



STATEMENT OF BASIS

Monarch Ceramic Tile, Inc.
Florence, Alabama
Lauderdale County
Facility No. 706-0004

This proposed Title V Major Source Operating Permit renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Monarch Ceramic Tile, Inc. was issued its Major Source Operating Permit (MSOP) on October 18, 2017, with an effective date of September 4, 2017 and an expiration date of September 3, 2022. Per ADEM Admin. Code r. 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of the permit. Based on this rule, the application for renewal was due to the Department no later than March 3, 2022. An application for permit renewal was received by the Department on January 12, 2022.

RENEWAL NOTES

1. Permit X046 was issued on March 8, 2020 for the addition of the Wet Polishing Line with two baghouses. This permit was added to the Title V permit during this renewal.
2. The Rectifying Line was removed from service and replaced with the Wet Polishing Line. This change was made during this renewal.
3. Additional 40 CFR 63 Subpart RRRRRR requirements were added that had not been previously addressed through any other permit action.

FACILITY DESCRIPTION

Monarch Ceramic Tile operates an existing ceramic tile manufacturing facility located in Florence, Lauderdale County, Alabama (hereinafter “the facility”). The facility currently holds Major Source Operating Permit (hereinafter “MSOP”) No. 706-0004. The plant is comprised of the following processes:

Nonmetallic Mineral Processing	Glaze Preparation
Spray Drying	Glazing Operation
Tile Body Storage and Conveying	Firing Operation
Colorization Process	Railcar Unloading and Storage
Tile Pressing	Trims Production
Tile Drying	Wet Polishing Line

The facility is major source of carbon monoxide (CO) emissions for both Title V and PSD. Therefore, any modifications to the facility are potentially subject to PSD review.

The following is a summary of facility-wide controlled potential emissions and the reported 2020 actual emissions:

Pollutant	Potential Emissions (TPY)	2020 Actual Emissions (TPY)
PM _{total}	72.11	37.75
PM ₁₀	72.11	37.75
PM _{2.5}	28.21	15.23
PM _{con}	14.87	4.07
SO ₂	60.13	29.54
NO _x	73.98	24.84
CO	279.17	114.75
VOC	76.46	24.17
HCl	9.86	0.34
HF	9.95	0.67
GHG (CO ₂ e)	64,473	-

Nonmetallic Mineral Processing

Process Description:

Raw materials (clay, feldspar, sand, and nepheline syenite) are received by truck and rail and stored in one of two raw material storage areas. The materials are moved by a front end loader and loaded into one of seven feed hoppers. The materials are then metered out directly onto a conveyor system that transports the material to either of two continuous ball mills. Water is added with the materials in the ball mills and milled to the desired consistency and viscosity to create a mud-like slurry called slip. Upon completion of the milling process, the slip is pumped into a concrete slip tank where it is stored before spray drying. Emissions from this source consist of particulate matter.

The Nonmetallic Mineral Processing system includes two raw material storage areas, seven feed hoppers, a raw material conveying system and two continuous ball mills. This area includes one baghouse (S-1).

This area is comprised of the following sources:

Source	Description	Control Device
EF-13	Raw Material Receiving and Storage Area 1	None
EF-14		
EF-15		
S-1	Seven (7) Feed Hoppers	Baghouse
EF-21	Raw Material Receiving Storage Area 2	None
EF-22		
EF-23		
EF-24		
EF-25		
EF 13-15	Raw Material Conveying	Baghouse
EF 18-20		
S-1		
EF-18	Two (2) Continuous Ball Mills	Baghouse
EF-19		
EF-20		
S-1		

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process Industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...*The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station....*”

“*Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.*”

Per §60.671, *conveying system*, *nonmetallic mineral processing plant*, and *nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: *Feeders, belt conveyors, bucket elevators and pneumatic systems.*

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power

plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

The Ball Mills and Raw Material Conveying are not subject to 40 CFR 60 Subpart OOO. However, since the baghouse (S-1) that controls emissions from the nonmetallic mineral processing is shared with other processes that are subject to Subpart OOO, the emissions from baghouse (S-1) will be limited to the NSPS standard while the NSPS sources are operating.

40 CFR Part 60, Subpart A, "General Provisions"

- Per 40 CFR §60.670(f), the S-1 baghouse is subject to the applicable provisions of 40 CFR Part 60 Subpart A, "General Provisions", as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

"The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source."

These units do not meet these conditions and are not subject to the requirements of CAM.

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Appendix A-4.

40 CFR Part 60 Subpart OOO, §60.672(a)

- Common Baghouse (S-1) shall not exhibit emissions of an opacity greater than 7%.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

40 CFR Part 60 Subpart OOO, §60.672(a)

- Particulate matter (PM) emissions from common Baghouse (S-1) shall not exceed 0.05 grams per dry standard cubic meter (gr/dscm).

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- The combined particulate matter emission rate from the Roof Vents (EF 13-15 and 18-25) shall not exceed 5.17 lbs/hr.
- The particulate matter emission rate from baghouse S-1 shall not exceed 0.45 lbs/hr.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675(b)

- The S-1 baghouse is subject to the applicable requirements of 40 CFR Part 60, Subpart OOO, “*Test methods and procedures*”, regarding particulate matter and opacity testing.

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity of the stack emissions.
- If testing is required, Method 22 of 40 CFR Part 60, Appendix A-7, shall be used to determine the presence of fugitive or instantaneous visible emissions.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – *Permit Content – Monitoring and Recordkeeping Requirements*

- The facility shall perform a visual check, at least once per week, of the stack and roof vents associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After any corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) & (c)(3)– *Permit Content – Monitoring and Recordkeeping Requirements*

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.

- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on permit limitations.

Emission Point	Expected Emissions (TPY)		
	PM	PM₁₀	PM_{2.5}
S-1	1.92	1.92	0.58
EF 13-25	5.98	5.98	1.79

Spray Drying

The slip is pumped, at high pressure, into one of the two spray dryers (atomizers) through a series of nozzles that cause the slip to be sprayed as a fine mist into an enclosed hot air stream that dries the slip to a fine powder, with a low moisture content, that is called body. This body is transported via conveyor systems to the storage silos. The spray dryers are fueled by natural gas. The emissions from spray dryer 1 are controlled by a wet scrubber, and the emissions from spray dryer 2 are controlled by a dust collector.

This area is comprised of the following sources:

Source	Source Description	Control Device
SD-1	Spray Dryer 1	Wet Scrubber
SD-2	Spray Dryer 2	Baghouse

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process Industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 60 Subpart UUU, “Standards of Performance for Calciners and Dryers in Mineral Industries”

- Per 40 CFR §60.730(a)&(c), this subpart applies to each calciner and dryer at a mineral processing plant that was constructed, modified, or reconstructed after April 23, 1986. Therefore, the spray dryers are subject to this subpart. Based on EPA’s Determinations, Control Nos. 0600020 and 9600060, the wet scrubber (SD-1) and baghouse (SD-2) are exempted from the monitoring requirements of this subpart since the units emit less than 11 TPY of particulate matter.

40 CFR Part 60, Subpart A, “General Provisions”

- The dryers are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “*General Provisions*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve

compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

The Spray Dryers meet these conditions for particulate matter, so they are subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

40 CFR Part 60 Subpart UUU, §60.732(b)

- The emissions from Spray Dryer 2 with Dust Collector (SD-2) shall not exceed opacity greater than 10%.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Each spray dryer shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P < 30 tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]” & 40 CFR 60 Subpart UUU, §60.732(a)

- Particulate matter emissions from Spray Dryer 1 with Wet Scrubber (SD-1) shall not exceed the lesser of 1.84 lbs/hr or 0.057 grams per dry standard cubic meter (0.025 gr/dscf).
- Particulate matter emissions from Spray Dryer 2 with Dust Collector (SD-2) shall not exceed the lesser of 1.36 lbs/hr or 0.057 grams per dry standard cubic meter (0.025 gr/dscf).

Nitrogen Oxides

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Nitrogen oxide (NO_x) emissions from Spray Dryers 1 & 2 (SD-1 & SD-2) shall no exceed 2.37 lbs/hr, each.

Carbon Monoxide

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Carbon monoxide (CO) emissions from Spray Dryers 1 & 2 (SD-1 & SD-2) shall no exceed 1.99 lbs/hr, each.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart UUU, §60.736

- The Spray Dryers are subject to the applicable requirements of 40 CFR Part 60 Subpart UUU, “*Test methods and procedures*”, for particulate matter (PM) and opacity emissions testing.

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A, shall be used in the determination of particulate matter (PM) emissions.
- If testing is required, Method 7 of 40 CFR Part 60, Appendix A, shall be used in the determination of nitrogen oxide (NO_x) emissions.

- If testing is required, Method 9 of 40 CFR Part 60, Appendix A, shall be used in the determination of opacity.
- If testing is required, Method 10 of 40 CFR Part 60, Appendix A, shall be used in the determination of carbon monoxide (CO) emissions.

