Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-24-010
Century Aluminum of KY, GP
1627 State Route 3543
Hawesville, KY 42348
September 26, 2024
Amy K. Tempus-Doom, P.E., Reviewer

SOURCE ID:	21-091-00004
AGENCY INTEREST:	1634
ACTIVITY:	APE20210003

Table of Contents

SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3334, Primary Production of Aluminum

Single Source Det. ☒ Yes ☐ No If Yes, Affiliated Source AI: 44199

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

28 Source Category ☒ Yes ☐ No If Yes, Category: Primary aluminum ore reduction plants

County: Hancock
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☒ PM_{10} ☒ $PM_{2.5}$ ☒ CO ☒ NO_X ☒ SO_2 ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☒ PM_{10} ☒ $PM_{2.5}$ ☒ CO ☒ NO_X ☒ SO_2 ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☒ Yes ☐ No
If yes, list which pollutant(s): Hydrofluoric Acid (HF), Polycyclic Organic Matter (POM)

PTE* greater than 25 tpy for combined HAP ☒ Yes ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Century Aluminum of Kentucky, GP (Century) produces primary aluminum from raw alumina (Al_2O_3) by applying electric current to the alumina in vessels termed reduction cells or "pots". Century operates four nearly identical potlines (Potlines #1-4) and a high purity aluminum potline (Potline #5). Each potline is composed of two potrooms that each contain 56 reduction cells for a total of 112 cells per potline.

Each pot in the potrooms is constructed as a complete electrolytic circuit with anode, cathode, and electrolyte. The exterior of the pots consists of a rectangular steel shell lined with refractory thermal insulation. Raw material inputs to the pots include alumina, bath, carbon anodes, and various other additives to the aluminum production process such as aluminum fluoride. Within the pot is an inner lining of carbon (the cathode). Carbon anode blocks are placed just below the surface of a fluoride electrolyte (cryolite) to complete the reaction circuit. A current is applied to metal rods attached to the anode blocks, which passes thorough the molten bath (molten aluminum, cryolite, and alumina) and the carbon cathode lining, and then to the current collector bars. The molten aluminum formed in the reduction cells (as it is liberated from alumina with oxygen) settles between the anode and cathode where it accumulates. The oxygen liberated reacts with the carbon anode blocks forming carbon dioxide. The accumulated molten metal is siphoned from the pots

into crucibles each day, and are sent to the casthouse to be cast into sows or ingots, or they are sent to customers as molten aluminum. The anode blocks, which are gradually consumed by the reaction in the pots, last a few weeks before they must be replaced with new anodes.

Emissions captured from each of the pots in Potlines 1-4, along with emissions captured from the fill stations and other raw material handling operations are routed to a Wet Scrubber System (43-2001). The three primary stages are a multiclone, a set of electrostatic precipitators (ESPs) and a lime-injected wet scrubber. Particulate recovered from the multiclones is routed to a set of bath reclaim storage silos to be recycled back to the potlines as raw material. Particulate removed from the ESPs is pelletized and shipped offsite as a waste material.

Emissions from the newer Potline 5, which was constructed in 1999, are controlled in a Dry Alumina Scrubber (48-0063). Reacted alumina, which has absorbed fluoride in the emissions stream, is routed back to Potline 5 to be used as a raw material.

To provide baked carbon anodes to the reduction cells, Century operates an anode paste mixing and forming operation and an anode bake furnace, in which the "green anodes" are baked. The green anodes are formed from petroleum coke, recycled spent anode material, and coal tar pitch, which serves as a binder. The formed anodes are compressed and placed within the bake furnace, where they are baked to remove volatiles, leaving a solid carbon block. The emissions from the paste mixing and anode forming units are vented to a common control device, a dry coke scrubber. The emissions from the anode bake furnace are sent to the Carbon Bake Dry Alumina Scrubber.

The molten aluminum produced by the reduction cells from all three potlines is sent to the casthouse to be formed into sows or is shipped offsite directly to customers in molten form.

Operations at the plant began in 1969, and originally included Potlines 1-4, Anode Bake Furnaces 1 & 2, and other support operations. Potline 5 and Anode Bake Furnace 3 began operation in 1999. In 2010, following the implementation of the amperage increase project, the production capacity of the plant increased to 250,000 tons per year from Potlines 1-4 and 66,000 tons per year from Potline 5 (For a total of 316,000 tons per year).

Production activities and emission units have historically been arranged into the following emission groups. This grouping and nomenclature is being retained as part of this renewal application.

- Emission Group 10: **Material Handling** (Raw Material Delivery and Transfer Operations)
- Emission Group 31: **Green Carbon** (Forming Green Anodes with Coke and Pitch)
- Emission Group 33: **Carbon Bake** (Baking of Anodes)
- Emission Group 34: **Rodding** (Removing Butts from Spent Anodes and Adding Rods to New Anodes)
- Emission Group 42: **Potlines**
- Emission Group 44: **Casting Operations**
- Emission Group 50: **Miscellaneous Operations** (Roads, Boilers, Engines)

Potlines #1 and #3 were de-energized in October 2015. Potline #3 was energized again on October 8, 2018, and Potline #1 was energized again on January 7, 2019. Potline #4 was de-energized in February 2019 and was energized again on January 27, 2020. Potline #5 was de-energized in September 2015 and was energized again on June 20, 2018.

All operations at the site have now been idle since August 2022.

The inclusion of the Parametric Monitoring Plan required by 40 CFR 63.848(f) as both a permit term that identifies the most recent revision date and an attachment to the permit was required by the U.S. EPA in comments on the proposed permit V-08-012. Revisions to this plan must be submitted to the Division for approval and incorporation into the permit.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-24-010 Activity: APE20210003

Received: November 30, 2021 Application Complete Date: January 31, 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

- APE20220001 – *Section 502(b)10 Change – Portable Anode Crusher*
- APE20190002 – *Section 502(b)10 Change – Anode Shot Blast Cleaner Replacement*

Description of Action:
In this renewal permit application, the following changes were made:

- Emission calculations were updated to reflect more recent data where it was available.
- The permit language for 40 CFR 63, Subparts LL and ZZZZ as well as 401 KAR 63:010 were updated to reflect the most recent revisions to the regulations.
- The overall permit language was updated to be consistent and clear.
- The change house boiler (EP 165) previously listed as an insignificant activity in Section C has been moved to Section B of the permit, since 401 KAR 59:015 applies to this unit.
- The 7 parts washers previously listed as insignificant activities in Section C have been moved to Section B of the permit, since 401 KAR 59:185 applies to these units.
- The Pitch Storage Tanks have been updated to reflect the selected control strategy to be in compliance with 40 CFR 63, Subpart LL.
- The permit has been organized into "Subject Items" by regulation applicability and grouping in Section B, and "Emission Groups" based on physical plant location, to aid in navigation.
- On The permit has been updated to include Vehicle Cleaning Operations in Section C of the permit.
- The applicability for the cooling towers in Section C of the permit has been corrected to 401 KAR 59:010.
- A new Stub Welding Jig #5 (EP 164) has been added to Section B of the permit, and is subject to 401 KAR 59:010 requirements.

Additionally, this facility has been idled since August 2022. In August 2024, the Division requested additional information regarding the shutdown and its permanence. The facility provided information indicating that the facility was being maintained in an idle state and was not permanently shutdown. The Division has added the compliance demonstration requirements for shutdown facilities to Section I of the permit, such that the requirements upon restart are clear.

On September 23, 2024, Century provided information that the facility is maintaining a continuous intent to restart the facility through the following actions and activities:

- Currently, there are 8 full time union employees and several salary employees maintaining the site. This includes the switchyard, utilities, mobile equipment, and critical infrastructure.
- Manufacturing and mobile equipment is operational and being used to support the activities that are ongoing.

- Maintaining all environmental and regulatory permits and certifications (Title V, KPDES, RCRA Hazardous Waste Generator, DOT Haz-Mat Shipper) and fulfilling all permit-required monitoring, notification, and reporting obligations.
- Completing audits with insurance carriers and resolving any identified issues.

Summary of All Affected Facilities Used to Determine 401 KAR 59:015 Emission Limits								
EP	**Fuel(s)**	**Capacity (MMBtu /hr)**	**Const.**	**Basis for PM Limit**	**Total Heat Input Capacity for PM Limit (MMBtu/hr)**	**Basis for SO_2 Limit**	**Total Heat Input Capacity for SO_2 Limit (MMBtu/hr)**	**Notes**
31	Natural Gas	18.4	1969	401 KAR 59:015, Section 4 (1)(c)	19.8	401 KAR 59:015, Section 5 (1)(c)(2)	19.8	
165	Natural Gas	1.4	1969	401 KAR 59:015, Section 4 (1)(c)	19.8	401 KAR 59:015, Section 5 (1)(c)(2)	19.8	

V-24-010 Emission Summary		
Pollutant	2023 Actual (tpy)*	PTE V-24-010 (tpy)
CO	0.0199	39,359
NOx	0.1082	321.5
PT	0.8878	685.3
PM_{10}	0.4467	574.6
$PM_{2.5}$	0.4010	393.4
SO_2	0.0055	2,639.8
VOC	0.0075	483.0
Lead	0.000	0.0654
Greenhouse Gases (GHGs)		
Carbon Dioxide	3.173	11,339
Methane	0.0001	0.215
Nitrous Oxide	0.00003	0.022
CO_2 Equivalent (CO_2e)	3.184	11,351
Hazardous Air Pollutants (HAPs)		
Particulate Fluoride (F)	0	122.1
Gaseous Fluoride (HF)	0	126.3
Total Fluoride (HF + F)	0	248.4
Manganese	0	0.0316
Mercury**	0	0.0124
Polycyclic Organic Matter (POM)**	0	472.4
Carbonyl Sulfide (COS)**	0	616.2
Combined HAPs:**	0	1215.2

*Note: The only reported emissions are from the fire pumps/emergency generators due to the shutdown of the facility.

**Note: These pollutants are calculated using the allowable under 40 CFR 63, Subpart LL because not enough information exists to establish a true potential for the affected units. Accordingly, these pollutant emission calculations will need to be revisited upon restart of the facility.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Subject Item A: Miscellaneous Particulate Sources					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	New	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly qualitative observations, recordkeeping
	Existing	40%	401 KAR 61:020, Section 3(1)(a)		
PM	New	• $P \leq 0.5$ tph = 2.34 lb/hr • $0.5 < P \leq 30$ tph = $3.59P^{0.62}$ lb/hr • $P > 30$ tph = $17.31P^{0.16}$ lb/hr	401 KAR 59:010, Section 3(2)	See comments.	Assumed when complying with emission and operating limits in the table below; calculations for units without limits in the table below, monitoring, recordkeeping.
	Existing	• $P \leq 0.5$ tph = 2.58 lb/hr • $0.5 < P \leq 30$ tph = $4.10P^{0.67}$ lb/hr • $P > 30$ tph = $55.0P^{0.11}$-40 lb/hr	401 KAR 61:020, Section 3(2)(a)		

Initial Construction and/or Modification Date: see below.

Process Description:

EP	Group	Equip. Desig.	Cons. Date	Description	Control Equipment	Emission limits, lbs/hr* PM/PM_{10}	Operation Limits (Tons/Year)**
EMISSION GROUP 10							
1	10	2012	1996	Vacuum Unloading - Nozzle 1 (Alumina & Coke)	DC 10-2012	0.000565	500,000 coke/alumina
2	10	2013	1996	Vacuum Unloading- Nozzle 2 (Alumina & Coke)	DC 10-2013	0.000565	500,000 coke/alumina
3	10	0416	1996	Transfer Point, Dock Unload to Conveyor	DC 10-0416	0.001074	1,000,000 coke/alumina
4	10	0220	1996	Unloading Station, Rail	DC 10-0220	0.001074	1,000,000 coke/alumina
5	10	0105	1996	Transfer Point, Tower 1	DC 10-0105	0.001017	1,000,000 coke/alumina
6	10	0240	1996	Transfer Point, Tower 5	DC 10-0240	0.001221	360,000 coke/alumina
7	10	0311	1996	Silo, 4000 Ton, Coke #1 East	DC 10-0316	0.000942	250,000 tons coke
8	10	0023 0310 0312 2023	1969 1996 1969 1969	Silo, 20 Ton, Packing Coke Waste Silo, 4000 Ton, Coke #2 West Silo, 750 Ton, Coke/Crushed Butts Silo, 200 Ton, Packing Coke	DC 10-0313	0.001785 0.000942 0.000660 0.000004	3,400 tons fluid coke 250,000 tons coke 175,200 tons coke 3,400 tons fluid coke
9	10	0030	1969	Silo, 4000 Ton, Alumina, 1A, (Silo#1)	DC 10-0037	0.000085	75,000 tons alumina
10	10	0031	1969	Silo, 4000 Ton, Alumina, 1B,	DC 10-0038	0.000085	75,000 tons alumina

