-06). This tank is equipped with a bin vent filter. From this tank, material will then be metered into Flash Calciner #2 (A-07). The Flash Calciner #2 (A-07) is natural gas fired and rated at 16 MMBTU/hr. Particulate emissions from the calciner are controlled by a baghouse.

From the storage bins, the calcined powder is conveyed to a feeder that empties into a tub powder feed stream and then on to the tub feed bin (A-15). This is controlled by a bagfilter. The tub feed stream enters the tub feed accumulator via air flow. There is pneumatic control as the powder enters the rotating tub (A-09) where it is combined with water or a water and promoter solution. The tub forms the powder into spheres of varying sizes. These spheres then discharge from the tub via a discharge chute which allows them to fall onto the curing belt.

Spheres that discharge from the tub fall onto the curing belt. The belt is a covered slow-moving belt that maintains an atmosphere of warm, moist air at approximately 180 ^{0}F. Additional heat is provided by a heat exchanger. The curing belt discharges the spheres to the belt activators (A-10 and A-13). The activators generate temperatures up to 1000 ^{0}F, but typically will run no higher than 850 ^{0}F to remove any moisture gained in the tub. Emissions from the activators are controlled by baghouses. These sources are natural gas fired and rated at 5.5 MMBTU/hr.

After the spheres exit the activator, they are then sent to an elevator which takes them to the Sweco screen or a roll crusher, depending on the final product desired. Spherical materials of the proper size and type are loaded into supersacks or drums as product. The screening, crushing, and loading operations are controlled by two baghouses (A-11 and A-18).

One special type of processing that takes place in the Active Plant is impregnation. This process involves the mixing of catalyst carrier materials, typically alumina based, with liquid solutions of varying compositions and concentrations. These compositions depend on customer specifications and may include hazardous air pollutants (HAPs). Feed material may enter in the form of powders, granules, spheres, or extrudates. Essentially, feed is introduced into the Munson mixer (A-12) and sprayed with the catalyst of choice. This is performed in a closed system, similar in nature to a washing machine. The spheres are then caught in a supersack. If necessary, the spheres could be routed directly into the Utility Activator (A-13). This is a natural gas-fired dryer rated at 3.0 MMBTU/hr. It should be noted that the spheres absorb a significant volume of liquid and exit the system with a high enough moisture content so as to not be a dust source. The primary emission from this source is steam.

Specific Conditions

17. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-19 Bin 26 to Railcar	PM_{10}	0.2	0.8
B-20 #1 Tank	PM_{10}	0.2	0.7

SN	Pollutant	lb/hr	tpy
A-01 Hydrate Transfer to Bins/Baghouse	PM_{10}	0.2	0.7
A-02 Elliot Mill #1/ Baghouse	PM_{10}	0.2	0.7
A-03 Elliot Mill #2/ Baghouse	PM_{10}	0.2	0.8
A-04 Elliot Mill #3/ Baghouse	PM_{10}	0.2	0.8
A-05 Elliot Mill #4/ Baghouse	PM_{10}	0.2	0.7
A-06 Flash Calciner #2 Feed Tank/Bin Vent Filter	PM_{10}	0.2	0.7
A-07 Flash Calciner #2/ Baghouse	PM_{10} VOC CO NOx	1.9 0.1 1.3 1.6	8.4 0.4 5.9 7.0
A-08 Tub Feed System/ Bagfilter	PM_{10}	0.2	0.7
A-09 Tub Stand	PM_{10}	0.1	0.4
A-10 Activator #1/Baghouse	PM_{10} VOC CO NOx	1.9 0.1 0.5 0.6	8.3 0.1 2.2 2.6

SN	Pollutant	lb/hr	tpy
A-11 Activator #1 Screening and Product Tanks/ Baghouse	PM_{10}	0.4	1.8
A-12 Munson Mixer	PM_{10}	0.1	0.4
A-13 Utility Activator	PM_{10} VOC CO NOx	0.1 0.1 0.3 0.3	0.1 0.1 1.1 1.3
A-15 Tub Feed System/ Baghouse	PM_{10}	0.2	0.7
A-17 Activator #2/Baghouse	PM_{10} VOC CO NOx	1.9 0.1 0.5 0.6	8.3 0.1 2.2 2.6
A-18 Screening, Crushing, and Tanks	PM_{10}	0.4	1.8

18. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
B-09	PM	0.2	0.8
B-20	PM	0.2	0.7
A-01	PM	0.2	0.7
A-02	PM	0.2	0.7
A-03	PM	0.2	0.8

