

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***STATEMENT OF BASIS / SUMMARY***

Title V, Construction/Operating  
Permit: V-19-026 R2  
Real Alloy Recycling, LLC  
805 Gardner Lane Road  
Morgantown, KY 42261  
5/3/2024  
Eric Amdahl, Reviewer

SOURCE ID: 21-031-00033  
AGENCY INTEREST: 11316  
ACTIVITY: APE20240002

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## SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3341, Secondary Smelting and Refining of Nonferrous Metals  
(Aluminum)

Single Source Det.  Yes  No If Yes, Affiliated Source AI:

Source-wide Limit  Yes  No If Yes, See Section 4, Table A

28 Source Category  Yes  No If Yes, Category: Secondary metal production plants

County: Butler

Nonattainment Area  N/A  PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  Ozone  Lead

PTE\* greater than 100 tpy for any criteria air pollutant  Yes  No

If yes, for what pollutant(s)?

PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

PTE\* greater than 250 tpy for any criteria air pollutant  Yes  No

If yes, for what pollutant(s)?

PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

PTE\* greater than 10 tpy for any single hazardous air pollutant (HAP)  Yes  No

If yes, list which pollutant(s): Hydrochloric Acid

PTE\* greater than 25 tpy for combined HAP  Yes  No

\*PTE does not include self-imposed emission limitations.

### Description of Facility:

Real Alloy Recycling, LLC (Real Alloy) owns and operates a secondary aluminum production plant that includes salt cake processing facility, a shredding facility, and a proprietary residual landfill for disposal of salt cake. The site is on a 551-acre tract of land located approximately one mile west of Morgantown, Kentucky. The raw materials processed at the Real Alloy facility consist of various types of scrap aluminum, including both coated and uncoated aluminum coil, dross from aluminum production, used beverage cans (UBCs), scrap siding, and miscellaneous aluminum scrap types.

The various types of scrap used at the facility may require processing, including shredding and delacquering, prior to charging to the rotary or reverberatory furnaces. UBCs are the primary feedstock for the reverberatory furnaces. The UBCs are received in bales, stored in the concrete storage yard, and transported to the Shredder Systems by forklift. The shredded material may then be transported to the delacquering furnace where paint is removed. The shreds are fed directly to the reverberatory furnace. Coated scrap aluminum siding may be processed in the same manner.

The reverberatory furnace is used to continuously melt aluminum while chlorine-containing flux is used to remove impurities from the melted scrap. Molten aluminum from the reverberatory

furnace is either poured into molds and allowed to cool to form ingots or tapped into crucibles mounted on flatbed trailers for molten delivery to customers.

Real Alloy also utilizes rotary furnaces to melt aluminum scrap in a batch process. The furnaces are charged with scrap, which is covered with a salt flux to reduce oxidation, and a small quantity of cryolite to improve coalescence of molten metal. Exhaust gases are ducted to pass through lime-injected baghouses where the fine particles are removed and acidic gases are neutralized.

Holding Furnaces contain cleaned, molten aluminum processed in other furnaces prior to casting or crucible operations. Preheaters may be used for the casting process.

Slag (salt cake and black dross), a by-product from cleaning aluminum scrap, is periodically removed from the rotary and reverberatory furnaces and transported to the Salt Cake Cooling (Mud Room, EU07), where it cools. A portion of the salt cake stream from the furnaces will optionally be diverted to EU06 instead of being transferred directly to the SCPF. In EU20, an excavator (mobile equipment) or other functionally equivalent equipment will be used to break up larger pieces of the salt cake into more manageable sizes to be staged for processing in the SCPF. The salt cake is then hauled to the salt cake processing facility (SCPF, EU06) to recover additional aluminum. The SCPF processes salt cake generated at Real Alloy and other related facilities around the country. The recovered aluminum (concentrate) is returned to the furnaces for reprocessing.

Real Alloy also owns and operates a permitted residual landfill for the disposal of reject fines generated by the salt cake processing facility. This landfill generates fugitive ammonia and particulate emissions.

## SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-19-026 R2

Activity: APE20240002

Received: February 21, 2024

Application Complete Date(s): May 2, 2024

Permit Action:  Initial  Renewal  Significant Rev  Minor Rev  Administrative

Construction/Modification Requested?  Yes  No NSR Applicable?  Yes  No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  Yes  No

- *APE20230007 – Off-Permit Change* – Addition of four natural gas fired burners to existing crucible stations and the crucible building for a total of 10.8 MMBtu/hr on October 6, 2023.
- *APE20240001 – Section 502(b)10 Change* – Replacement of Baghouse #8 for EU06, Shredder System on January 24, 2024

### Description of Action:

Real Alloy Recycling (RAR) submitted an application for the significant revision of permit V-19-026 R1, dated February 21, 2024. The purpose of the project is to facilitate the construction and installation of a new primary and secondary shredder system and a new holding furnace. In addition, the proposed project also involves modifications to existing rotary furnaces, shredder sorting equipment, and a reverberatory furnace.

The project includes the installation of the following new emission units:

- EU21 – Primary Shredder: Provides the option to divert a portion of the scrap stream from the existing hammermill shredder. The primary shredder may be used to feed the downstream secondary knife shredder which subsequently feeds the back end scrap processing section of the current shredder system. Additionally, the unit is capable of feeding shreds directly into staging bays that supply the rotary furnace when additional scrap processing steps performed in the back end of the existing shredder system are not necessary to achieve the desired product shredded scrap specifications for melting. Emissions from the shredder are vented to a shared baghouse. The maximum capacity is 38 ton/hr.
- EU22 – Secondary Shredder: Receives shredded scrap from the Primary Shredder (EU21) and subsequently feeds the back end scrap processing of the current Shredder System (EU16). Additionally, the unit is capable of feeding shreds directly into staging bays that supply the rotary furnace when additional scrap processing steps performed in the back end of the existing shredder system are not necessary to achieve the desired product shredded scrap specifications for melting. Emissions from the secondary shredder are vented to a baghouse that is shared with EU 21. The maximum capacity is 19 ton/hr.
- EU23 – Holding Furnace: A new holding furnace will be installed after Rotary Furnace 5 (EU04) to expand sow casting and crucible production. The new holding furnace has a 60,000 lb molten metal holding capacity which could enable molten metal transfers at a higher hourly process rate than the upstream melting furnace. The new holding furnace will be installed with two low NOx burners rated at 4.9 MMBtu/hr, each.

The project includes modifications the following emission units:

- EU04 – Rotary Furnace 5: Modifications to this unit include the replacement of the burner, and the addition of a door for the unit. The new burners have a rating of 16 MMBtu/hr, increasing the burner rating by 2 MMBtu/hr. There will be no change to the maximum potential capacity of the furnace. The addition of the rotary furnace door and installation of the downstream holding furnace may allow for an increase in actual throughput of the furnace while lowering the natural gas usage per ton of aluminum produced.
- EU13 – Rotary Furnace 8: RAR plans to change the tilt angle for EU13 when it is in the door open and charging position. This will be accomplished by modifying the existing furnace foundation to accommodate the furnace frame and barrel in a lowered position. By increasing the angle of the EU13 tilt, it will effectively increase the maximum holding capacity of the furnace. Because the furnace cycle time is proportional to the amount of feed/charge materials added and molten aluminum produced, the increase in metal holding capacity does not directly translate into a proportional increase in the hourly aluminum process rate over the batch operating cycle. Despite the increase in metal holding capacity, the current capacity of 8.22 ton/hr of molten aluminum remains unchanged.

The following emission units will experience associated emission increases due to the project:

- EU16 – Existing Shredder System: The second step in EU16 consisting of the magnet separator, air knife, and eddy current separators will experience an increase in actual annual throughput due to the increased shredded scrap production capability associated with EU 22, but there will be no physical changes to the unit.
- EU03 – Reverberatory Furnace: With the modification to EU13, RAR plans to introduce the capability of transferring molten aluminum from EU13 to EU03 to offer more operating flexibility in the molten casting and crucible filling associated with the rotary furnace molten aluminum production. This change does not increase the maximum capacity of EU 03.

Additionally, the following changes have been made to the permit:

- Removing Rotary Furnace RA1 (EU18) from the permit. Originally the unit was going to replace EU 04, however the facility has decided to modify EU 04 instead of removing and replacing it. EU 04 has been moved from Section H to Section B of the permit to reflect the change.
- Removing EU19 - Holding Furnace and replacing it with EU23.
- Updated the Appendix A - CAM Plan for the Salt Cake processing facility baghouses differential pressure range to better represent recent operating parameters.
- Insignificant Activities 26 and 27 (DeOx Line Casting Preheater & Charge Car on Rails) have been removed from Section C because they were never constructed.
- Changes to permit language to be consistent and clear.

RAR has requested emission and operating limitations that limit the total project emission increase to 90% of the SER for PSD triggering pollutants.

To determine if the project precludes 401 KAR 51:017, emission increases from the proposed project is determined for each emission unit and each pollutant. For new emission units the annual emission increases are calculated as the sum of the potential to emit from each new emission unit following completion of the project. Modified and associated emission units are calculated as the difference between the projected actual emissions and the baseline actual emissions. For Rotary

Furnaces 5 and 8, which are modified units, actual to-projected actual emission calculations were developed. The baseline period used for all pollutants and emission units is January 2021 through December 2022. The table below shows the summary of the analysis.

<b>Pollutant</b>	<b>Project Emission Increase (in tpy)</b>	<b>Significant Emission Rate (SER) (in tpy)</b>	<b>PSD Significant Emissions Increase?</b>
PM (filterable only)	15.9	25	No
PM <sub>10</sub>	10.5	15	No
PM <sub>2.5</sub>	5.30	10	No
Pb	6.9E-05	0.6	No
NO <sub>x</sub>	8.4	40	No
CO	38.2	100	No
VOC	9.4	40	No
SO <sub>2</sub>	0.082	40	No
GHGs (CO <sub>2</sub> e)	16,581	75,000	No

As shown in the table above, the Step 1 project emissions increase of all pollutants will be less than the SER, therefore no netting analysis is required at this time. The only other PSD avoidance-based permit term that was added to the revised Title V permit is an operating restriction associated with simultaneous operation of the existing hammermill shredder and the new secondary shredder. This new operating limitation is necessary to support the PSD applicability analysis for the unmodified but affected scrap processing section of EU16. Without it, RAR could operate both emission units that would supply shredded scrap to EU16. The existing hammermill shredder is expected to function primarily as a backup unit to the new primary and secondary shredders.