Subject Item A: Miscellaneous Particulate Sources							
		0160		(Silo#2) Silo, 280 Ton, Lithium Carbonate East		0.000001	550 tons lithium carbonate
11	10	0032	1969	Silo, 4000 Ton, Alumina, 2A, (Silo # 3)	DC 10-0039	0.000085	75,000 tons alumina
12	10	0033	1969	Silo, 4000 Ton, Alumina 2B, (Silo #4)	DC 10-0040	0.000085	75,000 tons alumina
13	10	0034	1969	Silo, 4000 Ton, Alumina, 3A, (Silo #5)	DC 10-0041	0.000085	75,000 tons alumina
14	10	0035	1969	Silo, 4000 Ton, Alumina, 3B, (Silo # 6)	DC 10-0042	0.000085	75,000 tons alumina
15	10	0601 0691	1969	Silo, 4000 Ton, Alumina, 4A, (Silo # 7) Silo, 420 Ton, Aluminum Fluoride, West	DC 10-0611	0.000085 0.00000168	75,000 tons alumina 14,500 tons aluminum fluoride
16	10	0602	1969	Silo, 4000 Ton, Alumina, 4B, (Silo # 8)	DC 10-0612	0.0001***	75,000 tons alumina
17	10	1100	1999	Silo, 5000 Ton, Alumina, 5, (Silo # 9)	DC 10-1100	0.000198	175,000 tons alumina
EMISSION GROUP 31							
22	31	0409	1969	Green Carbon Building Vacuum System	DC 31-0409	0.000768	1,462.92 tons coke
23	31	0214	1969	Silo, 200 Ton, Crushed Butts	DC 31-0217	0.000284	75,500 tons crushed butts
24	31	0056	1969	Ball Mill, 10 Ton	DC 31-0068	0.001500	87,600 tons coke
25	31	0104	1996	Ball Mill, 15 Ton	DC 31-0109	0.002250	131,400 tons coke
26	31	0025 0046 0144 0202 0226 0274 0328 0042 0336 0080 0148 0278 0206 0287 0034 0155 0242	1969	*Green Carbon Material Handling:* Bucket Elevator (B-9), Surge Bin (5 Ton) (B-4), Crusher Double Roll (B-3), Bucket Elevator (B-10), Conveyor Screw 16'' (A-10), Bucket Elevator (A-9), Bin Fine Surge (A-6), Conveyor Screw 16" (A-18), Bucket Elevator (A-16), Bin Coarse Surge (A-7), Bucket Elevator (B-7), Conveyor Screw 16" (A-17), Bucket Elevator (A-14), Bin Butts 5 Ton (A-12), Bin Scrap 20 Ton (A-11), Bucket Elevator (A-5) Conveyor Screw 24" (A-1)	DC 31-0380	Combined: 0.335789	204,570 tons coke per source
EMISSION GROUP 33							
36	33	0056	1969	Cleaning, Baked Anode	DC 33-0075	0.001898	235,200 tons baked anodes
38	33	0093 0174	1969	Conveying System, Packing Coke, CB1 & CB2 Silo, 100 Ton, Packing Material	DC 31-0169	0.001214 0.000004	2,312 tons packing coke 3,400 tons packing coke
39	33	3028	1999	Conveying System, Packing Coke Dust, CB3	DC 33-3028 Vents inside building	0.000571	1,088 tons packing coke

Subject Item A: Miscellaneous Particulate Sources							
40	33	0365	1969	Vacuum Cleaning System	DC 33-0365	0.000084	160 tons packing coke
41	33	0240 0244	1999	Silo, 200 Ton, Fresh Alumina Silo, 200 Ton, Reacted Alumina	Dry Alumina Scrubber 33-0140	0.000040 0.000040	17,520 tons alumina 17,520 tons reacted alumina
42	33	0054	1969	NKM Crane, CB1N	DC 33-0054 Vents inside building	0.011216	21,360 tons packing coke
43	33	0055	1969	NKM Crane, CB1S	DC 33-0055 Vents inside building	0.011216	21,360 tons packing coke
44	33	0310	1969	NKM Crane, CB2N	DC 33-0310 Vents inside building	0.008412	16,020 tons packing coke
45	33	0350	1969	NKM Crane, CB2S	DC 33-0350 Vents inside building	0.008412	16,020 tons packing coke
46	33	3001	1999	ECL Crane, CB3 Multipurpose	DC 33-3001 Vents inside building	0.016825	32,040 tons packing coke
47	33	0081	1969	Bin, Baked Anode Dust, CB1	Vents inside building	PM_{10} = 0.069630 PM = 0.1090	1,326 tons packing coke dust
48	33	0330	1969	Bin, Baked Anode Dust, CB2	Vents inside building	PM_{10} = 0.051776 PM = 0.0810	986 tons packing coke dust
EMISSION GROUP 34							
56	34	2016	1969	Saw, Stub Cut-Off	Cyclone 34-2838	PM_{10} = 0.163 PM = 0.232877	1,500 tons anode bars
57	34	2017	1969	Jig #1, Stub Welding	Vents to Atmosphere	0.0116***	12 tons welding rod***
58	34	2018	1969	Jig #2, Stub Welding	Vents to Atmosphere	0.0116***	12 tons welding rod***
59	34	2019	1969	Jig #3, Stub Welding	Vents to Atmosphere	0.0116***	12 tons welding rod***
60	34	2050	2008	Jig #4, Stub Welding	Vents to Atmosphere	0.0116***	12 tons welding rod***
62	34	0020 0021	1969	Tumble Mill #1 Tumble Mill #2	DC 34-0074	0.034932 0.034932	4,000 tons cast iron 4,000 tons cast iron
63	34	2104 2105 2115	1969 1969 2011	Furnace #1, Induction, Cast Iron (2 ton) Furnace #2, Induction, Cast Iron (2 ton) Furnace #3, Induction, Cast Iron (2 ton)	DC 34-2100	0.003699 0.003699 0.003699	4,000 tons cast iron 4,000 tons cast iron 4,000 tons cast iron
64	34	0078	1969	Furnace, Aluminum Spray	DC 34-9052	Combined: 0.010894	2,750 tons aluminum 34.80 MMscf natural gas

Subject Item A: Miscellaneous Particulate Sources							
65	34	2028 2087 2027 2021	1969	Central Butt Cleaning, Chip & Clean Central Butt Cleaning, Kent Chipper Central Butt Cleaning, Manual Backup Chipper Central Butt Cleaning, Butt Chipper	DC 34-2074	Combined: 0.001909	50,000 tons anode butts per source
66	34	0096 0146	1969	Shot Blast Cleaner-Anode Butt Shot Blast Cleaner-Anode Rod/Stub	DC 34-0165	0.732591 0.855822	75,500 tons spent rodded anodes 88,200 tons anode rods
67	34	0105 0107 0113 2031	1969 1969 2011 1969	Crusher #1, Primary Butt Crusher #2, Primary Butt Press #1, Primary Butt Press #2, Primary Butt	DC 34-0157	Combined: 0.000745	75,500 tons spent, rodded anodes butts per source
70	34	1110 0118	1969	Crusher, Secondary Butt Crusher, Tertiary Butt	DC 34-0154	0.000186 0.000186	75,500 tons spent anodes each
164	34		2020	Jig #5, Stub Welding	Vents to Atmosphere	---	---
EMISSION GROUP 42							
80	42	4217 3400 3401 3405 3408 3410 3411 3414 3417 3420 3426 0165 0692	2014	*Bath Reclaim including:* Anode Cleanings Storage Building Grizzly Screen Vibrating Feeder, Bath Crushing Rotary Breaker Bucket Elevator, Magnetic Separator Magnetic Separator #1, Bath Crushing Magnetic Separator #2, Bath Crushing Bucket Elevator, Crushed Anode Cleaning Storage Silo, North, 400 Ton, Crushed Anode Bath Silo, South, 400 Ton, Crushed Anode Bath Bucket Elevator, Anode Cover Delivery to Belt Silo, 420 Ton, Anode Cover Material, East Silo, 420 Ton, Anode Cover Material, West	DC 42-3427 DC10-0039 DC10-0612	***** *****	262,800 tons per year combined
81	42	0071 2025	1996	Silo, 100 Ton, Bath Reclaim Silo, 300 Ton, Bath Reclaim	DC 42-3034	0.000051 0.000051	45,000 tons bath per source

Subject Item A: Miscellaneous Particulate Sources							
82	42	0021 2026 2028 2031 2031 2032 2032 2033 2034 2036 2030	1969	*Legacy Bath Reclaim including:* Hopper Bucket Elevator Screw Conveyor Belt Conveyor BC-3, Loading Belt Conveyor BC-3, Discharge Belt Conveyor BC-2, Loading Belt Conveyor BC-2, Discharge Belt Conveyor BC-1, Crusher Vibrating Feeder Vibrating Screen	DC 42-0066	Combined: 0.000981	45,000 tons bath per source
83	42	0034	1969	Transfer Point & Receiver Bin, 7.5 ton, Crushed Bath (43)	DC 43-0051	0.000051	45,000 tons crushed bath
84a	42	0018 0029 0030 0031 0032 0070 0088 0315 0316 0318 0439 0440 2569 2580 3441 3443	1969	*Non-Subpart LL Sources:* Silo, 100 Ton, Surge Lines 1 & 2 (43) Potline 1A-5 Ton Fill Station Potline 1B-5 Ton Fill Station Potline 2A-5 Ton Fill Station Potline 2B-5 Ton Fill Station Airveying to 5 Ton Silos, Lines 1 & 2 (43) Airveying to 5 Ton Silos, Lines 3 & 4 (43) Potline 3A-5 Ton Fill Station Potline 3B-5 Ton Fill Station Silo, 100 Ton, Surge Lines 3 & 4 (43) Potline 4A-5 Ton Fill Station Potline 4B-5 Ton Fill Station Pelletizer Dryer (43) Pelletizer System (43) Cover Hopper Loading Station, East Cover Hopper Loading Station, West	Wet Scrubber System 43-2001 (Multiclone, ESP, Wet Scrubber Towers)	Individually: PM_{10} = 0.0691 PM = 0.119	15,330 tons 15,374 tons 15,374 tons 15,374 tons 15,374 tons 61,495 tons 61,495 tons 15,374 tons 15,374 tons 15,330 tons 15,374 tons 15,374 tons 22.73 MMscf nat. gas 24,000 tons ESP dust
91	42	1200	1999	Potline 5A-5 Ton, Fill Station	DC 42-1200	0.000017	15,374 tons
92	42	1100	1999	Potline 5B-5 Ton, Fill Station	DC 42-1100	0.000017	15,374 tons
93	42	0152	1969	Silo, 450 Ton, Lime Unloading	DC 43-0160	0.002836	6,500 tons lime
94	42	1156 1400 1615 1800 1700	1999	Silo, 150 Ton, Fresh Alumina Silo, 100 Ton, Anode Cleanings Silo, 150 Ton, Reacted Alumina Silo, 600 Ton, Alumina Silo 5A Silo, 600 Ton, Alumina Silo 5B	DC 48-1615	0.000396 0.000020 0.000040 0.000198 0.000198	175,000 tons 8,687 tons 17,520 tons 87,500 tons 87,500 tons
95	42	1500	1999	Silo, 85 Ton, Sodium Carbonate (48)	DC 48-1500	0.001103	2,100 tons sodium carbonate
EMISSION GROUP 44							
111	44	0004	1998	Metal Purification Unit	DC 44-0033	0.002399	316,000 tons aluminum
112A 112B	44	0500	2002	Crucible Cleaner Equipment Crucible Cleaner Entry Hood	DC 45-0501 DC 45-0503	0.052055	8,000 tons bath

*, ** - These columns contain self-imposed emission limitations and operating limitations to ensure compliance with modeling performed according to 401 KAR 51:017.

*** - Revision V-08-12 R2 – This revision is to the self-imposed PSD avoidance limits and operating limits and does not

Subject Item A: Miscellaneous Particulate Sources

affect or raise the PSD avoidance caps.

**** - Revision V-08-012 R3 – This revision is for the addition of a new bath crushing system

***** - The two anode cover material silos previously contained aluminum fluoride and bath material. They cannot be reverted to using the original material without reinstatement of the original limitations. They were previously part of Emission Group 10, but have been moved to Emission Group 42 since they share a combined limit.

Applicable Regulation:

401 KAR 59:010, *New process operations,* applicable with respect to each affected facility or source, associated with a process operation, which commenced on or after July 2, 1975.

401 KAR 61:020, *Existing process operations,* applicable with respect to each affected facility or source, associated with a process operation, which commenced before July 2, 1975.

40 CFR 64, *Compliance Assurance Monitoring,* applicable to EP 66 with respect to PM/PM_{10}. Refer to Appendix A-4.

Note: The emission limitations in the table above supersede the mass emission standards (PM/PM_{10}) of 401 KAR 59:010 and 61:020.

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances.

Comments:

The emission and operating caps included in the permit for the Miscellaneous Particulate Sources are the result of a PSD project conducted in V-08-012. This project included a plant-wide capacity increase. The emission limitations for PM/PM_{10} are the values used in modeling for increment consumption and NAAQS violations, and have been set to ensure that Century Aluminum Hawesville does not cause or contribute to a violation of the NAAQS or exceedance of the SIL.

The PM/PM_{10} emission limitations for EP16 and EP57-60 are a result of permit V-08-12 R2. This revision was to the self-imposed PSD avoidance limits and operating limits and did not affect or raise the PSD avoidance caps.

The two anode cover material silos involved in the new bath crushing system project in V-08-012 R3 have been modified and had their PM/PM_{10} emission limits removed. The two silos previously contained aluminum fluoride and bath material. They cannot be reverted to using the original material without reinstatement of the original limitations. They were previously part of Emission Group 10, but have been moved to Emission Group 42 since they share a combined limit.

Emissions are calculated using AP-42, Chapters 1.4, 11.12, 11.19.2, 12.1, 12.8, 12.10, 12.19 and OSHA monitoring data.

Also, for $PM_{2.5}$ calculations, from V-08-012, Statement of Basis, Page 13: Material Handling and Fugitive Sources - Approximately 15% of the PM_{10} exists as $PM_{2.5}$.