SN	Pollutant	lb/hr	tpy
A-04	PM	0.2	0.8
A-05	PM	0.2	0.7
A-06	PM	0.2	0.7
A-07	PM	1.9	8.4
A-08	PM	0.2	0.7
A-09	PM	0.1	0.4
A-10	PM	1.9	8.3
A-11	PM	0.4	1.8
A-12	PM	0.1	0.4
A-13	PM	0.1	0.1
A-15	PM	0.2	0.7
A-17	PM	1.9	8.3
A-18	PM	0.4	1.8

19. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at sources B-19, B-20, A-01, A-02, A-03, A-04, A-05, A-06, A-07, A-08, A-09, A-10, A-11, A-12, A-13, A-14, A-17, and A-18 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

20. Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source A-07, Flash Calciner #2, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the #2 Kiln shall not contain particulates in excess of 0.092 gram per dry standard cubic meter (g/dscm). Compliance with Subpart UUU has been demonstrated by reports dated July 19, 1999 and September 7, 2000, for different baghouses using EPA Method 5 (Appendix C).

A-14, A-20 and A-21

Toll Processing

Calciner #5 60", Calciner #5 Products Tanks, Calciner #5 Feed Tanks, and Feed Blender

Source Description

Prior to entering Calciner #5 (A-14), material is staged and stored in the Calciner #5 Feed tanks. These tanks are controlled by a bin vent (A-20). The Calciner #5 has been "bubbled" with the Feed Blender (A-21), which is a stainless steel tub. The vessel is opened, powders and other materials are poured in, the lid closed, and the mixture blended. Since it is a closed system, emissions are normally insignificant; the exception would be the occasional use of volatile solvents as a means of adding soluble components.

Calciner #5, also known as the 60" calciner, is used for specialty or toll processing. It is natural gas fired and rated at 16 MMBtu/hr. The calciner processes a variety of material; however the majority are alumina based. Particulate emissions are controlled by a baghouse (A-14). This modification includes a 3.6 MMBtu/hr INCINI-CONE afterburner system for the destruction of trace amounts of phenol and formaldehyde vented from this source. As the test calculations submitted show that uncontrolled phenol and formaldehyde are emitted at about 0.1 lb/hr, below the PAIL, no limits have been set, and no records are required for the operation of the thermal oxidizer, which is included in Section VII: Insignificant Activities.

After material exits from Calciner #5, it is delivered into the product tanks (A-19) pending packaging and shipping.

Specific Conditions

21. Pursuant to §19.501 et seq of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation #19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
A-14 + A21 Calciner #5 60"/ Baghouse	PM_{10} VOC CO NOx	2.0 10.1 1.3 1.5	8.5 10.4 5.5 6.6
A-20 Calciner #5 Feed Tanks/ Bin Vent	PM_{10}	0.2	0.7

22. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (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. These emission rates are based on the maximum operating capacity and applicable control equipment.

SN	Pollutant	lb/hr	tpy
A-14 + A-21	PM HAPs	2.0 10.0*	8.5 10.0*
A-20	PM	0.2	0.7

*** Individual hourly emission rates for HAPs are limited by Specific Condition #25 based on the TLV of the material.**

23. Pursuant to §18.501 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at sources A-14, A-20 and A-21 as measured by EPA Method 9. Compliance with this limit shall be demonstrated through Plantwide Condition #16.

24. Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source A-14, Calciner #5 60", with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c). The discharged gases from the baghouse associated with the #2 Kiln shall not contain particulates in excess of 0.092 gram per dry standard cubic meter (g/dscm). Compliance with Subpart UUU has been demonstrated by reports dated July 19, 1999 and September 7, 2000, for different baghouses using EPA Method 5 (Appendix C).

25. Pursuant to §18.801of the Arkansas Air Pollution Control Code, the permittee may use individual HAP containing materials provided that the total emission rate for individual HAPs does not exceed the allowable hourly emissions as determined by the Presumptively Acceptable Emission Rate (PAER) for each compound. The PAER is deemed by the Department to be the product, in lb/hr of HAP emitted, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH). The hourly emission rate shall be based on the maximum feed rate and the weight per cent of HAP in the material. Average feed rate values can not be used. Hourly emission rates higher than the PAER must be approved in writing by the Department after the determination that concentrations of HAPs at the plant perimeter do not exceed the Presumptively Acceptable Impact Level (PAIL) for each compound as deemed by the Department to be one one-hundredth of the Threshold Limit Value, as listed by the ACGIH.

