

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1343-AR-3 AFIN: 30-00086

1. PERMITTING AUTHORITY:

Arkansas Department 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:

Parviz Mokhtari

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Brick and Structural Clay Tile Manufacturing
NAICS Code: 327121

5. SUBMITTALS:

6/17/2008

7. REVIEWER'S NOTES:

Acme Brick Company owns and operates a clay brick manufacturing facility located at 1615 Grigsby Ford Road in Malvern, Arkansas. This facility manufactures hard fired clay brick for use in the construction of commercial and residential structures. This permit action re-establishes the facility as a minor source facility because the facility installed and operates a control system to reduce HAPs (HF and HCl) emissions to less than the major source threshold. Therefore, the facility qualifies to be an area source. Additionally, because 40 CFR 63, Subpart JJJJ has been vacated, all conditions required by this subpart have been removed from the permit. The proposed modification resulted in the permitted emissions decrease of 19.2 tons per year (tpy) of PM/PM₁₀, 1.7 tpy of SO₂, 22.67 tpy of HF, and 7.28 tpy of HCl; additionally, the permitted emission increase of 0.01 tpy of lead, 0.01 tpy of chromium, and 0.01 tpy of arsenic.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and 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 ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list?

If yes, explain why this permit modification not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

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

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Non-Criteria Pollutants:

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?
Hydrogen Fluoride	0.409	0.04499	1.47	No
Hydrogen Chloride	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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Hydrogen Fluoride	4.09	3.03	Yes
Hydrogen Chloride	29.82	3.34	Yes

Other Modeling:

Odor:

Odor modeling for sources emitting styrene. N/A

12. 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	*(1.25= 150042/120000)test	None	N/A	Stack test data from test conducted in

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Data	production ratio For lb/hr: max. lb/hr from stack test*1.1 safety factor**(1.25= 150042/120000)test production ratio			2006.
06		$PM(tpy) = lb/hr * 3.0 \text{ Safety Factor (SF) } * 8760 \text{ hrs } / 2000lb$ $PM_{10}(tpy) = PM(tpy) * Ratio(0.28/0.37) \text{ and } lb/hr * Ratio(0.28/0.37)$ SO ₂ , 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 $HCl(tpy) = 1.13 * 0.7(30\% \text{ removal efficiency}) * 8760 / 2000$ $HCl(lb/hr) = tpy * 2000 / 8760$ $HF(tpy) = 1.13 * 0.1(90\% \text{ removal efficiency}) * 8760 / 2000$ $HF(lb/hr) = tpy * 2000 / 8760$ The emission rate factor for Lead, Chromium, and Arsenic are based on AP-42 factor	Dry Scrubber	70% for HCl and 90% for HF	PM-based on highest hourly result during compliance test on 3/27/07. PM ₁₀ – Using ratio of PM to PM ₁₀ rates found in AP-42 to actual STK test data. SO ₂ , CO, NO _x , and VOC - Stack test data from test conducted in 2006. HF and HCl - based on the highest hourly pre-control device result from compliance test on 3/27/07.
09	AP-42	PM: 0.0062 lb/ton PM ₁₀ : 0.0032 lb/ton	None	N/A	AP-42 factor * 1.1

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
					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

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
N/A				

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)
N/A				

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)
04 and 05	Opacity checks	20%	Weekly	N
06	Opacity checks	5%	Weekly	N
09	Opacity checks	0%	Weekly	N
06	Natural Gas	321,667,000 cubic feet	Monthly	N
10	Hours operation	3,000	Monthly	N
facility	fired clay brick	150,042 tons	Monthly	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
04	20%	§19.503	Method 9 Weekly observation
05	20%	§19.503	Method 9 Weekly observation
06	5%	§18.501	Method 9 Weekly observation
09	0%	§19.503	Method 22
10	20%	§19.503	Method 9 Weekly observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
All Conditions Required by NESHAP JJJJ	Because 40 CFR 63, Subpart JJJJJ has been vacated, all conditions required by this subpart have been removed from the permit.

18. GROUP A INSIGNIFICANT ACTIVITIES

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 vapor pressure at STP	A-3			0.1				
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				

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

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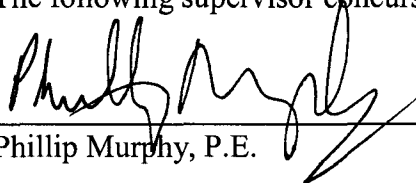
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1343-AOP-R2

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source Changing to Minor Source

Facility Name: ACME-Ouachita Plant
 1343-AR-3
 AFIN: 30-00086

\$/ton factor	22.07	Annual Chargeable Emissions (tpy)	65.2
Minimum Fee \$	400	Permit Fee \$	400

Title V Permit Chargeable Emissions (tpy) 210.26

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	Annual Chargeable Emissions
PM	<input checked="" type="checkbox"/>	29.6	10.4	-19.2	29.6
PM ₁₀	<input type="checkbox"/>	29.3	10.1	-19.2	
SO ₂	<input checked="" type="checkbox"/>	66.9	65.2	-1.7	66.9
VOC	<input checked="" type="checkbox"/>	14.9	14.9	0	14.9
CO	<input type="checkbox"/>	63.8	63.8	0	
NO _x	<input checked="" type="checkbox"/>	59.3	59.3	0	59.3
lead	<input type="checkbox"/>	0	0.01	0.01	
HF	<input checked="" type="checkbox"/>	28.47	5.8	-22.67	28.47
HCl	<input checked="" type="checkbox"/>	11.09	3.81	-7.28	11.09
Arsenic	<input type="checkbox"/>	0	0.01	0.01	
Chromium	<input type="checkbox"/>	0	0.01	0.01	