Subject Item B: Fugitive Sources

Initial Construction Date: 1969

Process Description:

EP	Group	Equip. Desig.	Description	Operation Limits (Tons/Year)
EMISSION GROUP 10				
FUG10	10	0018	Conveyor, Barge to Tower 1	1,000,000 tons coke, alumina
FUG10	10	0230	Conveyor, Railroad Unload Station to Tower 5	360,000 tons aluminum fluoride, coke, alumina
FUG10	10	0250	Conveyor, Tower 1 to Tower 5	360,000 tons coke, alumina, aluminum fluoride
FUG10	10	0015	Conveyor, Tower 1 to Alumina Silos	750,000 tons alumina, aluminum fluoride
FUG10	10	0305	Conveyor, Tower 5 to Coke Silos	250,000 tons coke
EMISSION GROUP 31				
FUG31	31	-	Fugitive Emissions from Green Carbon Mixing	-
EMISSION GROUP 34				
FUG34	34	-	Fugitive Emissions from Rodding Operations	-
EMISSION GROUP 50				
FUG50	50	-	Paved Roads	-
FUG50	50	-	Unpaved Roads	-

Emission Group 10, Material Handling, includes the following:

1. *Barge Unloading Station:*
   Raw materials for the plant are received by barge, rail, and truck. The vast majority of the two key raw materials (alumina and petroleum coke) are received by barge on the Ohio River. Vacuum unloading nozzles are used to suck these dry materials from barges docked at the barge unloading station and transfer them to a conveyor, which directs the material up to a large conveyor transfer tower (Tower 1).

2. *Railcar Unloading Station:*
   Although alumina and coke are primarily received via barge, these materials can also be delivered from rail cars at the Rail Unloading Station. Rail cars unload from the bottom through a grate to an underground conveyor that carries material to Tower 5. If the material received is alumina, it is conveyed from Tower 5 to Tower 1 and then onto the main conveyor (ED 0015) serving the Alumina Silos. If the material received is coke, it is conveyed from Tower 5 to the Coke Silos. A filter system pulls a draw on the rail unloading station to control dust emissions from the unloading process.

Emission Group 50, Miscellaneous Operations, includes the following:

1. *Road Fugitives:*
   Movement of plant vehicles on plant surfaces, most of which are paved, are a source of fugitive PM emissions. Currently, there is a single KyEIS Source ID (FUG50) defined in the Title V permit and KyEIS database with two Process IDs, one for paved road emissions and one for unpaved road emissions.

Subject Item B: Fugitive Sources
Applicable Regulation: **401 KAR 51:017,** *Prevention of significant deterioration of air quality*, applicable with respect to PM and PM_{10} **401 KAR 63:010,** *Fugitive emissions* **Comments:** Emissions calculated using AP-42, Section 13.2.1 and 13.2.2 and the Refractory products NESHAP example calculations. Also, for $PM_{2.5}$ calculations, from V-08-012, Statement of Basis, Page 13: Material Handling and Fugitive Sources - Approximately 15% of the PM_{10} exists as $PM_{2.5}$. The operating caps included in the permit for the units above are the result of a PSD project conducted in V-08-012. This project included a plant-wide capacity increase. The limitations have been set to ensure that Century Aluminum Hawesville does not cause or contribute to a violation of the NAAQS or exceedance of the SIL.

Subject Item C: CWPB3 Sources (Potlines #1-4)					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
TF	2.5 lb/ton (stack & roof)		40 CFR 63.843(a)(1)(iii)	12/2014 Stack test data	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
POM	2.7 lb/ton (stack & roof)		40 CFR 63.843(a)(2)(vi)	6/2019 Stack test data	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
PM	20 lb/ton (stack & roof)		40 CFR 63.843(a)(3)(iii)	12/2014 Stack test data	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
COS	3.9 lb/ton (stack & roof)		40 CFR 63.843(e)	LL Allowable	Calculation; monitoring; recordkeeping
Opacity	normal op.:10% sick/start-up: 40% dry scrubber: 25%		401 KAR 61:165, Section 3	N/A	Twice-daily qualitative stack observations; weekly roof monitor observations; monitoring; recordkeeping
HF	Stack	1.0 lb/ton	401 KAR 61:165, Section 4(1)(c)	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	3.25 lb/hr	401 KAR 61:165, Section 4(1)(b)		
PM	0.010 gr/scf (stack)		401 KAR 61:165, Section 5	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
PM (combined)	220.786 lb/hr (stack & roof)		401 KAR 51:017	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
PM_{10}/ $PM_{2.5}$ (combined)	128.1 lb/hr (stack & roof)		401 KAR 51:017	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping

Subject Item C: CWPB3 Sources (Potlines #1-4)				
SO_2 (combined)	898.97 lb/hr (stack & roof)	401 KAR 51:017	1/2012 Stack Test Data	Calculation; testing; monitoring; recordkeeping
CO (combined)	7,134 lb/hr (stack & roof)	401 KAR 51:017	BACT Limit	Calculation; testing; monitoring; recordkeeping
F (combined)	24.763 lb/hr (stack & roof)	401 KAR 51:017	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
HF (combined)	46.792 lb/hr (stack & roof)	401 KAR 51:017	12/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
VOC (combined)	30.252 lb/hr (stack & roof)	To preclude 401 KAR 51:017, Sections 8 to 16	Set equal to 6/2019 Stack Test Data for POM	Calculation; testing; monitoring; recordkeeping

Initial Construction Date: 1969

Process Description:

EP	Group	Equip. Desig.	Description	Control Equipment	BACT LIMITS (lbs/hr)	Operation Limits (Tons/Year)
EMISSION GROUP 42						
84b	42	4200 4220 4230 4240	Potline #1, CWPB3 (45) Potline #2, CWPB3 (45) Potline #3, CWPB3 (45) Potline #4, CWPB3 (45)	Wet Scrubber System 43-2001 (Multiclone, ESP, Wet Scrubber Towers)	Combined stack emissions CO – 6,778 F – 11.751 HF – 27.700 PM_{10} – 80.234 PM – 138.33	250,000 tons aluminum produced from all lines
85	42	2092	Potline #1 Roof Monitor, CWPB3	None	CO – 89.184 F – 3.253 HF – 4.773 PM_{10} – 11.956 PM – 20.614	62,500 tons aluminum produced
86	42	2093	Potline #2 Roof Monitor, CWPB3	None	CO – 89.184 F – 3.253 HF – 4.773 PM_{10} – 11.956 PM – 20.614	62,500 tons aluminum produced
87	42	2094	Potline #3 Roof Monitor, CWPB3	None	CO – 89.184 F – 3.253 HF – 4.773 PM_{10} – 11.956 PM – 20.614	62,500 tons aluminum produced
88	42	2088	Potline #4 Roof Monitor, CWPB3	None	CO – 89.184 F – 3.253 HF – 4.773 PM_{10} – 11.956 PM – 20.614	62,500 tons aluminum produced

Subject Item C: CWPB3 Sources (Potlines #1-4)

Each potline is composed of two potrooms that each contain 56 reductions cells (i.e., pots) for a total of 112 cells per potline. Each pot is constructed as a complete electrolytic circuit with anode, cathode, and electrolyte. The exterior of the pots consists of a rectangular steel shell lined with refractory thermal insulation. Within the pot an inner lining of carbon (the cathode) that contains the molten electrolyte (cryolite), the main constituents of which are sodium fluoride and aluminum fluoride. Carbon anode blocks are placed just below the surface of a fluoride electrolyte (cryolite) to complete the reaction circuit. A current is applied to metal rods attached to the anode blocks, which passes thorough the molten bath (molten aluminum, cryolite, and alumina) and the carbon cathode lining and then to current collector bars. The molten aluminum formed in the reduction cells (as it is liberated from alumina with oxygen) settles between the anode and cathode where it accumulates. The oxygen liberated reacts with the carbon anode blocks forming carbon dioxide. The accumulated molten metal is siphoned from the pots into crucibles each day, and are sent to the casthouse to be cast into sows or ingots, or they are sent to customers as molten aluminum. The anode blocks, which are gradually consumed by the reaction in the pots, last a few weeks before they must be replaced with new anodes.

The electrolysis in the pots produces particulate and gaseous byproducts. Each pot is equipped with covers and shields to capture the particulates and gases generated and route them to control devices. The particulates are predominately fluoride compounds, alumina, elemental carbon, carbon compounds, and small amounts of aluminum. The gaseous compounds include but are not limited to carbon dioxide, hydrogen fluoride, sulfur dioxide, carbon monoxide, and organics from the destruction of the carbon anode. Although the covers and shields capture a majority of the particulate and gaseous emissions generated in the pots, some emissions leave the pot rooms via roof vents located in the ceiling of each potline production room.

Emissions captured from each of the pots in Potlines 1-4, along with emissions captured from the fill stations and other raw material handling operations are routed to a Wet Scrubber System (43-2001). The three primary stages are a multiclone, a set of electrostatic precipitators (ESPs) and a lime-injected wet scrubber. Particulate recovered from the multiclones is routed to a set of bath reclaim storage silos to be recycled back to the potlines as raw material. Particulate removed from the ESPs is pelletized and shipped offsite as a waste material.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* applicable with respect to PM, PM_{10}, $PM_{2.5}$, SO_2, CO, and Fluorides

401 KAR 53:010, *Ambient air quality standards* (HF & TF)

401 KAR 61:165, *Existing primary aluminum reduction plants*

40 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 through 63.855, Tables 1 through 4, and Appendix A (Subpart LL), *National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants,* applicable with respect to each existing CWPB3 potline associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2.

40 CFR 64, *Compliance Assurance Monitoring,* applicable to Potlines #1-4 with respect to PM/PM_{10}, and SO_2. Refer to Appendix A-1.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, Sections 8 to 16, for VOC and NO_x.

Subject Item C: CWPB3 Sources (Potlines #1-4)
Comments: Emission for each of the potlines are calculated using previous stack test results for each Emission Unit, or data from a similar unit where no source specific tests were performed. COS emissions are calculated using the allowable for Subpart LL. Potlines #1-4 emission calculations use test data from compliance testing performed in January 2012, December 2014, and June 2019. Total Fluorides (TF), for the purposes of this permit and emission calculations include both Gaseous Fluorides (HF) and Particulate Fluorides (F). The ambient air monitor operated by Century Hawesville is operated for the measurement of gaseous fluorides (HF) only. So while 401 KAR 61:165 identifies what constitutes a violation for the secondary standard for TF, particulate fluorides are not actively monitored by Century, and therefore the only way an exceedance of the TF standard could be measured would be if HF monitoring data exceeded the TF standard alone (without the addition of particulate fluoride data). The green anode/pitch sulfur requirements were imposed as part of the PSD project conducted in V-01-019. These requirements constituted BACT for SO_2 for the processes they are applied to. The emission limitations for Potlines #1-4 (stack and roof) and Paste Production Plant were imposed as part the PSD project conducted in V-08-012. The operating limitation for Potlines #1-4 of 250,000 cumulative tons per year based on a 12-month rolling total was imposed as part of the PSD project conducted in V-08-012. The use of good design and combustion practices for the control of CO at Potlines #1-4 was considered BACT for the PSD project conducted in V-08-012.

Subject Item D: CWPB1 Sources (Potline #5)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
TF	1.2 lb/ton (stack & roof)	40 CFR 63.844(a)(1)	10/2014 Stack test data	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
POM	1.1 lb/ton (stack & roof)	40 CFR 63.843(a)(2)(iv)	LL Allowable	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
PM	7.4 lb/ton (stack & roof)	40 CFR 63.843(a)(3)(i)	10/2014 Stack test data	Semi-Annual Roof and Annual Stack Testing; monitoring; recordkeeping
COS	3.9 lb/ton (stack & roof)	40 CFR 63.843(e)	LL Allowable	Calculation; monitoring; recordkeeping
Opacity	20%	401 KAR 59:010, Section 3(1)(a)	N/A	Twice-daily qualitative stack observations; weekly roof monitor observations; monitoring; recordkeeping

Subject Item D: CWPB1 Sources (Potline #5)					
PM	• $P \leq 0.5$ tph = 2.34 lb/hr • $0.5 < P \leq 30$ tph = $3.59P^{0.62}$ lb/hr • $P > 30$ tph = $17.31P^{0.16}$ lb/hr		401 KAR 59:010, Section 3(2)	10/2014 Stack test data	Assumed when complying with 401 KAR 51:017 limits
PM	Stack	13.875 lb/hr	401 KAR 51:017	10/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	37.671 lb/hr			
	Combined	51.456 lb/hr			
PM_{10}	Stack	8.048 lb/hr	401 KAR 51:017	10/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	21.849 lb/hr			
	Combined	29.897 lb/hr			
SO_2	Stack	364.52 lb/hr	401 KAR 51:017	10/2012 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	7.44 lb/hr			
	Combined	371.96 lb/hr			
CO	Stack	2588.308 lb/hr	401 KAR 51:017	10/2012 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	52.823 lb/hr			
	Combined	2641.13 lb/hr			
F	Stack	0.126 lb/hr	401 KAR 51:017	10/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	2.886 lb/hr			
	Combined	3.012 lb/hr			
HF	Stack	0.685 lb/hr	401 KAR 51:017	10/2014 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	5.342 lb/hr			
	Combined	6.027 lb/hr			
VOC	Stack	7.384 lb/hr	401 KAR 51:017	10/2012 Stack test data	Calculation; testing; monitoring; recordkeeping
	Roof	0.166 lb/hr			
	Combined	7.55 lb/hr			
NO_x	36 tons/yr (stack & roof)		To preclude 401 KAR 51:017, Sections 8 to 16	10/2012 Stack test data	Calculation; testing; monitoring; recordkeeping

Initial Construction Date: 1998

Process Description:

EP	Group	Equip. Desig.	Description	Control Equipment	Operation Limits (Tons/Year)
EMISSION GROUP 42					
89	42	4250	Potline #5, CWPB1	Dry Alumina Scrubber 48-0063	66,000 tons aluminum produced
90	42	3091	Potline #5 Roof Monitor, CWPB1	None	66,000 tons aluminum produced

The potline is composed of two potrooms that each contain 56 reductions cells (i.e., pots) for a total of 112 cells per potline. Each pot is constructed as a complete electrolytic circuit with anode, cathode, and electrolyte. The exterior of the pots consists of a rectangular steel shell lined with refractory thermal insulation. Within the pot an inner lining of carbon (the cathode) that contains the molten electrolyte (cryolite), the main constituents of which are sodium fluoride and aluminum fluoride. Carbon anode blocks are placed just below the surface of a fluoride electrolyte (cryolite) to complete the reaction circuit. A

Subject Item D: CWPB1 Sources (Potline #5)

current is applied to metal rods attached to the anode blocks, which passes thorough the molten bath (molten aluminum, cryolite, and alumina) and the carbon cathode lining and then to current collector bars. The molten aluminum formed in the reduction cells (as it is liberated from alumina with oxygen) settles between the anode and cathode where it accumulates. The oxygen liberated reacts with the carbon anode blocks forming carbon dioxide. The accumulated molten metal is siphoned from the pots into crucibles each day, and are sent to the casthouse to be cast into sows or ingots, or they are sent to customers as molten aluminum. The anode blocks, which are gradually consumed by the reaction in the pots, last a few weeks before they must be replaced with new anodes.