26. Pursuant to §18.1004 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain records which demonstrate compliance with the limits set in Specific Conditions #21, #22, and #25 which may be used by the Department for enforcement purposes. These records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's usage of solvents and HAPs in the Toll processing area shall be submitted in accordance with General Provision 7.

SECTION V: COMPLIANCE PLAN AND SCHEDULE

Porocel Corporation is in compliance with the applicable regulations cited in the permit application. Porocel Corporation will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future regulations that may apply and determine their applicability with any necessary action taken on a timely basis.

SECTION VI: PLANTWIDE CONDITIONS

1. Pursuant to §19.704 of Regulation 19, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the Director 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.

2. Pursuant to §19.410(B) of Regulation 19, 40 CFR Part 52, Subpart E, the Director may cancel all or part of this permit if the construction or modification authorized herein is not begun within 18 months from the date of the permit issuance or if the work involved in the construction or modification is suspended for a total of 18 months or more.

3. 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 or within 180 days of permit issuance if no date is specified. 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.

4. 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

5. Pursuant to §19.303 of Regulation 19 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.

6. Pursuant to Regulation 26 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit subsumes and incorporates all previously issued air permits for this facility.

Acid Rain (Title IV)

7. Pursuant to §26.701 of Regulation #26 and 40 CFR 70.6(a)(4), the permittee is prohibited from causing any emissions which exceed any allowances that the source lawfully holds under Title IV of the Act or the regulations promulgated thereunder. No permit revision is required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement. This permit establishes no limit on the number of allowances held by the permittee. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement of this permit or the Act. Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Act.

Title VI Provisions

8. The permittee shall comply with the standards for labeling of products using ozone depleting substances pursuant to 40 CFR Part 82, Subpart E:

    a. All containers containing a class I or class II substance stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced to interstate commerce pursuant to §82.106.
    b. The placement of the required warning statement must comply with the requirements pursuant to §82.108.
    c. The form of the label bearing the required warning must comply with the requirements pursuant to §82.110.
    d. No person may modify, remove, or interfere with the required warning statement except as described in §82.112.

9. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for MVACs in Subpart B:

    a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
    b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
    c. Persons performing maintenance, service repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.

d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like appliance" as defined at §82.152.)
e. Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to §82.156.
f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

10. If the permittee manufactures, transforms, destroys, imports, or exports a class I or class II substance, the permittee is subject to all requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

11. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

    The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

12. The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program.

13. Pursuant to §19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR §70.6, this facility shall use only pipeline quality natural gas as fuel. Natural gas usage shall not exceed **140.2 MMSCF** based on a rolling twelve (12) month average, updated monthly. Compliance shall be shown through record keeping requirements set forth in Plantwide Condition #15.

14. Pursuant to §19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR §70.6, this facility shall not produce metallic mineral concentrates as defined in NSPS Subpart LL. Combined mineral throughputs in the plant shall not exceed **an average 15.0 tons/hour or 134,400 tons/year** based on a rolling twelve (12) month average, updated monthly. Compliance shall be shown through record keeping requirements set forth in Plantwide Condition #15.

15. Pursuant to §19.705 of Regulation 19 and 40 CFR Part 52, Subpart E, this facility shall maintain records of the amounts and types of products produced at this facility on a weekly and a rolling 12 month basis, including average hourly mineral throughputs. The permittee shall also maintain records of the amount of natural gas used at this facility. Natural gas usage records shall be kept on a monthly basis and updated no later than the 15th day of the month following the month to which the records pertain. These records shall be kept on site and made available to Department personnel upon request. A report of these amounts and the emissions associated with them shall be submitted to the Department in accordance with General Provision #7.

16. Pursuant to §19.705 of Regulation 19 and 40 CFR 52, Subpart E, weekly observations of the opacity from all sources shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference method 9. If visible emissions from any source appear to exceed the permitted 5% opacity limit, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted 5% opacity following the corrective action. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated per occurrence, kept on site, and made available to Department personnel upon request.

A.	The date, time, and location that opacity greater than permitted was observed.
B.	The cause of the exceedance of the opacity limit
C.	The corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
D.	The name of the person conducting the opacity observations.