Emission Monitoring:

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- The Spray Dryers (SD-1 & SD-2) are subject to the following CAM requirements for PM:

CAM Plan for Wet Venturi Scrubber at Emission Point SD-1

	Parameter No.1	Parameter No. 2
<u>I. Indicator</u>	Visible Emissions (VE)	Pressure Differential (ΔP)
A. Measurement Approach	1. Trained and qualified personnel shall perform a weekly VE inspection. If visible emissions are observed, a visible emissions observation (VEO) shall be conducted within 30 minutes in accordance with 40 CFR 60, Appendix A, Method 9. The Method 9 observation shall be conducted for a minimum of twelve (12) minutes.	1. A properly maintained and operated device shall be utilized to measure the pressure loss across the unit daily. The device shall be located at eye level and be easily accessible for inspections by Air Division and plant personnel.
<u>II. Indicator Range</u>	1. While the unit is in operation, an excursion is defined as an average opacity during the Method 9 opacity reading which exceeds twenty (20%) percent. 2. Excursions trigger an inspection, corrective action, and a reporting requirement.	1. While the unit is operating, an excursion is defined as a pressure loss of less than 5.4 inches H ₂ O. 2. Excursions trigger an inspection, corrective action, and a reporting requirement.

	3. Corrective action must be initiated within two (2) hours following an excursion.	3. When a pressure loss excursion occurs, corrective action shall be initiated within two (2) hours to identify and correct the problem.
III. Performance Criteria		
A. Data Representativeness	1. Inspections shall be made at the stack. Visual observations performed at emission points (exhaust stack SD-1).	1. A pressure loss reading is the measurement of the pressure differential between inlet and outlet of the baghouse. The minimum accuracy of the device is ± 0.5 in. H ₂ O.
B. Verification of Operating Status	N/A	N/A
i. QA/QC Practices and Criteria	1. Trained and qualified personnel shall perform the visible inspection.	1. The differential pressure gauge shall be calibrated annually.
C. Monitoring Frequency	1. Visible emissions observation shall be made weekly while each unit is in operation.	1. Pressure loss shall be measured daily while the unit is in operation.
D. Data Collection Procedures	1. Manual log entries based on weekly VE observation. Observation will be recorded along with the date, time, emission point designation, name of the observer, if VE's are observed. If VE's are observed, a Method 9 opacity reading shall be conducted. In addition to the information required by Method 9 the expiration date	1. Manual log entries based on gauge readings. Pressure loss will be recorded daily along with the date, time, and name of the observer.

	of the evaluator's certification shall be recorded and any corrective actions taken shall be recorded.	
E. Averaging Period	1. VE observations are instantaneous. If a Method 9 is required, then observations are a six (6) minute average.	1. Pressure loss readings are instantaneous.

CAM Plan for Dust Collector at Emission Point SD-2

	Parameter No.1	Parameter No. 2
<u>I. Indicator</u>	Visible Emissions (VE)	Pressure Differential (ΔP)
A. Measurement Approach	1. Trained and qualified personnel shall perform a weekly VE inspection. If visible emissions are observed, a visible emissions observation (VEO) shall be conducted within 30 minutes in accordance with 40 CFR 60, Appendix A, Method 9. The Method 9 observation shall be conducted for a minimum of twelve (12) minutes.	1. A properly maintained and operated device shall be utilized to measure ΔP across the unit daily. The device shall be located at eye level and be easily accessible for inspections by Air Division and plant personnel.
<u>II. Indicator Range</u>	<p>1. While the unit is operating, an excursion is defined as an average opacity during the Method 9 opacity reading which exceeds ten (10%) percent.</p> <p>2. Excursions trigger an inspection, corrective action, and a reporting requirement.</p>	<p>i. While the unit is operating, an excursion is defined as a ΔP of less than 2.0 inches H₂O or greater than 8.0 inches H₂O.</p> <p>ii. Excursions trigger an inspection, corrective action, and a reporting requirement.</p>

	3. Corrective action must be initiated within two (2) hours following an excursion.	iii. When a pressure drop excursion occurs, corrective action shall be initiated within two (2) hours to identify and correct the problem.
III. Performance Criteria		
1. Data Representativeness	1. Inspections shall be made at the stack. Visual observations performed at emission points (exhaust stack SD-2).	1. ΔP on gauge is the measurement of the pressure differential between inlet and outlet of the baghouse. The minimum accuracy of the device is ± 0.5 in. H ₂ O.
2. Verification of Operating Status	N/A	N/A
a. QA/QC Practices and Criteria	1. Trained and qualified personnel shall perform the visible inspection.	i. The differential pressure gauge shall be calibrated annually. Pressure taps checked weekly for plugging.
3. Monitoring Frequency	1. Visible emissions inspections shall be made weekly while the unit is in operation.	1. ΔP is measured daily while the unit is in operation.
4. Data Collection Procedures	1. Manual log entries based on weekly VE inspection. Observation will be recorded along with the date, time, emission point designation, name of the observer, if VE's are observed. If VE's are observed, a Method 9 opacity reading shall be conducted. In addition to the information required by	1. Manual log entries based on gauge readings. ΔP will be recorded daily along with the date, time, and name of the observer.

	Method 9 the expiration date of the evaluator's certification shall be recorded and any corrective actions taken shall be recorded.	
5. Averaging Period	1. VE observations are instantaneous. If a Method 9 is required, then observations are a six (6) minute average.	1. ΔP readings are instantaneous.

Recordkeeping and Reporting Requirements:

40 CFR Part 64 & ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- A semi-annual monitoring shall be submitted to the Department within sixty (60) days of the end of each semi-annual reporting period as determined by the anniversary dates of the permits. This report shall include summary information on the number, duration, and cause (including unknown cause, if applicable) of excursions or exceedances and the corrective actions taken.

40 CFR Part 64 “Compliance Assurance Monitoring”

- Records of observation date, observation time, emission point designation, emission point operation mode, name of the observer, expiration date of the observer's certification, observed opacity, and any corrective actions taken during each visible emissions observation shall be kept in a permanent form suitable for inspection.
- If visible emissions observation utilizing Method 9 is required, the results shall be documented using the ADEM visible emissions observations report. The Method 9 observation shall be conducted for a minimum of twelve (12) minutes.
- Records of observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed pressure drop (ΔP), and any corrective actions taken during each pressure drop (ΔP) observation shall be kept in a permanent form suitable for inspection.

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.

- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests AP-42 emission factors and permit limits.

Emission Point	Expected Emissions (TPY)						
	PM	PM₁₀	PM_{2.5}	SO₂	CO	NO_x	VOC
SD-1	7.84	7.84	2.51	0.09	8.48	10.10	0.55
SD-2	8.09	8.09	2.59	0.09	8.48	10.10	0.55

Tile Body Storage and Conveying

In this process, the body is transported from the Spray Dryers by means of a conveyor system to the initial storage silos and then to the individual press surge hoppers. Conveyor System 1 (CS-1) conveys body from Spray Dryer 1 to the 5 storage silos. Conveyor System 2 (CS-2) conveys body from Spray Dryer 2 to the 5 storage silos. Conveyor System 3 (CS-3) feeds body from the storage silos to either conveyor system 4 or 5. Conveyor System 4 (CS-4) conveys body to the colorization process and then returns the body to Conveyor System 5 (CS-5) for distribution to the individual press surge hoppers. The emissions from these sources are vented to three roof vents (EF 18, 19, & 20) and three baghouses (S-1, S-4, & S-6).

This area is comprised of the following sources:

Source	Source Description	Control Device
CS-1	Conveying System 1	S-1
		S-6
		EF-18
		EF-19
		EF-20
CS-2	Conveying System 2	S-4
		EF-18
		EF-19
		EF-20
CS-3	Conveying System 3	S-1
		S-6
		EF-18
		EF-19
		EF-20
CS-5	Conveying System 5	S-1
CS-7		S-6
		EF-18
		EF-19
		EF-20

Source	Source Description	Control Device
CS-6	Conveying System 6	S-1
CS-7		S-6
		EF-18
		EF-19
		EF-20
CS-7	Conveying System 7	S-1
		S-6
		EF-18
		EF-19
		EF-20

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process Industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station....”

“Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.”

Per §60.671, *conveying system*, *nonmetallic mineral processing plant*, and *nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

These sources were constructed in 1991 and modified in 1996. Therefore, the following would be considered affected sources under this subpart:

Source	Description
CS-1	Conveyor System 1
CS-2	Conveyor System 2
CS-3	Conveyor System 3
CS-5	Conveyor System 5

CS-6	Conveyor System 6
CS-7	Conveyor System 7

40 CFR Part 60, Subpart A, “General Provisions”

- Per 40 CFR §60.670(f), these sources are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “General Provisions”, as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

40 CFR Part 60 Subpart OOO, §60.672(e)(1)

- Fugitive emissions from building openings shall not exhibit opacity greater than 7%.

40 CFR Part 60 Subpart OOO, §60.672(a) &(e)(2)

- Common Baghouse (S-1, S-4, S-6) and Roof Vents (EF-13-15 and 18-25) shall not exhibit emissions of opacity greater than 7%.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]” & 40 CFR 60 Subpart OOO, §60.672(e)(2)

- The combined particulate matter emission rate from the Roof Vents (EF 13-15 and 18-25) shall not exceed the lesser of 5.17 lbs/hr or 0.05 grams per dry standard cubic meter.