As part of this revision, unrelated to the project, RAR requested removal of previously established short term emission limitations on Rotary Furnaces #8 & #9. The Division has determined that the source can effectively determine compliance with the annual (tpy) synthetic minor emission limitations without the need to also maintain short term emission limitations. Accordingly, the tpy limits remain, but the short term limits have been removed.

<b>V-19-026 R2 Emission Summary</b>				
<b>Pollutant</b>	<b>2023 Actual (tpy)</b>	<b>Previous PTE V-19-026 R1 (tpy)*</b>	<b>Change (tpy)</b>	<b>Revised PTE V-19-026 R2 (tpy)*</b>
CO	128	206.75	-17.25	189.5
NO <sub>x</sub>	22.7	61.60	9.8	71.4
PT	38.1	76.09	11.65	87.74
PM <sub>10</sub>	31.5	65.73	13.57	79.3
PM <sub>2.5</sub>	29.1	57.92	6.48	64.4
SO <sub>2</sub>	0.15	0.38	-0.019	0.361
VOC	9.8	32.10	24.1	56.2
Lead	0.00013	0.0003	0	0.0003
<b>Greenhouse Gases (GHGs)</b>				
Carbon Dioxide	27,957	79602	-4822	74780
Methane	0.598	1.44	-0.08	1.36
Nitrous Oxide	0.0595	0.14	-0.004	0.136

V-19-026 R2 Emission Summary				
Pollutant	2023 Actual (tpy)	Previous PTE V-19-026 R1 (tpy)*	Change (tpy)	Revised PTE V-19-026 R2 (tpy)*
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	27,990	79681	-4826	74855
Hazardous Air Pollutants (HAPs)				
Hexane, n-Hexane	0.29	0.78	-0.065	0.715
Hydrochloric Acid	7.51	41.89	+0.35	42.24
Hydrofluoric Acid	0.091	1.90	-1.532	0.368
Total Combined HAPs	7.89	44.60	-1.24	43.36

\*Includes permit required control devices and federally enforceable emissions or operating limitations.

**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS**

<b>Emission Unit 02 (EU02): Delacquering Furnace</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
THC (as Propane)	0.06 lb/ton of feed/charge (w/o afterburner)	40 CFR 63.1505(d)(1)(i)	0.2 lb/ton, based on MACT limit	Addition of afterburner and compliance with 40 CFR 63.1505(e)(1)(i), use of Eq. 6 [40 CFR 63.1513(a)], recordkeeping & reporting.
	0.20 lb/ton of feed/charge (w/ afterburner)	40 CFR 63.1505(e)(1)(i)		
PM	0.08 lb/ton of feed/charge (w/o afterburner)	40 CFR 63.1505(d)(1)(ii)	20 lb/ton pre-control, based on 04/2019 stack test, includes NG contribution	Addition of afterburner and compliance with 40 CFR 63.1505(e)(1)(ii), use of Eq. 7 [40 CFR 63.1513(b)(1)], recordkeeping & reporting.
	0.30 lb/ton of feed/charge (w/ afterburner)	40 CFR 63.1505(e)(1)(ii)		
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	20 lb/ton pre-control, based on 04/2019 stack test; includes NG contribution	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at an add-on control, if COM is monitoring option	40 CFR 63.1505(d)(2) & (e)(2)	N/A	Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
D/F TEQ	$3.5 \times 10^{-6}$ gr/ton of feed/charge (w/o afterburner)	40 CFR 63.1505(d)(1)(iii)	$1.00 \times 10^{-8}$ lb/ton, based on MACT Limit	Addition of afterburner and compliance with 40 CFR 63.1505(e)(1)(iii), use of Eq. 7A [40 CFR 63.1513(b)(2)], recordkeeping & reporting.
	$7.0 \times 10^{-5}$ gr/ton of feed/charge (w/ afterburner)	40 CFR 63.1505(e)(1)(iii)		
HCl	0.80 lb/ton of feed/charge (w/o afterburner)	40 CFR 63.1505(d)(1)(iv)	1.5 lb/ton, based on MACT Limit	Addition of afterburner and compliance with 40 CFR 1505(e)(1)(iv), use of Eq. 7 [40 CFR 63.1513(b)(1)], recordkeeping & reporting.
	1.50 lb/ton of feed/charge (w/ afterburner)	40 CFR 63.1505(e)(1)(iv)		

**Initial Construction and/or Modification Date:** May 13, 1998; Afterburner added in 2010

**Process Description:**

Coatings and paint are removed from shredded aluminum cans in a natural gas furnace. This unit is classified as a scrap dryer/delacquering kiln/decoating kiln under 40 CFR 63, Subpart RRR.

Maximum Capacity: 11.5 ton/hr delacquered (cleaned) scrap

Maximum Firing Rate: 18 MMBtu/hr



<b>Emission Unit 02 (EU02): Delacquering Furnace</b>	
Control Device: Lime-Injected Baghouse (shared with EU03) & Afterburner	
<b>Applicable Regulations:</b>	
<p><b>401 KAR 59:010, New process operations.</b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.</p> <p><b>401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.</b> This regulation is applicable to this unit because it is a new delacquering kiln located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).</p>	
<b>Precluded Regulation:</b>	
<b>401 KAR 51:017, Prevention of significant deterioration of air quality</b>	
<b>Comments:</b>	
<p>Emission factors for PM (pre-control) are based on stack tests performed April, 2019, and include emissions due to both delacquering and natural gas combustion. The uncontrolled factor for PM was back calculated from the tested EF of 0.06 lb/tn PM test results and a 99.7% control efficiency. Emission factors for D/F TEQ, HCl, THC, and VOC reflect the highest MACT allowable under the alternate limits scenario of 40 CFR 63.1505(e). Emission factors for other criteria pollutants from the combustion of natural gas are based on AP-42, Chapter 1.4. Emission factors for Greenhouse Gas emissions, from the combustion of natural gas, are from 40 CFR 98.</p>	

<b>Emission Unit 03 (EU03): Reverberatory Furnace</b>				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.40 lb/ton of feed/charge	40 CFR 63.1505(i)(1)	53.3 lb/ton from melting, pre-control, based on 04/2019 stack test	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	53.3 lb/ton from melting, pre-control, based on 04/2019 stack test	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at an add-on control, if COM is monitoring option	40 CFR 63.1505(i)(5)	N/A	Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed when meeting requirements under 40 CFR 63, Subpart RRR; Weekly qualitative observations for the flue gas stack
D/F TEQ	$2.1 \times 10^{-4}$ gr/ton of feed/charge	40 CFR 63.1505(i)(3)	$3 \times 10^{-08}$ lb/ton, based on MACT limit	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting

<b>Emission Unit 03 (EU03): Reverberatory Furnace</b>				
HCl	0.40 lb/ton of feed/charge or 10% of the uncontrolled HCl	40 CFR 63.1505(i)(4)	10 lb/ton, 3 run average from April 2019 SMACT testing, pre-control	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
<b>Initial Construction Date:</b> May 13, 1998				
<b>Process Description:</b>				
<p>This sidewall furnace continuously melts aluminum scrap using natural gas. This unit is classified as a Group 1 furnace melting other than clean charge using reactive flux under 40 CFR 63, Subpart RRR. Although constructed in 1998, this unit was permanently re-designated as a new emission unit on November 11, 2011 pursuant to 40 CFR 63.1505(k)(6).</p> <p>Maximum Capacity: 12.5 ton/hr molten Al                      Maximum Firing Rate: 38 MMBtu/hr                      Control Device: Lime-Injected Baghouse (shared with EU02)</p>				
<b>Applicable Regulations:</b>				
<p><b>401 KAR 59:010, <i>New process operations.</i></b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.</p> <p><b>401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), <i>National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.</i></b> This regulation is applicable to each new secondary aluminum processing unit and each Group 1 furnace processing other than clean charge located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).</p>				
<b>Precluded Regulation:</b>				
<p><b>401 KAR 51:017, <i>Prevention of significant deterioration of air quality</i></b></p>				
<b>Comments:</b> For melting/fluxing activities, the emission factors for PM, PM <sub>10</sub> , PM <sub>2.5</sub> are based on stack testing performed April, 2019. The uncontrolled factor for PM was back calculated from the tested EF of 0.16 lb/ton PM and a 99.7% control efficiency. For particulate emission factors, since PM is the only one tested, other speciated sizes (PM <sub>10</sub> and PM <sub>2.5</sub> ) are conservatively assumed to be the same. Emission factors for HCl is based on a three run average from the testing performed on April 2019, the uncontrolled emission factor was back calculated from the tested EF of 0.03 lb/ton. D/F is based on a 3 run average from April 2019 SMACT test. Emission factors used for pollutants emitted due to natural gas combustion are based on a combination of AP-42, Chapter 1.4, 40 CFR 98 (for greenhouse gases), and engineering estimates based on emissions from testing the combined stack for EU03 and EU02. The emission factors for VOC and NOx were determined based similar test data from similar Real Alloy Recycling facilities.				

<b>Emission Unit 04 – Rotary Furnace #5</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	0.40 lb/ton of feed/charge	40 CFR 63.1505(i)(1)	9.2 lb/ton; 3 run avg. from Sept. 2021 SMACT test - based on Litho Sheet (Pre-control)	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	9.2 lb/ton; 3 run avg. from Sept. 2021 SMACT test - based on Litho Sheet (Pre-control)	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at an add-on control, if COM is monitoring option	40 CFR 63.1505(i)(5)	N/A	Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed when meeting requirements under 40 CFR 63, Subpart RRR; Weekly qualitative observations for the flue gas stack
D/F TEQ	$2.1 \times 10^{-4}$ gr/ton of feed/charge	40 CFR 63.1505(i)(3)	1.09 E-09 lb/ton; 3 run avg. from Sept. 2021 SMACT test - based on Litho Sheet	Use of Eq. 7A [40 CFR 63.1513(b)], recordkeeping & reporting
HCl	0.40 lb/ton of feed/charge or 10% of the uncontrolled HCl	40 CFR 63.1505(i)(4)	6.1 lb/ton; 3 run avg. from Sept. 2021 SMACT test - based on Dross (Pre-control)	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting

**Initial Construction Date:** 1990, Modified 2024.

**Process Description:**

The custom-built, natural gas-fired, rotary aluminum furnace melts scrap in batches. This unit is classified as an existing Group 1 furnace melting other than clean charge using reactive flux under 40 CFR 63, Subpart RRR.

Maximum Capacity: 100.8 tons of aluminum/day

Maximum Firing Rate: 16 MMBtu/hr

Control Device: Lime-Injected Baghouse

**Applicable Regulations:**

**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

**401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A**

<b>Emission Unit 04 – Rotary Furnace #5</b>	
<p><b>(Subpart RRR)</b>, <i>National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production</i>. This regulation is applicable to each new secondary aluminum processing unit and each Group 1 furnace processing other than clean charge located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).</p>	
<p><b>Precluded Regulation:</b>  <b>401 KAR 51:017</b>, <i>Prevention of significant deterioration of air quality</i></p>	
<p><b>Comments:</b>                      Filterable PM emission factor was determined during a 3 run average stack test from September 2021 stack test, and was based on the litho sheet. Condensable PM and VOC emission factors were determined as the maximum result from a 3 run average of November 2023 compliance testing for rotary furnace 8 and 9, which are similar rotary furnace with expected similarities in condensable PM emission profiles. The HCl and D/F emission factors are based on a 3 run average from the September 2021 SMACT test. The new emission factors for NOx and CO are based on vendor estimates for the equipment. GHGs emission factors were calculated using the information provided from 40 CFR 98, Subpart C.</p>	

<b>Emission Unit 06 (EU06): Salt Cake Processing Plant (SCPP)</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> <li>• <math>P &gt; 30</math> ton/hr: <math>17.31 \times P^{0.16}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	6.735 lb/ton, pre-control, based on 01/2014 Morgantown Stack Test	Monitoring throughput, calculating & comparing emissions, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly qualitative visual observations, recordkeeping & reporting
Odor	At property line: Non-detect at a 1:7 dilution ratio	401 KAR 53:010, Section 4, Appendix A	N/A	Reasonable precautions to prevent ammonia odors from crossing property boundaries, including protecting byproducts from moisture
<p><b>Initial Construction Date:</b> 1995</p>				
<p><b>Process Description:</b>                      Salt Cake, a by-product of aluminum scrap melting and purifying, is processed through crushers and screens to recover small amounts of aluminum left in the by-product. All equipment is electrically driven and particulates are controlled by baghouse filters set up in the four major areas of the plant: receiving building, primary processing, secondary processing, and reject building.                      Maximum Capacity: 40 ton/hr salt cake                      Control Device: 3 Fabric Filters</p>				

<b>Emission Unit 06 (EU06): Salt Cake Processing Plant (SCPP)</b>				
<b>Applicable Regulations:</b>				
<p><b>401 KAR 53:010, Ambient air quality standards.</b> This regulation, while generally applicable to all processes, is applied specifically to this process due to the potential for the salt cake to produce ammonia and odors exceeding the odor standard without proper precautions taken.</p> <p><b>401 KAR 59:010, New process operations.</b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.</p> <p><b>40 CFR 64, Compliance assurance monitoring (CAM).</b> This regulation applies to each pollutant-specific emissions unit (PSEU) at a major source that is required to obtain a Title V permit if the unit is subject to an emission limit, uses a control device to achieve the limit, and has a pre-control potential to emit 100 percent or more of an emission amount that would classify the source as major for that pollutant. Applies to PM.</p>				
<b>Precluded Regulation:</b>				
<p><b>401 KAR 51:017, Prevention of significant deterioration of air quality</b></p>				
<p><b>Comments:</b> Emission factors for particulates are based on the stack testing of the baghouse filters in January of 2014. PM<sub>10</sub> and PM<sub>2.5</sub> are conservatively assumed to be equal - PM<sub>10</sub> is the only one of the two to receive specific speciated testing. The submitted forms (DEP7007N) for this equipment claim a current maximum of 219,000 tons per year processed rather than the maximum potential of 350,400 tons per year processed. In the renewal, the source has requested the current maximum processing limit (219,000 tons/yr) become an operational limit for EU06 in the permit. Baghouse #3 was replaced with a new baghouse in December 2021.</p>				

<b>Emission Unit 07 (EU07): Salt Cake Cooling (Mud Room)</b>				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	1.5 lb/ton pre-control; AP-42 Table 11.17-4	Monitoring throughput, calculating & comparing emissions, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly visual observations, recordkeeping & reporting
Odor	At property line: Non-detect at a 1:7 dilution ratio	401 KAR 53:010, Section 4, Appendix A	N/A	Reasonable precautions to prevent ammonia odors from crossing property boundaries, including protecting byproducts from moisture
<b>Initial Construction Date:</b> 1995				
<b>Process Description:</b>				
Salt Cake and dross, both by-products of aluminum scrap melting and purifying, are removed from the rotary and reverberatory furnaces and cooled in the Mud Room (EU07) prior to processing in the SCPP (EU06). All equipment is electrically driven.				

<b>Emission Unit 07 (EU07): Salt Cake Cooling (Mud Room)</b>				
Maximum Capacity: 25 ton/hr byproduct Control Device: Baghouse				
<b>Applicable Regulations:</b> <b>401 KAR 53:010, Ambient air quality standards.</b> This regulation, while generally applicable to all processes, is applied specifically to this process due to the potential for the process byproducts to produce ammonia and odors exceeding the odor standard without proper precautions taken. <b>401 KAR 59:010, New process operations.</b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.				
<b>Precluded Regulation:</b> <b>401 KAR 51:017, Prevention of significant deterioration of air quality</b>				
<b>Comments:</b> The baghouse for the mud room was replaced in November 2021. The expected grain loading for the new baghouse is 0.001 gr/dscf. Pre-control emissions are calculated using AP-42 Chapter 11.17 for similar handling activities. Using this emission factor and the estimated post-control grain loading multiplied by 3 to provide a conservative estimate of potential emissions for the new baghouse (0.003 gr/dscf), the calculated control efficiency is 96.9%. PM <sub>10</sub> and PM <sub>2.5</sub> emission factors are determined using EPA's PM calculator for the appropriate SCC code.				

<b>Emission Unit 08 (EU08): Landfill Area</b>				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Visible Fugitives	None across property line	401 KAR 63:010, Section 3(2)	N/A	Reasonable precautions as outlined in 401 KAR 63:010, Section(3)(1)(a) - (f)
Odor	At property line: Non-detect at a 1:7 dilution ratio	401 KAR 53:010, Section 4, Appendix A	N/A	Reasonable precautions to prevent ammonia odors from crossing property boundaries, including protecting byproducts from moisture.
<b>Initial Construction Date:</b> 1995				
<b>Process Description:</b> An onsite residual landfill provides a disposal area for baghouse dust, aluminum processing waste and secondary aluminum smelter slag. Salt cake is disposed in the area once it has been processed and the remaining aluminum has been recovered. Fugitive emissions are created due to the use of haul roads and dumping of waste. Waste from affiliated plants may also be accepted. Maximum Capacity: 32 ton/hr waste dumped; 1.15 VMT/hr haul roads Control Device: Water Suppression				
<b>Applicable Regulations:</b> <b>401 KAR 53:010, Ambient air quality standards.</b> This regulation, while generally applicable to all processes, is applied specifically to this process due to the potential for the waste to produce ammonia and odors exceeding the odor standard without proper precautions taken.				

<b>Emission Unit 08 (EU08): Landfill Area</b>	
<p><b>401 KAR 63:010, Fugitive emissions.</b> This regulation is applicable to each affected facility, such as an apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.</p> <p><b>Comments:</b> Particulate emission factors are based on AP-42, Chapter 13.22 (unpaved roads) and 11.23 (silt factor, taconite ore mining). Projected vehicle miles traveled across haul roads are used in the PTE calculations.</p>	

<b>Emission Unit 13 (EU13): Rotary Furnace #8</b>					
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis		Compliance Method
CO	3.54 lb/ton, each & 128.73 ton/yr, total for all types of charge	401 KAR 51:017	Stack: dross, conc., salt cake	1.4 lb/ton, 3 run average from November 2023 compliance test on RF8	Testing, monthly and rolling 12-month total emission calculations (incl. melting, NG combustion & fugitives), monitoring, recordkeeping & reporting
			Fugitive: dross, conc., salt cake	0.014 lb/ton; 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: All other charge	3.75 lb/ton 3 run average from November 2023 compliance test on RF8	
			Fugitive: All other charge	0.038 lb/ton; 98.01% capture efficiency	
VOC	19.38 ton/yr, each	To preclude 401 KAR 51:017	Stack: dross, conc., salt cake	1.2 lb/ton; 3 run average from November 2023 compliance test on RF8	Testing, monthly and rolling 12-month total emission calculations (incl. melting, NG combustion & fugitives), monitoring, recordkeeping & reporting
			Fugitive: dross, conc., salt cake	0.012 lb/ton; 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: All other charge	1.2 lb/ton; 3 run average from November 2023 compliance test on RF8	

<b>Emission Unit 13 (EU13): Rotary Furnace #8</b>					
			Fugitive: All other charge	0.012 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
PM	7.05 ton/yr	To preclude 401 KAR 51:017	Stack: dross, conc., salt cake	6.03 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8	5-year testing, monitoring, recordkeeping, & reporting
			Fugitive: dross, conc., salt cake	0.061 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: All other charge	6.03 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8	
			Fugitive: All other charge	0.061 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
PM <sub>10</sub>	6.495 ton/yr	To preclude 401 KAR 51:017	Stack: Dross, Conc., Salt Cake	13.6 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8 (pre-control)	Testing, monitoring, recordkeeping, & reporting
			Fugitive: Dross, Conc., Salt Cake	0.137 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: All other charge	4.32 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8	
			Fugitive: All other charge	0.044 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
PM <sub>2.5</sub>	3.69 ton/yr	To preclude 401 KAR 51:017	Stack: Dross, Conc., Salt Cake	11.6 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8 (pre-control)	Testing, monitoring, recordkeeping, & reporting
			Fugitive: Dross, Conc., Salt Cake	0.12 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	