17. Pursuant to §26.802(B) of the Regulations of the Arkansas Operating Air Permit Program, the facility may perform demonstration runs to evaluate processing of new non-metallic minerals that may potentially be used in processes listed in this permit, provided that the following conditions are met:

    a. They are not considered modifications under any provision of Title I of the Act;
    b. Emissions allowed in this permit are not exceeded;
    c. These demonstration runs do not violate any applicable requirements; and
       Do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.

    Compliance with this condition shall be demonstrated through submittal of the following

information to the Department:

A. Within a maximum of 30 days after the completion of a demonstration run, the facility shall submit a summary report of the results to the Department. This report will include information as to the amount of product produced and actual raw materials used, results of stack testing that was performed, and notification as to whether the facility intends to add the new material to their existing permit through a permit modification, place a temporary hold on the incorporation of the new material into the permit until a later date, or not pursue the production of the new material.

B. The permittee shall maintain records of the emissions generated during demonstration runs. These records shall be used to insure that emissions limits for the facility, including the weekly and 12 month natural gas usage and mineral thropughput limits listed in Plantwide Conditions #13 and #14, are not being exceeded. These records shall be updated within 15 days of the completion of every demonstration run performed at the facility. These records shall be kept on site and made available to Department personnel upon request.

C. The permittee shall not continuing processing of a product for which a demonstration run has been performed without first modifying their permit to include the new product.

18. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code and A.C.A. §8-4-203 as referenced by §8-4-304 and 8-4-311, the permittee shall maintain records of the amounts of HAPs emitted both from the processes listed in this permit and from any demonstration runs, as described in Plantwide Condition #17, on a monthly basis. These records shall be used to demonstrated compliance with Plantwide Condition #17 and shall be updated no later than the 5th day of the month following the month to which they pertain. These records shall be kept on site and made available to Department personnel upon request. A report of these emissions shall be submitted to the Department in accordance with General Provision #7.

SECTION VII: INSIGNIFICANT ACTIVITIES

Pursuant to §26.304 of Regulation 26, the following sources are insignificant activities. Any activity for which a state or federal applicable requirement applies is not insignificant even if this activity meets the criteria of §304 of Regulation 26 or is listed below. Insignificant activity determinations rely upon the information submitted by the permittee in an application dated **July, 2000.**

Description	Category
3.6 MMBtu/hr INCINI-CONE afterburner for A-14 emissions	A-1
Bench Scale Research & Development includes a small burner (less than 0.5 MMBtu/hr) and an Activator.	A-5

Pursuant to §26.304 of Regulation 26, the emission units, operations, or activities contained in Regulation 19, Appendix A, Group B, have been determined by the Department to be insignificant activities. Activities included in this list are allowable under this permit and need not be specifically identified.

SECTION VIII: GENERAL PROVISIONS

1. Pursuant to 40 CFR 70.6(b)(2), 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 40 CFR 70.6(a)(2) and §26.701(B) of the Regulations of the Arkansas Operating Air Permit Program (Regulation 26), effective August 10, 2000, this permit shall be valid for a period of five (5) years beginning on the date this permit becomes effective and ending five (5) years later.

3. Pursuant to §26.406 of Regulation #26, it is the duty of the permittee to submit a complete application for permit renewal at least six (6) months prior to the date of permit expiration. Permit expiration terminates the permittee's right to operate unless a complete renewal application was submitted at least six (6) months prior to permit expiration, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. The Department will not necessarily notify the permittee when the permit renewal application is due.

4. Pursuant to 40 CFR 70.6(a)(1)(ii) and §26.701(A)(2) of Regulation #26, where an applicable requirement of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq* (Act) is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions are incorporated into the permit and shall be enforceable by the Director or Administrator.

5. Pursuant to 40 CFR 70.6(a)(3)(ii)(A) and §26.701(C)(2) of Regulation #26, records of monitoring information required by this permit shall include the following:

    a. The date, place as defined in this permit, and time of sampling or measurements;
    b. The date(s) analyses were performed;
    c. The company or entity that performed the analyses;
    d. The analytical techniques or methods used;
    e. The results of such analyses; and
    f. The operating conditions existing at the time of sampling or measurement.

6. Pursuant to 40 CFR 70.6(a)(3)(ii)(B) and §26.701(C)(2)(b) of Regulation #26, records of all required monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

7. Pursuant to 40 CFR 70.6(a)(3)(iii)(A) and §26.701(C)(3)(a) of Regulation #26, the permittee shall submit reports of all required monitoring every 6 months. If no other reporting period has been established, the reporting period shall end on the last day of the anniversary month of this permit. The report shall be due within 30 days of the end of the reporting period. Even though the reports are due every six months, each report shall contain a full year of data. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as defined in §26.2 of Regulation #26 and must be sent to the address below.

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

8. Pursuant to 40 CFR 70.6(a)(3)(iii)(B), §26.701(C)(3)(b) of Regulation #26, and §19.601 and 19.602 of Regulation #19, all deviations from permit requirements, including those attributable to upset conditions as defined in the permit shall be reported to the Department. An initial report shall be made to the Department by the next business day after the discovery of the occurrence. The initial report may be made by telephone and shall include:

    a. The facility name and location,
    b. The process unit or emission source which is deviating from the permit limit,
    c. The permit limit, including the identification of pollutants, from which deviation occurs,
    d. The date and time the deviation started,
    e. The duration of the deviation,
    f. The average emissions during the deviation,
    g. The probable cause of such deviations,
    h. Any corrective actions or preventive measures taken or being taken to prevent such deviations in the future, and
    i. The name of the person submitting the report.

A full report shall be made in writing to the Department within five (5) business days of discovery of the occurrence and shall include in addition to the information required by initial report a schedule of actions to be taken to eliminate future occurrences and/or to minimize the amount by which the permits limits are exceeded and to reduce the length of time for which said limits are exceeded. If the permittee wishes, they may submit a full report in writing (by facsimile, overnight courier, or other means) by the next business day after discovery of the occurrence and such report will serve as both the initial report and full report.

9. Pursuant to 40 CFR 70.6(a)(5) and §26.701(E) of Regulation #26, and A.C.A.§8-4-203, as referenced by §8-4-304 and §8-4-311, if any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications hereof which can be given effect without the invalid provision or application, and to this end, provisions of this Regulation are declared to be separable and severable.

10. Pursuant to 40 CFR 70.6(a)(6)(i) and §26.701(F)(1) of Regulation #26, the permittee must comply with all conditions of this Part 70 permit. Any permit noncompliance with applicable requirements as defined in Regulation #26 constitutes a violation of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Any permit noncompliance with a state requirement constitutes a violation of the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) and is also grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

11. Pursuant to 40 CFR 70.6(a)(6)(ii) and §26.701(F)(2) of Regulation #26, it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

12. Pursuant to 40 CFR 70.6(a)(6)(iii) and §26.701(F)(3) of Regulation #26, this permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

13. Pursuant to 40 CFR 70.6(a)(6)(iv) and §26.701(F)(4) of Regulation #26, this permit does not convey any property rights of any sort, or any exclusive privilege.

14. Pursuant to 40 CFR 70.6(a)(6)(v) and §26.701(F)(5) of Regulation #26, the permittee shall furnish to the Director, within the time specified by the Director, any information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the permittee may be required to furnish such records directly to the Administrator along with a claim of confidentiality.

15. Pursuant to 40 CFR 70.6(a)(7) and §26.701(G) of Regulation #26, the permittee shall pay all permit fees in accordance with the procedures established in Regulation #9.

16. Pursuant to 40 CFR 70.6(a)(8) and §26.701(H) of Regulation #26, no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for elsewhere in this permit.

17. Pursuant to 40 CFR 70.6(a)(9)(i) and §26.701(I)(1) of Regulation #26, if the permittee is allowed to operate under different operating scenarios, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which the facility or source is operating.

18. Pursuant to 40 CFR 70.6(b) and §26.702(A) and (B) of Regulation #26, all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act unless the Department has specifically designated as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements.

19. Pursuant to 40 CFR 70.6(c)(1) and §26.703(A) of Regulation #26, any document (including reports) required by this permit shall contain a certification by a responsible official as defined in §26.2 of Regulation #26.

20. Pursuant to 40 CFR 70.6(c)(2) and §26.703(B) of Regulation #26, the permittee shall allow an authorized representative of the Department, upon presentation of credentials, to perform the following:

    a. Enter upon the permittee's premises where the permitted source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
d. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements.

21. Pursuant to 40 CFR 70.6(c)(5) and §26.703(E)(3) of Regulation #26, the permittee shall submit a compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. This compliance certification shall be submitted annually and shall be submitted to the Administrator as well as to the Department. All compliance certifications required by this permit shall include the following:

a. The identification of each term or condition of the permit that is the basis of the certification;
b. The compliance status;
c. Whether compliance was continuous or intermittent;
d. The method(s) used for determining the compliance status of the source, currently and over the reporting period established by the monitoring requirements of this permit; and
e. Such other facts as the Department may require elsewhere in this permit or by §114(a)(3) and 504(b) of the Act.

22. Pursuant to §26.704(C) of Regulation #26, nothing in this permit shall alter or affect the following:

a. The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
b. The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
c. The applicable requirements of the acid rain program, consistent with §408(a) of the Act; or
d. The ability of EPA to obtain information from a source pursuant to §114 of the Act.

23. 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.

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CSN: 60-0004

On December 3, 2001, the Director of the Arkansas Department of Environmental Quality gave notice of a draft permitting decision for the above referenced facility. During the comment period, no comments were received on the draft permitting decision. After the comment period had expired the following comments were received from Porocel Corporation. The facility can propose changes that have not been incorporated in this permit in future applications. Although the Department is not obligated to address these late comments, a response to these issues follows:

Issue #1:

Page 15, 4th paragraph of the Draft permit, states that the baghouse was added to PW-04 (Dryer) in 1980.
Porocel comments that the Dryer was installed in the 1950's, which should allow for a higher opacity than 5%. Porocel requests an unspecified higher opacity limit consistent with current regulations.

Response #1:

Denied. Specific Condition # 4 states that the Dryer (PW-04) is subject Pursuant to 40 CFR Part 60, Subpart UUU - *Standards of Performance for Calciners and Dryers in Mineral Industries,* the permittee shall operate source PW-04, the Dryer, with dry control equipment at all times, in accordance with the emission standards for particulates of §60.732(a) and the monitoring requirements of §60.734(c).
§60.732(b) limits opacity to no more than 10% for emissions from dry control equipment.

Section 18.301(B)(2) authorizes the Director to establish limits that assist in the abatement or control of air pollution. Baghouses have a control efficiency in excess of 99%, so that visible emissions are negligible. The Department experience has been that the opacities of emissions from Baghouses that exceed 5% indicate a malfunction, and that maintenance and repair of the filter unit is required.

Issue #2:

Page 16, Specific Condition #4 requires that the permittee not exceed 5% opacity at sources PW-02, PW-03, and PW-04. All of these sources were installed in the 1950's and should be "grandfathered" in with a higher opacity limit than 5%.

Response #2:

Accepted. The department incorrectly assigned the 5% limits to PW-02 and PW-03 based onthe assumption that a baghouse was present. Porocel has been operating the Precrusher with a 10% opacity limit, so Specific Condition #3 has been changed to allow PW-02 and PW-03 to operate at 10% opacity limit.

Issue #3:

Page 20, Specific Condition # 7, limits the opacity at sources B-01 (Mill House) and B-02 (#2 Kiln) to 5%. The mill and the kiln were installed prior January 30, 1972, and Porocel believes that a higher opacity can be allowed.

Response #3:

Denied. Both these sources are controlled by Baghouses, and the comments given in Response #1 apply to all sources at the facility controlled by Baghouses.

Issue #4:

Page 22, Specific Condition #11, limits opacities from B-08, B-09, B-10, B-11, and B-12 are limited in the Draft permit to 5%. They were previously limited to 7%. Porocel request a 7% opacity limit for all equipment installed after 1970.

Response #4:

Denied. The above sources are all controlled by Baghouses, and the comments of Response #1 apply here.

Issue #5:

Page 39, Plantwide Condition #14, restricts the facility to processing only non-metallic minerals. Porocel points out that the various metal oxides, borates, etc., being processed can be considered to be metallic minerals.

Response #5:

Accepted. The purpose of this restriction was to make certain that Subpart LL does not apply to this facility. Subpart LL defines a "metallic mineral processing plant" as a facility that produces metallic mineral concentrates from ores. Such concentrates are defined as having metallic compounds in concentrations higher than naturally occurring in the ore being processed. With the exception of the removal of water from the metallic compounds in the various kilns and dryers, there is no concentration of the metal content of the ores processed at Porocel. The Department has concurred with the conclusion of the permit modification application that Subpart LL does not apply here.

Plantwide condition #14 now reads as follows:

14. Pursuant to §19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR §70.6, this facility shall not produce metallic mineral concentrates as defined in NSPS Subpart LL. Combined mineral throughputs in the plant shall not exceed **an average 15.0 tons/hour or 134,400 tons/year** based on a rolling twelve (12) month average, updated monthly. Compliance shall be shown through record keeping requirements set forth in Plantwide Condition #15.