The electrolysis in the pots produces particulate and gaseous byproducts. Each pot is equipped with covers and shields to capture the particulates and gases generated and route them to control devices. The particulates are predominately fluoride compounds, alumina, elemental carbon, carbon compounds, and small amounts of aluminum. The gaseous compounds include but are not limited to carbon dioxide, hydrogen fluoride, sulfur dioxide, carbon monoxide, and organics from the destruction of the carbon anode. Although the covers and shields capture a majority of the particulate and gaseous emissions generated in the pots, some emissions leave the pot rooms via roof vents located in the ceiling of each potline production room.

Emissions from the newer Potline 5, which was constructed in 1998, are controlled in a Dry Alumina Scrubber (48-0063). Reacted alumina, which has absorbed fluoride in the emissions stream, is routed back to Potline 5 to be used as a raw material.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, applicable with respect to PM, PM_{10}, $PM_{2.5}$, SO_2, CO, VOC, and Fluorides.

401 KAR 59:010, *New process operations*

40 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 through 63.855, Tables 1 through 4, and Appendix A (Subpart LL), *National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants*, applicable with respect to each CWPB1 potline associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2. For the purposes of this subpart, Potline #5 is considered a new center-worked prebake one (CWPB1) potline, except for the purposes of compliance with the emission standards for PM, POM, and COS, according to 40 CFR 63.847(a)(6) and (7). For that purpose, Potline #5 is considered an existing CWPB1 potline and must comply with the corresponding limitations for existing units.

40 CFR 64, *Compliance Assurance Monitoring,* applicable to Potline #5 with respect to PM/PM_{10}. Refer to Appendix A-2.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, Sections 8 to 16, for NO_x.

Comments:

Potline #5 emission calculations uses test data from compliance testing performed in October 2012 and October 2014. COS emissions are calculated using the allowable for Subpart LL.

Total Fluorides (TF), for the purposes of this permit and emission calculations include both Gaseous Fluorides (HF) and Particulate Fluorides (F).

Subject Item D: CWPB1 Sources (Potline #5)
The emission limitations for Potline #5 (stack and roof) were imposed as part the PSD project conducted in V-01-019. The green anode/pitch sulfur requirements were imposed as part of the PSD project conducted in V-01-019. These requirements constituted BACT for SO_2 for the processes they are applied to. The operating limitation for Potline #5 of 66,000 tons per year based on a 12-month rolling total was imposed as part of the PSD project conducted in V-08-012. The NO_x emission limitations for Potline #5 and those in Section D of the permit are from permitting action V-08-012 R1 to preclude PSD applicability.

Subject Item E: Anode Bake Furnaces #1, #2, & #3					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
TF	ABF #1 & #2	0.20 lb/ton	40 CFR 63.843(c)(1)	6/2015 Stack test data	Calculation; Annual testing; monitoring; recordkeeping
	ABF #3	0.02 lb/ton	40 CFR 63.844(c)(1)		
POM	ABF #1 & #2	0.18 lb/ton	40 CFR 63.843(c)(2)	6/2015 Stack test data	
	ABF #3	0.05 lb/ton	40 CFR 63.844(c)(2)		
PM	0.20 lb/ton		40 CFR 63.843(c)(3)	6/2012 Stack test data	
Mercury	1.7 µg/dscm		40 CFR 63.843(c)(4)	LL Allowable	
Opacity	ABF #1 & #2	40%	401 KAR 61:020, Section 3(1)(a)	N/A	Twice-daily qualitative observations; monitoring; recordkeeping
	ABF #3	20%	401 KAR 59:010, Section 3(1)(a)		
PM (ABF #3)	• $P \leq 0.5$ tph = 2.34 lb/hr • $0.5 < P \leq 30$ tph = $3.59P^{0.62}$ lb/hr • $P > 30$ tph = $17.31P^{0.16}$ lb/hr		401 KAR 59:010, Section 3(2)	6/2012 Stack test data	Assumed when complying with 401 KAR 51:017 limits
PM (ABF #1 & #2)	• $P \leq 0.5$ tph = 2.58 lb/hr • $0.5 < P \leq 30$ tph = $4.10P^{0.67}$ lb/hr • $P > 30$ tph = $55.0P^{0.11}$-40 lb/hr		401 KAR 61:020, Section 3(2)(a)	6/2012 Stack test data	
PM	3.575 lb/hr		401 KAR 51:017	6/2012 Stack test data	Calculation; testing; monitoring;
PM_{10}	3.575 lb/hr		401 KAR 51:017	Assumed equal to	

Subject Item E: Anode Bake Furnaces #1, #2, & #3				
			PM	recordkeeping
CO	219.246 lb/hr	401 KAR 51:017	5/2011 Stack test data	
F	3.220 lb/hr	401 KAR 51:017	6/2015 stack test data	
HF	0.697 lb/hr	401 KAR 51:017	6/2015 stack test data	
VOC	5.461 lb/hr	To preclude 401 KAR 51:017, Sections 8 to 16	6/2012 stack test data	
SO_2	139.959 lb/hr	401 KAR 51:017	5/2011 Stack test data	

Process Description:

EP	Group	Equip. Desig.	Cons. Date	Description	Primary Fuel	Heat Input Capacity (MMBtu)	Maximum Capacity*	Control Equipment
EMISSION GROUP 33								
41b	33	3301	1969	Anode Bake Furnace #1	Natural Gas	40.278	233,000 tons green anode; 106,800 tons packing coke; 855.57 MMscf natural gas; 675,000 gal propane	Dry Alumina Scrubber 33-0140
		3302	1969	Anode Bake Furnace #2	Natural Gas	40.278		
		3307	1999	Anode Bake Furnace #3	Natural Gas	27.332		

*Limited by an operating limitation below.

In **Emission Group 33,** Carbon Bake, the formed green anode blocks are placed within one of the three anode bake furnaces, where they are baked to remove volatiles, leaving a solid carbon block. Each of the three bake furnaces employs a similar process.

The anode bake furnaces are below ground, natural gas (or propane)-fired ring furnaces. The exterior of each bake furnace is composed of a refractory lined concrete tub which forms the shell within which the anodes can be baked. Within the shell of the furnace are refractory brick walls known as headwalls that run perpendicular to the length of the furnace tub and form the individual furnace sections. Flues also formed with refractory running parallel to the length of the furnace. The chambers formed at the intersections of the flues and headwalls are called "pits". The pits house the anodes during baking. A vacuum crane loads the anodes into each pit and then covers the anodes with packing coke to insulate the anodes during the baking process. The packing coke is delivered from the main 200-ton Packing Coke Silo to loading cranes that move up and down the furnace building to place the coke over the pits.

Mobile firing trains consisting of a series of natural gas-fired burners supply hot combustion gases to flues running parallel to the length of the furnaces. Emissions produced as the anodes bake are drawn through the porous refractory walls of the pits and are collected with combustion by-products. Cooling manifolds collect exhaust gas and route it through ducts to the Carbon Bake Dry Alumina Scrubber (33-0140). The induced draft fan for the Scrubber supplies the draw to large duct branches on each bake furnace that run parallel to the length of the furnace. Alumina used as the sorbent is received via truck to a 200-ton Fresh Alumina Silo. Reacted alumina removed from the bottom of the scrubber is stored in a 200-Ton Reacted Alumina Silo before being transported back to the Reacted Alumina Silo serving the Potline 5 Scrubber. From there is it routed to Potline 5 as a raw material.

Subject Item E: Anode Bake Furnaces #1, #2, & #3

Once a baking cycle for a given section of the furnace is complete, the loading/unloading cranes suck out the packing coke and transfer it to bins and a conveying system, which transports it to a 100-ton Packing Coke Waste Silo where it is stored before being bagged for disposal. The baked anode blocks are removed by crane from the pits and are then attached to elevated conveyors that route them to the Rodding Department where the anode rods are inserted and sealed to the anode block with molten cast iron.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, applicable with respect to PM, PM_{10}, $PM_{2.5}$, SO_2, CO, and Fluorides.

401 KAR 59:010, *New process operations*, applicable with respect to each affected facility or source, associated with a process operation, which commenced on or after July 2, 1975.

401 KAR 61:020, *Existing process operations*, applicable with respect to each affected facility or source, associated with a process operation, which commenced before July 2, 1975.

40 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 through 63.855, Tables 1 through 4, and Appendix A (Subpart LL), *National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants*. applicable with respect to each new or existing anode bake furnace associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2. For the purposes of this subpart, Anode Bake Furnaces #1 & #2 are considered existing anode bake furnaces. For the purposes of this subpart, Anode Bake Furnace #3 is considered a new anode bake furnace, except for the purposes of compliance with the emission standards for PM and Hg, according to 40 CFR 63.847(a)(6) and (9). For that purpose, Anode Bake Furnace #3 is considered an existing anode bake furnace and must comply with the corresponding limitations for existing units.

40 CFR 64, *Compliance Assurance Monitoring*, applicable to EP 41b with respect to PM/PM_{10}. Refer to Appendix A-3.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, Sections 8 to 16, for VOC and NO_x.

Comments:

The anode bake furnace emission calculations use test data from compliance testing performed in May 2011, June 2012, and June 2015.

Also, for $PM_{2.5}$ calculations, from V-08-012, Statement of Basis, Page 13: 20% of the PM_{10} resulting from the Anode Bake Process is considered to be $PM_{2.5}$. Total Fluorides (TF), for the purposes of this permit and emission calculations include both Gaseous Fluorides (HF) and Particulate Fluorides (F).

The operating and emission limitations for the Anode Bake Furnaces were imposed as part the PSD project conducted in V-08-012, and were modified in V-08-012 R3.

The green anode/pitch sulfur requirements were imposed as part of the PSD project conducted in V-01-019. These requirements constituted BACT for SO_2 for the processes they are applied to.

The NO_x emission limitations for Potline #5 and those in Section D of the permit are from permitting action V-08-012 R1 to preclude PSD applicability.

Subject Item F: Paste Production Plant				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	0.082 lb/ton	40 CFR 63.843(b)(4)	AP-42, Table 11.12-2	Calculation; Testing; monitoring; recordkeeping
PM	• $P \leq 0.5$ tph = 2.58 lb/hr • $0.5 < P \leq 30$ tph = $4.10P^{0.67}$ lb/hr • $P > 30$ tph = $55.0P^{0.11}$-40 lb/hr	401 KAR 61:020, Section 3(2)(a)	AP-42, Table 11.12-2	Assumed when complying with 401 KAR 51:017 limit
PM	0.002294 lb/hr	401 KAR 51:017	AP-42, Table 11.12-2	Testing, monitoring recordkeeping
PM_{10}	0.0015140 lb/hr	401 KAR 51:017	AP-42, Table 11.12-2	Testing, monitoring recordkeeping
POM	Capture and control	40 CFR 63.843(b)	KYEIS, Assuming VOC is equal to POM.	Site Inspection and records review
POM (VOC)	13.94 lb/hr	To preclude 401 KAR 51:017	KYEIS, Assuming VOC is equal to POM.	Testing, monitoring recordkeeping
Opacity	40%	401 KAR 61:020, Section 3(1)(a)	N/A	Twice-daily qualitative observations; monitoring; recordkeeping

Initial Construction Date: 1969

Process Description:

EP	Group	Equip. Desig.	Cons. Date	Description	Control Equipment	Operation Limits (Tons/Year) *
EMISSION GROUP 31						
28	31	0351	1969	Mixer 1	*Dry Coke Scrubber 31-0126*	27,222.2
		0352		Mixer 2		27,222.2
		0353		Mixer 3		27,222.2
		0354		Mixer 4		27,222.2
		0355		Mixer 5		27,222.2
		0356		Mixer 6		27,222.2
		0357		Mixer 7		27,222.2
		0358		Mixer 8		27,222.2
		0359		Mixer 9		27,222.2
		0362		Conveyor Green Mix Belt		108,888.89
		0364		Conveyor Green Mix Belt		136,111.11
		2035		Conveyor Green Mix Belt		245,000
		2037		Rejects Chute Flop Gate		6,500
		0425		Tank, Pitch Day, 10000 gallon		39,759.89
		2036		Conveyor Green Mix Belt		245,000
		2006		Hopper Surge (32)		245,000
		0135		Silo Buffer		26,280
		2010		Anode Vibrating Press		245,000

*Note: This column contains operating limitations to ensure compliance with modeling performed for PM & PM_{10} according to 401 KAR 51:017.