<b>Emission Unit 13 (EU13): Rotary Furnace #8</b>					
			Stack: All other charge	1.81 lb/ton, 3 run avg from Nov. 2023 compliance test on RF8 (pre-control)	
			Fugitive: All other charge	0.018 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
PM	0.40 lb/ton of feed/charge	40 CFR 63.1505(i)(1)	See above.		Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	See above.		Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at add-on control, if COM is chosen as monitoring option	40 CFR 63.1505(i)(5)	N/A		Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A		Assumed when meeting requirements under 40 CFR 63, Subpart RRR
D/F TEQ	$2.1 \times 10^{-4}$ gr/ton	40 CFR 63.1505(i)(3)	Stack: Dross, Conc., Salt Cake	1.18E-09 lb/ton, 3 run avg from 08/2021 SMOCT test	Use of Eq. 7A [40 CFR 63.1513(b)], recordkeeping & reporting
			Fugitive: Dross, Conc., Salt Cake	1.19E-11 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: All other charge	1.18E-09 lb/ton, 3 run avg from 08/2021 SMOCT test	

<b>Emission Unit 13 (EU13): Rotary Furnace #8</b>					
			Fugitive: All other charge	1.19E-11 lb/ton 99.0% Capture Efficiency and 98.01% control efficiency	
HCl	0.40 lb/ton of feed/charge or 10% of uncontrolled HCl	40 CFR 63.1505(i)(4)	Stack: Dross, Conc., Salt Cake	20.60 lb/ton pre-control, 3 run avg from 08/2021 SMACT test	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
			Fugitive: Dross, Conc., Salt Cake	0.21 lb/ton, 99.0% Capture Efficiency and 98.01% control efficiency	
			Stack: High VOC Scrap	20.60 lb/ton pre-control, 3 run avg from 08/2021 SMACT test	
			Fugitive: High VOC Scrap	0.21 lb/ton, 99.0% Capture Efficiency and 98.01% control efficiency	

**Initial Construction and Modification Date:** 2011; Modified 2024

**Process Description:**

EU 13 processes aluminum scrap, concentrate from the Salt Cake Processing Plant (SCPP - EU06), and dross. Reactive chloride flux (NaCl and KCl Salts) is used to remove impurities and provide a barrier to oxidation at the surface of the melted aluminum. No fluoride-containing flux is used in these units. Each furnace is in an enclosure vented to a lime-injected dual baghouse system to control emissions of PM and HCl (acid gas). This unit is classified as a new Group 1 furnaces melting other than clean charge using reactive flux under 40 CFR 63, Subpart RRR.

Maximum Capacity: 8.22 ton/hr input

Maximum Firing Rate: 24 MMBtu/hr

Control Device: Lime-Injected Baghouse

**Applicable Regulations:**

**401 KAR 51:017, Prevention of significant deterioration of air quality,** for CO.

**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to

<b>Emission Unit 13 (EU13): Rotary Furnace #8</b>	
<p>particulates, commenced on or after July 2, 1975  <b>401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.</b> This regulation is applicable to each new and existing secondary aluminum processing unit and each Group 1 furnace processing other than clean charge located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).</p>	
<p><b>Precluded Regulation:</b>  <b>401 KAR 51:017, Prevention of significant deterioration of air quality,</b> for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC.</p>	
<p><b>Comments:</b>                      For both sources of PM, emission factors were calculated using the data from a three run average from the November 2023, compliance testing data for EU 13. Uncaptured emissions were determined based on a control efficiency of 98.01% and a capture efficiency of 99.0%. The emission factor for NO<sub>x</sub> is based on a 3 run avg of April 2006 Goodyear AZ company test including a natural gas contribution. The CO and VOC emission factor are based on a three run average for the compliance test, dated November 2023. HCl and D/F emission factors are based on a three run average from the August 2021, SMOACT test. The SO<sub>2</sub> emission factor was sourced from AP-42, Table 1.4-2. The CO<sub>2</sub> emission factor is based on a stack test from 2010. The emission factors for methane and N<sub>2</sub>O are from 40 CFR 98, Subpart C, Table C-2.</p>	

<b>Emission Unit 14 (EU14): Rotary Furnace #9</b>					
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis		Compliance Method
CO	3.54 lb/ton, each & 128.73 ton/yr, total for all types of charge	401 KAR 51:017	Stack: dross, conc., salt cake	1.14 lb/ton, Calc. from permit limit	Testing, monthly and rolling 12-month total emission calculations (incl. melting, NG combustion & fugitives), monitoring, recordkeeping & reporting
			Fugitive: dross, conc., salt cake	0.0115 lb/ton Calc. from permit limit and 99.99% capture efficiency	
			Stack: All other charge	4.97 lb/ton Calc. from permit limit	
			Fugitive: All other charge	0.0502 lb/ton Calc. from permit limit and 99.99% capture efficiency	
VOC	19.38 ton/yr, each	To preclude 401 KAR 51:017	Stack: dross, conc., salt cake	0.033 lb/ton, stack test Calc. from permit limit	Testing, monthly and rolling 12-month total emission calculations (incl. melting, NG combustion
			Fugitive: dross, conc., salt cake	0.000303 lb/ton Calc. from permit limit and 99.99% capture efficiency	

<b>Emission Unit 14 (EU14): Rotary Furnace #9</b>					
			Stack: All other charge	0.831 lb/ton Calc. from permit limit	& fugitives), monitoring, recordkeeping & reporting
			Fugitive: All other charge	0.00808 lb/ton Calc. from permit limit and 99.99% capture efficiency	
PM	7.05 ton/yr	To preclude 401 KAR 51:017	Stack: dross, conc., salt cake	6.5 lb/ton, Calc. from permit limit	5-year testing, monitoring, recordkeeping, & reporting
			Fugitive: dross, conc., salt cake	0.0657 lb/ton Calc. from permit limit and 99.99% capture efficiency	
			Stack: All other charge	6.5 Calc. from permit limit	
			Fugitive: All other charge	0.0657 lb/ton Calc. from permit limit and 99.99% capture efficiency	
PM <sub>10</sub>	6.495 ton/yr	To preclude 401 KAR 51:017	Stack: Dross, Conc., Salt Cake	6.0 lb/ton, Calc. from permit limit	Testing, monitoring, recordkeeping, & reporting
			Fugitive: Dross, Conc., Salt Cake	0.0606 lb/ton Calc. from permit limit and 99.99% capture efficiency	
			Stack: All other charge	6.0 lb/ton, Calc. from permit limit	
			Fugitive: All other charge	0.061 lb/ton Calc. from permit limit and 99.99% capture efficiency	
PM <sub>2.5</sub>	3.69 ton/yr	To preclude 401 KAR 51:017	Stack: Dross, Conc., Salt Cake	3.40 lb/ton, Calc. from permit limit	Testing, monitoring, recordkeeping, & reporting
			Fugitive: Dross, Conc., Salt Cake	0.0343 lb/ton Calc. from permit limit and 99.99% capture efficiency	
			Stack: All other charge	3.40 lb/ton, Calc. from permit limit	
			Fugitive: All other charge	0.0343 lb/ton Calc. from permit limit and 99.99% capture efficiency	

Emission Unit 14 (EU14): Rotary Furnace #9					
PM	0.40 lb/ton of feed/charge	40 CFR 63.1505(i)(1)	See above.		Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	See above.		Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at add-on control, if COM is chosen as monitoring option	40 CFR 63.1505(i)(5)	N/A		Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A		Assumed when meeting requirements under 40 CFR 63, Subpart RRR
D/F TEQ	$2.1 \times 10^{-4}$ gr/ton	40 CFR 63.1505(i)(3)	Stack: Dross, Conc., Salt Cake	3.00E-08 lb/ton, Based on MACT limit	Use of Eq. 7A [40 CFR 63.1513(b)], recordkeeping & reporting
			Fugitive: Dross, Conc., Salt Cake	3.00E-10 lb/ton Based on MACT limit and 99.99% capture efficiency	
			Stack: All other charge	3.00E-08 lb/ton, Based on MACT limit	
			Fugitive: All other charge	3.00E-10 lb/ton Based on MACT limit and 99.99% capture efficiency	
HCl	0.40 lb/ton of feed/charge or 10% of uncontrolled HCl	40 CFR 63.1505(i)(4)	Stack: Dross, Conc., Salt Cake	20.00 lb/ton pre-control, based on MACT limit	Use of Eq. 7 [40 CFR 63.1513(b)], recordkeeping &

<b>Emission Unit 14 (EU14): Rotary Furnace #9</b>					
			Fugitive: Dross, Conc., Salt Cake	0.200 lb/ton, Engr. Estimate	reporting
			Stack: High VOC Scrap	20.00 lb/ton pre-control, based on MACT limit	
			Fugitive: High VOC Scrap	0.200 lb/ton, Engr. Estimate	

**Initial Construction Date:** 2011

**Process Description:**

EU 14 each processes aluminum scrap, concentrate from the Salt Cake Processing Plant (SCPP - EU06), and dross. Reactive chloride flux (NaCl and KCl Salts) is used to remove impurities and provide a barrier to oxidation at the surface of the melted aluminum. No fluoride-containing flux is used in these units. Each furnace is in an enclosure vented to a lime-injected dual baghouse system to control emissions of PM and HCl (acid gas). These units are classified as new Group 1 furnaces melting other than clean charge using reactive flux under 40 CFR 63, Subpart RRR.

Maximum Capacity: 8.22 ton/hr input

Maximum Firing Rate: 24 MMBtu/hr

Control Device: Lime-Injected Baghouses

**Applicable Regulations:**

**401 KAR 51:017, Prevention of significant deterioration of air quality**, for CO.

**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975

**401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.** This regulation is applicable to each new and existing secondary aluminum processing unit and each Group 1 furnace processing other than clean charge located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).

**Comments:** Emission factors for melting and fugitives were originally established based on testing at similar rotary furnaces at other facilities. This was later updated to test results from the actual equipment at the source. Many of the emission factors are now based on engineering calculations using the permit limits and will be verified under the repeat performance testing required by 40 CFR 63.1511(e). For D/F and HCl, HAPs of concern for secondary aluminum processors, are based on the limits required by 40 CFR 63, Subpart RRR (MACT limits). Emission factors for fugitives are based on a ratio of stack to fugitive emissions of 0.01 for all pollutants and the back calculated stack emission factors based on permit limits. Two of the emission factors are based on older surrogate tests because the emissions are not generally tested for nor do they have limits. The NOx emission factor is based on a closely similar rotary furnace at the Goodyear site tested for NOx in April, 2006. The CO2 emission factor is based on the same similar furnace when it was tested for in June, 2010. Most criteria pollutants and HAPs calculations include the emissions of pollutants due to combustion of natural gas as they are captured together by the furnace hood(s). Natural Gas combustion emission factors for SO2 and Lead are based on AP-42, Chapter 1.4 and greenhouse gas emission factors for combustion are based on 40 CFR 98.

**Emission Unit 14 (EU14): Rotary Furnace #9**

These rotary furnaces are also subject to 401 KAR 51:017, which required that a best available control technology (BACT) analysis be performed and controls (if feasible) be applied for any PSD pollutant(s). The equipment constructed under V-06-047 R2 included EU13 and EU14 (Rotary Furnaces #8 & #9), and EU17 [Holding Furnace (#H11)] became subject to PSD for emissions of CO. Appropriate BACT requirements for CO emissions were determined and applied to the subject equipment (the three new furnaces planned). Potential emissions for the new equipment to emit PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC also made emission and operational limits necessary for all new equipment under the permit revision to preclude the applicability of 401 KAR 51:017 for these specific pollutants.

<b>Emission Unit 16 (EU16) Shredder System</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	0.010 gr/dscf	40 CFR 63.1505(b)(1)	1.54 lb/ton, pre-control, based on 3 run avg from 2021 report	5-year testing, monitoring, recordkeeping, & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	1.54 lb/ton, pre-control, based on 3 run avg from 2021 report	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at an add-on control, if COM is monitoring option	40 CFR 63.1505(i)(5)	N/A	Use of a COMs unit, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
PM	1.28 ton/yr	Preclusion of 401 KAR 51:017	1.54 lb/ton, pre-control, based on 3 run avg from 2021 report	5-year testing, monitoring, recordkeeping, & reporting
PM <sub>10</sub>	1.28 ton/yr	Preclusion of 401 KAR 51:017	0.78 lb/ton, pre-control, PM/PM <sub>10</sub> ratio & EPA's PM calculator	5-year testing, monitoring, recordkeeping, & reporting
PM <sub>2.5</sub>	1.28 ton/yr	Preclusion of 401 KAR 51:017	0.23 lb/ton, pre-control, PM/PM <sub>2.5</sub> ratio & EPA's PM calculator	5-year testing, monitoring, recordkeeping, & reporting

**Initial Construction Date:** 2013

**Process Description:**

The shredder system consists of a hammermill shredder and shredded scrap processing operations (a two pass air knife, an *Accumulator* hopper, cross belt magnet, drum magnet, conveyors, and transfer points). The overall maximum input capacity for this system is limited by the maximum input capacity of the

<b>Emission Unit 16 (EU16) Shredder System</b>				
downstream Delacquering Furnace (EU02). This unit is classified as an aluminum scrap shredder under 40 CFR 63, Subpart RRR Maximum Capacity: 12.04 ton/hr scrap Control Device: Baghouse				
<b>Applicable Regulation:</b> <b>401 KAR 59:010, New process operations.</b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975. <b>401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.</b> This regulation is applicable to each new aluminum scrap shredder located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).				
<b>Precluded Regulation:</b> <b>401 KAR 51:017, Prevention of significant deterioration of air quality</b>				
<b>Comments:</b> The PM emission factor was determined during a three run average based on a 2021 SMOACT report, it was calculated using a grain loading value of 0.0022 gr/dscfm, and assumes that 68% of the 43,404 dscfm contributes to the flowrate through the baghouse. Uncaptured emissions are calculated based on a 97% capture and control efficiency				

<b>Emission Unit 17 (EU17): Holding Furnace H11</b>				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
CO	3.53 ton/yr	401 KAR 51:017	84 lb/mmescf, AP-42, Table 1.4-1	Monitoring, calculating 12-month rolling emissions, recordkeeping, & reporting
VOC	0.23 ton/yr	To preclude 401 KAR 51:017	5.5 lb/mmescf, AP-42, Table 1.4-2	Monitoring, calculating 12-month rolling emissions, recordkeeping, & reporting
PM	0.32 ton/yr (incl. filterable + condensable)	To preclude 401 KAR 51:017	7.6 lb/mmescf, AP-42, Table 1.4-2	Monitoring, calculating 12-month rolling emissions, recordkeeping, & reporting
PM <sub>10</sub>	0.32 ton/yr	To preclude 401 KAR 51:017	7.6 lb/mmescf, AP-42, Table 1.4-2	Monitoring, calculating 12-month rolling emissions, recordkeeping, & reporting
PM <sub>2.5</sub>	0.32 ton/yr	To preclude 401 KAR 51:017	7.6 lbs/mmescf, AP-42, Table 1.4-2	Monitoring, calculating 12-month rolling emissions, recordkeeping, & reporting



<b>Emission Unit 17 (EU17): Holding Furnace H11</b>				
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> <li>• <math>P &gt; 30</math> ton/hr: <math>17.31 \times P^{0.16}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	7.6 lb/mmscf, AP-42, Table 1.4-2	Assumed when meeting the preclusion limit for 401 KAR 51:017 and burning only natural gas
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed as long as only clean aluminum held and natural gas burned

**Initial Construction Date:** 2013

**Process Description:**

This furnace holds clean, molten aluminum prior to casting and crucible operations. The furnace uses a natural-gas fired burner and emissions, vented to atmosphere, are due only to the burner. This unit is classified as a Group 2 furnace under 40 CFR 63, Subpart RRR.

Maximum Firing Rate: 9.8 MMBtu/hr

Control Device: None

**Applicable Regulations:**

**401 KAR 51:017, Prevention of significant deterioration of air quality**, for CO.

**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975

**401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.** This regulation is applicable to each new group 2 furnace located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).

**Precluded Regulation:**

**401 KAR 51:017, Prevention of significant deterioration of air quality**, for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC.

**Comments:** All criteria pollutant emission factors were based on AP-42, Chapter 1.4 at the time of the original application for construction (2012). For modern compliance purposes, the emission factor used for PM (total) calculations must now contain both filterable and condensable particulates. Greenhouse gas emissions are based on 40 CFR 98 for combustion of natural gas. This furnace is also subject to 401 KAR 51:017, which required that a best available control technology (BACT) analysis be performed and controls (if feasible) be applied for any PSD pollutant(s). The equipment constructed under V-06-047 R2 included EU13 and EU14 (Rotary Furnaces #8, #9), and EU17 [Holding Furnace (#H11)] became subject to PSD for emissions of CO. Appropriate BACT requirements for CO emissions were determined and applied to the subject equipment (the three new furnaces). Potential emissions for the new equipment to emit PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC also made emission limits necessary for all new equipment under the permit revision to preclude the applicability of 401 KAR 51:017 for these specific pollutants.

<b>Emission Unit 23 (EU23): Holding Furnace</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> <li>• <math>P &gt; 30</math> ton/hr: <math>17.31 \times P^{0.16}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	7.6 lb/mmscf, AP-42, Table 1.4-2	Assumed based on application and as long as only clean aluminum held, natural gas burned and no fluxing or solids added
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Assumed as long as only clean aluminum held, natural gas burned and no fluxing or solids added

**Initial Construction Date:** Expected 2024

**Process Description:**

This natural gas-fired furnace holds clean molten aluminum prior to casting or crucible operations. The furnace is uncontrolled and classified as a Group 2 furnace, under 40 CFR 63, Subpart RRR, melting clean charge and using no reactive flux.

Maximum Firing Rate: 9.8 MMBtu/hr

Control Device: None

**Applicable Regulations:**

**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975

**401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.** This regulation is applicable to each new group 2 furnace located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).

**Comments:** All criteria pollutant and HAP emission factors are based on AP-42, Chapter 1.4, Table 1.4-2 and 1.4-3. Greenhouse gas emissions are based on 40 CFR 98, Subpart C for combustion of natural gas.

<b>Emission Unit 20 (EU20): Salt Cake Pre-Processing Operation</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	1.5 lb/ton pre-control; AP-42 Table 11.17-4	Monitoring throughput, calculating & comparing emissions, recordkeeping & reporting
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly visual observations, recordkeeping & reporting

<b>Emission Unit 20 (EU20): Salt Cake Pre-Processing Operation</b>				
Odor	At property line: Non-detect at a 1:7 dilution ratio	401 KAR 53:010, Section 4, Appendix A	N/A	Reasonable precautions to prevent ammonia odors from crossing property boundaries, including protecting byproducts from moisture
<b>Initial Construction Date:</b> 2022				
<b>Process Description:</b> Salt cake is pre-processed inside the Mud Room Building using an excavator or functionally equipment type of mechanical processing equipment. Maximum Capacity: 13.7 ton/hr salt cake (monthly average) Control Device: Baghouse				
<b>Applicable Regulations:</b> <b>401 KAR 53:010, Ambient air quality standards.</b> This regulation, while generally applicable to all processes, is applied specifically to this process due to the potential for the process byproducts to produce ammonia and odors exceeding the odor standard without proper precautions taken. <b>401 KAR 59:010, New process operations.</b> This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.				
<b>Comments:</b> The baghouse for the mud room was replaced in November 2021. The expected grain loading for the new baghouse is 0.001 gr/dscf. Pre-control emissions are calculated using AP-42 Chapter 11.17 for similar handling activities. Using this emission factor and the estimated post-control grain loading multiplied by 3 to provide a conservative estimate of potential emissions for the new baghouse (0.003 gr/dscf), the calculated control efficiency is 96.9%. PM <sub>10</sub> and PM <sub>2.5</sub> emission factors are determined using EPA's PM calculator for the appropriate SCC code. The control device is already federally enforceable through EU 07, which shares the building.				

<b>Emission Unit 21 &amp; 22 (EU21 &amp; EU22) Primary and Secondary Shredders</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
PM	0.010 gr/dscf	40 CFR 63.1505(b)(1)	1.00 lb/ton; grain loading based off of vendor estimate	5-year testing, monitoring, recordkeeping, & reporting
PM	<ul style="list-style-type: none"> <li>• <math>P \leq 0.5</math> ton/hr: 2.34 lb/hr</li> <li>• <math>0.5 &lt; P \leq 30</math> ton/hr: <math>3.59 \times P^{0.62}</math> lb/hr</li> <li>• <math>P &gt; 30</math> ton/hr: <math>17.31 \times P^{0.16}</math> lb/hr</li> </ul>	401 KAR 59:010, Section 3(2)	1.00 lb/ton; grain loading based off of vendor estimate	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
Opacity	10% at an add-on control, if COM is monitoring option	40 CFR 63.1505(b)(2)	N/A	Use of a COMs unit, recordkeeping & reporting

<b>Emission Unit 21 &amp; 22 (EU21 &amp; EU22) Primary and Secondary Shredders</b>					
Opacity	20%		401 KAR 59:010, Section 3(1)(a)	N/A	Assumed when meeting requirements under 40 CFR 63, Subpart RRR
PM	EU 21	12.80 tons/yr	To preclude 401 KAR 51:017	1.00 lb/ton; grain loading based off of vendor estimate	5-year testing, monitoring, recordkeeping, & reporting
	EU 22	6.40 tons/yr			
PM <sub>10</sub>	EU 21	6.32 tons/yr	To preclude 401 KAR 51:017	0.51 lb/ton; EPA's PM Calculator	5-year testing, monitoring, recordkeeping, & reporting
	EU 22	3.16 tons/yr			
PM <sub>2.5</sub>	EU 21	3.74 tons/yr	To preclude 401 KAR 51:017	0.15 lb/ton; EPA's PM Calculator	5-year testing, monitoring, recordkeeping, & reporting
	EU 22	1.87 tons/yr			

**Initial Construction Date:** Expected 2024

**Emission Unit 21 (EU21) Primary Shredder**

**Description:**

The Primary Shredder is used to de-bale/shred purchased aluminum scrap in preparation for further downstream processing (i.e., secondary shredding in the Secondary Shredder and subsequent cleaning, separation, and sorting in the scrap processing section of the existing shredder system and/or direct feeding and melting in the furnaces.) This unit is considered an aluminum scrap shredder under 40 CFR 63, Subpart RRR.

Maximum Capacity: 38.0 tons/hr

Control Device: Baghouse

**Emission Unit 22 (EU22) Secondary Shredder**

**Description:**

The Secondary Shredder is used to further shred to a smaller size the shredded scrap stream from the Primary Shredder (EU21) in preparation for further downstream processing (i.e. cleaning, separation, and sorting in the scrap processing section of the existing Shredder System (EU16) and/or direct feeding and melting the furnaces). This unit is considered an aluminum scrap shredder under 40 CFR 63, Subpart RRR.

Maximum Capacity: 19.0 tons/hr

Control Device Baghouse

**Applicable Regulation:**

**401 KAR 59:010, *New process operations.*** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

**401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production.*** This regulation is applicable to each new aluminum scrap shredder located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).

**Precluded Regulation:**

**401 KAR 51:017, *Prevention of significant deterioration of air quality***

**Emission Unit 21 & 22 (EU21 & EU22) Primary and Secondary Shredders**

**Comments:**

The PM emission factor for EUs 21 and 22 is estimated using an emission factor derived from the baghouse's emissions performance (as exit grain loading) design basis. Emissions factors are derived on a lb/SCC unit basis (i.e. lb/ton) using the baghouses exit grain loading design basis, baghouse flow capacity allocation for the primary and secondary shredder, and the rated aluminum throughput capacity of the associated primary shredder.

Filterable particulate emissions are speciated into filterable PM10 and PM2.5 sizes fractions based on EPA's PM calculator database for the relevant SCC associated with a secondary aluminum scrap shredding operations.

Uncaptured emissions were determined based on a worst-case uncaptured emission factor derivation approach based on assuming a 98% capture efficiency.

**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)**

**Testing Requirements/Results:**

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
EU02 <sup>1,2</sup> Cond. 1	Lime Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.30 lbs/ton	0.03 lbs/ton	16,765 lbs/hr Feed Rate	CMN20140003	9/26/2014
<sup>2</sup> Cond. 2	Lime Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.30 lbs/ton	0.027 lbs/ton	16,765 lbs/hr Feed Rate		9/26/2014
Cond. 1	Lime Inj. Baghouse	HCl	40 CFR 63.1505	Every 5 years	Method 26A	1.5 lbs/ton	0.03 lbs/ton	16,765 lbs/hr Feed Rate		9/26/2014
Cond. 2	Lime Inj. Baghouse	HCl	40 CFR 63.1505	Every 5 years	Method 26A	1.5 lbs/ton	0.051 lbs/ton	16,765 lbs/hr Feed Rate		9/26/2014
Cond. 1	Afterburner	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	5.0 µg/MG	0.028 µg/MG	17,508 lbs/hr Feed Rate		9/26/2014
Cond. 2	Afterburner	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	5.0 µg/MG	0.18 µg/MG	17,508 lbs/hr Feed Rate		9/26/2014
Cond. 1	NO Control	THC	40 CFR 63.1505	Every 5 years	Method 25A	0.20 lbs/ton	0.10 lbs/ton	16,765 lbs/hr Feed Rate		9/26/2014
Cond. 2	NO Control	THC	40 CFR 63.1505	Every 5 years	Method 25A	0.20 lbs/ton	0.029 lbs/ton	16,765 lbs/hr Feed Rate		9/26/2014
EU03 <sup>1,2</sup> Cond. 1	Lime Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.037 lbs/ton	13,601 lbs/hr product		9/26/2014
<sup>2</sup> Cond. 2	Lime Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.035 lbs/ton	13,601 lbs/hr product		9/26/2014
Cond. 1	Lime Inj. Baghouse	HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.0069 lbs/ton	13,601 lbs/hr product		9/26/2014
Cond. 2	Lime Inj. Baghouse	HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.02 lbs/ton	13,601 lbs/hr product		9/26/2014

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
Cond. 1	Post Control	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	0.25 µg/MG	12,856 lbs/hr Production	CMN20140003	9/26/2014
Cond. 2	Post Control	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	1.9 µg/MG	12,856 lbs/hr Production		9/26/2014
EU02 <sup>3,4</sup> Cond. 2	Lime-Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.30 lbs/ton	0.058 lbs/ton	15,467 lbs/hr Feed Rate	CMN20190001	4/25/2019
Cond. 2	Uncontrl'd.	HCl	40 CFR 63.1505	Every 5 years	Method 26A	1.5 lbs/ton	0.28 lbs/ton	15,467 lbs/hr Feed Rate		4/25/2019
Cond. 2	Uncontrl'd.	D/F TEQ	40 CFR 63.1505	Every 5 years	Method 23	5.0 µg/MG	0.54 µg/MG	15,467 lbs/hr Feed Rate		4/25/2019
Cond. 2	Uncontrl'd.	THC	40 CFR 63.1505	Every 5 years	Method 25A	0.20 lb/ton	0.034 lb/ton	15,467 lbs/hr Feed Rate		4/25/2019
EU03 Cond. 1	Lime-Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.17 lbs/ton	5,401 lbs/hr Feed Rate		4/24/2019
Cond. 2	Lime-Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.058 lbx/ton	15,467 lbs/hr Feed Rate		4/24/2019
Cond. 1	Uncontrl'd	HCL	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.03 lbs/ton	5,401 lbs/hr Feed Rate		4/24/2019
Cond. 2	Uncontrl'd	HCL	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.0081 lbs/ton	15,467 lbs/hr Feed Rate		4/24/2019
Cond. 1	Uncontrl'd	D/F TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	1.1 µg/MG	5,401 lbs/hr Feed Rate		4/24/2019
Cond. 2	Uncontrl'd	D/F TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	0.39 µg/MG	15,467 lbs/hr Feed Rate		4/25/2019

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
EU02	Lime Inj. Baghouse & Afterburner	PM	40 CFR 63.1505	Every 5 years	Method 5	0.30 lbs/ton	TBD	TBD	TBD	2024
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	1.5 lbs/ton	TBD	TBD	TBD	2024
		D/F TEQ	40 CFR 63.1505	Every 5 years	Method 23	5.0 µg/MG	TBD	TBD	TBD	2024
		THC	40 CFR 63.1505	Every 5 years	Method 25A	0.20 lb/ton	TBD	TBD	TBD	2024
EU03	Lime Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	TBD	TBD	TBD	2024
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	TBD	TBD	TBD	2024
		D/F TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	TBD	TBD	TBD	2024
EU04	Lime-Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.11 lbs/ton	5,285 lbs/hr Feed Rate	CMN20160001	9/14/2016
		HCl <sup>5</sup>	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.032 lbs/ton	5,375 lbs/hr Feed Rate		9/14/2016
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	1.9 µg/MG	5,285 lbs/hr Feed Rate		9/14/2016
EU04	Lime-Inj. Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	TBD	TBD	TBD	2021
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	TBD	TBD	TBD	2021
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	TBD	TBD	TBD	2021



Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
EU06	Baghouse, Receiving Building (1 of 4)	PM	401 KAR 59:010	Initial to establish EF	Method 5	33.9 lbs/hr	1.4 lbs/hr	74,646 lbs/hr Feed Rate	CMN20140001	1/8/2014
EU13	Lime-Inj Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.13 lbs/ton	9,600 lbs/hr Feed Rate	CMN20160003	8/3/2016
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.17 lbs/ton	12,732 lbs/hr Feed Rate		8/2/2016
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	10.7 µg/MG	9,600 lbs/hr Feed Rate		8/3/2016
EU14	Lime-inj Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.18 lbs/ton	9,138 lbs/hr Feed Rate	CMN20150003	8/19/2015
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.024 lbs/ton	9,138 lbs/hr Feed Rate		8/19/2015
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	3.3 µg/MG	7,773 lbs/hr Feed Rate		8/19/2015
EU16	Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.01 gr/dscf	0.0022 gr/dscf	19,511 lbs/hr	CMN20190006	9/17/2019
EU14 <sup>6</sup>	Lime-Inj. Baghous	PM	40 CFR 63.1505	Every 5 years	Method 5	*6	*6	*6	CMN20200002	7/22/2020
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	*6	*6	*6		7/22/2020

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
EU14 <sup>7</sup>	Lime-inj Baghouse	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	86.9 µg/MG, 29 /43.7 µg/MG, 16.4 µg/MG	10,433 lbs/hr Feed Rate; 10,010/11,888 lbs/hr Feed Rate; 12,229 lbs/hr Feed Rate	CMN20200002 <sup>7</sup> CMN20200004 CMN20200005	7/22/2020 8/19/2020 10/22/2020
EU14 <sup>8</sup>	Lime-inj Baghouse	DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	3.4 µg/MG	8,836 lbs/hr Feed Rate	CMN20200007	1/12/2021
EU13 <sup>9</sup>	Lime-Inj Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	TBD	TBD	CMN20210004	8/10/2021
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	TBD	TBD		8/10/2021
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	TBD	TBD		8/10/2021
EU05	Lime-Inj Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	0.11 lbs/ton	4,522 lbs/hr Feed Rate	CMN20210007	9/15/2021
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	0.20 lbs/ton	5,847 lb/hr Feed Rate		9/14/2021
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	0.54 µg/MG	4,522 lbs/hr Feed Rate		9/15/2021
EU07	Mudroom Baghouse	PM	401 KAR 59:010, Section 3(2)	As required by the Division	Method 5	18.10 lbs/ton	0.3 lbs/ton	14.7 ton/hr Process Rate	CMN20210009	1/18/2022
EU06	Reject Bldg.	PM	401 KAR 59:010,	As required	Method 5	31.14 lbs/ton	0.28 lbs/ton	34 ton/hr Process Rate	CMN20210009	1/18/2022

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
	Baghouse		Section 3(2)	by the Division						
EU14	Lime-Inj Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.40 lbs/ton	TBD	TBD	TBD	2025
		HCl	40 CFR 63.1505	Every 5 years	Method 26A	0.40 lbs/ton	TBD	TBD	TBD	2025
		DF/TEQ	40 CFR 63.1505	Every 5 years	Method 23	15 µg/MG	TBD	TBD	TBD	2025
EU16	Baghouse	PM	40 CFR 63.1505	Every 5 years	Method 5	0.01 gr/dscf	TBD	TBD	TBD	2024

**Footnotes:**

1. CMN20140003: For EU02 and EU03: Emissions from the Reverb Furnace and Delac Kiln are commonly ducted and routed to a lime-injected baghouse. Subpart RRR requires that emissions from commonly ducted units, not within a SAPU, meet the individual applicable emission limits for each unit established in 40 CFR 63.1505. Pollutant contributions from the Reverb Furnace and Delac Kiln were tested at the outlet of each source individually (prior to the baghouse) to determine contributions from each. Resulting contributions of each were used to establish compliance with the individual unit limitations for each.
2. CMN20140003: For Condition 1, the reverberatory furnace processed UBC that had undergone delacquering in EU 02. For Condition 2, the reverberatory furnace processed only purchased scrap. Except for the Delacquering Kiln’s THC results, all data for this test report included in the matrix are for the post-control results.
3. CMN20190001: For EU02 and EU03: Commonly Ducted units tested under 2 different conditions: Condition 1 – 100% charge directly to the Reverb Furnace (old sheet/Class 3 baled cubes). No charge or flux to the Delac Kiln. Condition 2 – 100% Delac Kiln feed from the Shredder of UBC baled to the Reverb Furnace charge well.
4. CMN20190001: For EU02 and EU03: Test report has not received final DAQ approval as of 5/01/2020.
5. CMN20160001: For HCl, the rotary furnace processed only dross for maximum HCl emission conditions. For PM and D/F, furnace processed Lithographed scrap.
6. Under CMN20200002, a protocol for testing for three 40 CFR 63, Subpart RRR emission standards, PM, HCl and DF/Teq., was submitted and the tests were observed. The final report from the source contained only the information for the DF/Teq test. Also refer to note #7.

7. CMN20200002, CMN20200004, CMN20200005. Three separate tests were conducted on EU 14 (Rotary Furnace #9) for D/F emissions on July 22, 2020; Aug. 19-20, 2020; and Oct. 22, 2020. The multiple tests were necessary due to problems with flow restrictions impacting baghouse performance. Two different conditions were tested under the August runs. A fourth test was scheduled, after additional redesign, in January of 2021 (CMN20200007). Also refer to note #6.
8. CMN20200007 was conducted on January 12, 2021. The furnace passed the D/F test after the redesigns.
9. CMN20210004 test protocol for EU13 was submitted, approved and tests for HCl, HF and DF were performed on 08/10/2021. The test results report had not been submitted and entered into KYEIS as of V-19-026 R1 issued as Draft.

**SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS**

**Table A – Group Requirements:**

None

**Table B - Summary of Applicable Regulations:**

Applicable Regulations	Emission Unit
<p><b>401 KAR 51:017, <i>Prevention of significant deterioration of air quality</i></b>, applies to the construction of a new major stationary source or a project at an existing major stationary source that commences construction after September 22, 1982, and locates in an area designated attainment or unclassifiable under 42 U.S.C. 7407(d)(1)(A)(ii) and (iii). It is applicable to the equipment constructed in V-06-047 R2, including EU13 and EU14 (Rotary Furnaces #8 and #9) and EU17 (Holding Furnace #H11), and only for emissions of CO. It is precluded for other pollutants and for other emission units. Refer to Table C.</p>	<p>EU13, EU14, EU17</p>
<p><b>401 KAR 53:010, <i>Ambient air quality standards</i></b>. This regulation establishes ambient air quality standards necessary for the protection of public health, the general welfare, and the property and people of the Commonwealth of Kentucky. It is applicable to any single point location and sets concentration standards for the following air contaminants: Carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter measured as PM<sub>10</sub>, particulate matter measured as PM<sub>2.5</sub>, sulfur dioxide, gaseous fluorides (expressed as HF), hydrogen sulfide, odors, and total fluorides – dry weight basis (as fluoride ion). While generally applicable to the entire facility, it is specifically applied to the listed EUs for odor control.</p>	<p>EU06, EU07, EU08, EU20</p>
<p><b>401 KAR 59:010, <i>New process operations</i></b>, applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.</p>	<p>EU02, EU03, EU04, EU06, EU07, EU13, EU14, EU16, EU17, EU20, EU21, EU22, EU23</p>
<p><b>401 KAR 63:002, Section 2(4)(ccc) 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), <i>National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production</i></b>, applies to each new and existing aluminum scrap shredder, scrap dryer/delacquering kiln/decoating kiln, each new and existing secondary aluminum processing unit, each Group 1 furnace processing other than clean charge, and each Group 2 furnace located at a secondary aluminum production facility that is a major source of hazardous air pollutants (HAPs).</p>	<p>EU02, EU03, EU04, EU13, EU14, EU16, EU17, EU21, EU22, EU23</p>
<p><b>401 KAR 63:010, <i>Fugitive emissions</i></b>, applies to each apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.</p>	<p>EU08</p>

Applicable Regulations	Emission Unit
<p><b>40 CFR 64, Compliance assurance monitoring (CAM)</b>, applies to each pollutant-specific emissions unit (PSEU) at a major source that is required to obtain a Title V permit if the unit satisfies all of the following criteria:</p> <p>(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1);</p> <p>(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and</p> <p>(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.</p> <p>For purposes of this paragraph, “potential pre-control device emissions” shall have the same meaning as “potential to emit,” as defined in 40 CFR 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.</p>	<p>EU06</p>

**Table C - Summary of Precluded Regulations:**

Precluded Regulations	Emission Unit
<p>401 KAR 51:017, <i>Prevention of Significant Deterioration of Air Quality</i>. This regulation provides for the prevention of significant deterioration (PSD) of ambient air quality.</p>	<p>EUS 02, 06, 07, 13, 14, 16, 17, 21 &amp; 22</p>

**Table D - Summary of Non Applicable Regulations:**

N/A

**Air Toxic Analysis**

**401 KAR 53:010, Ambient air quality standards**

The Division for Air Quality (Division) performed AERMOD on February 25, 2022 for Hydrofluoric Acid (HF), a regulated pollutant under Kentucky’s ambient air quality standards, which may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 53:010.

**Single Source Determination**

N/A

**SECTION 5 – PERMITTING HISTORY**

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-06-047	Renewal	APE2050003	2/9/2007	1/9/2008	Renewal and Name Change from IMCO to Aleris International	N/A
V-06-047 R1	Admin. Amend.	APE20100006	2/9/2007	7/2/2010	Name/Ownership Change to Aleris Recycling	N/A
V-06-047 R2	Sig. Rev.	APE20110003	2/9/2007	9/12/2011	PSD addition 3 rotary furnaces/holding furnace and shredder system	PSD
V-12-049	Renewal	APE20120008	7/10/2013	1/5/2015	Renewal	PSD
V-12-049 R1	Admin. Change	APE20150003	7/10/2013	4/13/2015	Name Change from Aleris Recycling to Real Alloy Recycling, Inc.	N/A
V-12-049 R2	Admin. Amend.	APE20180003	7/10/2013	7/21/2018	Name/Ownership Change from Real Alloy Recycling, Inc. to Real Alloy Recycling, LLC	N/A
V-19-026	Renewal	APE20190001 APE20190002	8/16/2019	10/14/2021	Renewal Permit	N/A
V-19-026 R1	Significant Revision	APE20210005 APE20220003	12/14/2021 11/8/2022	3/16/2023	Replacement of Rotary Furnace EU04 with EU18. Addition of EU19 and EU20, Preheater and Charge Car on rails as IAs	V-19-026 R1

**SECTION 6 – PERMIT APPLICATION HISTORY**

Permit Number: V-19-026 R1

Activities: APE20210005; APE20220003

Received: 10/25/2021; 10/24/2022

Application Complete Date(s): 12/14/2021; 11/8/2022

Permit Action:  Initial  Renewal  Significant Rev  Minor Rev  Administrative

Construction/Modification Requested?  Yes  No NSR Applicable?  Yes  No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  Yes  No

- APE20210006 – 502(b)10 Change – Replacement of Baghouse #3 Serving EU06

**Description of Action:**

Real Alloy has applied for a significant revision to their Title V permit. The facility plans to:

- Remove and replace Rotary Furnace RF5 (EU04) with new Rotary Furnace RA1 (EU18). This new unit will use the existing control device used by EU04.
- Construct and operate a new 6 MMBtu/hr Holding Furnace (EU19)
- Construct and operate two new Insignificant Activities: a 2 MMBtu/hr DeOx Casting Line Preheater (direct) (IA-26) and a Charge Car on rails (IA-27).

Because Real Alloy is a major stationary source under 401 KAR 51:017, Prevention of significant deterioration (PSD), projects at this facility must be evaluated against the significant emission rate (SER) that would make this project a major modification, subject to PSD and BACT review.

The calculated project emission increase is included in the following table:

Pollutant	Project Emission Increase* (tpy)	Significant Emission Rate (SER) (tpy)	PSD Significant Emissions Inc.?
PM (filterable only)	+11.24	25	No
PM <sub>10</sub>	+11.24	15	No
PM <sub>2.5</sub>	+9.59	10	No
Pb	+7.48E-5	0.6	No
NO <sub>x</sub>	+11.69	40	No
CO	+100.24	100	Yes
VOC	+18.34	40	No
SO <sub>2</sub>	+0.090	40	No
Fluorides**	+1.90	3	No
GHGs (CO <sub>2</sub> e)	+17975.25	75,000	No

\*Includes increases only.

\*\*Includes particulate fluorides only.

Because the facility exceeded the SER in Step 1 for CO, calculating the project emissions increase, they chose to look at other projects completed and emission reductions that could be included in the contemporaneous netting window. The only project to be included in this 5-year lookback period that changed CO emissions at the facility is the removal of RF5, applied for in this application. Using a 24-month baseline period of Jan 2015 to Dec 2016, the facility calculated the



net CO emissions at the facility during the contemporaneous period. The results are included in the following table:

<b>Pollutant</b>	<b>Project Emission Increase* (tpy)</b>	<b>Contemporaneous Emission Changes (tpy)</b>	<b>Net Emissions Increase (tpy)</b>	<b>Significant Emission Rate (SER) (tpy)</b>	<b>PSD Significant Emissions Inc.?</b>
PM (filterable, only)	+11.24	-7.36	+3.88	25	No
PM <sub>10</sub> (filterable & condensable)	+11.24	-7.36	+3.88	15	No
PM <sub>2.5</sub> (filterable & condensable)	+9.59	-7.36	+2.24	10	No
Pb	+7.48E-5	-2.99E-5	+4.49E-5	0.6	No
NO <sub>x</sub>	+11.69	-5.52	+6.17	40	No
CO	+100.24	-65.12	+35.12	100	No
VOC	+18.34	-14.72	+3.62	40	No
SO <sub>2</sub>	+0.090	-0.036	+0.054	40	No
Fluorides	+1.90	-0.37	+1.53	3	No
GHGs (CO <sub>2</sub> e)	+17975.25	-7089.85	+10885.40	75,000	No

Based on this analysis, the project will not be a major modification subject to 401 KAR 51:017.

Because EU04 will need to continue to operate until EU18 is constructed, the Division has added an alternate operating scenario to Section H to allow operation of EU04 until EU18 begins operation. Accordingly, there is also an operating limit in Section B for EU18 that requires EU04 to be shut down before EU18 is operated. These requirements ensure that the netting decrease is federally enforceable.

The Division is also clarifying that there are only three baghouses serving EU06, not four.

Additionally, per a request made on March 16, 2022 by Real Alloy, the Division is extending the testing due date for EU13 & EU14 to align the testing with the testing performed at the facility for 40 CFR 63, Subpart RRR. The testing requirement has been revised to require the next test to occur no later than December 31, 2023.

On October 24, 2022, Real Alloy submitted a minor revision application requesting the addition of a new-salt cake pre-processing operation inside the existing mud room building. The application was deemed complete on November 8, 2022.

Currently, Real Alloy removes salt cake from the Reverberatory Furnace (EU03), Rotary Furnace #5 (EU04) (to be replaced by EU18), Rotary Furnace #8 (EU13), and Rotary Furnace #9 (EU14) and transports it to the Salt Cake Cooling (Mud Room) (EU07) to cool. As needed, the salt cake is then transported to and processed through the Salt Cake Processing Facility (SCPF) (EU06) located within a different area of the plant site. This SCPF also processes externally received salt cake. Any recovered aluminum (concentrate) is returned to the furnaces for reprocessing.

Real Alloy has applied to conduct a new Salt Cake Pre-Processing Operation inside an unused space within the existing Mud Room Building. A portion of the salt cake stream from the furnaces will optionally be diverted to this new process instead of being transferred directly to the SCPF. In the new operation, an excavator (mobile equipment) or other functionally equivalent equipment will be used to break up larger pieces of the salt cake into more manageable sizes to be staged for processing in the SCPF. This new Salt Cake Pre-Processing Operation will be designated as EU20.

A non-emergency engine with no operating hours restriction will provide the power to the excavator (mobile equipment), and the engine will not remain at a location for more than 12 consecutive months classifying it as a “nonroad engine”.

While the new pre-processing operation will provide the plant more flexibility and maneuvering space within the existing Receiving Building at the SCPF where the salt cake is currently received, it will not debottleneck the SCPF because that operation is currently constrained by the equipment used to process the salt cake. This new pre-processing area will only provide an additional staging of smaller salt cake pieces for the SCPF. In addition, discrete solidified chunks of aluminum that can be broken off from the salt cake (aka “chunk heads”) can be recycled directly back to the furnaces, which is more efficient than having this material transported to the SCPF with the salt cake only to have to be transferred back to the furnaces.

The new Salt Cake Pre-Processing Operation will generate some PM dust inside the building space due to the mechanical breakup of salt cake pieces. However, the existing Mud Room Building baghouse (Baghouse #16) already serves to evacuate the air space in the building and provide PM control for the operations within. Thus, this existing baghouse will serve as the control device for the new Salt Cake Pre-Processing Operation.

Pollutant	2020 Actual (tpy)	Previous PTE V-19-026 (tpy)*	Change (tpy)	Revised PTE V-19-026 R1 (tpy)*
CO	169.94	171.64	+35.11	206.75
NO <sub>x</sub>	20.85	55.43	+6.17	61.60
PT	40.17	71.82	+4.27	76.09
PM <sub>10</sub>	34.80	61.93	+3.80	65.73
PM <sub>2.5</sub>	33.80	57.03	+0.89	57.92
SO <sub>2</sub>	0.17	0.33	+0.05	0.38
VOC	6.21	28.48	+3.62	32.10
Lead	0.00014	0.00027	+0.00003	0.0003
<b>Greenhouse Gases (GHGs)</b>				
Carbon Dioxide	25683	68727	+10875	79602
Methane	0.65	1.23	+0.21	1.44
Nitrous Oxide	0.62	0.12	+0.02	0.14
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	25893	68795	+10886	79681
<b>Hazardous Air Pollutants (HAPs)</b>				
Hexane, n-Hexane	-	0.61	+0.17	0.78
Hydrochloric Acid	9.30	45.06	-3.17	41.89
Hydrofluoric Acid	0.98	0.37	+1.53	1.90
Total Combined HAPs		46.07**	-1.47	44.60

\*Includes permit required control devices.

\*\* Includes all tracked HAPs

Permit Number: V-19-026

Activities: APE20190001; APE20190002

Received: 6/19/2019

Application Complete Date(s): 8/16/2019

Permit Action:  Initial  Renewal  Significant Rev  Minor Rev  Administrative

Construction/Modification Requested?  Yes  No NSR Applicable?  Yes  No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  Yes  No

- APE20180007 – 502(b)10 Change – Delacquering Kiln Drum Replacement

**Description of Action:**

Real Alloy has applied for a renewal of their Title V permit. Since the previous renewal was issued in 2013, the facility has undergone two name changes to the current Real Alloy Recycling, LLC, several baghouse repairs and replacements, and the addition of eddy current equipment to remove combustibles from the shredder feed to the delacquering kiln. In the renewal permit, the following changes were made:

- Removal of Shredder System (EU01) from site and permit.
- Removal of Rotary Furnace #6 (EU04) from permit. Furnace would require reconstruction or replacement to become operational again.
- Removal of Rotary Furnace #10 (EU15) from permit as it was authorized but never constructed.
- Replacement of baghouse for operations in the Salt Cake Processing Facility (EU06) and updating of associated emission factors and capture efficiency.
- Inclusion of an annual processing rate limit for the Salt Cake Processing Facility (EU06).
- Addition of Compliance Assurance Monitoring (CAM) plan for the Salt Cake Processing Facility (EU06) baghouses as Appendix A.
- Update of PM (total) emission limit for the Holding Furnace (EU17) to specify that it includes both Filterable and Condensable PM.
- Update of permitting language to be consistent and clear.
- The construction of a cage mill, submitted in an application on April 9, 2019, was cancelled by Real Alloy, and has not been incorporated into the renewal.

Pollutant	2020 Actual (tpy)	PTE V-19-026 (tpy)
CO	169.94	171.64
NO <sub>x</sub>	20.85	55.43
PT	40.17	71.82
PM <sub>10</sub>	34.80	61.93
PM <sub>2.5</sub>	33.80	57.03
SO <sub>2</sub>	0.17	0.33
VOC	6.21	28.48
Lead	0.00014	0.00027
Greenhouse Gases (GHGs)		
Carbon Dioxide	25683	68727
Methane	0.65	1.23
Nitrous Oxide	0.62	0.12

Pollutant	2020 Actual (tpy)	PTE V-19-026 (tpy)
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	25893	68795
Hazardous Air Pollutants (HAPs)		
Hexane, n-Hexane	-	0.61
Hydrochloric Acid	9.30	45.06
Hydrofluoric Acid	0.98	0.37
Total Combined HAPs		46.07**

\*\* Includes all tracked HAPs

## **APPENDIX A – ABBREVIATIONS AND ACRONYMS**

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO <sub>x</sub>	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM <sub>10</sub>	– Particulate Matter equal to or smaller than 10 micrometers
PM <sub>2.5</sub>	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO <sub>2</sub>	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds