STATEMENT OF BASIS

For the issuance of Air Permit # 1154-AOP-R8 AFIN: 30-00008

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Acme Brick Company - Perla Plant
224736 US Highway 67 North
Malvern, Arkansas 72104

3. PERMIT WRITER:

Skylar Redman

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
12/6/22	Administrative Amendment	

6. REVIEWER'S NOTES:

This was an administrative amendment for the addition of SN-37 Brick Crusher to the insignificant activities.

7. COMPLIANCE STATUS:

Currently, there are no active/pending enforcement actions or recent compliance activities and issues.

8. PSD/GHG APPLICABILITY:

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

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. N/A

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-14 & SN-18	PM, Hg, HCl, HF, Cl_2	NESHAP JJJJJ
SN-19 & SN-20	CO	NESHAP ZZZZ
SN-22 & SN-23	PM and Opacity	NSPS OOO

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N/A

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

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

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department 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 Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), 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?
Acenaphthene	0.2	0.022	4.4E-8	Yes
Acenaphthylene	0.2	0.022	4.4E-8	Yes
Acrolein	0.23	0.0253	1.86E-4	Yes
Anthracene	0.2	0.022	5.89E-8	Yes
Antimony	0.5	0.055	0.0007	Yes
Arsenic	0.01	0.0011	0.00075	Yes
Benz(a)anthracene	0.2	0.022	4.41E-8	Yes
Benzo(a)pyrene	0.2	0.022	2.94E-8	Yes
Benzo(b)fluoranthene	0.2	0.022	4.41E-8	Yes
Benzo(g,h,i)perylene	0.2	0.022	2.943E-8	Yes
Beryllium	0.0005	0.000055	0.00001	Yes
Cadmium	0.01	0.0011	0.00039	Yes
Chromium	0.5	0.055	0.0013	Yes
Chrysene	0.2	0.022	4.41E-8	Yes
Cobalt	0.02	0.0022	5.25E-5	Yes
Dibenzo(a,h)anthracene	0.2	0.022	2.94E-8	Yes
Fluorene	0.2	0.022	6.86E-8	Yes
Hydrogen chloride	2.98	0.3278	3.8	No
Hydrogen fluoride	1.64	0.1804	18.16	No
Indeno(1,2,3-cd)pyrene	0.2	0.022	4.41E-8	Yes
Lead	0.05	0.0055	0.0036	Yes
Manganese	0.1	0.011	0.007	Yes
Mercury	0.01	0.0011	0.0073	No
PAH	0.2	0.022	0.005	Yes
Phenanthrene	0.2	0.022	1.23E-7	Yes

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
POM	0.2	0.022	5.14E-5	Yes
Pyrene	0.2	0.022	1.23E-7	Yes
Selenium	0.2	0.022	0.0055	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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of TLV	Modeled Rate (lb/hr)	Modeled Concentration ($\mu g/m^3$)	Pass ?
Hydrogen chloride*	29.8	3.8	2.00	Yes
Hydrogen fluoride*	16.4	18.16	9.37	Yes
Mercury*	0.1	0.0073	0.00368	Yes

*Modeling last performed with the R5 revision, no increases have been requested or permitted since that revision.

c) H_2S Modeling: N/A

13. CALCULATIONS:

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
09	Stack Test & AP-42	Production ratio of 0.13 used for all emissions 3.51 $lb_{PM/PM10}$/hr 6.4 lb_{SO2}/hr 0.5 lb_{VOC}/hr 0.88 lb_{CO}/hr 3.65 lb_{NOx}/hr 0.064 lb_{HF}/hr 0.023 lb_{HCl}/hr Other HAP factors are from AP-42 1.4-3 and 1.4-4	Wet Scrubber	PM 90%	Stack test data from test conducted in March 2001. 10% safety factor
10	Stack Test Data	3.51 $lb_{PM/PM10}$/hr	Wet	PM 90%	Stack test

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		6.4 lb_{SO2}/hr 0.5 lb_{VOC}/hr 0.88 lb_{CO}/hr 3.65 lb_{NOx}/hr 0.064 lb_{HF}/hr 0.023 lb_{HCl}/hr Other HAP factors are from AP-42 1.4-3 and 1.4-4	Scrubber		data from test conducted in March 2001. 10% safety factor
12, 13, & 17	Stack Test Data	Production ratio of 0.87 used for all emissions 2.43 $lb_{PM/PM10}$/hr	None	N/A	Stack test data from test conducted in October 1993. 10% safety factor
14 & 18	Brick MACT, Stack Test Data, & AP-42	0.37 $lb_{PM/PM10}$/ton (BM) 2.04 lb_{SO2}/ton (PT)* 0.02 lb_{VOC}/ton(PT)* 2.49 lb_{CO}/ton(PT)* 0.33 lb_{NOx}/ton (PT)* 0.005lb_{Cl2}/ton (PT)* 0.82 lb_{HF}/ton (PT)* 0.17 lb_{HCl}/ton (PT)* 3.3E-4lb_{Hg}/ton (BM) Other HAP factors from AP-42*	None	N/A	*10 % safety factor on all pollutants except PM & Hg. BM - Brick MACT PT- Performance Tests conducted in 2016 and 2017.
19	Manufacturer Supplied Data & AP-42	2,200 HP 200 $g_{PM/PM10}$/hr 650 g_{SO2}/hr 550 g_{VOC}/hr 1,100 g_{CO}/hr 13,200 g_{NOx}/hr	None	N/A	2,700 hr/yr

SN	Emission Factor Source	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		HAP Factors AP-42			
20	Manufacturer Supplied Data	1,495 HP 179 $g_{PM/PM10}$/hr 2,288 g_{SO2}/hr 240 g_{VOC}/hr 768 g_{CO}/hr 6,166 g_{NOx}/hr HAP Factors AP-42	None	N/A	2,700 hr/yr
21	EPA-450/3-88-008 (Sept. 1988, pp 4-17) & AP-42 13.2.2	4 Stockpiles f= 8.1% p= 105 Clay (2L & 1S) Silt Content 6% 1.9E-6lb_{PM10}/hr/ft^3 Long: 15'x50'x800' & 40,000 ft^2 Short: 15'x50'x400' & 20,000 ft^2 Sand Silt Content 2.6% 8.4E-7lb_{PM10}/hr/ft^3 10'x50'x200' 2,000 ft^2			
22	AP-42 11.19.2	1.15 Production Ratio 0.00012 lb_{PM}/ton 0.000542 lb_{PM10}/ton 23 tph 201,478 tons/yr	Dust Collector		10 % safety factor
23	AP-42 13.2.4	1.15 Production Ratio 0.000121 lb_{PM}/ton 5.71E-5 lb_{PM10}/ton			10 % safety factor

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
14 & 18	PM	Method 5 or Method 29	5 years	§63.8440
	HF	Method 26A or 320		
	HCl	Method 26A or 320		
	Cl2	Method 26A or 320		
	Hg	Method 29		
19 & 20	CO	ASTM D6522-00 or Method 10	8,760 hrs or 3 years, whichever occurs first	§63.6615
22 & 23	VE	Method 9	5 years	§60.675

15. 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)
19 & 20	Catalyst Inlet Temperature	CPMS for Temperature	Continuous	N

16. 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)
09, 10, 12, 13 17, 19, & 20	Opacity	20%	Monthly	N
09	Annual Throughout	8,300 tons of sand	Monthly	Y
10	Annual Throughput	64,000 tons of calcine material	Monthly	Y
14	Annual Production Limit	87,599 tons of fired ware	Monthly	Y
	Daily Production Limit	239.76 tons/day of fired ware	Daily	Y
18	Annual Production Limit	87,599 tons of fired ware	Monthly	Y
	Daily Production Limit	239.76 tons/day of fired ware	Daily	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
14 & 18	Opacity or Alternative	0%	Daily or Alternative	N
19 and 20	Calendar Year Usage Limit	2,700 hrs/yr for each generator	Monthly	Y
22 & 23	Opacity	7%	Initial PT	Y
	Annual Throughput	202,000 tons of ground material	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
09, 10, 12, 13 17, 19, & 20	20%	Dept. Guidance	Monthly Observation
14 & 18	0%	NESHAP JJJJJ	Daily Method 22 or PM Annual Test Alternative
22 & 23	7%	NSPS OOO	Method 9 Perf. Test

18. DELETED CONDITIONS:

Former SC	Justification for removal
	None Removed

19. 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
Clay Dryer Burner	A-1	0.33	0.03	0.24	3.61	4.29	0.08	0.08
Waste Oil, 1500 gallons	A-3			0.00051				
Waste Oil, 1000 gallons	A-3			0.00033				
Waste Oil, 500 gallons	A-3			0.00017				
Diesel Tank, 9000 gallons	A-3			0.005				
Diesel Tank, 9000 gallons	A-3			0.005				
Diesel Tank, 1000 gallons	A-3			0.00084				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Diesel Tank, 1000 gallons	A-3			0.00084				
Standby Generators Diesel Supply Tanks, 2500 gallons	A-3			0.00033				
Total for Group	A-3	0.33	0.03	0.01302	3.61	4.29	0.08	0.08
SN-29, Primary Crusher	A-13	0.91						
SN-30, Secondary Crusher	A-13	0.91						
SN-31, Secondary Syenite Sand Feeder	A-13	0.01						
SN-33, Brick Crusher	A-13	0.69						
SN-35, Calcine Clay Feeder	A-13	0.004						
SN-37, Brick Crusher	A-13	0.69						
IA-8, Bat Loss Drop	A-13	0.00075						
IA-16, 1000 Gallon Gasoline Tank	A-13			0.23			0.012	0.012
IA-29, Calcine Clay Feeder	A-13	0.01						
IA-33, Car Cleaner Systems	A-13	0.19						
Vehicle Travel	A-13	0.24						
Total for Group	A-13	3.65		0.23			0.012	0.012

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1154-AOP-R7

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Acme Brick Company (Perla Plant)
Permit Number: 1154-AOP-R8
AFIN: 30-00008

$/ton factor	25.13	Annual Chargeable Emissions (tpy)	548.7758
Permit Type	AA	Permit Fee $	0

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	0
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		75.5	75.5	0	0	75.5
PM_{10}		74.5	74.5	0		
$PM_{2.5}$		0	0	0		
SO_2		240.3	240.3	0	0	240.3
VOC		10.2	10.2	0	0	10.2
CO		228.7	228.7	0		
NO_X		126.2	126.2	0	0	126.2
Lead	☑	0.0158	0.0158	0	0	0.0158

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
HCl	☑	16.51	16.51	0	0	16.51
HF	☑	79.37	79.37	0	0	79.37
Total other HAP*	☐	1.11	1.11	0		
Chargeable NCAP	☑	0.68	0.68	0	0	0.68