

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1016-AOP-R3 AFIN: 10-00004

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
8001 National Drive
Little Rock, Arkansas 72219-8913

2. APPLICANT:

Reynolds Metals Company
500 East Reynolds Road
Arkadelphia, Arkansas 71923

3. PERMIT WRITER:

Michael H. Watt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Hazardous Waste Treatment and Disposal Facility
NAICS Code: 562211

5. SUBMITTALS:

11/08/04, 11/16/04, 2/11/05, 9/15/05, and 1/25/06

6. REVIEWER'S NOTES:

Reynolds Metals Company (Reynolds) operates a spent potliner thermal treatment process at its facility located in Gum Springs, Arkansas. The facility consists of a potliner pretreatment system and a thermal treatment system. The latter (two waste kilns) operates under interim status as hazardous waste incinerators (40 C.F.R. § 265). A Part B permit application was submitted in August 1993 and updated in December 1997.

The first minor modification is to allow the permittee to install a new loadout system which consists of a new belt conveyor, screw conveyor, bucket elevator, and truck loadout for the Potliner Building. The emissions from the new system will be collected with several new emissions pick-up points, which will exhaust through the existing baghouse system (SN-06). Since the SN-06 dust collector has already been permitted for equipment expansion and continuous operation, emission limits will not be affected and no change in conditions is requested.

The second minor modification involves changing the Area 20 dust collectors (SN-01, SN-02, SN-05, SN-26, and SN-27). The changes are the result of system repairs and optimizations as recommended in an engineering study. Through elimination of unnecessary air bleed-ins, and by applying collection air to the proper places, the study recommends elimination of SN-02 and an air volume reduction in dust collector SN-26 from 30,000 cfm to 28,000 cfm. The total Area 20 dust collection exhaust volume will be reduced from a total of 71,700 cfm to 64,000 cfm.

The third minor modification involves installation of a new truck loadout system for prepared potliner feed. The system will be an extension of the feed delivery system to the Kiln (SN-09). A diverter valve will allow the operator to send feed to either the Kiln or to the new loadout, which consists of conveyors, a tote delivery system, vibrators, an articulating arm, and an inline dust collector (SN-31). Material sent to the new loadout system will then be shipped via truck for further treatment at an off-site facility. Permitted emissions from SN-09 will not be changed and the permitted increases from the new SN-31 will be 0.2 tons per year of particulate, 1.23 tons per year of ammonia, and trace amounts of heavy metals included in the total particulate.

Finally, a full modification has been submitted to update stack testing requirements to the 40 CFR 63, Subpart EEE, National Emissions Standards for Hazardous Air Pollutants from Hazardous Waste Combustors, standards. This permit modification will also include all requirements associated with 40 CFR 63, Subpart EEE.

This is also the Title V Renewal Application for this facility. In the renewal, chlorine has been added to the Off-Gas Stack (SN-19). This is based on stack testing results and was not included in previous permits. There is no physical change associated with this permitted increase in emissions. In addition, Polycyclic Aromatic Hydrocarbons have been determined not to be VOCs.

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 enforcement actions pending at this time.

8. APPLICABLE REGULATIONS:

PSD Applicability

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

Has the facility undergone PSD review in the past? N

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

 ≥ 100 tpy and on the list of 28? N

 ≥ 250 tpy all other? N

PSD Netting

Was netting performed to avoid PSD review in this permit? N

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01, 02, 05, 06, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27	PM ₁₀	CAM
Facility	All	MACT EEE

9. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 1016-AOP-R2	Permit #1016-AOP-R3	Change
PM	46.86	47.20	+0.34
PM ₁₀	46.86	47.2	+0.34
SO ₂	2.00	2.0	0
VOC	32.37	32.0	-0.37
CO	101.13	100.0	-1.13
NO _x	205.00	205.0	0
Lead	0.021	2.12E-02	0
Ammonia	66.650	69.94	+3.29
Antimony Compounds	3.001	6.30E-04	-3.00
Arsenic Compounds	0.831	9.11E-02	-0.83
Beryllium Compounds	0.011	9.15E-02	+0.08
Cadmium Compounds	0.080	2.11E-01	+0.131
Chlorine	0.00	100.18	+100.18
Chromium Compounds	3.105	9.52E-02	-3.01
Dioxin and Furans*	0.00	3.48E-07	+3.48E-07
Fluorides	6.480	6.48	0
Hydrogen Chloride	8.760	100.18	+91.42
Mercury	0.00	0.11	+0.11
Polycyclic Aromatic Hydrocarbons	2.983	2.99	+0.007

10. 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/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?
Ammonia	17.41	1.92	15.92	NO
Antimony Compounds	0.5	0.055	1.43E-04	Yes
Arsenic Compounds	0.01	0.0011	2.03E-02	NO
Beryllium Compounds	0.002	2.2E-04	2.04E-02	NO
Cadmium Compounds	0.01	0.0011	5.02E-02	NO
Chlorine	1.45	0.1595	22.87	NO
Chromium Compounds	0.01	0.0011	2.20E-02	NO
Fluorides	2.5	0.275	1.48	NO
Hydrogen Chloride	2.98	0.3278	22.87	NO
Mercury	0.025	0.00275	0.03	NO
Polycyclic Aromatic Hydrocarbons	0.2	0.022	0.69	NO

2nd Tier Screening (PAIL)

SCREEN3 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 ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Ammonia	174.1	1.25	YES
Arsenic Compounds	0.1	0.002	YES
Beryllium Compounds	0.02	0.0018	YES
Cadmium Compounds	0.1	0.005	YES
Chlorine	14.5	2.29	YES
Chromium Compounds	0.1	0.0018	YES
Fluorides	25.0	0.2	YES
Hydrogen Chloride	29.8	2.29	YES
Mercury	0.25	0.0026	YES
Polycyclic Aromatic Hydrocarbons	2.0	0.07	YES

11. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
02	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
05	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
06	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
07	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
08	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
09	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
10	Grain Loading	0.005 gr/acf	Baghouse	99.9%	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
11	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
12	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
13	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
14	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
15	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
16	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
18	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
19	MACT EEE Limits and Stack Testing	See Permit	Afterburner Baghouse	99.9% 99.9%	
20	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
21	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
22	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
23	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
24	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
25	Grain Loading	0.005 gr/acf	Baghouse	99.9%	
26	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
27	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
30	Grain Loading	0.002 gr/acf	Baghouse	99.9%	
31	Grain Loading	0.002 gr/acf	Baghouse	99.9%	

12. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
19	EEE	EEE See Plantwide	Annual	MACT EEE

13. 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	Various AFS systems	CEM	Continuous	N
19	CO Concentration	CEM	Continuous	N
19	PM Concentration	CEM	Continuous	N

14. RECORD KEEPING 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)
19	Kiln Feed Rate	30 ton/hr	Hourly	N
19	CO Concentration	100 ppmv dry gas corrected to 7% O2	Continuous	N
19	PM Concentration	0.08 gdscf corrected to 7% O2	Continuous	N

15. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	7%	CAM	Weekly
05	7%	CAM	Weekly
06	7%	CAM	Weekly
07	10%	CAM	Weekly
08	10%	CAM	Weekly
09	7%	CAM	Weekly
10	7%	CAM	Weekly
11	7%	CAM	Weekly

SN	Opacity	Justification for limit	Compliance Mechanism
12	10%	CAM	Weekly
13	10%	CAM	Weekly
14	10%	CAM	Weekly
15	10%	CAM	Weekly
16	10%	CAM	Weekly
18	7%	CAM	Weekly
19	20%	Guidance	Daily
20	7%	CAM	Weekly
21	7%	CAM	Weekly
22	7%	CAM	Weekly
23	10%	CAM	Weekly
24	10%	CAM	Weekly
25	10%	CAM	Weekly
26	7%	CAM	Weekly
27	7%	CAM	Weekly

16. DELETED CONDITIONS:

Former SC	Justification for removal
11-14	Source Removed from Service
43	MACT EEE Replaced it.
60-66	Sources are now Insignificant
35	Redundant Condition
39	MACT EEE Replaced it.
Plantwide 10	One time testing.

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17. VOIDED, SUPERCEDED, OR SUBSUMED PERMITS:

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

Permit #
1016-AOP-R2

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phillip Murphy, P.E.