

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2004-AOP-R3 AFIN: 16-00002

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Acme Brick Company - Wheeler Plant  
2905 Dan Avenue  
Jonesboro, Arkansas 72401

3. PERMIT WRITER:

Thomas Rheume

4. NAICS DESCRIPTION AND CODE:

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

5. SUBMITTALS:

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
3/10/2008	Title V Renewal	There are no new emission sources but some existing emissions are re- calculated

6. REVIEWER'S NOTES:

This permit is a renewal of the Title V permit. Since the last permit the EPA rule (MACT) for brick manufacturing has been vacated. Conditions related to that rule have been deleted. There are no physical changes occurring but emissions are being revised based on testing of another Acme facility and the emergency generator is being moved from an insignificant activity to a permitted source with requirements of 40 CFR 63, Subpart ZZZZ included. Permitted emissions are decreasing by 35.6, 31.15, 5.18 and 3.98 tons per year of particulates, CO, NO<sub>x</sub> and HCl, respectively. Permitted are increasing by 6.95, 2.75 and 2.74 tons per year for SO<sub>2</sub>,

VOC and HF, respectively. Other pollutants are now identified in the permit at rates less than 1 ton per year.

The applicant has re-calculated emissions based on testing conducted at the Acme Ouachita plant. This resulted in decreases in permitted emissions for particulate, CO, NO<sub>x</sub>, and HCl but increases for VOC, SO<sub>2</sub> and HF.

Since there were increases in HF and HCl, these emissions were evaluated as per the Department Non Criteria Pollutant Control Strategy (NCAPCS). For comparison of ambient impact levels, California RELs (Reference Exposure Levels) were used. There is no TLV for HCl and the TLV for HF has been reduced since the last permit evaluation, resulting in the need for further evaluation.

AP-42 and other data indicate that there are small amounts of other HAPs/pollutants emitted during the brick manufacturing process. These emissions are the result of products of combustion from fuel or from naturally occurring elements in the raw materials that may be released during firing. These pollutants were also evaluated and found not to be emitted in levels that would cause concern under the NCAPCS.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no known compliance issues.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

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

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

If yes, explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-03	None	40 CFR 63 Subpart ZZZZ

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

## 11. AMBIENT AIR EVALUATIONS:

a) Reserved.

b) Non-Criteria Pollutants:

HF and HCl are emitted in quantities over 1 ton per year. Based on limited data in AP-42, there are other possible HAPs and pollutants emitted in small quantities. The non-criteria pollutants listed below were evaluated.

HF, HCl, Lead, Selenium, Arsenic, Beryllium, Tetrachloroethene, Antimony, Cadmium, Cobalt, Nickel, Manganese and Mercury

Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = $0.11 \times \text{TLV}$	lb/hr Emission Rate	Pass?
HF	0.411	0.045	5.27	N
HCl	None			N
Chromium	0.01	0.01	0.00045095	Y
Lead	0.05	0.05	0.00129000	Y
Selenium	0.2	0.2	0.00197800	Y
Arsenic	0.01	0.01	0.00026836	Y
Beryllium	0.00005	0.00005	0.00000372	Y
Antimony	0.5	0.055	0.00023220	Y
Cadmium	0.02	0.0022	0.00013871	Y
Cobalt	0.02	0.0022	0.000018801	Y

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	lb/hr Emission Rate	Pass?
Nickel	0.1	0.011	0.00063773	Y
Manganese	0.02	0.0022	0.0024974	N
Mercury	0.5	0.055	0.00006679	Y

2<sup>nd</sup> 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 (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Manganese	0.2	0.038161	Y

HF and HCl were evaluated using RELs from California OEHHA

Pollutant	Acute REL (µg/m <sup>3</sup> )	Chronic REL (µg/m <sup>3</sup> )	1 Hour Impact Modeled (µg/m <sup>3</sup> )	Annual Impact Modeled (µg/m <sup>3</sup> )
HF	240	14	131.2	19.92*
HCl	2100	9	17.18	2.6082

\*Occurs at one receptor on the fence line. Next highest receptor impact level is 9.33 (µg/m<sup>3</sup>). Since this is a chronic (lifetime) impact level, there will not be the potential for anyone to be exposed at the REL for a lifetime

c) H<sub>2</sub>S Modeling:

Not applicable, there are no H<sub>2</sub>S emissions

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	PM, VOC, SO <sub>2</sub> , CO, HF and HCl based on	Test data adjusted by production rate (x	None	None	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	testing data from Ouachita plant	0.72 factor) and safety factor (x 1.2)			
	NOx from manufacturer	80 ppm	None	None	Natural gas burner emissions
02	PM, VOC, SO <sub>2</sub> , NOx and CO based on testing data from Ouachita plant	Test data adjusted by production rate (x 0.72 factor) and safety factor (x 1.2)	None	None	
	HF and HCl based on Ouachita test at inlet to control	Test data adjusted by production rate (x 0.5 factor) and safety factor (x 1.2)	None	None	
	Other HAPS from AP-42	Tables 11.3-6 and 11.3-7. No safety factor applied	None	None	
03	PM, NOx, CO and VOC from Cummins	0.40, 10.49, 1.68, 0.83 g/BHP-hr respectively	None	None	207 HP and 500 hours per year operation
	SO <sub>2</sub>	0.5% Sulfur in Diesel Fuel	None	None	
	HAPs	AP-42	None	None	

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

14. 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)
None				

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15. 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)
03	Hours of Operation. Emergency and non-Emergency	100/500 total	Monthly	Y

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	20%	Regulation 19	Daily Observations
02	20%	Regulation 19	Daily Observations
03	20%	Regulation 19	Initial Observation only

17. DELETED CONDITIONS:

Former SC	Justification for removal
	None

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
IA-1, Dry Coating Mixer	A-13	0.000024						
IA-2, Bat Loss Drop	A-13	0.00054						
IA-3, Pugmill	A-13	0.0117						
IA-4, Brick / Refractory Saw	A-13	0.0023704						
IA-5, Brick Packaging /	A-13	0.009						

Dehacking								
IA-6, Brick Setting	A-13	0.0117						
IA-7, Slurry Mixers	A-13	0.00012						
IA-8, Additive Storage	A-13	0.00012						
IA-9, Clay Storage	A-13	0.468						
IA-10, Conveyor Drop Points and Material Storage	A-13	0.936						
IA-11, Holding Room Exhausts	A-13	0.761244						
IA-12, Grinding Building	A-13	1.340625						
IA-13, Kiln Car Cleaner	A-13	0.0072						
IA-14, Clay Surge Hopper	A-13	0.006435						
IA-15, Sand and Slurry Applications	A-13	0.01584						
IA-16, Material Bucket Mixing	A-13	0.006435						
IA-17, Plant Vacuum System	A-13	0.0029						
IA-18, Primary Crushing	A-13	1.340625						
TOTAL A-13		4.9208784						
Road Diesel Tank, 8500 Gallons, 0.0074 psi vapor pressure at STP	A-3				0.00316			

Off Road Diesel Tank, 8500 Gallons, 0.0074 psi vapor pressure at STP	A-3			0.00316				
Waste Oil, 500 Gallons, <0.01 psi vapor pressure at STP	A-3			0.00316				
Hydraulic Reservoir, 600 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Reservoir, 80 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Reservoir, 30 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Reservoir, 30 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Reservoir, 30 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Reservoir, 30 gallons, <0.01 psi vapor	A-3			0				



pressure at STP								
Die Lube Reservoir, 250 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Vacuum Pump Reservoir, 210 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Motor Oil, 55 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Gear Oil, 55 gallons, <0.1 psi vapor pressure at STP	A-3			0				
Transmission Oil, 55 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Antifreeze, 55 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Hydraulic Fluid, 55 gallons, <0.01 psi vapor pressure at STP	A-3			0				
Lignosulfanate (Additive A) Tanks (3), 9500 gallons,	A-3			0				

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<0.01 psi vapor pressure at STP								
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19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

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APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

### Fee Calculation for Major Source

Acme Brick Company - Wheeler Plant  
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Annual Chargeable Emissions (tpy)  
100  
0

Annual Chargeable Emissions (tpy)  
 Permit Fee \$

23.89  
 Renewal No Changes

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) -31.62  
 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 condensable 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
		Old Permit	Chargeable Emission	New Permit	Chargeable Emissions			
PM		49.6		14		-35.6		14
PM <sub>10</sub>		49.6		14		-35.6	-35.6	14
SO <sub>2</sub>		27.6		34.55		6.95	6.95	34.55
VOC		2.6		5.35		2.75	2.75	5.35
CO		66.1		34.95		-31.15		
NO <sub>x</sub>		19.7		14.52		-5.18	-5.18	14.52
HF	<input checked="" type="checkbox"/>	20.33		23.07		2.74	2.74	23.07
HCl	<input checked="" type="checkbox"/>	7.01		3.03		-3.98	-3.98	3.03
Other Chargeable Pollutants	<input checked="" type="checkbox"/>	0		0.7		0.7	0.7	0.7