

STATEMENT OF BASIS

For the issuance of Air Permit # 1343-AR-5 AFIN: 30-00086

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Acme Brick Company - Ouachita Plant
1615 Grigsby Ford Rd.
Malvern, Arkansas 72104

3. PERMIT WRITER:

Alexander Sudibjo

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Clay Building Material and Refractories Manufacturing
NAICS Code: 327120

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
5/12/2021	Modification	No changes

6. REVIEWER'S NOTES:

This permit modification incorporates provisions of NESHAP ZZZZ for SN-10. There are no changes to the facility's permitted annual emissions.

7. COMPLIANCE STATUS:

As of May 12, 2021, there are no compliance issues with the facility. ECHO (<https://echo.epa.gov/detailed-facility-report?fid=110000597872>) shows no violation identified as of March 20, 2019.

8. PSD/GHG APPLICABILITY:

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

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

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

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-09	PM (Fugitive Emissions)	NSPS OOO
SN-10	CO	NESHAP ZZZZ

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N/A

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit?
 If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

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

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
HF	0.409	0.04499	1.47	No
HCl	2.982	0.328	1.02	No
Cadmium	1.124	0.124	0.000257	Yes
Chromium	0.01	0.0011	0.000872	Yes
Arsenic	0.01	0.0011	0.00053	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
HF	4.09	3.03	Yes
HCl	29.82	3.34	Yes

c) H₂S Modeling:

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

Is the facility exempt from the H₂S Standards Y
 If exempt, explain: The facility does not have H₂S emissions.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
04	Stack Test Data	PM, SO ₂ , CO, NO _x , VOC, HF, and HCL: For tpy: avg lb/hr from stack test *4.38*(1.1) safety factor	None	N/A	Stack test data from test conducted in 2006.
05	Stack Test Data	*(1.25= 150042/120000)test production ratio For lb/hr: max. lb/hr from stack test*1.1 safety factor**(1.25= 150042/120000)test production ratio	None	N/A	Stack test data from test conducted in 2006.
06		PM(tpy)=lb/hr * 3.0 Safety Factor (SF) *8760 hrs /2000lb	Dry Scrubber	70% for HCl and 90% for	PM-based on highest hourly result during compliance test on

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		<p>$PM_{10}(tpy) = PM(tpy) * Ratio(0.28/0.37)$ and $lb/hr * Ratio(0.28/0.37)$</p> <p>SO₂, CO, NO_x VOC: For tpy: avg lb/hr from stack test *4.38*(1.25) safety factor *(1.25= 150042/120000)test production ratio For lb/hr: max. lb/hr from stack test*1.25 safety factor**(1.25= 150042/120000)test production ratio</p> <p>HCl (tpy)=1.13*0.7(30% removal efficiency)*8760/2000 HCl(lb/hr)=tpy*2000/8760</p> <p>HF(tpy)=1.13*0.1(90%removal efficiency)*8760/2000 HF(lb/hr)=tpy*2000/8760</p>		HF	<p>3/27/07.</p> <p>PM₁₀ – Using ratio of PM to PM₁₀ rates found in AP-42 to actual STK test data.</p> <p>SO₂, CO, NO_x, and VOC - Stack test data from test conducted in 2006.</p> <p>HF and HCl - based on the highest hourly pre-control device result from compliance test on 3/27/07.</p>
09	AP-42	PM: 0.0062 lb/ton PM ₁₀ : 0.0032 lb/ton	None	N/A	AP-42 factor * 1.1 safety factor
10	Vendor Data	NO _x : 11402 g/hr, 25.1 lb/hr CO: 633 g/hr, 1.39 lb/hr VOC: 618 g/hr, 1.36 lb/hr PM: 166 gr/hr, 0.37 lb/hr SO ₂ : 650 g/hr, 1.433lb/r	None	N/A	Stand-by Generator: Vendor Supplied Data- 3000 Hours/year Example: for NOX=11402 g/h * 0.0022046g/lb=25.1 lb/hr and * 3000 hr/yr/2000lb=37.7tpy

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
10	CO	According to Table 4 of Subpart ZZZZ	Every 8,760 hours of operation or 3 years from the previous test, whichever comes first	40 C.F.R. § 63.6615

17. MONITORING OR CEMS:

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

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
10	Catalyst inlet temperature	CPMS	15 minutes	Y

18. RECORDKEEPING REQUIREMENTS:

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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
06	Opacity checks	5%	Monthly	N
09	Opacity checks	0%	Monthly	N
06	Natural Gas Usage	321,667,000 cubic feet per consecutive 12 month period	Monthly	N
10	Hours of Operation	3,000 hours per consecutive 12 month period	Monthly	N
Facility	Clay Bricks Processed	150,042 tons per consecutive 12 month period	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
04	20%	§19.503	Inspector Observation
05	20%	§19.503	Inspector Observation
06	5%	§18.501	Inspector Observation
09	0%	§19.503	Method 22
10	20%	§19.503	Inspector Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

21. GROUP A INSIGNIFICANT ACTIVITIES:

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

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
IA-1, Dry Coating Mixer	A-13							
IA-2, Bat Loss Drop	A-13							
IA-3, Proportioning Feeders	A-13							
IA-4, Pugmill	A-13							
IA-5, Brick / Refractory Saw	A-13							
IA-6, Brick Packaging / Dehacking	A-13							
IA-7, Brick Setting	A-13							
IA-9, Slurry Mixers	A-13							
IA-10, Additive Storage	A-13							
IA-11, Clay Storage	A-13							
IA-12, 550 Gallon Gasoline Tank	A-13			0.1				
IA-14, Conveyor Drop Points and Material Storage	A-13							
IA-15, Sand Dryer	A-13							
IA-18, Holding Room	A-13							
IA-22, Manufacturing Vacuum System	A-13							
IA-23, Brick Process Dust Collector	A-13							
IA-25, Kiln Car Cleaner	A-13							
IA-26, Grinding Vacuum System	A-13							
Diesel Tank, 500 Gallons, 0.0074 psi	A-3			0.1				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
vapor pressure at STP								
Diesel Tank, 1000 Gallons, 0.0074 psi vapor pressure at STP	A-3			0.1				
Waste Oil, 275 Gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Hydraulic Reservoir, 40 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Hydraulic Reservoir, 40 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Hydraulic Reservoir, 40 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Hydraulic Reservoir, 400 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Hydraulic Reservoir, 400 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Motor / Engine Oil, 55 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Die Lube Reservoir, 55 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Vacuum Pump Reservoir, 300 gallons, <0.01 psi vapor pressure at STP	A-3			< 0.001				
Gear Lube Reservoir, 55 gallons, <0.1 psi vapor pressure at STP	A-3							
Transmission Oil Reservoir, 55 gallons, <0.01 psi vapor pressure at STP	A-3							
Antifreeze Tank, 200 gallons, <0.01 psi	A-3							

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
vapor pressure at STP								
Generator Diesel Supply Tank, ~2200 gallons, <0.5 psi vapor pressure at STP	A-3			0.1				

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1343-AR-4

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