Subject Item F: Paste Production Plant

The pitch storage tanks feed a smaller 10,000-gallon Pitch Day Tank in the paste production plant, which distributes the required volume of pitch to each of nine mixers that form the paste consisting of coke, recycled butts material, and pitch. From the mixers, the anode paste mixture is conveyed to an Anode Vibrating Press, which compresses the mixture into anode blocks. The blocks then pass through cooling conveyors where they are submerged in water. The cooled anode blocks are then sent to one of the three bake furnaces via elevated conveyors.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, applicable with respect to PM and PM_{10}

401 KAR 61:020, *Existing process operations;* applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced before July 2, 1975.

401 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 to 63.855, Tables 1 to 4, and Appendix A (Subpart LL), *National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants*, applicable with respect to each existing paste production plant associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2. For the purposes of this subpart, the paste production plant is defined as the processes whereby calcined petroleum coke, coal tar pitch (hard or liquid) and/or other materials are mixed, transferred and formed into green anodes for a prebake process. This definition includes all operations from initial mixing to final forming (i.e., briquettes, paste, green anodes) within the paste production plant, including conveyors and units managing heated liquid pitch. This includes EP28, which is considered an existing paste production plant.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, Sections 8 to 16, for VOC.

Comments:

In addition to being a source of PM emissions, the wet circuit process units and conveyors are a source of VOC/HAP emissions (e.g., POM). Emissions in the wet circuit area are vented to the Dry Coke Scrubber (31-0216) for control in accordance with applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants, 40 CFR 63, Subpart LL.

Also, for $PM_{2.5}$ calculations, from V-08-012, Statement of Basis, Page 13: All PM_{10} resulting from the Green Carbon Process is considered to be $PM_{2.5}$.

The operating and emission limitations for the Anode Paste Production Plant (EP28) are the result of a PSD project conducted in V-08-012. This project included a plant-wide capacity increase. The emission limitations for PM/PM_{10} are the values used in modeling for increment consumption and NAAQS violations, and have been set to ensure that Century Aluminum Hawesville does not cause or contribute to a violation of the NAAQS or exceedance of the SIL. The VOC emission limitations are to preclude PSD for VOC.

Subject Item G: Pitch Storage Tanks				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
POM	95% Reduction	40 CFR 63.843(d)	0.0392 lb POM/ton; Subpart LL ICR Survey for VOC	Design Evaluation submitted 10/11/2017
VOC (POM)	0.426987 lb/hr	To preclude 401 KAR 51:017, Section 8 to 16	0.0392 lb POM/ton; Subpart LL ICR Survey for VOC	Assumed when complying with operating limit

Initial Construction Date: 1969

Process Description:

EP	Group	Equip. Desig.	Description	Control Equipment
EMISSION GROUP 31				
27	31	0420	Tank #1, Pitch – 100,000 gallons	*Carbon Adsorption System*
		0440	Tank #2, Pitch – 100,000 gallons	
		2019	Tank #3, Pitch – 100,000 gallons	

Coal tar pitch is received at the plant via tanker trucks or rail cars. The pitch is stored in one of three 100,000-gallon Pitch Storage Tanks that all vent through a carbon adsorption system. These tanks feed a smaller 10,000-gallon Pitch Day Tank in the paste production plant, which distributes the required volume of pitch to each of nine mixers that form the paste consisting of coke, recycled butts material, and pitch.

Applicable Regulation:
401 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 to 63.855, Tables 1 to 4, and Appendix A (Subpart LL), *National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants,* applicable with respect to each pitch storage tank associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2.

Precluded Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, Sections 8 to 16, for VOC.

Comments:
Century submitted the design evaluation for the Pitch Storage Tank control system pursuant to 40 CFR 63.843(d) on October 11, 2017. Fumes from Tank #1 and Tank #3 are vented to spare Tank #2, which acts as a knockout condenser, and then to a small carbon adsorber vessel. Emissions are calculated assuming POM is equal to VOC for these tanks. The operating and emission limitations for the Pitch Storage Tanks (EP27) are the result of a PSD project conducted in V-08-012. This project included a plant-wide capacity increase. The VOC emission limitations are to preclude PSD for VOC.

Subject Item H: Indirect Heat Exchangers ≥ 10 MMBtu/hr				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	0.48 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	1.9 lb/mmscf, AP-42 Table 1.4-2	Assumed based upon natural gas combustion

Subject Item H: Indirect Heat Exchangers ≥ 10 MMBtu/hr				
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO_2	2.3 lb/MMBtu	401 KAR 59:015, Section 5(1)	0.6 lb/mmscf, AP-42 Table 1.4-2	Assumed based upon natural gas combustion

Initial Construction Date: 1969; Modified 1996

Process Description:
Emission Point 31 (Emission Group 31) – (Century ID #0415)
Eclipse Horizontal Oil Heater
Description:

Model: 1000-B-HC-LT-WP-G-PRO-FM
Primary Fuel: Natural Gas
Heat Input Capacity: 18.4 MMBtu/hr
Annual Hours of Operation: 8,760 hr/yr
Control Equipment: None

This natural gas-fired process heater (Eclipse horizontal oil heater) provides heated oil that is used to keep the pitch at the desired viscosity in the transfer processes.

Applicable Regulation:

401 KAR 59:015, *New indirect heat exchangers*, applies to indirect heat exchangers having a heat input capacity greater than one (1) million BTU per hour (MMBtu/hr) commenced on or after April 9, 1972.

40 KAR 63:002, Section 2(4)(iiii), 40 C.F.R. 63.7480 through 63.7575, Tables 1 through 13 (Subpart DDDDD), *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*, applies to each industrial, commercial, or institutional boiler or process heater as defined in 40 CFR 63.7575 that is located at, or is part of, a major source of HAP.

Comments:
Allowable emissions for this unit are calculated using the total rated heat input capacity of all affected facilities at a source which is 19.8 mm BTU/hr. Emissions calculated using AP-42, Chapter 1.4 and 40 CFR 98, Subpart C, and a HHV for natural gas of 1020 Btu/scf.

Subject Item I: Indirect Heat Exchangers < 10 MMBtu/hr				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	0.48 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	1.9 lb/mmscf, AP-42 Table 1.4-2	Assumed based upon natural gas combustion
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO_2	2.3 lb/MMBtu	401 KAR 59:015, Section 5(1)	0.6 lb/mmscf, AP-42 Table 1.4-2	Assumed based upon natural gas combustion

Subject Item I: Indirect Heat Exchangers < 10 MMBtu/hr

Initial Construction Date: 1969

Process Description:
Emission Point 165 (Emission Group 50)
Change House Hot Water Heater
Description:
Model: 1000-B-HC-LT-WP-G-PRO-FM
Primary Fuel: Natural Gas
Heat Input Capacity: 1.4 MMBtu/hr
Control Equipment: None

Applicable Regulation:
401 KAR 59:015, *New indirect heat exchangers*, applies to indirect heat exchangers having a heat input capacity greater than one (1) million BTU per hour (MMBtu/hr) commenced on or after April 9, 1972.
401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances.

Comments:
Allowable emissions for this unit are calculated using the total rated heat input capacity of all affected facilities at a source which is 19.8 mm BTU/hr. Emissions calculated using AP-42, Chapter 1.4 and 40 CFR 98, Subpart C, and a HHV for natural gas of 1020 Btu/scf.

This existing natural gas-fired boiler at the plant is used to provide hot water to the Change House (i.e., for showers). Because this water boiler has a rated heat input capacity of 1.4 MMBtu/hr (less than the 1.6 MMBtu/hr threshold in 40 CFR 60.7575), it qualifies as a Hot Water Heater, which is exempt from 40 CFR 63, Subpart DDDDD.

Subject Item J: Existing Stationary Rice < 500 HP

Process Description:

EP	Group	Equip. Desig.	Cons. Date	Description	Model	Fuel	Rated Capacity	Control Equipment
EMISSION GROUP 50								
137	50	0111	1969	Fire Pump Engine	Detroit Diesel 4-71, Model 4061AZ	Diesel	115 HP	None
138	50	3728	2002	Admin Emergency Generator Engine	Olympian Generator with Perkins Engine, Model D50P3	Diesel	91 HP	None
139	50	3721	1970	HR Emergency Generator Engine	Onan Generator with CCK Engine, Model #5.0CCk-3CR/1J	Natural Gas	67 HP	None

Applicable Regulation:
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Subject Item J: Existing Stationary Rice < 500 HP

Comments:
Emissions calculated using AP-42, Chapter 3.2 and 3.3, 40 CFR 98, Subpart C, and an assumption of 500 hours per year to be conservative and account for emergency operation.

Subject Item K: Cold Cleaners

Process Description:

EP	Group	Equip. Desig.	Cons. Date	Description	Control Equipment	Maximum Capacity (gal/yr)
EMISSION GROUP 50						
152	50	9135	01/1996	Parts Washer, Garage (78)	Cover	210
153	50	9253	01/1996	Parts Washer, Cell Lining (78)	Cover	210
154	50	9134	01/1996	Parts Washer, Hydraulic Shop (78)	Cover	210
155	50	9136	01/1996	Parts Washer, Potlines (78)	Cover	210
156	50	9137	01/1996	Parts Washer, Carbon Bake (78)	Cover	210
157	50	9138	01/1996	Parts Washer, Casthouse (78)	Cover	210
158	50	9139	01/1996	Parts Washer, Rodding (78)	Cover	210
163	50	-	09/2021	Parts Washer, Used Oil Building (78)	Cover	180

Seven (7) existing parts washers that were constructed in 1996 and 2021 to support maintenance functions.

Applicable Regulation:
401 KAR 59:185, *New solvent metal cleaning equipment*, applies to each cold cleaner that utilizes VOCs to remove soluble impurities from metal surfaces commenced on or after June 29, 1979 that is part of a major source located in a county or portion of a county designated attainment for ozone.

Comments:
All eight (8) parts washers currently use a very low vapor pressure (< 1 mmHg @ 68°F) solvent, Crystal Clean 142 Mineral Spirits. Annual VOC emissions from the parts washers are calculated assuming a 20% evaporative loss rate applied to a maximum annual usage rate.

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
28 (Paste Production Plant)	Dry Coke Scrubber (31-0126)	PM	40 CFR 63.843(b)	Annually	Method 5	0.082 lb/ton	0.003 lb/ton	98.08 ton/hr	CMN20170003	11/28/2017
		PM	401 KAR 51:017			0.002294 lb/hr	0.336 lb/hr			
28 (Paste Production Plant)	Dry Coke Scrubber (31-0126)	PM	40 CFR 63.843(b)	Annually	Method 5	0.082 lb/ton	0.025 lb/ton	28.78 ton/hr	CMN20180003	11/8/2018
		PM	401 KAR 51:017			0.002294 lb/hr	0.719 lb/hr			
28 (Paste Production Plant)	Dry Coke Scrubber (31-0126)	PM	40 CFR 63.843(b)	Annually	Method 5	0.082 lb/ton	0.04724 lb/ton	14.504 ton/hr	CMN20190004	5/30/2019
		PM	401 KAR 51:017			0.002294 lb/hr	0.685 lb/hr			
28 (Paste Production Plant)	Dry Coke Scrubber (31-0126)	PM	40 CFR 63.843(b)	Annually	Method 5	0.082 lb/ton	0.05061 lb/ton	15.000 ton/hr	CMN20200003	6/4/2020
		PM	401 KAR 51:017			0.002294 lb/hr	0.734 lb/hr			
28 (Paste Production Plant)	Dry Coke Scrubber (31-0126)	PM	40 CFR 63.843(b)	Annually	Method 5	0.082 lb/ton	0.02739 lb/ton	14.880 ton/hr	CMN20210002	7/22/2021
		PM	401 KAR 51:017			0.002294 lb/hr	0.407526 lb/hr			
41b (Anode Bake Furnace #3)	Dry Alumina Scrubber (33-0140)	TF	40 CFR 63.844(c)	Annually	Method 5, 315, 13B, 29	0.02 lb/ton	0.002 lb/ton	6.64 ton/hr	CMN20180001	6/5/2018-6/7/2018
		POM				0.05 lb/ton	0.02 lb/ton			
		PM				0.20 lb/ton	0.10 lb/ton			
		Mercury				1.7 µg/dscm	0.236 µg/dscm			

