

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2168-AR-8 AFIN: 60-00005

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

AluChem of Little Rock, LLC
10500 Arch Street Pike
Little Rock, Arkansas 72206

3. PERMIT WRITER:

Derrick Brown

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Alumina Refining and Primary Aluminum Production
NAICS Code: 331313

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
11/29/2021	Deminimis	Addition of a baghouse to Hot Oil Dryer, SN-15.

6. REVIEWER'S NOTES:

AluChem of Little Rock, LLC (60-00005) operates an alumina refining facility located at 10500 Arch Street Pike, Little Rock, Pulaski County, Arkansas. This permit modification allows the addition of a baghouse to Hot Oil Dryer, SN-15. The fine from this baghouse shall be sold to an offsite customer. The fines from this baghouse shall be sold to an offsite customer. This modification increases permitted emissions by 0.5 tpy of PM, and 0.4 tpy of PM₁₀.

7. COMPLIANCE STATUS:

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

Most recent Inspection Report dated 03/29/21, stated there were no areas of concern.

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.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
03, 15	PM & Opacity	NSPS Subpart UUU
13	HAPs	NESHAP Subpart ZZZZ
13	HAPs	NSPS Subpart JJJ

10. UNCONSTRUCTED SOURCES: N/A

11. PERMIT SHIELD – TITLE V PERMITS ONLY: N/A

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

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/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
HF	0.409	0.044	2.26	No

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	4.0	3.6	Yes

^AModelled for Permit #2168-A, no change in HF emissions.

c) H₂S Modeling: N/A

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	AP-42, 11.24.1	1.1 lb/ton	Bin Vent Filter	99%	131,400 tpy at SN-01 or SN-02
02	AP-42, 11.24.1	1.1 lb/ton	Bin Vent Filter with Baghouse	99%	131,400 tpy at SN-01 or SN-02
03	AP-42, 11.24.1 & Natural Gas Section for Combustion; HF control with NaHCO ₃ spray based on chemistry.	<u>Drying Emissions (lb/ton)</u> PM: 19.7 PM ₁₀ : 12.0 <u>Special Emissions (HF)</u> 9.5 tpy <u>Combustion (lb/10⁶ft³)</u> PM ₁₀ : 7.6 SO ₂ : 0.6 NO _x : 100 CO: 84 VOC=5.5	Cyclone & Baghouse for PM; H ₂ O spray with NaHCO ₃ for HF	99% for (Drying Emissions) Particulate; 90% for Hydrogen Fluoride	NaHCO ₃ = Sodium bicarbonate
04	AP-42, 11.24.1	2.4 lb PM/ton 0.31 lb PM ₁₀ /ton	Fabric Collector	99%	
05	AP-42, 11.24.1	0.01 lb PM/ton 0.004 lb PM ₁₀ /ton	None	N/A	None
06	AP-42, 11.24.1	1.1 lb PM/ton	Bin Vent Filter & Bag House	99%	
07	AP-42, 13.2.4	0.003 lb PM/ton	None	N/A	None
08	AP-42, 11.19.2	1.6 E-5 lb PM/ton	None	N/A	None
09	AP-42, 11.24-2	1.1 lb PM/ton	Bag House	99%	Bag House
11	AP-42, 11.24-2	1.1 lb PM/ton	Baghouse	99%	15 tph 131,400 tpy
12	AP-42, 11.24-2	1.1 lb PM/ton	Bin Vent Filter	99%	15 tph 131,400 tpy
13	¹ AP-42 Table 3.2-3 (7/00) ² Engine Manufacturer	PM = PM ₁₀ = filterable + condensable: ¹ PM: 9.50-03	None	None	Emergency Generator SI 4SRB NSCR

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		¹ PM ₁₀ : 1.94-02 ¹ SO ₂ : 5.88-04 = 8.33-04 lb/hr ² VOC: 1 g/hp-hr ² CO: 4 g/hp-hr ² NO _x : 2 g/hp-hr			Certified stationary 155 HP New 500 hrs/yr
14	AP-42, 11.24-2	1.1 lb PM/ton	Bin Vent Filter	99%	15 tph 131,400 tpy
15	AP-42, 11.24.2	19.7 lb PM/ton	Baghouse Combustion (lb/10 ⁶ ft ³) PM ₁₀ : 7.6 SO ₂ : 0.6 NO _x : 100 CO: 84	99% (PM only)	15 tph 131,400 tpy 7922 scf nat. gas/hr

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
03, 15	Particulate	Method 5	Initial	§60.736(b)(1)
	Opacity	Method 9	Initial & Daily	§60.736(b)(2)
03	Hydrogen Fluoride	Approved Method	Initial & Every 5 Years	Department

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)
13	Hours	Hour Meter	Hourly	N

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)
01 & 02	Product received	131,400 tons per	Monthly	No

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
		year		
03, 15	Opacity	10%	Daily	No
03	Sodium Bicarbonate Spray use	437 lbs	Continuously	No
13	Hours of Operation (emergency and non-emergency)	500 hours per year	Monthly	No

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02, 04-06, 13	5%	Rule.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311	Inspector Observation
03, 15	10%	Rule 19.304 and § 60.734	Certified Method 9
11, 12, 14	20%	Rule.19.503 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311	Inspector Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
	No conditions deleted this permit action.

21. GROUP A INSIGNIFICANT ACTIVITIES:

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

Source Name	Group A Cat.	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
500 Gallon Diesel Storage Tank	A-3	-	-	0.01	-	-	-	-
500 Gallon Diesel Storage Tank	A-3	-	-	0.01	-	-	-	-
Eight (8) 0.38 MMBtu/hr each process water heaters	A-1	-	0.10	0.01	0.07	1.10	1.31	0.02
CO ₂ Tank	A-13	<0.01	-	-	-	-	-	-

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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 #
2168-AR-7

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