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]” & 40 CFR 60 Subpart OOO, §60.672(a)

- Particulate matter emissions from common Baghouse (S-1) shall not exceed the lesser of 0.45 lbs/ hr or 0.05 grams per dry standard cubic meter.
- Particulate matter emissions from common Baghouse (S-4) shall not exceed the lesser of 0.46 lbs/ hr or 0.05 grams per dry standard cubic meter.
- Particulate matter emissions from common Baghouse (S-6) shall not exceed the lesser of 0.27 lbs/ hr or 0.05 grams per dry standard cubic meter.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675

- These sources are subject to the applicable requirements of 40 CFR Part 60 Subpart OOO, “*Test methods and procedures*”, regarding opacity and particulate matter emission testing.

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.
- If testing is required, Method 22 of 40 CFR Part 60, Appendix A-7, shall be used to determine the presence of fugitive or instantaneous visible emissions.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – *Permit Content – Monitoring and Recordkeeping Requirements*

- The facility shall perform a visual check, once per week, of the stack and roof vents associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – *Permit Content – Monitoring and Recordkeeping Requirements*

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective actions, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests and AP-42 emission factors.

Emission Point	Expected Emissions (TPY)		
	PM	PM₁₀	PM_{2.5}
S-1	1.92	1.92	1.58
S-4	1.96	1.96	0.59
S-6	1.15	1.15	0.35

Colorization Process

Body is transported by conveyor system 4 where it is stored in a surge hopper for further processing. The body and dye material from one of the two dye storage silos is metered back onto the conveyor system and conveyed to a pneumatic mixer that mixes the dye material and body into a uniform mixture. From this mixer, the colored body is dropped onto conveyor system 5 for transport to the press surge hopper.

This area is comprised of the following sources:

Source	Source Description	Control Device
CS-4	Conveying System 4	S-6
	Body Surge Hopper	S-6
	Two Dye Storage Silos	S-6
	Pneumatic Mixer	S-6

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station....”

“Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.”

Per §60.671, *conveying system, nonmetallic mineral processing plant, and nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

These sources were constructed in 1991 and modified in 1996. Therefore, the following would be considered affected sources under this subpart:

Source	Description
S-6	Conveyor System 4
	Body Surge Hopper

40 CFR Part 60, Subpart A, “General Provisions”

- Per 40 CFR §60.670(f), these sources are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “*General Provisions*”, as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

40 CFR Part 60 Subpart OOO, §60.672(a)

- Common Baghouse (S-6) shall not exhibit emissions of opacity greater than 7%.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]” & 40 CFR 60 Subpart OOO, §60.672(a)

- Particulate matter emissions from common Baghouse (S-6) shall not exceed the lesser of 0.27 lbs/ hr or 0.05 grams per dry standard cubic meter.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675

- These sources are subject to the applicable requirements of 40 CFR Part 60 Subpart OOO, “*Test methods and procedures*”, regarding opacity and particulate matter emission testing.

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- The facility shall perform a visual check, once per week, of the stack associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.

- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective actions, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests.

Emission Point	Expected Emissions (TPY)		
	PM	PM ₁₀	PM _{2.5}
S-6	1.15	1.15	0.35

Tile Pressing Operation

In this process, body material is transported to the presses by conveyor system 4 where it empties into a surge hopper. From the surge hopper, material is fed into the press dyes for pressing into the appropriate shape and size. Emissions from Tile Presses 1, 2, 3 and 4 are controlled by common Baghouse (S-6). Emissions from Tile Presses 5 and 6 are controlled by common Baghouse (S-2).

This area is comprised of the following sources:

Source	Source Description	Control Device
P-1	Press 1	S-6
P-2	Press 2	S-6
P-3	Press 3	S-6
P-4	Press 4	S-6
P-5	Press 5	S-2
P-6	Press 6	S-2

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station....”

“Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.”

Per §60.671, *conveying system*, *nonmetallic mineral processing plant*, and *nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

These sources were constructed in 1991 and modified in 1996. Therefore, the following would be considered affected sources under this subpart:

Source	Description
S-6	Tile Presses 1, 2, 3, & 4

40 CFR Part 60, Subpart A, “General Provisions”

- Per 40 CFR §60.670(f), these sources are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “*General Provisions*”, as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

40 CFR Part 60 Subpart OOO, §60.672(a)

- Common Baghouse (S-6) shall not exhibit emissions of opacity greater than 7%.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]” & 40 CFR 60 Subpart OOO, §60.672(a)

- Particulate matter emissions from common Baghouse (S-6) shall not exceed the lesser of 0.27 lbs/ hr or 0.05 grams per dry standard cubic meter.
- Particulate matter emissions from the common Baghouse (S-2) shall not exceed 1.91 lbs/hr.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675

- These sources are subject to the applicable requirements of 40 CFR Part 60 Subpart OOO, “*Test methods and procedures*”, regarding opacity and particulate matter emission testing.

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – *Permit Content – Monitoring and Recordkeeping Requirements*

- The facility shall perform a visual check, once per week, of the stacks associated with these units. If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.

- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests and AP-42 emission factors.

Emission Point	Expected Emissions (TPY)		
	PM	PM ₁₀	PM _{2.5}
S-2	8.14	8.14	2.44
S-6	1.15	1.15	0.35

Tile Drying

After being formed, the individual pressed tiles are transported by a roller conveyor to one of five horizontal roller dryers to further reduce the moisture content of individual pressed tiles. These dried tiles are referred to as “green tiles”. This drying process provides the green tiles with sufficient strength to undergo glazing and transfer to the kilns. The press dryers are fueled by natural gas. The emissions from these units are uncontrolled.

This area is comprised of the following sources:

Source	Source Description	Control Device
D-1	Press Dryer 1	NONE
D-2	Press Dryer 2	NONE
D-3	Press Dryer 3	NONE
D-4	Press Dryer 4	NONE
D-5	Press Dryer 5	NONE
D-6	Press Dryer 6	NONE

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – *Visible Emissions*

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A-4.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- Tile production shall be limited to 8,520 hours in any consecutive 12-month period. The press dryers may operate 8,760 hours per year.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – *Process Industries – General*

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (} P < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- Particulate matter emissions from Dryer 1 & 2 (D-1, D-2) shall not exceed the lesser of 0.75 lb/hr or the allowable set by Rule 335-3-4-.04(1).
- Particulate matter emissions from Dryer 3, 4, & 5 (D-3, D-4, D-5) shall not exceed the lesser of 0.56 lb/hr or the allowable set by Rule 335-3-4-.04(1).

Nitrogen Oxides

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- Nitrogen oxide (NO_x) emissions from Dryer 1 & 2 (D-1, D-2) shall not exceed 0.5 lbs/hr, each.
- Nitrogen oxide (NO_x) emissions from Dryer 3, 4, & 5 (D-3, D-4, D-5) shall not exceed 0.38 lbs/hr, each.

Carbon Monoxide

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- Carbon monoxide (CO) emissions from Dryer 1 & 2 (D-1, D-2) shall not exceed 5.41 lbs/hr, each.
- Carbon monoxide (CO) emissions from Dryer 3, 4, & 5 (D-3, D-4, D-5) shall not exceed 4.03 lbs/hr, each.

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter (PM) emissions.
- If testing is required, Method 7 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of nitrogen oxide (NO_x) emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.
- If testing is required, Method 10 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of carbon monoxide (CO) emissions.
- If testing is required, Method 22 of 40 CFR Part 60, Appendix A-7, shall be used in the determination of fugitive or instantaneous emissions.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05©(1) – Permit Content – Monitoring and Recordkeeping Requirements

- An observation of each emission point associated with these sources (D-1, 2, 3, 4 & 5 will be accomplished at least weekly. If visible emissions are noted during the above-referenced visual checks, corrective action shall be initiated within two (2) hours to reduce the emissions.

After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced

- .

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.

- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests, stack data from similar equipment, and permit limitations.

Emission Point	Expected Emissions (TPY)						
	PM	PM ₁₀	PM _{2.5}	SO ₂	CO	NO _x	VOC
D-1	3.20	3.20	0.58	2.13	23.05	2.13	6.82
D-2	2.39	2.39	0.43	2.13	17.17	1.62	4.26
D-3	2.39	2.39	0.43	2.13	17.17	1.62	4.26
D-4	2.39	2.39	0.43	2.13	17.17	1.62	4.26
D-5	2.39	2.39	0.43	2.13	17.17	1.62	4.26

Glaze Preparation

Glaze preparation consists of milling two distinctive types of glazing material, glazes and glaze pastes, to the green tile. Frit, small amounts of clay, stains, and other materials are batched and milled until the desired consistency and color is achieved. Glaze pastes involve taking set amounts of material and mixing them together until the desired paste-like consistency and color are achieved. Emissions of particulate matter are controlled by common baghouses (S-4).

This area is comprised of the following sources:

Source	Source Description	Control Device
S-4	Glaze Ball Mill 1	Baghouse (S-4)
	Glaze Ball Mill 2	
	Glaze Ball Mill 3	
	Glaze Ball Mill 4	
	Glaze Ball Mill 5	
	Glaze Ball Mill 6	
	Glaze Ball Mill 7	

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station...”

“Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.”

Per §60.671, *conveying system*, *nonmetallic mineral processing plant*, and *nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

The Glaze Ball Mills are not subject to this subpart. However, since the baghouse (S-4) that controls emissions from the glaze preparation is shared with other processes that are subject to this subpart, the emissions from the baghouse (S-4) will be limited to the NSPS standard while the NSPS sources are operation. Therefore, the following would be considered affected sources under this subpart:

Source	Description
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S-4	Baghouse S-4
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40 CFR Part 60, Subpart A, “General Provisions”

- Per 40 CFR §60.670(f), these sources are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “General Provisions”, as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A-4.

40 CFR Part 60 Subpart OOO, §60.732(a)

- Common Baghouse (S-4) shall not exhibit emissions of opacity greater than 7%.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – *Process Industries – General*

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*” & 40 CFR 60 Subpart OOO, §60.672(a)

- Particulate matter emissions from common Baghouse (S-4) shall not exceed the lesser of 0.46 lbs/ hr or 0.05 grams per dry standard cubic meter.

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675

- These sources are subject to the applicable requirements of 40 CFR Part 60 Subpart OOO, “*Test methods and procedures*”, regarding opacity and particulate matter emission testing.

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – *Permit Content – Monitoring and Recordkeeping Requirements*

- The facility shall perform a visual check, once per week, of the stack associated with Glaze Preparation (S-4). If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests.

Emission Point	Expected Emissions (TPY)		
	PM	PM ₁₀	PM _{2.5}
S-4	1.96	1.96	0.59

Glazing Operation

This process consists of the application of glazing material to the green tile. Glazes may be applied by means of an air spray, bell (waterfall), or rotating disc in a totally enclosed environment, rotating silk screen, and ceramic ink jet. An increasing amount of glazing is by means of printing a picture on the dried tile by means of a ceramic inkjet printer. The ink does not use a volatile solvent and must be fired to set.

Particulate emissions from glaze lines 1 and 2 are routed to baghouse (S-3), particulate emissions from glaze lines 3 and 4 are routed to baghouse (S-4), and particulate emissions from glaze lines 5 and 6 are routed to baghouses (S-2).

This area is comprised of the following sources:

Source	Source Description	Control Device
S-3	Glaze Line 1	S-3
S-3	Glaze Line 2	S-3
S-4	Glaze Line 3	S-4
S-4	Glaze Line 4	S-4
S-2	Glaze Line 5	S-2
S-2	Glaze Line 6	S-2

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants”

- §60.670(a), (b), and (e) state the following:

“...*The provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station....*”

“*Any facility under paragraph (a) of this section that commences construction or modification after August 31, 1983, is subject to the requirements of this subpart.*”

Per §60.671, *conveying system, nonmetallic mineral processing plant, and nonmetallic mineral* are defined as follows:

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: *Feeders, belt conveyors, bucket elevators and pneumatic systems.*

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, Portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 [b] and [c].

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals: *Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell; Sand and Gravel; Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay; Rock Salt; Gypsum [natural or synthetic]; Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate; Pumice; Gilsonite; Talc and Pyrophyllite; Boron, including Borax, Kernite, and Colemanite; Barite; Fluorospar; Feldspar; Diatomite; Perlite; Vermiculite; Mica; Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.*

The Glaze Lines are not subject to this subpart. However, since the baghouse (S-4) that controls emissions from Glaze Lines 3 and 4 is shared with other processes that are subject to this subpart, the emissions from the baghouse (S-4) will be limited to the NSPS standard

while the NSPS sources are operation. Therefore, the following would be considered affected sources under this subpart:

Source	Description
S-4	Common Baghouse

40 CFR Part 60, Subpart A, “General Provisions”

- Per 40 CFR §60.670(f), these sources are subject to the applicable provisions of 40 CFR Part 60 Subpart A, “General Provisions”, as listed in Table 1 of 40 CFR 60 Subpart OOO.

40 CFR 63 Subpart RRRRRR, “National Emissions Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing Area Sources”

- Per 40 CFR 63.11435(a), a facility is subject to this subpart if you own or operate a clay ceramics manufacturing facility (as defined in 63.11444), with an atomized glaze spray booth or kiln that fires glazed ceramic ware, that processes more than 45 megagrams per year (Mg/yr) (50 tons per year (tpy)) of wet clay and is an area source of hazardous air pollutant (HAP) emissions.

The kilns fire glazed ceramic ware that processes more than 50 TPY of wet clay and is an area source of HAP emissions. Therefore, these sources are a subject to the applicable requirements of 40 CFR 63 Subpart RRRRRR.

40 CFR Part 63 Subpart A, “General Provisions”

- These sources are subject to the applicable requirements of 40 CFR 63 Subpart A, “General Provisions” as stated in Table 1 of 40 CFR 63 Subpart RRRRRR.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Emission Standards:***Opacity***ADEM Admin. Code r. 335-3-4-.01 – *Visible Emissions*

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

40 CFR Part 60 Subpart OOO, §60.672(a)

- Common Baghouse (S-4) shall not exhibit emissions of opacity greater than 7%.

OperationalADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

40 CFR 63 Subpart RRRRRR, 63.11438(d)

- The facility must comply with one of the following management practices or equipment standards:
 - Employ waste minimization practices, as defined in §63.11444; or
 - Alternatively, comply with the equipment standard requirements in §63.11438(c)(1) or the management practices in §63.11438(c)(2).
 - The equipment standards in §63.11438(c)(1), stipulate that the facility must control the emissions from the atomized glaze spray booth with an air pollution control device (APCD), as defined in §63.11444.
 - The facility must operate and maintain the APCD in accordance with the equipment manufacturer’s specifications; and
 - Monitor the APCD according to the applicable requirements in §63.11440.
 - The management practices in §63.11438(c)(2) stipulate that the facility may use wet glazes containing less than 0.1 (weight) percent clay ceramics metal HAP.

40 CFR Part 63 Subpart RRRRRR, §63.11440(b)(2)(ii)(A)&(B)

- The facility shall conduct weekly visual inspections of the system ductwork of common Baghouses (S-2, S-3, & S-4) associated with Glazing Lines 1-6 for leaks.

- The facility shall conduct inspections of the interior of the common Baghouses (S-2, S-3, & S-4) for structural integrity and to determine the condition of the fabric filters at least every 12 months.

40 CFR Part 63 Subpart RRRRRR, §63.11440(b)(3)

- As an alternative to §63.11440(b)(2), the facility may demonstrate compliance by conducting a daily 30-minute visible emissions (VE) test (i.e., no visible emissions) using EPA Method 22 (40 CFR part 60, appendix A-7); or using an approved alternative monitoring technique under §63.8(f).

40 CFR Part 63 Subpart RRRRRR, §63.11440(c)

- If the results of the visual inspection indicate an exceedance, the facility must take corrective action according to the equipment manufacturer’s specifications or instructions.

40 CFR 63 Subpart RRRRRR, 63.11438(e)

- Surface applications (wet glazes) containing less than 0.1 (weight) percent clay ceramics metal HAP do not have to be considered in determination of 250 TPY threshold for wet glaze usage.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – *Process Industries – General*

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (} P < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*” & 40 CFR 60 Subpart OOO, §60.672(a)

- Particulate matter emissions from common Baghouse (S-4) shall not exceed the lesser of 0.46 lbs/ hr or 0.05 grams per dry standard cubic meter.

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Particulate matter emissions from common Baghouse (S-2) shall not exceed the lesser of 1.91 lbs/hr or the allowable set by Rule 335-3-4-.04(1).
- Particulate matter emissions from common Baghouse (S-3) shall not exceed the lesser of 0.20 lbs/hr or the allowable set by Rule 335-3-4-.04(1).

Compliance and Performance Test Methods and Procedures:

40 CFR Part 60 Subpart OOO, §60.675

- These sources are subject to the applicable requirements of 40 CFR Part 60 Subpart OOO, “Test methods and procedures”, regarding opacity and particulate matter emission testing.

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- The facility shall perform a visual check, once per week, of the stacks associated with common Baghouse (S-2, S-3, & S-4). If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.

40 CFR 63 Subpart RRRRRR, §63.11438(b)

- Records of annual wet glaze usage shall be maintained.

40 CFR 63 Subpart RRRRRR, §63.11440(d)

- The facility must maintain records of the monitoring activities in §63.11440(a) through (c). The facility may use existing operating permit documentation to meet the monitoring requirements if it includes, but is not limited to, the monitoring records listed in §63.11440(d)(1) through (5) related to any kiln peak temperature checks, visual inspections, VE tests, or alternative monitoring.

40 CFR 63 Subpart RRRRRR, §63.11442(a)

- The facility must keep the following records:
 - A copy of each notification that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted according to the requirements in §63.10(b)(2)(xiv).
 - Records of all required measurements needed to document compliance with management practices as required in §63.10(b)(2)(vii), including records of monitoring and inspection data required by §63.11440.

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements & 40 CFR 63 Subpart RRRRRR, §63.11442(b)-(d)

- All records shall be maintained in a form suitable and readily available for expeditious review for at least five years from the date of generation. The facility must keep each record onsite for at least two years from the date of generation. The facility may keep the records offsite for the remaining three years.

Emissions Summary:

Expected emissions are based on permit limitations.

Emission Point	Expected Emissions (TPY)		
	PM	PM ₁₀	PM _{2.5}
S-2	8.14	8.14	2.44
S-3	0.85	0.85	0.26
S-4	1.96	1.96	0.59

Firing Operations

This process involves heating of the tiles to vitrify (make glass-like) and fuse (bond) the glaze material permanently to the surface of the tile body. The green tiles are fed into a fast fired roller kiln and fired according to a predetermined temperature curve that exposes the tiles to a maximum temperature of approximately 2,000 °F and then cooled rapidly by an indirect cooling system. Natural gas is used as fuel to heat the kilns. Emissions from Kilns 1 and 3 are vented through Kiln Control System 1 (KCSYS1), bypass stacks (K1M, K3M), and cooler stacks (K1C, K3C). Kiln 2 is a double layer kiln with each layer exhausting through dedicated bypass and cooler stacks (K2MU, K2ML, K2CU, K2CL) and Kiln Control System 2 (KCSYS2).

The facility requested a combined limit 9.9 TPY of HCL and HF for three kilns to remain an area source for HAP. Therefore, these units are subject to the applicable requirements of 40 CFR 63 Subpart RRRRRR, “*National Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing Area Sources*”.

This area is comprised of the following sources:

Source	Source Description	Control Device
KCSYS1 K1M K1C	Kiln 1	KCSYS1
		K1M
		K1C

Source	Source Description	Control Device
KCSYS2 K2MU K2ML K2CU K2C1 K2P	Double Layer Kiln 2	KCSYS2
		K2MU
		K2ML
		K2CU
		K2C1
		K2P
KYSYS1 K3M K3C	Kiln 3	KYSYS1
		K3M
		K3C

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 63 Subpart RRRRRR, “National Emission Standards for Hazardous Air Pollutants for Clay Manufacturing Area Sources”

- Per 40 CFR 63.1143(a), a facility is subject to this subpart if you own or operate a clay ceramics manufacturing facility (as defined in 63.11444), with an atomized glaze spray booth or kiln that fires glazed ceramic ware, that processes more than 45 megagrams per year (Mg/yr) (50 tons per year (tpy)) of wet clay and is an area source of hazardous air pollutant (HAP) emissions.

The kilns fire glazed ceramic ware that processes more than 50 TPY of wet clay and is an area source of HAP emissions. Therefore, these sources are a subject to the applicable requirements of 40 CFR 63 Subpart RRRRRR.

40 CFR Part 63 Subpart A, “General Provisions”

- These sources are subject to the applicable requirements of 40 CFR 63 Subpart A, “General Provisions” as stated in Table 1 of 40 CFR 63 Subpart RRRRRR.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not have pre-controlled emissions that exceed major source threshold. Therefore, these units are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit

particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Tile production shall be limited to 8,520 hours in any consecutive 12-month period. The Pre-kiln Dryer and Kiln may operate a maximum of 8,760 hours in any consecutive 12-month period.

40 CFR 63 Subpart RRRRRR, §63.11438(a)(1)

- The kilns shall use natural gas, or equivalent clean-burning fuel, as fuel.
- The peak kiln temperature shall be maintained below 1540 °C (2800 °F).

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Particulate matter emissions from Kiln 1 (KCSYS1, K1M, & K1C) and Kiln 3 (KCSYS1, K3M, & K3C) shall not exceed the lesser of 0.67 lb/hr or the allowable set by Rule 335-3-4-.04(1).
- Particulate matter emissions from Kiln 2 (KCSYS2, K2MU, K2ML, K2CU, K2CL, & K2P) shall not exceed the lesser of 1.75 lb/hr or the allowable set by Rule 335-3-4-.04(1).

Nitrogen Oxides

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Nitrogen oxide (NO_x) emissions from Kiln 1 (KCSYS1, K1M, & K1C) and Kiln 3 (KCSYS1, K3M, & K3C) shall not exceed of 2.27 lb/hr.
- Nitrogen oxide (NO_x) emissions from Kiln 2 (KCSYS2, K2MU, K2ML, K2CU, K2CL, & K2P) shall not exceed 4.87 lb/hr.

Carbon Monoxide

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Carbon monoxide (CO) emissions from Kiln 1 (KCSYS1, K1M, & K1C) and Kiln 3 (KCSYS1, K3M, & K3C) shall not exceed of 7.07 lb/hr.
- Carbon monoxide (CO) emissions from Kiln 2 (KCSYS2, K2MU, K2ML, K2CU, K2CL, & K2P) shall not exceed 24.82 lb/hr.

Hydrogen Fluoride

40 CFR 63 Subpart RRRRRR

- Hydrogen Fluoride emissions from the Kilns (KCSYS1 and KCSYS2) shall not exceed 9.9 TPY.

Hydrogen Chloride

40 CFR 63 Subpart RRRRRR

- Hydrogen Chloride emissions from the Kilns (KCSYS1 and KCSYS2) shall not exceed 9.9 TPY.

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter (PM) emissions.
- If testing is required, Method 7 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of nitrogen oxide (NO_x) emissions.

- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.
- If testing is required, Method 10 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of carbon monoxide (CO) emissions.
- If testing is required, Method 26a of 40 CFR Part 60, Appendix A-8, shall be used in the determination of hydrogen chloride (HCl) and hydrogen fluoride (HF) emissions.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- An observation of each emission point associated with these units will be accomplished at least weekly. If visible emissions are noted during the above-referenced visual checks, corrective action shall be initiated within two (2) hours to reduce the emissions.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been eliminated.

40 CFR 63 Subpart RRRRRR, §63.11440(a)

- A check of the peak firing temperature of the kilns shall be conducted daily. If the peak temperature exceeds 1540 °C (2800 °F), then corrective action shall be taken according to standard operating procedures.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- The facility shall maintain records documenting kiln fuel usage.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.

40 CFR 63 Subpart RRRRRR, §63.11440(d)

- The facility must maintain records of the monitoring activities in §63.11440(a) through (c). The facility may use existing operating permit documentation to meet the monitoring requirements if it includes, but is not limited to, the monitoring records listed in §63.11440(d)(1) through (5) related to any kiln peak temperature checks, visual inspections, VE tests, or alternative monitoring.

40 CFR 63 Subpart RRRRRR, §63.11442(a)

- The facility must keep the following records:
 - A copy of each notification that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted according to the requirements in §63.10(b)(2)(xiv).
 - Records of all required measurements needed to document compliance with management practices as required in §63.10(b)(2)(vii), including records of monitoring and inspection data required by §63.11440.

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements & 40 CFR 63 Subpart RRRRRR, §63.11442(b)-(d)

- All records shall be maintained in a form suitable and readily available for expeditious review for at least five years from the date of generation. The facility must keep each record onsite for at least two years from the date of generation. The facility may keep the records offsite for the remaining three years.

Emissions Summary:

Expected emissions are based on permit limitations, AP 42 emission factors, and 2013 stack tests results.

Emission Point	Expected Emissions (TPY)								
	PM	PM ₁₀	PM _{2.5}	SO ₂	CO	NO _x	VOC	HF	HCl
KCSYS1	5.71	5.71	2.57	25.13	70.33	19.34	28.88	2.97	4.88
K1C	1.19	1.19	0.45	0.38	5.07	0.21	-	-	-

Emission Point	Expected Emissions (TPY)								
	PM	PM ₁₀	PM _{2.5}	SO ₂	CO	NO _x	VOC	HF	HCl
K3C	1.19	1.19	0.45	0.38	5.07	0.21	-	-	-
KCSYS2	7.46	7.46	3.35	25.13	105.73	20.75	26.37	3.28	4.60
K2CL	1.28	1.28	0.48	-	-	-	-	-	-
K2CU	1.28	1.28	0.48	-	-	-	-	-	-
K2P	0.34	0.34	0.13	-	-	-	-	-	-
K1M K2MU K2ML K3M	-	-	-	-	-	-	-	3.70	0.30

Railcar Unloading and Storage

In this process, raw material is unloaded from railcar and conveyed through a closed conveyor system to one of two indoor storage bins. Material is subsequently transported to the batching area by means of a front-end loader. The railcar unloading is controlled by baghouse S-2.

This area is comprised of the following sources:

Source	Source Description	Control Device	Emission Point
	Railcar Unloading Conveyor	S-2	FUG

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is

exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (} P < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Particulate matter emissions from common Baghouse (S-2) shall not exceed the lesser of 1.91 lbs/hr or the allowable set by Rule 335-3-4-.04(1).

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- The facility shall perform a visual check, once per week, of the stack associated with common Baghouse (S-2). If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on permit limitations.

Emission Point	Expected Emissions (TPY)		
	PM	PM₁₀	PM_{2.5}
S-2	8.14	8.14	2.44

Trims Production

In this process, previously fired tiles are cut into smaller (modular) sections by use of a wet saw, dried, re-glazed, and the glaze dried, prior to packaging.

This area is comprised of the following sources:

Source	Source Description	Control Device
CRD	Cut Roller Dryer	NONE

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve

compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – *Visible Emissions*

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.
- This process is limited to using natural gas to fire the burners.

ADEM Admin. Code r. 335-3-14.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*””

- A water stream must be directed at the cutting blade of the wet saw at all times when in use.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – *Process Industries – General*

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P < 30 tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- Particulate matter emissions from Cut Roller Dryer (CRD) shall not exceed the lesser of 0.013 lbs/ hr or the allowable set by Rule 335-3-4-.04(1).

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- The facility shall perform a visual check, once per week, of the stack associated with Cut Roller Dryer (CRD) and the Profile Dryer (PD). If any visible emissions are noted, maintenance inspections and/or corrective action to reduce the visible emissions must be taken within two (2) hours.
- After the corrective action has been performed, the permittee shall conduct another visual check to ensure that the visible emissions have been reduced.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- The facility shall maintain records documenting daily natural gas usage.
- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.

- Source observations, corrective action, and all maintenance records of each source permitted under this unit will be documented and available for inspection.
- The Permittee shall submit a written report of exceedances of the stack opacity to the Department at least semi-annually.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on previous stack tests.

Emission Point	Expected Emissions (TPY)						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
CRD	0.04	0.04	0.01	0.00	0.09	0.01	0.13

30 TPH Tile Crusher with Diesel Generator

Scrap tile is stored onsite in a bunker under cover. The custom-built CEMCO portable crusher would be brought onsite to crush this scrap tile. The crusher uses wet suppression to minimize emissions. This unit is run by a portable 400 hp diesel-fired generator that is attached to the crusher. The crusher and attached diesel-fired generator are moved between facilities.

This area is comprised of the following sources:

Source	Source Description	Control Device	Emission Point
PC-1	30 TPH Tile Crusher with Diesel Generator	NONE	FUG

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – *Visible Emissions*

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

ADEM Admin. Code r. 335-3-4-.02 – *Fugitive Emissions*

- Wet suppression shall be utilized to minimize fugitive emissions while this unit is operating.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”

- This unit shall operate a maximum of 1,000 hours in any consecutive 12-month period.

ADEM Admin. Code r. 335-3-5-.01(1)(b) – “*Fuel Combustion*”

- The diesel generator shall not emit sulfur oxides, measured as sulfur dioxide, in excess of 4.0 lb/MMBtu of heat input.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – *Process Industries – General*

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – *Sampling and Testing Methods*

- If testing is require, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

- There are no additional monitoring requirements for these sources.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – *Permit Content – Monitoring and Recordkeeping Requirements*

- Records of the monthly and 12-month total of hours of operation of this unit shall be kept on file for at least 5 years.

Emissions Summary:

Expected emissions are based on previous stack tests.

Emission Point	Expected Emissions (TPY)						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
PC-1	1.43	1.43	1.43	0.41	6.20	0.50	1.34

Wet Polishing Line

In this process, some of the fired tile from the kilns (1, 2, and 3) will go to the polishing operation to have the glaze on the tile polished for appearance before being sent to packaging. This operation consists of a wet polishing line controlled by two 9,400 acfm baghouses.

This area is comprised of the following sources:

Source	Source Description	Control Device
PL-1 PL-2	Polishing Baghouses 1 & 2	PL-1 PL-2

Applicability

ADEM Admin. Code r. 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.

ADEM Admin. Code r. 335-3-4-.04(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “*Control of Particulate Emissions – Process industries – General*”.

ADEM Admin. Code r. 335-3-4-.01(1)

- These sources are subject to ADEM Admin. Code r. 335-3-4-.01(1), “*Control of Particulate Emissions – Visible Emissions*”.

ADEM Admin. Code r. 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “*Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]*”.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- As stated in 40 CFR §64.2(a)(1), (2), and (3), any pollutant-specific emissions unit at a major source must implement CAM if the following conditions are met:

“The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section; the unit uses a control device to achieve compliance with any such emission limitation or standard; and the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.”

These units do not meet these conditions and are not subject to the requirements of CAM.

Regulations

Emission Standards:

Opacity

ADEM Admin. Code r. 335-3-4-.01 – Visible Emissions

- According to ADEM Admin. Code r. 335-3-4-.01(1)(a)-(b), this facility shall not emit particulate of an opacity greater than twenty percent (20%), as determined by a six minute average. During one six-minute period in any sixty minute period, the facility may emit particulate of an opacity no greater than forty percent (40%). If visible emissions are observed, the opacity should be determined using Method 9 of 40 CFR Part 60, Subpart A.

Operational

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- This system shall operate a maximum of 8,520 hours in any consecutive 12-month period.

Particulate Matter

ADEM Admin. Code r. 335-3-4-.04(1) – Process Industries – General

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (} P < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour
P = Process weight per hour in tons per hour

ADEM Admin. Code r. 335-3-14-.04 – “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]”

- The combined particulate matter emissions (PM₁₀/PM_{2.5}) from each baghouse shall not exceed the lesser of 0.059 lbs/ hr (0.25 TPY) or the allowable set by Rule 335-3-4-.04(1).

Compliance and Performance Test Methods and Procedures:

ADEM Admin. Code r. 335-3-1-.05 – Sampling and Testing Methods

- If testing is required, Method 5 of 40 CFR Part 60, Appendix A-3, shall be used in the determination of particulate matter emissions.
- If testing is required, Method 9 of 40 CFR Part 60, Appendix A-4, shall be used in the determination of opacity.

Emission Monitoring:

ADEM Admin. Code r. 335-3-16-.05(c)(1) – Permit Content – Monitoring and Recordkeeping Requirements

- The Permittee shall perform periodic inspections of the baghouses to verify proper operation. The following activities shall be performed:
 - Once per week, perform a check of visible emissions from the baghouse stacks.
 - This check shall be performed by a person familiar with Method 9.
 - If any visible emissions are noted, the Permittee shall initiate corrective actions to reduce visible emissions within two (2) hours of the initial observation.
 - Once per month, check hoppers, fans, and cleaning cycles for proper operation.
 - Once per month, perform a visual check of all hoods and ductwork.
 - Record any repairs or observed problems.

Recordkeeping and Reporting Requirements:

ADEM Admin. Code r. 335-3-16-.05(c)(2) – Permit Content – Monitoring and Recordkeeping Requirements

- The Permittee shall maintain records of all monitoring required by this permit. This includes all problems observed and corrective actions taken. If a visible emissions observation utilizing Method 9 is required the results shall be documented using the ADEM visible emissions observations report.

- Records of monthly and rolling 12-month rolling total hours of operation shall be maintained in a form suitable for inspection.
- All records shall be maintained for at least five years from the date of generation and shall be made available to the permitting authority upon request.

Emissions Summary:

Expected emissions are based on manufacturer’s guaranteed emission rate.

Emission Point	Expected Emissions (TPY)		
	PM	PM ₁₀	PM _{2.5}
PL-1	0.25	0.25	0.25
PL-2	0.25	0.25	0.25

ENVIRONMENTAL JUSTICE

ADEM utilized the EJSCREEN screening tool to perform an analysis of the area. Please refer to Appendix A.

RECOMMENDATION

Based on the above analysis and pending the outcome of the 30-day public comment period and 45-day EPA comment period, I recommend that the Department issue the renewal to MSOP No. 706-0004.

Haley K. Crumpton
Industrial Minerals Section
Energy Branch
Air Division

Date

Appendix A

EJSCREEN Results

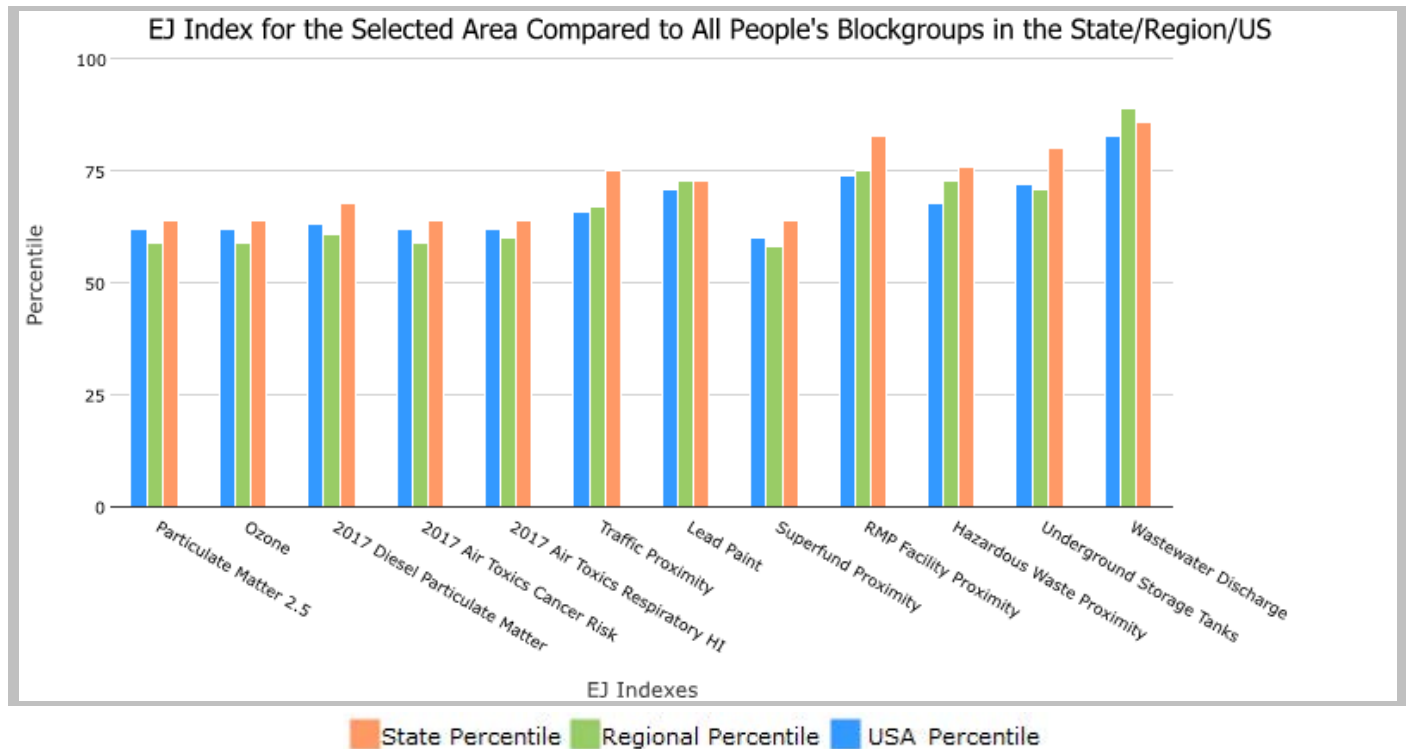
1 mile Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 7,809

Input Area (sq. miles): 3.14

Monarch Ceramic Tile

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	64	59	62
EJ Index for Ozone	64	59	62
EJ Index for 2017 Diesel Particulate Matter*	68	61	63
EJ Index for 2017 Air Toxics Cancer Risk*	64	59	62
EJ Index for 2017 Air Toxics Respiratory HI*	64	60	62
EJ Index for Traffic Proximity	75	67	66
EJ Index for Lead Paint	73	73	71
EJ Index for Superfund Proximity	64	58	60
EJ Index for RMP Facility Proximity	83	75	74
EJ Index for Hazardous Waste Proximity	76	73	68
EJ Index for Underground Storage Tanks	80	71	72
EJ Index for Wastewater Discharge	86	89	83



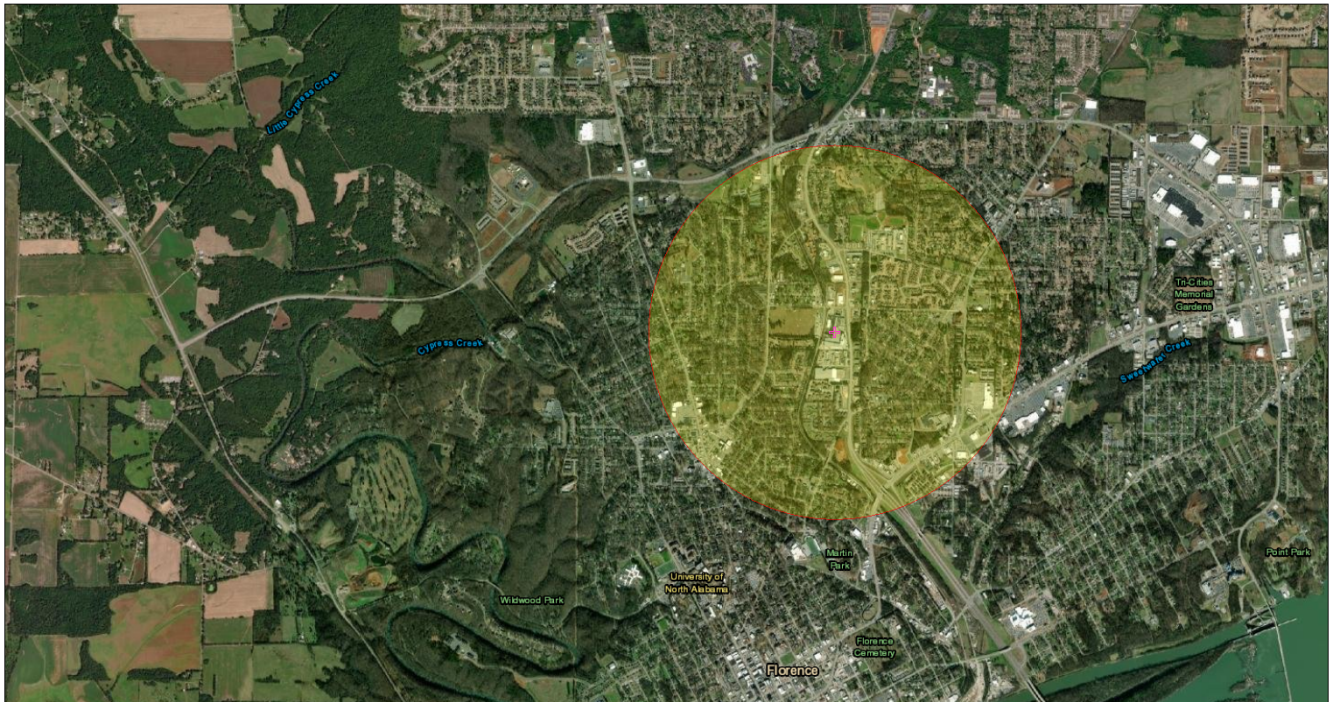
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

1 mile Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 7,809

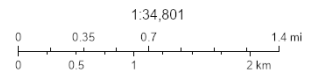
Input Area (sq. miles): 3.14

Monarch Ceramic Tile



May 3, 2022

📍 Monarch Ceramic Tile



Esri, HERE, Garmin, Maxar

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJScreen Report (Version 2.0)

1 mile Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 7,809

Input Area (sq. miles): 3.14

Monarch Ceramic Tile

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	8.16	8.9	5	8.18	50	8.74	37
Ozone (ppb)	38.7	39.1	48	37.9	51	42.6	24
2017 Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.277	0.216	74	0.261	60-70th	0.295	50-60th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	30	34	55	31	80-90th	29	80-90th
2017 Air Toxics Respiratory HI*	0.4	0.47	40	0.4	70-80th	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	310	230	81	430	67	710	57
Lead Paint (% Pre-1960 Housing)	0.29	0.18	81	0.15	83	0.28	62
Superfund Proximity (site count/km distance)	0.019	0.054	25	0.083	30	0.13	16
RMP Facility Proximity (facility count/km distance)	2	0.41	96	0.6	93	0.75	90
Hazardous Waste Proximity (facility count/km distance)	1.7	0.83	84	0.62	90	2.2	68
Underground Storage Tanks (count/km ²)	5.4	1.7	91	3.5	81	3.9	79
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.015	0.42	79	0.45	83	12	72
Socioeconomic Indicators							
Demographic Index	41%	36%	68	37%	64	36%	65
People of Color	33%	34%	59	39%	51	40%	51
Low Income	50%	37%	74	35%	76	31%	80
Unemployment Rate	5%	6%	55	6%	56	5%	59
Linguistically Isolated	1%	1%	74	3%	55	5%	48
Less Than High School Education	12%	14%	50	13%	56	12%	62
Under Age 5	5%	6%	41	6%	42	6%	40
Over Age 64	17%	17%	57	17%	60	16%	63

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

For additional information, see: www.epa.gov/environmentaljustice

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

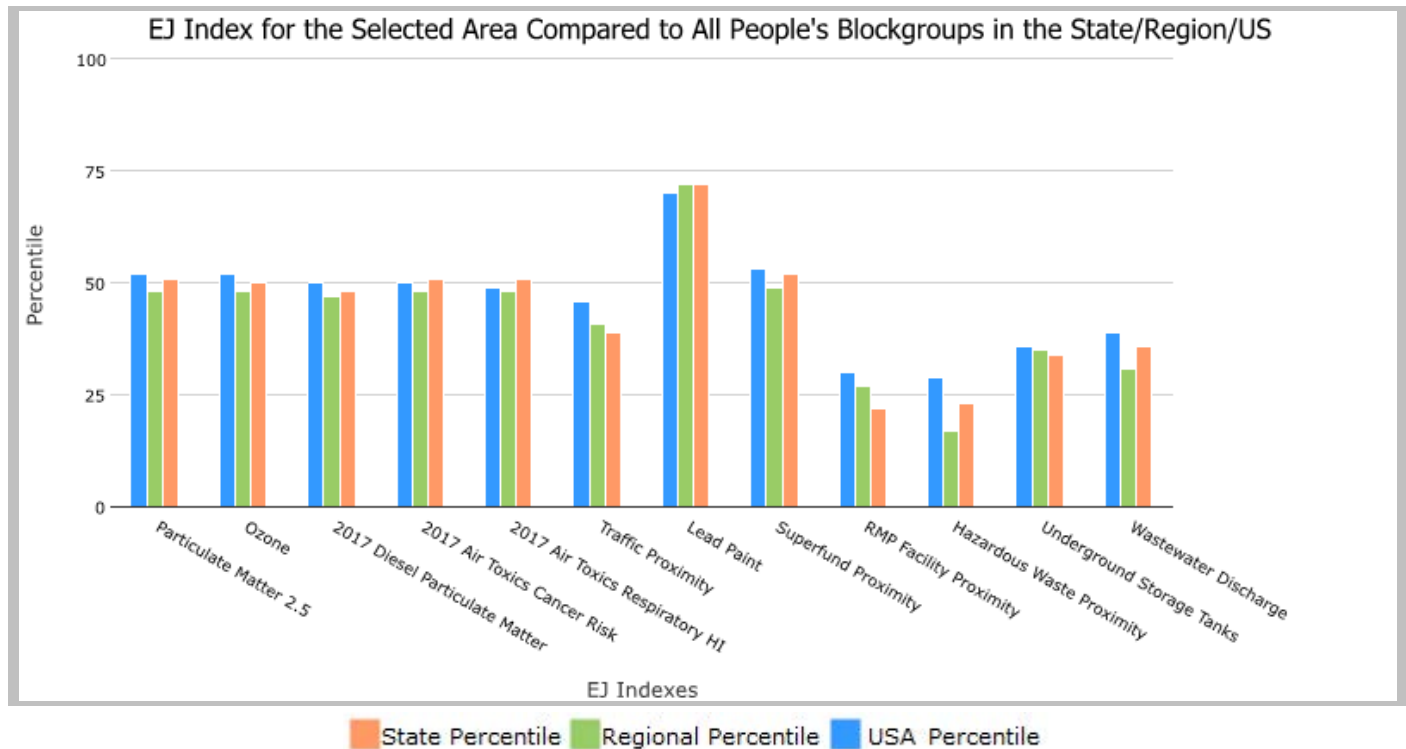
3 miles Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 38,057

Input Area (sq. miles): 28.27

Monarch Ceramic Tile

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	51	48	52
EJ Index for Ozone	50	48	52
EJ Index for 2017 Diesel Particulate Matter*	48	47	50
EJ Index for 2017 Air Toxics Cancer Risk*	51	48	50
EJ Index for 2017 Air Toxics Respiratory HI*	51	48	49
EJ Index for Traffic Proximity	39	41	46
EJ Index for Lead Paint	72	72	70
EJ Index for Superfund Proximity	52	49	53
EJ Index for RMP Facility Proximity	22	27	30
EJ Index for Hazardous Waste Proximity	23	17	29
EJ Index for Underground Storage Tanks	34	35	36
EJ Index for Wastewater Discharge	36	31	39



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJScreen Report (Version 2.0)



3 miles Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 38,057

Input Area (sq. miles): 28.27

Monarch Ceramic Tile

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	8.15	8.9	5	8.18	50	8.74	37
Ozone (ppb)	38.6	39.1	48	37.9	51	42.6	24
2017 Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.259	0.216	71	0.261	50-60th	0.295	50-60th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	30	34	55	31	80-90th	29	80-90th
2017 Air Toxics Respiratory HI*	0.4	0.47	41	0.4	70-80th	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	310	230	81	430	67	710	57
Lead Paint (% Pre-1960 Housing)	0.29	0.18	81	0.15	84	0.28	62
Superfund Proximity (site count/km distance)	0.019	0.054	25	0.083	30	0.13	16
RMP Facility Proximity (facility count/km distance)	1.8	0.41	95	0.6	91	0.75	88
Hazardous Waste Proximity (facility count/km distance)	1.4	0.83	79	0.62	86	2.2	62
Underground Storage Tanks (count/km ²)	3	1.7	82	3.5	70	3.9	67
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0079	0.42	75	0.45	79	12	67
Socioeconomic Indicators							
Demographic Index	37%	36%	62	37%	57	36%	60
People of Color	26%	34%	51	39%	43	40%	44
Low Income	47%	37%	69	35%	72	31%	77
Unemployment Rate	5%	6%	53	6%	53	5%	56
Linguistically Isolated	2%	1%	79	3%	61	5%	54
Less Than High School Education	15%	14%	59	13%	65	12%	69
Under Age 5	5%	6%	46	6%	47	6%	45
Over Age 64	19%	17%	66	17%	67	16%	69

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

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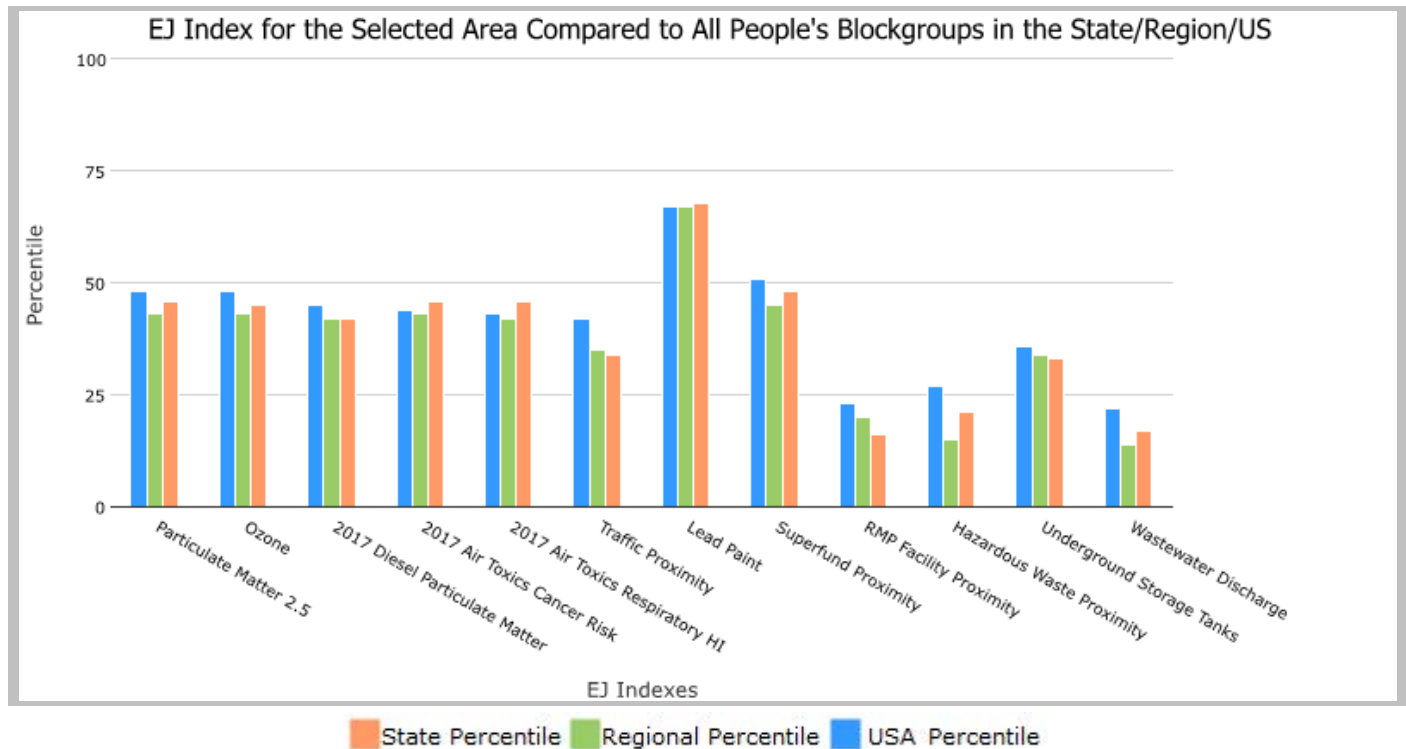
5 miles Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 53,984

Input Area (sq. miles): 78.53

Monarch Ceramic Tile

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	46	43	48
EJ Index for Ozone	45	43	48
EJ Index for 2017 Diesel Particulate Matter*	42	42	45
EJ Index for 2017 Air Toxics Cancer Risk*	46	43	44
EJ Index for 2017 Air Toxics Respiratory HI*	46	42	43
EJ Index for Traffic Proximity	34	35	42
EJ Index for Lead Paint	68	67	67
EJ Index for Superfund Proximity	48	45	51
EJ Index for RMP Facility Proximity	16	20	23
EJ Index for Hazardous Waste Proximity	21	15	27
EJ Index for Underground Storage Tanks	33	34	36
EJ Index for Wastewater Discharge	17	14	22



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

5 miles Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 53,984

Input Area (sq. miles): 78.53

Monarch Ceramic Tile



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	6

EJScreen Report (Version 2.0)

5 miles Ring Centered at 34.827411,-87.668463, ALABAMA, EPA Region 4

Approximate Population: 53,984

Input Area (sq. miles): 78.53

Monarch Ceramic Tile

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	8.15	8.9	5	8.18	49	8.74	37
Ozone (ppb)	38.6	39.1	48	37.9	51	42.6	24
2017 Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.242	0.216	68	0.261	50-60th	0.295	50-60th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	30	34	55	31	80-90th	29	80-90th
2017 Air Toxics Respiratory HI*	0.4	0.47	40	0.4	70-80th	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	280	230	79	430	65	710	55
Lead Paint (% Pre-1960 Housing)	0.28	0.18	81	0.15	83	0.28	62
Superfund Proximity (site count/km distance)	0.019	0.054	25	0.083	30	0.13	16
RMP Facility Proximity (facility count/km distance)	1.5	0.41	94	0.6	89	0.75	85
Hazardous Waste Proximity (facility count/km distance)	1.2	0.83	74	0.62	83	2.2	59
Underground Storage Tanks (count/km ²)	3.3	1.7	84	3.5	72	3.9	69
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.029	0.42	84	0.45	86	12	77
Socioeconomic Indicators							
Demographic Index	34%	36%	57	37%	53	36%	56
People of Color	25%	34%	48	39%	41	40%	42
Low Income	43%	37%	63	35%	67	31%	73
Unemployment Rate	5%	6%	53	6%	54	5%	57
Linguistically Isolated	1%	1%	78	3%	59	5%	52
Less Than High School Education	14%	14%	56	13%	62	12%	67
Under Age 5	5%	6%	44	6%	45	6%	43
Over Age 64	20%	17%	70	17%	70	16%	73

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

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