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
		PM	401 KAR 51:017		Method 5, 201A, 13B, 25A, 10, 7E	3.575 lb/hr		0.663 lb/hr			
		PM_{10}				3.575 lb/hr		1.313 lb/hr			
		$PM_{2.5}$				N/A		0.691 lb/hr			
		CO				219.246 lb/hr		31.325 lb/hr			
		NOx				Section D		6.562 lb/hr			
		SO_2				139.959 lb/hr		21.857 lb/hr			
		F				3.220 lb/hr		0.0033 lb/hr			
		HF				0.697 lb/hr		0.0084 lb/hr			
		VOC				5.461 lb/hr		0.019 lb/hr			
41b (Anode Bake Furnace #1 & #3)	Dry Alumina Scrubber (33-0140)	TF	40 CFR 63.843(c) & 63.844(c)	Annually	Method 5, 315, 13B, 29	ABF #1	0.20 lb/ton	0.01 lb/ton	12.92 ton/hr	CMN20180002	10/22/2018 - 10/24/2018
						ABF #3	0.02 lb/ton				
		POM				ABF #1	0.18 lb/ton	0.03 lb/ton			
						ABF #3	0.05 lb/ton				
		PM				0.20 lb/ton		0.08 lb/ton			
		Mercury				1.7 µg/dscm		0.229 µg/dscm			
		PM	401 KAR 51:017		Method 5, 13B	3.575 lb/hr		0.988 lb/hr			
		F				3.220 lb/hr		0.006 lb/hr			
		HF				0.697 lb/hr		0.013 lb/hr			
41b (Anode Bake Furnace #1, #2, & #3)	Dry Alumina Scrubber (33-0140)	TF	40 CFR 63.843(c) & 63.844(c)	Annually	Method 5, 315, 13B, 29	ABF #1	0.20 lb/ton	0.012 lb/ton	2.886 ton/hr	CMN20190003	5/30/2019-6/1/2019
						ABF #2	0.20 lb/ton	0.005 lb/ton	4.669 ton/hr		

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
						ABF #3	0.02 lb/ton	0.003 lb/ton	6.417 ton/hr		
		POM				ABF #1	0.18 lb/ton	0.075 lb/ton	2.886 ton/hr		
						ABF #2	0.18 lb/ton	0.054 lb/ton	4.669 ton/hr		
						ABF #3	0.05 lb/ton	0.015 lb/ton	6.417 ton/hr		
		PM				0.20 lb/ton		0.16 lb/ton	13.97 ton/hr		
		Mercury				1.7 µg/dscm		0.375 µg/dscm			
		PM	401 KAR 51:017		Method 5, 201A, 13B, 25A, 10, 7E	3.575 lb/hr		3.453 lb/hr			
		PM_{10}				3.575 lb/hr		3.453 lb/hr			
		$PM_{2.5}$				N/A		1.059 lb/hr			
		CO				219.246 lb/hr		126.49 lb/hr			
		NOx				Section D		11.846 lb/hr			
		SO_2				139.959 lb/hr		92.728 lb/hr			
		F				3.220 lb/hr		0.030 lb/hr			
		HF				0.697 lb/hr		0.049 lb/hr			
		VOC				5.461 lb/hr		4.380 lb/hr			
41b (Anode Bake Furnace #1, #2, & #3)	Dry Alumina Scrubber (33-0140)	TF	40 CFR 63.843(c) & 63.844(c)	Annually	Method 5, 315, 13B, 29	ABF #1	0.20 lb/ton	0.017 lb/ton	5.931 ton/hr	CMN20200002	6/1/2020-6/4/2020
						ABF #2	0.20 lb/ton	0.009 lb/ton	7.087 ton/hr		
						ABF #3	0.02 lb/ton	0.010 lb/ton	7.087 ton/hr		
		POM				ABF #1	0.18 lb/ton	0.092 lb/ton	5.931 ton/hr		

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
						ABF #2	0.18 lb/ton	0.015 lb/ton	7.087 ton/hr		
						ABF #3	0.05 lb/ton	0.020 lb/ton	7.087 ton/hr		
		PM				0.20 lb/ton		0.04 lb/ton	17.38 ton/hr (combined)		
		Mercury				1.7 µg/dscm		0.37 µg/dscm			
		PM	401 KAR 51:017		Method 5, 201A, 13B, 25A, 10, 7E	3.575 lb/hr		0.04 lb/hr			
		PM_{10}				3.575 lb/hr		1.625 lb/hr			
		$PM_{2.5}$				N/A		0.741 lb/hr			
		CO				219.246 lb/hr		150.46 lb/hr			
		NOx				Section D		14.885 lb/hr			
		SO_2				139.959 lb/hr		57.288 lb/hr			
		F				3.220 lb/hr		0.007 lb/hr			
		HF				0.697 lb/hr		0.260 lb/hr			
		VOC				5.461 lb/hr		3.874 lb/hr			
41b (Anode Bake Furnace #1, #2, & #3)	Dry Alumina Scrubber (33-0140)	TF	40 CFR 63.843(c) & 63.844(c)	Annually	Method 5, 315, 13B, 29	ABF #1	0.20 lb/ton	0.005 lb/ton	5.442 ton/hr	CMN20210001	7/19/2021-7/21/2021
						ABF #2	0.20 lb/ton	0.010 lb/ton	4.288 ton/hr		
						ABF #3	0.02 lb/ton	0.010 lb/ton	6.926 ton/hr		
		POM				ABF #1	0.18 lb/ton	0.937 lb/ton	5.442 ton/hr		
						ABF #2	0.18 lb/ton	0.785 lb/ton	4.288 ton/hr		
						ABF #3	0.05 lb/ton	0.301 lb/ton	6.926 ton/hr		
		PM				0.20 lb/ton		0.05 lb/ton	16.66 ton/hr		

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
		Mercury				1.7 µg/dscm	0.53 µg/dscm	(combined)		
		PM	401 KAR 51:017		Method 5, 201A, 13B, 25A	3.575 lb/hr	0.80 lb/hr			
		PM_{10}				3.575 lb/hr	0.64 lb/hr			
		F				3.220 lb/hr	0.013 lb/hr			
		HF				0.697 lb/hr	0.104 lb/hr			
		VOC				5.461 lb/hr	40.09 lb/hr			
84b (Potlines #1-4 Main Stack)	Wet Scrubber System (43-2001)	TF	40 CFR 63.843(a)	Annually	Method 5, 14A, & 315	2.5 lb/ton[4]	3.1 lb/ton	14.98 ton/hr	CMN20190002	6/4/2019
		POM				2.7 lb/ton[4]	2.54 lb/ton			
		PM				20 lb/ton[4]	9.77 lb/ton			
		PM	401 KAR 51:017		Method 5, 13B	138.33 lb/hr	101.24 lb/hr			
		$PM_{10/2.5}$				80.234 lb/hr	69.67 lb/hr			
		F				11.751 lb/hr	23.52 lb/hr			
		HF				27.700 lb/hr	7.30 lb/hr			
		HF	401 KAR 61:165		Method 5, 13B	1.0 lb/ton	0.49 lb/ton			
		PM				0.010 gr/scf	0.012 gr/dscf			
84b (Potlines #1-4 Main Stack)[3]	Wet Scrubber System (43-2001)	TF	40 CFR 63.843(a)	Annually	Method 5, 14A, & 315	2.5 lb/ton[4]	3.1 lb/ton	12.95 ton/hr	CMN20190005	10/14/2019 - 10/15/2019 ; 11/25/2019 - 11/26/2019
		POM				2.7 lb/ton[4]	2.1 lb/ton			
		PM				20 lb/ton[4]	10.6 lb/ton			
		PM	401 KAR 51:017		Method 5, 13B	138.33 lb/hr	104.98 lb/hr			
		F				11.751 lb/hr	29.58 lb/hr			
		HF				27.700 lb/hr	2.60 lb/hr			
		HF	401 KAR 61:165		Method 5, 13B	1.0 lb/ton	0.265 lb/ton			
		PM				0.010 gr/scf	0.0043 gr/dscf			
84b (Potlines #1-4 Main	Wet Scrubber	TF	40 CFR 63.843(a)	Annually	Method 5, 14A,	2.5 lb/ton[5]	1.84 lb/ton	17.09 ton/hr	CMN20200008	8/25/2020-8/26/2020
		POM				2.7 lb/ton[5]	1.3 lb/ton			

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
Stack)[3]	System (43-2001)	PM			& 315	20 lb/ton[5]	6.7 lb/ton			
		$PM_{10/2.5}$	401 KAR 51:017		Method 5, 202, 13B	80.234 lb/hr	68.09 lb/hr			
		PM				138.33 lb/hr	68.09 lb/hr			
		F				11.751 lb/hr	11.292 lb/hr			
		HF				27.700 lb/hr	3.511 lb/hr			
		HF	401 KAR 61:165		Method 5, 13B	1.0 lb/ton	0.205 lb/ton			
		PM				0.010 gr/scf	0.0083 gr/dscf			
84b (Potlines #1-4 Main Stack & Potline #4 downcomer)[2]	Wet Scrubber System (43-2001)	TF	40 CFR 63.843(a)	Annually	Method 5, 14A, & 315	2.5 lb/ton[1]	1.7 lb/ton[1]	18.09 ton/hr	CMN20210004	8/23/2021-8/26/2021
		POM				2.7 lb/ton[1]	0.4 lb/ton[1]			
		PM				20 lb/ton[1]	4.7 lb/ton[1]			
		$PM_{10/2.5}$	401 KAR 51:017		Method 5, 202, 10, 7E, 6C, 25A, 13B	80.234 lb/hr	76.88 lb/hr			
		PM				138.33 lb/hr	76.88 lb/hr			
		SO_2				898.97 lb/hr[1]	9.15 lb/hr[1]			
		CO				6778 lb/hr	1172 lb/hr			
		F				11.751 lb/hr	5.544 lb/hr			
		HF				27.700 lb/hr	19.946 lb/hr			
		VOC				30.252 lb/hr[1]	26.2 lb/hr[1]			
		NOx				Section D	1.20 lb/ton			
		HF	401 KAR 61:165		Method 5, 13B	1.0 lb/ton	1.1 lb/ton			
		PM				0.010 gr/scf	0.0096 gr/dscf			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.8 lb/ton[1]	1.771 ton/hr	CMN20190002	6/4/2019
		POM				2.7 lb/ton[1]	2.5 lb/ton[1]			
		PM				20 lb/ton[1]	9.22 lb/ton[1]			
		PM	401 KAR 51:017;	Semi-annually	Method 5, 14A	20.614 lb/hr	17.4 lb/hr	1.771 ton/hr		
		HF				4.773 lb/hr	0.829 lb/hr			

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
		F	401 KAR 61:165			3.253 lb/hr	0.482 lb/hr			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.85 lb/ton[1]	1.62 ton/hr	CMN20190005	10/14/2019 - 10/15/2019; 11/25/2019 - 11/26/2019
		POM				2.7 lb/ton[1]	1.9 lb/ton[1]			
		PM				20 lb/ton[1]	10.2 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	4.480 lb/hr	1.62 ton/hr		
		HF				4.773 lb/hr	0.796 lb/hr			
		F				3.253 lb/hr	0.543 lb/hr			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	1.9 lb/ton[1]	1.449 ton/hr	CMN20200006	6/10/2020-6/11/2020; 6/11/2020-6/12/2020; 6/18/2020-6/19/2020
		POM				2.7 lb/ton[1]	1.1 lb/ton[1]			
		PM				20 lb/ton[1]	8.4 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	1.349 lb/hr	1.449 ton/hr		
		HF				4.773 lb/hr	0.449 lb/hr			
		F				3.253 lb/hr	0.161 lb/hr			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.4 lb/ton[1]	1.264 ton/hr	CMN20200014	3/9/2021-3/10/2021; 3/10/2021-3/11/2021; 3/23/2021-3/24/2021
		POM				2.7 lb/ton[1]	1.0 lb/ton[1]			
		PM				20 lb/ton[1]	6.1 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	10.877 lb/hr	1.264 ton/hr		
		HF				4.773 lb/hr	5.472 lb/hr			
		F				3.253 lb/hr	2.390 lb/hr			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	5.0 lb/ton[1]	1.483 ton/hr	CMN20210005	10/7/2021-10/8/2021; 10/11/2021 - 10/12/2021
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	8.8 lb/ton[1]			
		PM	401 KAR 51:017;	Semi-annually	Method 5, 14A	20.614 lb/hr	29.492 lb/hr	1.483 ton/hr		
		HF				4.773 lb/hr	13.747 lb/hr			

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
		F	401 KAR 61:165			3.253 lb/hr	7.648 lb/hr			; 10/20/2021 - 10/21/2021
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually (retest of 10/2021 test)	Method 5, 14A, & 315	2.5 lb/ton[1]	4.2 lb/ton[1]	1.471 ton/hr	CMN20210005	11/8/2021-11/9/2021; 11/10/2021 - 11/11/2021 ; 11/22/2021 - 11/23/2021
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	8.5 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually (retest of 10/2021 test)	Method 5, 14A	20.614 lb/hr	27.943 lb/hr	1.471 ton/hr		
		HF				4.773 lb/hr	10.636 lb/hr			
		F				3.253 lb/hr	6.281 lb/hr			
85 (Potline #1 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.0 lb/ton[1]	1.423 ton/hr	CMN20220002	3/14/2022-3/15/2022; 3/21/2022-3/24/2022
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	6.0 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	12.788 lb/hr	1.423 ton/hr		
		HF				4.773 lb/hr	1.177 lb/hr			
		F				3.253 lb/hr	2.130 lb/hr			
86 (Potline #2 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.3 lb/ton[1]	0.778 ton/hr	CMN20190002	6/4/2019
		POM				2.7 lb/ton[1]	2.5 lb/ton[1]	1.066 ton/hr		
		PM				20 lb/ton[1]	8.59 lb/ton[1]	1.066 ton/hr		
		PM	401 KAR 51:017;	Semi-annually	Method 5, 14A	20.614 lb/hr	7.8 lb/hr	1.066 ton/hr		
		HF				4.773 lb/hr	0.115 lb/hr	0.778 ton/hr		

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
		F	401 KAR 61:165			3.253 lb/hr	0.084 lb/hr	0.778 ton/hr		
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	3.1 lb/ton[1]	1.601 ton/hr		
		POM				2.7 lb/ton[1]	2.5 lb/ton[1]			
		PM				20 lb/ton[1]	9.77 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	19.3 lb/hr	1.601 ton/hr		
		HF				4.773 lb/hr	1.140 lb/hr			
		F				3.253 lb/hr	0.560 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	3.1 lb/ton[1]	1.618 ton/hr	CMN20190005	10/14/2019 - 10/15/2019; 11/25/2019 - 11/26/2019
		POM				2.7 lb/ton[1]	2.1 lb/ton[1]			
		PM				20 lb/ton[1]	10.57 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	5.059 lb/hr	1.618 ton/hr		
		HF				4.773 lb/hr	1.076 lb/hr			
		F				3.253 lb/hr	0.635 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	1.9 lb/ton[1]	1.521 ton/hr	CMN20200006	6/8/2020-6/9/2020; 6/9/2020-6/10/2020; 6/17/2020-6/18/2020
		POM				2.7 lb/ton[1]	1.1 lb/ton[1]			
		PM				20 lb/ton[1]	8.1 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	0.084 lb/hr	1.521 ton/hr		
		HF				4.773 lb/hr	0.539 lb/hr			
		F				3.253 lb/hr	0.155 lb/hr			
87	None	TF	40 CFR	Semi-	Method	2.5 lb/ton[1]	1.6 lb/ton[1]	1.326 ton/hr	CMN20200010	11/3/2020-

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
(Potline #3 downcomer)		POM	63.843(a)	annually	5, 14A, & 315	2.7 lb/ton[1]	1.0 lb/ton[1]			11/4/2020; 11/4/2020-11/5/2020; 11/17/2020 - 11/18/2020
		PM				20 lb/ton[1]	5.6 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	8.582 lb/hr	1.326 ton/hr		
		HF				4.773 lb/hr	2.736 lb/hr			
		F				3.253 lb/hr	1.006 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	1.4 lb/ton[1]	1.156 ton/hr	CMN20200014	4/6/2021-4/9/2021; 4/20/2021-4/23/2021
		POM				2.7 lb/ton[1]	1.0 lb/ton[1]			
		PM				20 lb/ton[1]	5.0 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	4.874 lb/hr	1.156 ton/hr		
		HF				4.773 lb/hr	1.696 lb/hr			
		F				3.253 lb/hr	0.975 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	4.5 lb/ton[1]	1.535 ton/hr	CMN20210005	10/7/2021-10/8/2021; 10/11/2021 - 10/12/2021; 10/20/2021 - 10/21/2021
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	9.7 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	36.275 lb/hr	1.535 ton/hr		
		HF				4.773 lb/hr	11.856 lb/hr			
		F				3.253 lb/hr	6.871 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually (retest of 10/2021 test)	Method 5, 14A, & 315	2.5 lb/ton[1]	3.6 lb/ton[1]	1.437 ton/hr	CMN20210005	11/8/2021-11/9/2021; 11/10/2021 - 11/11/2021
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	7.9 lb/ton[1]			

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
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually (retest of 10/2021 test)	Method 5, 14A	20.614 lb/hr	23.502 lb/hr	1.437 ton/hr		; 11/22/2021 - 11/23/2021
		HF				4.773 lb/hr	7.849 lb/hr			
		F				3.253 lb/hr	4.773 lb/hr			
87 (Potline #3 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 14A, & 315	2.5 lb/ton[1]	2.0 lb/ton[1]	1.529 ton/hr	CMN20220002	3/14/2022-3/15/2022; 3/21/2022-3/24/2022
		POM				2.7 lb/ton[1]	0.2 lb/ton[1]			
		PM				20 lb/ton[1]	4.7 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 14A	20.614 lb/hr	5.464 lb/hr	1.529 ton/hr		
		HF				4.773 lb/hr	2.143 lb/hr			
		F				3.253 lb/hr	1.225 lb/hr			
88 (Potline #4 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	2.5 lb/ton[1]	1.1 lb/ton[1]	5.977 ton/hr	CMN20200009	7/1/2020-7/2/2020; 7/2/2020-7/3/2020; 7/16/2020-7/17/2020
		POM				2.7 lb/ton[1]	0.7 lb/ton[1]			
		PM				20 lb/ton[1]	14.3 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 13B	20.614 lb/hr	4.039 lb/hr	5.977 ton/hr		
		PM_{10}				11.956 lb/hr	3.877 lb/hr			
		HF				4.773 lb/hr	0.102 lb/hr			
		F				3.253 lb/hr	0.556 lb/hr			
88 (Potline #4 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	2.5 lb/ton[1]	1.2 lb/ton[1]	2.023 ton/hr	CMN20200015	4/1/2021-4/2/2021; 4/2/2021-4/3/2021; 4/16/2021-4/17/2021
		POM				2.7 lb/ton[1]	1.2 lb/ton[1]			
		PM				20 lb/ton[1]	4.9 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 13B	20.614 lb/hr	3.68 lb/hr	2.023 ton/hr		
		HF				4.773 lb/hr	0.456 lb/hr			
		F				3.253 lb/hr	0.808 lb/hr			
88	None	TF	40 CFR	Semi-	Method	2.5 lb/ton[1]	1.7 lb/ton[1]	3.131 ton/hr	CMN20210006	10/5/2021-

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
(Potline #4 downcomer)		POM	63.843(a)	annually	5, 13B, & 315	2.7 lb/ton[1]	0.4 lb/ton[1]			10/7/2021; 10/19/2021 - 10/20/2021
		PM				20 lb/ton[1]	4.7 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 13B	20.614 lb/hr	1.475 lb/hr	3.131 ton/hr		
		HF				4.773 lb/hr	1.101 lb/hr			
		F				3.253 lb/hr	0.705 lb/hr			
88 (Potline #4 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	2.5 lb/ton[1]	1.7 lb/ton[1]	6.2 ton/hr	CMN20220003	3/8/2022-3/10/2022; 3/28/2022-3/29/2022
		POM				2.7 lb/ton[1]	1.56 lb/ton[1]			
		PM				20 lb/ton[1]	4.7 lb/ton[1]			
		PM	401 KAR 51:017; 401 KAR 61:165	Semi-annually	Method 5, 13B	20.614 lb/hr	1.174 lb/hr	6.2 ton/hr		
		HF				4.773 lb/hr	0.992 lb/hr			
		F				3.253 lb/hr	0.616 lb/hr			
89 (Potline #5 Main Stack)	Dry Alumina Scrubber (48-0063)	TF	40 CFR 63.843(a)	Annual	Method 5, 13B, & 315	1.2 lb/ton[1]	3.8 lb/ton[1]	5.940 ton/hr	CMN20180005	11/26/2018 - 11/28/2018
		POM				1.1 lb/ton[1]	0.8 lb/ton[1]			
		PM				7.4 lb/ton[1]	3.3 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 201A, 202, 6C, 10, 25A, 7E, 13B	13.875 lb/hr	1.59 lb/hr			
		PM_{10}				8.048 lb/hr	0.654 lb/hr			
		SO_2				364.52 lb/hr	61.051 lb/hr			
		CO				2588.308 lb/hr	932.810 lb/hr			
		VOC				7.384 lb/hr	5.568 lb/hr			
		NO_x				Section D	6.635 lb/hr			
		F				0.126 lb/hr	0.021 lb/hr			
		HF				0.685 lb/hr	15.89 lb/hr			
89 (Potline #5	Dry Alumina	TF	40 CFR 63.843(a)	Annual	Method 5, 13B,	1.2 lb/ton[1]	0.69 lb/ton[1]	4.798 ton/hr	CMN20190001	6/17/2019-6/19/2019
		POM				1.1 lb/ton[1]	0.4 lb/ton[1]			

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
Main Stack)	Scrubber (48-0063)	PM			& 315	7.4 lb/ton[1]	2.3 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 201A, 202, 6C, 10, 25A, 7E, 13B	13.875 lb/hr	0.206 lb/hr			
		PM_{10}				8.048 lb/hr	1.444 lb/hr			
		SO_2				364.52 lb/hr	162.03 lb/hr			
		CO				2588.308 lb/hr	935.389 lb/hr			
		VOC				7.384 lb/hr	13.707 lb/hr			
		NO_x				Section D	2.471 lb/hr			
		F				0.126 lb/hr	0.029 lb/hr			
		HF				0.685 lb/hr	0.409 lb/hr			
89 (Potline #5 Main Stack)	Dry Alumina Scrubber (48-0063)	VOC	401 KAR 51:017	Re-test	Method 25A	7.384 lb/hr	2.169 lb/hr	5.368 ton/hr	CMN20190008	10/24/2019
89 (Potline #5 Main Stack)	Dry Alumina Scrubber (48-0063)	TF	40 CFR 63.843(a)	Annual	Method 5, 13B, & 315	1.2 lb/ton[1]	1.64 lb/ton[1]	5.45 ton/hr	CMN20200005	6/16/2020
		POM				1.1 lb/ton[1]	1.1 lb/ton[1]			
		PM				7.4 lb/ton[1]	4.3 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 13B, 25A	13.875 lb/hr	4.524 lb/hr			
		HF				0.685 lb/hr	2.832 lb/hr			
		F				0.126 lb/hr	0.107 lb/hr			
		VOC		Every 5 years		7.384 lb/hr	5.034 lb/hr			
89 (Potline #5 Main Stack)	Dry Alumina Scrubber (48-0063)	TF	40 CFR 63.843(a)	Annual	Method 5, 13B, & 315	1.2 lb/ton[1]	1.2 lb/ton[1]	4.9336 ton/hr	CMN20210003	8/3/2021-8/5/2021
		POM				1.1 lb/ton[1]	0.6 lb/ton[1]			
		PM				7.4 lb/ton[1]	4.6 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 13B, 25A	13.875 lb/hr	7.87 lb/hr			
		HF				0.685 lb/hr	0.22 lb/hr			
		F				0.126 lb/hr	0.369 lb/hr			

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
		VOC		Every 5 years		7.384 lb/hr	3.09 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Annual	Method 5, 13B, & 315	1.2 lb/ton[1]	3.6 lb/ton[1]	5.94 ton/hr	CMN20180005	11/26/2018 - 11/28/2018
		POM				1.1 lb/ton[1]	0.8 lb/ton[1]			
		PM				7.4 lb/ton[1]	3.3 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 201A, 202, 6C, 10, 25A, 7E, 13B	37.671 lb/hr	15.61 lb/hr			
		PM_{10}				21.849 lb/hr	7.93 lb/hr			
		SO_2				7.44 lb/hr	2.58 lb/hr			
		CO				52.823 lb/hr	53.05 lb/hr			
		VOC				0.166 lb/hr	3.454 lb/hr			
		NO_x				Section D	91.98 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Annual	Method 5, 13B, & 315	1.2 lb/ton[1]	1.2 lb/ton[1]	1.292 lb/hr	CMN20190001	6/17/2019-6/19/2019
		POM				1.1 lb/ton[1]	0.9 lb/ton[1]			
		PM				7.4 lb/ton[1]	5.6 lb/ton[1]			
		PM	401 KAR 51:017		Method 5, 201A, 202, 6C, 10, 25A, 7E, 13B	37.671 lb/hr	11.906 lb/hr			
		PM_{10}				21.849 lb/hr	5.252 lb/hr			
		SO_2				7.44 lb/hr	0.872 lb/hr			
		CO				52.823 lb/hr	181.672 lb/hr			
		VOC				0.166 lb/hr	9.273 lb/hr			
		NO_x				Section D	0.110 lb/hr			
		F				2.886 lb/hr	0.199 lb/hr			
		HF				5.342 lb/hr	0.573 lb/hr			

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
90 (Potline #5 downcomer)	None	VOC	401 KAR 51:017	Re-test	Method 25A	0.166 lb/hr	2.105 lb/hr	1.374 ton/hr	CMN20190008	10/24/2019
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	1.2 lb/ton[1]	1.374 ton/hr	CMN20190009	10/1/2019-10/2/2019; 10/2/2019-10/3/2019; 10/23/2019 - 10/25/2019
		POM				1.1 lb/ton[1]	0.9 lb/ton[1]			
		PM				7.4 lb/ton[1]	5.6 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	5.569 lb/hr	1.374 ton/hr		
		HF				5.342 lb/hr	0.907 lb/hr			
		F				2.886 lb/hr	0.619 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	1.64 lb/ton[1]	1.424 ton/hr	CMN20200005	6/8/2020-6/9/2020; 6/9/2020-6/10/2020; 6/17/2020-6/18/2020
		POM				1.1 lb/ton[1]	1.1 lb/ton[1]			
		PM				7.4 lb/ton[1]	4.3 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	4.963 lb/hr	1.424 ton/hr		
		HF				5.342 lb/hr	1.287 lb/hr			
		F				2.886 lb/hr	0.277 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	1.2 lb/ton[1]	2.019 ton/hr	CMN20200011	11/3/2020-11/4/2020; 11/4/2020-11/5/2020; 11/17/2020 - 11/18/2020
		POM				1.1 lb/ton[1]	0.26 lb/ton[1]			
		PM				7.4 lb/ton[1]	2.21 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	17.48 lb/hr	2.019 ton/hr		
		HF				5.342 lb/hr	6.45 lb/hr			
		F				2.886 lb/hr	2.592 lb/hr			

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
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	1.57 lb/ton[1]	1.335 ton/hr	CMN20200016	5/5/2021-5/6/2021; 5/6/2021-5/7/2021; 5/19/2021-5/20/2021
		POM				1.1 lb/ton[1]	0.57 lb/ton[1]			
		PM				7.4 lb/ton[1]	3.74 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	15.55 lb/hr	1.335 ton/hr		
		HF				5.342 lb/hr	3.60 lb/hr			
		F				2.886 lb/hr	1.94 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	0.6 lb/ton[1]	1.34 ton/hr	CMN20210007	10/5/2021-10/7/2021; 10/19/2021-10/20/2021
		POM				1.1 lb/ton[1]	0.7 lb/ton[1]			
		PM				7.4 lb/ton[1]	4.6 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	16.12 lb/hr	1.34 ton/hr		
		HF				5.342 lb/hr	1.76 lb/hr			
		F				2.886 lb/hr	0.76 lb/hr			
90 (Potline #5 downcomer)	None	TF	40 CFR 63.843(a)	Semi-annually	Method 5, 13B, & 315	1.2 lb/ton[1]	1.9 lb/ton[1]	1.461 ton/hr	CMN20220001	3/8/2022-3/10/2022; 3/28/2022-3/31/2022
		POM				1.1 lb/ton[1]	1.0 lb/ton[1]			
		PM				7.4 lb/ton[1]	5.7 lb/ton[1]			
		PM	401 KAR 51:017	Semi-annually	Method 5, 13B	37.671 lb/hr	24.0 lb/hr	1.461 ton/hr		
		HF				5.342 lb/hr	7.08 lb/hr			
		F				2.886 lb/hr	3.36 lb/hr			

Footnotes:

Note: TF is the sum of HF and F.

[1]Note: The limits and results of testing for Subpart LL include the sum of the downcomer results and the most recent main stack testing.

[2]Note: Potline #2 was not in operation for this test.

[3]Note: During this test, only Potlines #1, #3, and #4 were operating.

[4]Note: Includes the result of the main stack and the highest, most recent, downcomer result (Potline #3).

[5]Note: Includes the result of the main stack and the highest, most recent, downcomer result (Potline #4).

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
268.67 tpy of NOx emissions	To preclude 401 KAR 51:017, Sections 8 to 16	EP 41b, 84b, 85, 86, 87, 88
250,000 tons of aluminum produced/yr	401 KAR 51:017	EP 84b, 85, 86, 87, 88
233,000 tons green anode/yr; 106,800 tons packing coke/yr; 855.57 MMscf natural gas/yr; 675,000 gal propane/yr	401 KAR 51:017	EP 41b (combined)
petroleum coke used to make the green anodes < 3.0% sulfur by weight; pitch < 0.80% sulfur by weight	401 KAR 51:017	EP 41b, 84b, 85, 86, 87, 88, 89, 90
124,680 tons of pitch/yr	To preclude 401 KAR 51:017	EP 27 (combined)

Table B - Summary of Applicable Regulations:

Regulation	Basis of Determination	Emission Unit
401 KAR 51:017	*Prevention of significant deterioration of air quality*	EP 84b, 85, 86, 87, 88, 89, 90
401 KAR 53:010	*Ambient air quality standards*	Source-wide
401 KAR 59:010	*New process operations;* 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.	EP 1, 2, 3, 4, 5, 6, 7, 8, 17, 25, 39, 41a, 46, 60, 63, 67, 80, 81, 89, 90, 91, 92, 94, 95, 111, 112A, 112B, 164
401 KAR 59:015	*New indirect heat exchangers;* applicable to indirect heat exchangers having a heat input capacity greater than one (1) MMBtu/hr commenced on or after April 9, 1972.	EP 31, 165
401 KAR 59:185	*New solvent metal cleaning equipment*, applies to each cold cleaner that utilizes VOCs to remove soluble impurities from metal surfaces commenced on or after June 29, 1979 that is part of a major source located in a county or portion of a county designated attainment for ozone.	EP 152, 153, 154, 155, 156, 157, 158, 163
401 KAR 61:020	*Existing process operations;* applicable to each affected facility, associated with a process operation,	EP 8, 9, 10, 11, 12, 13, 14, 15, 16,

Regulation	Basis of Determination	Emission Unit
	which is not subject to another emission standard with respect to particulates, commenced before July 2, 1975.	22, 23, 24, 26, 36, 38, 40, 42, 43, 44, 45, 47, 48, 56, 57, 58, 59, 62, 63, 64, 65, 66, 67, 70, 82, 83, 84a, 93
401 KAR 61:165	*Existing primary aluminum reduction plants;* applicable to each potroom group within a primary aluminum reduction plant commenced before October 23, 1974.	EP 84b, 85, 86, 87, 88
401 KAR 63:002, Section 2(4)(bb), 40 C.F.R. 63.840 to 63.855, Tables 1 to 4, and Appendix A (Subpart LL)	*National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants,* applicable with respect to each new and existing CWPB1 potline, each existing CWPB3 potline, paste production plant, anode bake furnace, and pitch storage tank, associated with primary aluminum production and located at a major source as defined in 40 CFR 63.2.	EP 27, 28, 41b, 84b, 85, 86, 87, 88, 89, 90
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ)	*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* applicable to owners and operators of stationary RICE at a major or area source of HAP emissions.	EP 137, 138, 139
401 KAR 63:002, Section 2(4)(iiii), 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD)	*National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters;* applicable to industrial, commercial, or institutional boiler or process heater as defined in 40 CFR 63.7575 that is located at, or is part of, a major source of HAP.	EP 31
401 KAR 63:010	*Fugitive emissions,* applicable to 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.	FUG10, FUG31, FUG34, FUG50
401 KAR 63:020	*Potentially hazardous matter or toxic substances,* applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances.	EP 57, 58, 59, 60, 63, 84a, 164, 165
40 CFR 64	*Compliance Assurance Monitoring*. Applicable to each pollutant-specific emissions unit (PSEU) at a major source that satisfies all of the following criteria: 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	EP 84b, 85, 86, 87, 88, 89, 90

Regulation	Basis of Determination	Emission Unit
	limitation or standard that is exempt under 40 CFR 64.2(b)(1); 2. The unit uses a control device to achieve compliance with any such emission limitation or standard; and 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.	

Table C - Summary of Precluded Regulations:

Regulation	Basis of Determination	Emission Unit
401 KAR 51:017	*Prevention of significant deterioration of air quality.* This regulation has been precluded by the source taking operational and emission limits on emission units involved in projects that would have major modifications and triggered PSD BACT review if they were not put in place.	EP 84b, 85, 86, 87, 88, 89, 90

Table D - Summary of Non Applicable Regulations:

N/A

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Air Toxic & Ambient Air Analysis

401 KAR 53:010, *Ambient air quality standards* & **401 KAR 61:165**, *Existing primary aluminum reduction plants*

On June 18, 1979, the Facility, formerly known as National Southwire Aluminum (V76-414), entered into an Agreed Order (hereinafter, the "1979 Agreed Order") with the Commonwealth of Kentucky, Department for Natural Resources and Environmental Protection, Division of Air Pollution Control, to resolve violations of KRS 224.330, 401 KAR 3:020(4), 401 KAR 3:060(4), 401 KAR 3:010(7)(4), and 401 KAR 3:060, Section 4. Appendix C of the 1979 Agreed Order established an ambient air monitoring network as part of the negotiated agreement to bring the Facility into compliance. The ambient air monitoring network established by the 1979 Agreed Order is still in effect and has no express ending date or termination clause outlined therein.

Pursuant to Appendix C of the 1979 Agreed Order, the Facility is required to maintain: "a minimum of six (6) permanently located monitoring sites for the monitoring of gaseous fluorides, particulate matter, and forage sampling for total fluoride determination…" The monitors currently located at the following locations:

Site Number	Northing	Easting
1	37°56'59.78"N	86°47'35.73"W
2	37°54'52.95"N	86°47'17.17"W
3	37°55'58.27"N	86°45'8.66"W
4	37°57'4.40"N	86°46'26.18"W
5	37°58'13.47"N	86°46'5.73"W
6	37°59'30.74"N	86°47'28.44"W

On July 18, 2022, the Facility halted aluminum production and is currently idled. On December 20, 2022, Century contacted DAQ representatives to request the ambient monitoring requirements of the 1979 Agreed Order be suspended until the Facility restarted aluminum production.

The Division agreed that, until the Facility resumes aluminum production, the ambient monitoring requirements of the 1979 Agreed Order shall be temporarily suspended. Upon the restart of aluminum production, Century will resume complying with the ambient monitoring requirements of the 1979 Agreed Order.

The Agreed Order signed by the facility and the Cabinet on February 23, 2024 (File No. DAQ-23-2-0013) establishes the requirements for notification and restart of the ambient monitoring network in the event of restart of the facility. These requirements are also established in the permit in Section I.

As part of those requirements, Century may submit a technical demonstration and proposal to the Cabinet that supports terminating the 1979 Agreed Order (V76-414) and replacing it with fluoride ambient monitoring requirements in the Title V permit that are consistent with 401 KAR 61:165. The technical demonstration must be supported by data showing that fluoride emissions are being limited, or have since been reduced, to a level warranting recission of the ambient monitoring

requirements in the 1979 Agreed Order (V76-414). Any proposal to revise, amend, or the 1979 Agreed Order (V76-414) shall conform to the current regulatory requirements of the facility and be protective of human health and the environment. Pursuant to 401 KAR 61:165, Century is required to conduct ambient monitoring at one location, at a minimum, and the Cabinet has the discretion to prescribe additional locations, if necessary. Upon review of the technical demonstration and proposal, the Cabinet may, in whole or in part; (1) accept; or (2) disapprove and provide comments to Century identifying any deficiencies with the proposal, request additional information regarding the proposal, or request additional data or a technical demonstration of any proposal. The submittal must be made no later than 180 days prior to the restart of aluminum production.

The Division for Air Quality (Division) has previously performed modeling using SCREEN View (or AERMOD) of potentially hazardous matter or toxic substances that 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 63:020.

Single Source Determination

Century Aluminum of Kentucky, and the adjacent Southwire Company, LLC, (AFS # 21-091-00009), are considered by the Division and the United States Environmental Protection Agency (U.S. EPA) Region IV, to be one source as defined in 401 KAR 51:017, Prevention of significant deterioration of air quality (PSD). Each source is subject to 401 KAR 52:020 and will be issued individual Title V operating permits. Pursuant to the respective Title V permits, each permittee is responsible and liable for their own violations unless there is a joint cause for the violations.

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
O-73-209	Operating	---	4/27/1973	6/12/1973	Operating Permit for Primary Al facility	---
C-77-111	Const.	---	9/7/1977	10/10/1977	Const. of Al melting furnace	---
OT-80-2	Temp. Operating	---	6/2/1980	10/10/1980	Temp Op. Permit for most sources; AO V76-414	PSD
O-82-25	Operating	---	1/21/1982	1/27/1982	Est. Ambient Air Monitoring Network; AO V76-414	PSD
R5234	Registration	---	1/9/1991	1/29/1991	Conveyors	---
R5758	Registration Rev.	---	9/26/1991	10/7/1991	Revised Conveyor Reg.	---
F-94-015	Const. & operation	---	9/13/1994	3/28/1995	Cast iron melt furnace	---
F-96-024	Const. & operation	---	9/17/1996	2/28/1997	Potline #5	PSD
F-96-024 R1	Const. & operation	---	10/2/1997	12/1/1997	Revision to Potline #5 Project	PSD
F-96-024 R2	Const. & operation	---	10/2/1997	5/29/1998	Revision to Potline #5 Project	PSD
S-99-109	Const. & operation	G239	8/23/1999	10/8/1999	Degassing Unit permit	N/A
F-96-024 R3	Const. & operation	G095	6/30/2000	6/30/2000	Revision to Potline #5 Project	PSD
F-96-024 R4	Const. & operation	G674	5/26/2000	10/2/2000	Revision to Potline #5 Project	PSD
F-96-024 R5	Const. & operation	---	5/26/2000	12/29/2000	Revision to Potline #5 Project	PSD
V-01-019	Initial Title V	F067	2/16/1997	6/20/2003	Initial Title V and PSD permit	PSD

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-01-019 R1	Sig Revision	APE20050003	9/30/2005	4/12/2007	Addition of Alternate Operating Scenario, minor admin. Corrections.	N/A
V-08-012	Renewal/ Sig Revision	APE20080001	12/13/2008	12/15/2009	Permit Renewal/PSD Modification	PSD
V-08-012 R1	Sig Revision	APE20110004	4/25/2011	5/29/2012	Significant Revision, added Section D NOx Limits	Syn Minor
V-08-012 R2	Sig Revision	APE20120002	6/19/2012	1/4/2013	Significant Revision	Syn Minor
V-08-012 R3	Minor Revision	APE20130005	6/30/2014	5/18/2015	New Bath Crushing Operation/ Tilt Furnace	N/A
V-16-011	Renewal	APE20150002	4/14/2016	5/1/2017	Renewal Permit	N/A
V-16-011 R1	Minor Revision	APE20180001	1/19/2018	5/5/2018	Change to PMP from 2 to 4 pot shields removed. Updated Sections A & F	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

N/A

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_x – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds