Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-20-004 R4
Logan Aluminum, Inc.
Russellville, KY 42276
February 7, 2025
Ryan Anderson, Reviewer

SOURCE ID:	21-141-00038
AGENCY INTEREST:	2761
ACTIVITY:	APE20240007

Table of Contents

SECTION 1 – SOURCE DESCRIPTION

SIC Code: 3341/3353, Secondary Smelting & Refining of Nonferrous Metals/Aluminum Sheet, Plate, and Foil

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

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

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

County: Logan
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): Hydrochloric Acid

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

*PTE does not include self-imposed emission limitations.

Description of Facility:
Logan Aluminum (Logan) owns and operates an aluminum remelt and rolling facility located in Russellville, Kentucky which commenced construction in 1980. Logan produces aluminum coils from aluminum ingots supplied by external sources or produced internally. The aluminum ingots are rolled in a series of both hot and cold rolling units that convert the ingot first into slabs and then into rolled aluminum coils. The raw coils are then finished to customer specifications through a process of leveling (unrolling and re-rolling the coils to level the metal surface), slitting (trimming the edges of the coils), and coating.

Initially, Logan's primary Standard Industrial Classification (SIC) code was 3353: Aluminum Sheet, Plate, and Foil. Logan was therefore not considered one of the source categories listed in 401 KAR 51:001 (118)(a)(2)(a) which are subject to a lower PSD major source threshold of 100 tons per year. While under this classification, Logan accepted a source-wide synthetic minor limit of 250 tons per year (tpy) to avoid being classified as an existing major source under PSD. As authorized by permit F-97-003, Logan completed a new project for which they accepted a synthetic minor limitation of 250 tpy. This project did not trigger PSD requirements because Logan was not an existing major source under PSD and the project itself was not a new major stationary source. However, Logan became an existing major source under PSD following this project. With the

addition of an aluminum melt furnace authorized by V-03-017 R4, Logan became a secondary metal production plant, which is one of the listed source categories under PSD. Therefore, Logan is a 28 source category existing major source under PSD, and therefore fugitive emissions, to the extent quantifiable, must be considered in calculating the potential to emit for applicability determinations under PSD (401 KAR 51:017, Section 7(c)).

The primary operations at the facility can be segregated into the following categories:

- Melting
- Casting
- Hot Rolling
- Cold Rolling
- Finishing (Leveling, Slitting, Coating, and Packing)

Logan's melting and casting operations consist of two physically separate process areas: 1) the legacy plant Remelt operations, and 2) the recently installed "Remelt 2" operations.

The primary process units in the Remelt area, located at the northwest end of the main production building, are the three direct chill casting lines (DC1, DC2, and DC3, respectively) each of which includes a Melting Furnace, a Holding Furnace, and a Flux Box (in-line fluxer). Two furnaces upstream of the DC casting lines, the Multichamber Furnace and the Swarf Furnace, are used as supplemental sources of molten aluminum.

The DC1-DC3 Melting Furnaces can receive hard charge (ingots, sows, pigs, etc.), runaround scrap, and molten aluminum as charge materials and are classified as Group 2 furnaces under 40 CFR 63, Subpart RRR. The East Preheater, West Preheater and Sow Dryer are used in conjunction with the DC1, DC2, and DC3 Melting Furnaces, respectively, to preheat sows prior to charging. The Melting Furnaces operate in batch mode with an operating cycle consisting of charging, melting, alloying, drossing, and tapping. The Melting Furnaces are tapped every 2-3 hours and directly feed the Holding Furnace on the associated casting line. Dross skimmed from the furnaces is transferred to the Skimming House where it is cooled, stored, and eventually sold to outside firms for processing. The dross processing vendors return the reclaimed aluminum to Logan in the form of sows.

The Multichamber Furnace primarily receives various forms of pre-processed scrap materials, including Class I and III scrap, used beverage cans (UBCs), lithographic scrap, new and post-consumer aluminum siding, and small amounts of other scrap materials. Logan may use salt flux in the Multichamber Furnace as part of the September 2018 salt flux trial and subsequent approval in V-20-004 R1. Regardless, the furnace is classified as a Group 1 Furnace under 40 CFR 63, Subpart RRR because scrap materials not meeting the definition of "clean charge" are fed to the furnace. The Scrap Processing System, composed of a series of "aluminum scrap shredders" (as defined in 40 CFR 63, Subpart RRR) and conveying processes, is used to convert incoming scrap to a more uniform size and to remove fines from the material prior to melting in the Multichamber Furnace. Scrap is loaded into to the furnace in a batch-wise fashion via a pre-heated shaft with 2-4 discrete charges typically occurring between taps. The pre-heated scrap is first melted in the melting chamber of the furnace and then circulated into the main chamber where regenerative natural gas burners are used to supply heat for melting, to maintain the bath temperature, and to oxidize organic contaminants released by the heated scrap. Under normal operation, the furnace is tapped by pumping metal from the main chamber into crucibles that are then transferred to the

Reservoir Furnace (a furnace used primarily as a holding vessel that feeds the DC3 Holding Furnace). Crucibles from the Multichamber can also be fed directly to the DC1, DC2, and DC3 Melting Furnaces. Dross that is skimmed from the furnace is transferred to the Skimming House. Three (3) natural gas-fired crucible pre-heating stations are used to maintain the molten metal temperature in crucibles supplied from the Multichamber Furnace.

The Swarf Furnace receives runaround scrap, Class I scrap, and Holding Furnace dross as charge materials and supports solid reactive chlorine fluxing, classifying it as a Group 1 Furnace under 40 CFR 63, Subpart RRR. Charge materials are both automatically and manually fed to the sidewell of the furnace throughout an operating cycle defined as the period from "tap-to-tap". Freshly melted and fluxed metal from the sidewell is circulated via pumps to the main hearth of the furnace where natural gas burners are fired to supply heat for melting and to maintain the molten bath temperature. The main hearth of the furnace is tapped into crucibles and the molten metal is primarily transferred to the Reservoir Furnace although it can be fed to the DC1, DC2, and DC3 Melting Furnaces as well. Dross is periodically skimmed from the furnace and transferred to the Skimming House. Two (2) natural gas-fired crucible pre-heating stations are used to maintain the molten metal temperature in crucibles supplied from the Swarf Furnace.

Once processing in the Melting Furnace is complete, the tap plug is removed and metal flows through a dedicated trough to the associated Holding Furnace. Alloying, solid reactive chlorine fluxing, and drossing are performed during each operating cycle for the Holding Furnaces, defined as "initial Melter tap to final Holder home." As furnaces that support reactive fluxing, the Holding Furnaces are classified as Group 1 Furnaces under 40 CFR 63, Subpart RRR. When the metal in a Holding Furnace is ready to be cast, the furnace is tilted upwards to allow the molten metal to flow into a trough feeding the Caster. As the metal flows through the trough prior to the caster, a Flux Box (classified as an in-line fluxer under 40 CFR 63, Subpart RRR) is used to inject chlorine gas under the molten surface to further purify the metal. From the Flux Box, the molten metal passes through a filter box, which contains packed media to further filter the molten metal. The metal then flows slowly into DC casting molds, which solidify the metal forming ingots. A Flux Box, Filter Box and DC Caster are associated with each of the three Holding Furnaces (i.e. DC1, DC2, and DC3). The final cast ingots are then moved to the rolling mill to be formed into aluminum coil.

The "Remelt 2" operations consist of a new DC aluminum casting line, designated as DC4, and associated support operations. The new DC4 casting line consists of six major sections: bale breaking, shredding, cleaning, decoating, melting and casting.

The Shredding Systems each encompass a bale breaker, shredder, and cleaning section for preparing scraps for further downstream processing. UBC scrap and other potential scrap types are transported to the entrance of the aluminum scrap shredding lines in the form of large scrap bales or compacted loose scrap. Once inspected and ready for processing, scrap is charged to the bale breaker feed conveyor. The bale breakers consist of a twin shaft, low-speed, high-torque system designed to separate large bales of aluminum scrap into smaller components and to remove potentially dangerous charge materials (i.e., air cylinders, ammunition, other ferrous metal types). After the scrap is processed and separated by the bale breaker and unwanted materials are removed, loose aluminum scrap is transported via conveyor to the single-shaft shredder. Operation of the shredder ensures consistent scrap shred sizing prior to downstream processing, increasing the available scrap surface area to maximize the potential for efficient decoating and melting.

Subsequent to the rotary shredders, aluminum scrap undergoes several separation processes in series (i.e., fines separation, magnetic separation) to allow for uniform charge material generation. Throughout these processes, unwanted, non-aluminum materials present in the scrap mix is removed prior to decoating and melting, promoting overall metal quality and purity. Although the majority of the scrap will be processed as described above, scrap can be introduced at any point in the shred line: at the secondary shredder, at the cleaning section or at the surge hopper. PM emissions may be generated in the Shredding Systems primarily when scrap is shredded and screened to remove any dirt or other foreign materials adhered to the surface. The Shredding Systems are each equipped with a capture and collection system (CCS) to route particulate matter generated from the conveying and shredding processes in the system to a dedicated baghouse serving each shred line.

Decoaters A and B are charged with the shredded aluminum scrap and use indirect-fired rotary decoating kilns to remove lacquers, oils, water, dust, and fines from the scrap. After passing from the Shredding System discharge surge bins to the Decoater shred feed conveyor and to the Decoater entry airlock, shredded and coated aluminum scrap comes into contact with a flow of hot process gas generated by an integral afterburner that serves to volatilize residual organic coatings present on the shredded aluminum scrap. Exhaust gas from the rotary drum containing volatilized organic coatings is then routed through a cyclone and then either back to the rotary drum hot gas inlet or to a natural gas-fired afterburner chamber where a direct flame is used to combust any organics present. The majority of afterburner exhaust gas is redirected back to the rotary drum where the heat released from the combustion process is used to drive further thermal decoating of scrap, but a portion of the exhaust gas is routed through a pressure-controlled duct leading to a baghouse. Hot exhaust gas from the afterburner enters the rotary decoater and passes through the shredded aluminum scrap. Design of the rotary drum maximizes the contact time between the hot combustion gas and the coated aluminum scrap, producing a high degree of decoating. Overall, regulated pollutant emissions are generated by the Decoater from a combination of natural gas combustion and the actual scrap decoating process as various contaminants present on the coated aluminum scrap are volatilized and evolve from the rotary decoating drum for further treatment in the afterburner. The afterburner on each decoater is equipped with two cold air low-NOX burners. PM emissions generated in each Decoater are controlled by a lime-injected baghouse.

Four (4) Sidewell Furnaces are used to produce molten aluminum primarily from shredded and decoated aluminum scrap produced by Decoater A and Decoater B. All four (4) Sidewell Furnaces have the flexibility on a short-term basis to process a charge mix ranging from 100 percent shredded and decoated scrap fed to the furnace via conveyor to 100 percent loose scrap (i.e., coated scrap, internal runaround scrap, etc.) manually loaded to the furnace. With the ability to support reactive flux injection and charge materials other than clean charge, the Sidewell Furnaces are classified as Group 1 Furnaces under 40 CFR 63, Subpart RRR. In contrast to the Swarf Furnace in the legacy plant Remelt area, the Sidewell Furnaces comprise a continuous process because the furnaces must be capable of receiving hot shreds from the continuously operated Decoater A or Decoater B at all times. Also, the charging and tapping practices of the Sidewell Furnaces are not linked (as in the case of batch furnaces operating under a “tap-to-tap” operating cycle). Freshly melted and fluxed metal from the sidewell is circulated via pumps to the main hearth of the furnace where natural gas burners are fired to supply heat for melting and to maintain the molten bath temperature. Dross is manually skimmed from the surface of the molten metal in both the charge well and the main hearth and transferred to the Dross House. Once the molten metal level in the

Sidewell Furnaces reaches a target value and the casting bay is ready for a transfer, the furnace taps are lifted and molten metal flows via fixed trough system to one of two holding furnaces.

Hoods located over the charge well and pump well of each furnace captures regulated air pollutant emissions released from charging and fluxing. A separate hood situated over the door of the main hearth captures any emissions generated during the periodic drossing activities occurring in the main hearths. For each of the sidewell furnaces, the main hearth door hood and charge/pump well hood have a common duct system that leads to a baghouse. Natural gas combustion byproducts and emissions attributable to molten metal production occurring in each main hearth chamber are also ducted to the respective baghouses.

Once tapped, molten aluminum produced by one of the four Sidewell Furnaces flows via troughs to one of two molten aluminum holding furnaces. Each of these two holding furnaces uses solid reactive salt fluxing and has the capability of receiving and processing aluminum charge materials classified as "clean charge." As such, the holding furnaces are classified as Group 1 Furnaces under 40 CFR 63, Subpart RRR. After one of the four associated melting furnaces is tapped, either Holder A or Holder B begins to fill with molten metal. Solid salt flux and alloying agents can be added to the molten bath and to metal in the trough leading from the melt furnaces. Dross generated during the holding furnace operating cycle is removed through the furnace door, placed in dross pans, and transferred to the Dross House for further processing. Once alloying, fluxing, and drossing activities are all complete, the metal is ready for transport through an associated in-line flux box to the caster. After the caster is prepared, one of the two holding furnaces is tilted to allow metal to flow into the trough which ultimately feeds the caster. The metal then flows slowly into DC casting molds, which solidify the metal forming ingots. The final cast ingots are then transported via trucks over Logan's internal plant road network to the rolling mill to be formed into aluminum coil. Based on these operating practices, the operating cycle definition for Holders A and B is the period from "last Melter transfer-to-final Holder home."

Flux Box A receives molten metal from either of the two holders and performs limited reactive fluxing with chlorine gas. The operating cycle for Flux Box A is defined to be "initial Holder tilt to final Holder home". As the holder tilts and begins to dispense metal into a gravity-fed trough, the metal flows into Flux Box A through an air lock. After the flux box fills with molten metal, gaseous chlorine flux injection begins and continues until the full cast has been completed. The fluxing agent is designed to remove hydrogen from the metal but also removes other components, primarily calcium and sodium. The flux injectors use nozzles submerged below the metal surface to disperse the gaseous chlorine flux, a combination of pure chlorine gas and inerts. Once the metal leaves the Flux Box, it flows through the filter box, a mass of filter media designed to remove any remaining physical impurities. The metal then flows to the Caster. Approximately once per day when the flux injection system is not active and metal is not flowing or accumulated within the flux box (i.e., not a part of a normal operating cycle), the flux box lid that seals the lid to the box during normal operation is removed or tilted away and any dross that has accumulated on the injection system nozzles or the refractory lined baffles is removed and transferred to the Dross House.

Along with ingots from external sources, the ingots produced internally are rolled into aluminum coil in a series of two milling steps, hot rolling and cold rolling. Prior to rolling, the ingots are fed to either Scalper 1 or Scalper 2 where the top and bottom surfaces are scalped to make them smooth for the rollers at the Hot Mill. Scrap formed by the Scalper ("scalped chips") are collected via

cyclones and are pneumatically conveyed by the Swarf Furnace Chip Conveyor to a cyclone feeding the Swarf Furnace or to a cyclone feeding the Scalped Chip Briquetting System. In the hot rolling mill, the scalped ingots are first heated close to the melting point in one of the four Pusher Furnaces or one of the three Carbottom Furnaces. The pre-heated ingots are then reduced to aluminum sheet by repeated passes under the Reversing Mill. As the ingots are reduced, the ends of the slab are trimmed using three shearing devices. The resulting slab is then processed through the 3-stand Finishing Mill to produced rolled coils. The edges of the slab are also trimmed during the Finishing Mill reducing process. Due to the significant amount of heat formed by the pressure applied to the rollers in the Reversing and Finishing Mills, a water-based mineral-oil emulsion is applied as a coolant. Logan also applies kerosene to the Finishing Mill stands to facilitate the initial "biting" process of feeding the slab into each of the three mill stands. The aluminum coils are then left to cool before further processing in the Cold Mills.

In the Cold Mills, the coils are unwound, rolled, and rewound comprising a single cold rolling pass. This process is repeated through up to five passes to reduce the coils to the desired thickness, depending on the targeted end product (e.g., beverage cans, automotive sheet, etc.). Cold Mill 1 is a heavy gauge, single stand cold rolling mill that uses a severely hydrotreated and refined mineral-oil based coolant as a lubricant and coolant. Cold Mill 2 is a lighter-gauge, single stand cold rolling mill using a similar lubricant/coolant package to Cold Mill 1. Cold Mill 3 is a three-stand cold mill which uses a water-based coolant package with mineral-oil based materials applied as a "bite lubricant." Either between passes or after the final pass, some coils from the Cold Mills are then annealed in one of two Annealing Furnaces. All three cold mills are equipped with CCS consisting of entry hoods, enclosures, exit hoods, duct work, and fans to route mill fumes to different air pollution control systems. Cold Mills 1 and 2 share a roll coolant recovery system (RCRS, i.e., heavy oil scrubber) for PM and VOC emissions control. Cold Mill 3 uses progressive purification systems (PPS) for PM control and a cooling tower water supplied condenser for VOC controls. Cold Mill 4 has a 6-high roll, single stand configuration and increases the cold rolling capability and maximizes flexibility of the cold rolling area to process beverage can stock, automotive stock, and products targeted to various other market segments (e.g., transportation, building and construction materials, etc.). Cold Mill 4 has the capability of producing the complete family of coil products currently produced in Cold Mills 1-3. Entrained roll coolant mist and vapor are captured through the mill's hooding system and are routed to a Heavy Oil Scrubbing (HOS) system designed for PM and VOC control.

After processing in the Tension Leveler to level the coil surface and cleaning in a Pretreatment Line, some coils are sent to the Coating Line where water and solvent-based coatings are applied. The finished coils are then unwound and cut to the width desired by the customer using one of four Slitters. The finished coils are finally stored, packaged, and shipped to customers.

Logan uses a set of three natural gas-fired boilers (i.e., Boilers #1, #2, & #3) to provide process steam for various uses throughout the plant including as a cleaning medium in the Pretreatment Line. A set of Cooling Towers are used to remove heat from process water prior to the wastewater treatment plant. Various parts washers, classified as solvent cold cleaners, are used to clean oil from components in the rolling mill. Various volatile organic liquid and petroleum liquid storage tanks are used in conjunction with major process units at the plant.

During periods of natural gas curtailment, the permittee may use propane as a back-up fuel for the emission points that use natural gas in the main plant facility. When the natural gas supplier curtails the amount of gas sent to Logan, the propane blending system is started. There are four tanks that supply the propane to be blended along with a unit that does the blending. The mixture of natural gas and propane is sent to the main plant facility in the same pipeline that carries the unblended natural gas. There are no separate lines to burn 100% propane. For any unit that burns natural gas in the main plant facility, there is no option to not burn the blended gas. The Remelt 2 (DC4) facility will not receive the propane/natural gas mixture. In this alternate operating scenario, the permittee has limited hours of operation during which propane can be used.

SECTION 2 – CURRENT APPLICATION

Permit Number: V-20-004 R4 Activities: APE20240007

Received: 11/8/2024 Application Complete Date(s): 11/20/2024

Permit Action: ☐ Initial ☐ Renewal ☐ Significant Rev ☒ Minor Rev ☐ Administrative

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

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

- ***APE20240002 – Section 502(b)10 Change:*** *Addition of DC4 mobile scrap conveyor #2 (IA74)*

Description of Action:
On November 8, 2024, the Division received a minor permit revision application for the Title V permit V-20-004 R3 held by Logan Aluminum, Inc. (Logan).

In this application, Logan is requesting the addition of an alternate operating scenario for the bypass operation associated with the roll coolant recovery system (EP 59). The alternate operating scenario will allow for extended bypass operations up to 24 hours, with an additional 8 hours to "return to normal". The main function of the alternate operating scenario is to provide additional time for maintenance and repair as needed. During the extended bypass operation, the rectification column will be offline, while washing oil will be re-circulated through the absorption column. Logan conducted an engineering test to determine the VOC emission rate during the extended bypass operation. Emission factors for PM/PM10/PM2.5 will remain constant for both the normal operation and the bypass operation, as the bypass operation is only anticipated to impact the VOC emission rate. The VOC group limit of 118.5 tons per year for Emission Group 9 (EPs 30, 32 & 59) will remain unchanged.

Additionally, PM/PM10/PM2.5 and VOC emission factors for Cold Mill 1 (EP 30), Cold Mill 2 (EP 32) and the Roll Coolant Recovery System (EP 59) will be updated based on the results of the January 2020 compliance test. With the updated emission factors, the estimated control efficiencies for PM/PM10/PM2.5 for EP 59 have been removed from KYEIS because the compliance test data is outlet data from the stack.

For establishing baseline emissions from these units, Logan selected the timeframe of October 2019 to September 2021.

The following table lists the project emissions increase expected from the extended bypass operation modification, taking into account the project actual emissions and the emissions the units could have accommodated prior to the project occurring.

Pollutant	Project Emissions Increase	Significant Emission Rate (SER)	PSD Applicable
	Tons per year (tpy)		
PM (filterable, only)	0.24	25	No
PM_{10} (filterable & condensable)	0.31	15	No
$PM_{2.5}$ (filterable & condensable)	0.23	10	No
VOC	2.53	40	No

Accordingly, the project does not exceed the significant emission rate (SER) and does not trigger further review under 401 KAR 51:017.

V-20-004 R4 Emission Summary				
Pollutant	2023 Actual (tpy)	Revised PTE V-20-004 R3 (tpy)	Change (tpy)	Revised PTE V-20-004 R4 (tpy)
CO	156.47	585.62	+0	585.62
NOx	277.18	845.17	+0	845.17
PT	257.18	318.85	-15.01	303.84
PM_{10}	255.60	372.47	-27.87	344.60
$PM_{2.5}$	363.34*	303.75	-24.63	279.12
SO_2	3.12	8.02	+0	8.02
VOC	533.22	919.23	-63.04	856.19
Lead	0.06	0.12	+0	0.12
Greenhouse Gases (GHGs)				
Carbon Dioxide	259,909	753,028	+0	753,028
Methane	4.94	14.47	+0	14.47
Nitrous Oxide	0.50	1.50	+0	1.50
CO_2 Equivalent (CO_2e)	260,182	753,836	+0	753,836
Hazardous Air Pollutants (HAPs)				
Arsenic (and Compounds)	0.42	0.89	+0	0.89
Formaldehyde	0.50	1.39	+0	1.39
Hexane; N-Hexane	3.19	9.42	+0	9.42
Hydrochloric Acid	97.43	417.38	+0	417.38
Methanol	0.00006	5.30	+0	5.30
Combined HAPs:	101.9	435.62	+0	435.62

*Note: This includes changes in actual emissions reported to KYEIS based on stack testing results that have not yet been incorporated into the PTE emission calculations via a permit revision.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Group 1: Scrap Shredding Systems (EPs 56, 127, 133, 205)					
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**		**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lb/hr • P<30 ton/hr: $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	EP 56	0.83 lb/hr; 7/2018 Stack Test	5-year testing, monthly calculation, monitoring, & recordkeeping
			EPs 127 & 133	1.48 lb/hr; manufacturer's grain loading	
			EP 205	2.70 lb/hr; UPL of tests done on EPs 127 & 133	
PM	0.010 gr/dscf	40 CFR 63.1505(b)(1)	EP 56	0.0024 gr/dscf; 7/2018 Stack Test	5-year testing, monitoring, recordkeeping, & reporting
			EPs 127 & 133	0.0018 gr/dscf; manufacturer's guarantee	
			EP 205	0.0011 gr/dscf; UPL of tests done on EPs 127 & 133	
PM_{10} (EP56)	1.5 lb/hr on a 3-hr average	To preclude 401 KAR 51:017	0.83 lb/hr; 7/2018 Stack Test		5-year testing, monitoring, recordkeeping, & reporting

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (ton/hr)	Control Device	Construction Commenced
56 (1010-1)	Scrap Processing System	15	Baghouse System with Leak Detection	2006
127 (9023)	Shredding System A	20	Baghouse System with Leak Detection (C-9093)	7/12/2016
133 (9027)	Shredding System B	20	Baghouse System with Leak Detection (C-9095)	10/1/2016
205	Shredding System C	30	Baghouse System with Leak Detection (C-9099)	2024

EP56 encompasses conveying and shredding equipment used to process both clean and dirty scrap fed to the Multichamber Furnace. This system includes three low speed high torque shredders that process selected scrap.
EP127, EP133, and EP205 each encompass a bale breaker, a shredder, an eddy current separator, and an air knife. These systems feed scrap to Decoaters A & B.
Under 40 CFR 63, Subpart RRR these units are considered new aluminum scrap shredders.

Emission Group 1: Scrap Shredding Systems (EPs 56, 127, 133, 205)

Applicable Regulations:

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

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

40 CFR 64, *Compliance Assurance Monitoring (CAM)* for EP56 for PM & PM_{10}

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for EP56 for PM_{10}

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP127 & 133 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Emissions calculated for EP56 use stack testing data from the July 2018 stack test, the EPA's $PM_{2.5}$ Calculator for the SCC code, an assumed control efficiency of 95%. EPs 127 & 133 use a manufacturer's guaranteed grain loading of 0.0018 gr/dscf, the EPA's PM calculator for PM_{10} and $PM_{2.5}$, a nominal control efficiency of 98% and a capture efficiency of 98%. Emissions for EP205 are calculated using upper prediction limit (UPL) filterable PM concentration from Sept. 2018 Shred Line A, June 2019 Shred Line B, and Sept. 2023 Shred Line A baghouse stack testing. UPL analysis performed on 9 test runs at a confidence limit of 95%. PM_{10} and $PM_{2.5}$ calculated using the average of particle size distribution test results from Sept. 2018 Shred Line A, June 2019 Shred Line B, and Sept. 2023 Shred Line A PSD Avoidance testing, a nominal control efficiency of 81% (based on testing of Shred Lines A & B) and a capture efficiency of 98%. The building provides 90% control for the PM emissions released inside.

Emission Group 2: Group 2 Furnaces (EPs 02, 03, 27, & 40)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis		Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	EP02	0.64 lb/hr; AP-42, Chapter 1.4 & 9/2010 Stack Test	Monthly calculation, monitoring, & recordkeeping
			EP03	0.64 lb/hr; AP-42, Chapter 1.4 & 9/2011 Stack Test	
			EP27	0.81 lb/hr; AP-42, Chapter 1.4 & 9/2011 Stack Test of EP03	
			EP40	0.15 lb/hr; AP-42, Chapter 1.4 & 9/2010 Stack Test of EP03	

Emission Group 2: Group 2 Furnaces (EPs 02, 03, 27, & 40)

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
02 (1005-1 A&B)	Melt Furnace (East) & Pre-Heater DC1	35.0	80.0	None	6/15/1981
03 (1005-4 A&B)	Melt Furnace (West) & Pre-Heater DC2	35.0	80.0	None	6/15/1981
27 (1008-1)	Reservoir Furnace	30.0	50.0	None	10/2/1997
40 (1006-2)	Melt Furnace DC3	44.2	80.0	None	11/26/1991

The permittee operates two Pre-Heaters & three Melt Furnaces **(**Direct Chill Lines (DC1-DC3)). Low NOx regenerative burners are installed on EP02 (1005-1A&B) DC1 and EP03 (1005-4 A&B) DC2.
The Reservoir Furnace (EP27) serves as a molten aluminum supply unit to the DC3 Holding Furnace. This unit is capable of receiving molten aluminum from the Swarf Furnace and the Multichamber furnace as well as solid sows and pigs in its dry hearth.
Under 40 CFR 63, Subpart RRR all of the furnaces in Emission Group 2 are classified as existing group 2 furnaces that process only clean charge with no reactive fluxing. All of the furnaces in Emission Group 2 use natural gas as the primary fuel, but have the ability to use propane as a backup fuel in case of natural gas curtailment.

Applicable Regulations:

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

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

State-Origin Regulation:

401 KAR 63:021, ***Existing sources emitting toxic air pollutants***

Precluded Regulation:

401 KAR 51:017, ***Prevention of significant deterioration of air quality,*** for EP02, EP03, EP27, & EP40 for PM, VOC, & NO_x

Comments:

Emissions for these furnaces are calculated using emissions factors from AP-42, Chapter 1.4 and 1.5 and Stack Tests on each unit or similar units.

Emission Group 3: Group 1 Furnaces with Add-On Controls (EPs 26, 57, 129, 130, 135, & 136)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	AP-42, Chapter 1.4; Previous Stack Tests	Monthly calculation, monitoring, & recordkeeping
PM	0.40 lb/ton	40 CFR 63.1505(i)(1)	AP-42, Chapter 1.4; Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
D/F	15.0 µg/Mg D/F TEQ	40 CFR 63.1505(i)(3)	Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
HCl	0.40 lb/ton	40 CFR 63.1505(i)(4)	Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
PM_{10} (EP57)	1.6 lb/hr on a 3-hr average	To preclude 401 KAR 51:017	0.94 lb/ton; 8/2008 Stack test; & 7.6 lb/mmscf; AP-42, Chapter 1.4 (conservative)	5-year testing, monitoring, & recordkeeping
NO_x (EP57)	8.3 lb/hr on a 3-hr average	To preclude 401 KAR 51:017	424.0 lb/mmscf; 8/2008 Stack Test	5-year testing, monitoring, & recordkeeping
NO_x (EPs 129, 130, 135, 136)	0.22 lb/ton & 14.63 tons/yr, on an individual basis	401 KAR 51:017	0.22 lb/ton; 99% UPL of 10/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO (EPs 129, 130, 135, 136)	0.52 lb/ton & 34.66 tons/yr, on an individual basis	401 KAR 51:017	0.52 lb/ton; 95% UPL of 10/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
VOC (EPs 129, 130, 135, 136)	0.14 lb/ton & 9.37 tons/yr, on an individual basis	401 KAR 51:017	0.14 lb/ton; 95% UPL of 10/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO_2e (EPs 129, 130, 135, 136)	16,925 tons/yr, on an individual basis	401 KAR 51:017	40 CFR 98, Subparts A & C	BACT Design, GCOP, monitoring, recordkeeping, & reporting
Process Description:				

Emission Group 3: Group 1 Furnaces with Add-On Controls (EPs 26, 57, 129, 130, 135, & 136)

Emission Point (Unit ID)	Unit Name	Max Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
26 (1009-1A)	Swarf Furnace (Main Hearth)	12.5	34.0	None	11/15/1997
26 (1009-1B & 1D)	Swarf Furnace (Sidewell & Drossing)	12.5	34.0	Lime Injected Baghouse & Leak Detection	11/15/1997
57 (1011-1)	Multichamber Furnace System	16.2	27.3	Lime Injected Baghouse & Leak Detection	2006; Modified 2012
129 (9041-1&2)	Sidewell A1 Melt Furnace (Sidewell, Drossing, & Main Hearth)	15	33.0	Lime Injected Baghouse & Leak Detection (C-9092)	7/12/2016
130 (9045-1&2)	Sidewell A2 Melt Furnace (Sidewell, Drossing, & Main Hearth)	15	33.0	Lime Injected Baghouse & Leak Detection (C-9091)	7/12/2016
135 (9046-1&2)	Sidewell B1 Melt Furnace (Sidewell, Drossing, & Main Hearth)	15	33.0	Lime Injected Baghouse & Leak Detection (C-9094)	10/1/2016
136 (9047-1&2)	Sidewell B2 Melt Furnace (Sidewell, Drossing & Main Hearth)	15	33.0	Lime Injected Baghouse & Leak Detection (C-9096)	10/1/2016

EP26 is a side-well type swarf furnace where Class I and runaround scrap are melted, treated with reactive flux, tapped into crucibles, and added to the Direct Chill Line (DC) Melting Furnaces or the Reservoir Furnace. Emissions from the sidewell are controlled by a dedicated lime-injected baghouse, while emissions during drossing activities in the furnace main hearth are routed to a separate baghouse (Swarf Hearth Baghouse). Main hearth emissions are uncontrolled. The Swarf Furnace is classified as an existing group 1 furnace under 40 CFR Part 63 Subpart RRR, and is part of an existing SAPU (SAPU A). The sidewell emission unit includes emissions from drossing activities. This unit uses natural gas as the primary fuel, but has the ability to use propane as a backup fuel in case of natural gas curtailment.

EP57 is a Multichamber Furnace that melts a variety of aluminum scrap types to produce molten aluminum, which is tapped into crucibles. The Multichamber Furnace is classified as a new group 1 furnace under 40 CFR 63 Subpart RRR, and is part of a new SAPU (SAPU B). Emissions from this unit are controlled by a lime-injected baghouse system. Solid salt flux is used to arrest the oxidation process that occurs during drossing events. The main hearth chamber door hood was upgraded in 2010 and improvements to charge tower exhaust system were constructed in 2012. This unit uses natural gas as the primary fuel, but has the ability to use propane as a backup fuel in case of natural gas curtailment.

Emission Group 3: Group 1 Furnaces with Add-On Controls (EPs 26, 57, 129, 130, 135, & 136)

EP129, EP130, EP135, and EP136 are sidewell-type furnaces. Emissions generated in each sidewell melt furnace charge well and during drossing activities in the furnace main hearth are routed to the baghouse. Main hearth emissions are also routed to the respective baghouses. Each of the four (4) sidewell melt furnaces are classified as new group 1 Furnaces under 40 CFR 63, Subpart RRR, and are part of a different new SAPU (SAPU C). All four (4) sidewell furnaces will have the flexibility on a short-term basis to process a charge mix ranging from 100 percent shredded and decoated scrap fed to the furnace via conveyor to 100 percent loose scrap (i.e., coated scrap, internal runaround scrap, etc.) manually loaded to the furnace. These units are only capable of using natural gas as fuel.

Applicable Regulations:

401 KAR 51:017*, Prevention of significant deterioration of air quality,* for EP129, EP130, EP135, & EP136 for NO_x, CO, VOC, & GHG

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

401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production,* applies to each new and existing group 1 furnace with add-on control devices located at a secondary aluminum production facility located at a major source of HAPs.

40 CFR 64*, Compliance Assurance Monitoring (CAM)* for EP26 for PM & EP57 for PM & PM_{10}

State-Origin Regulation:

401 KAR 63:021, *Existing sources emitting toxic air pollutants*, for EP26

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for EP26 for PM, VOC, & NO_x; & for EP57 for PM_{10} & NO_x

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP129, EP130, EP135, and EP136 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Natural Gas and Propane emissions are calculated using emission factors for AP-42, Chapter 1.4 and 1.5, and 40 CFR 98, Subpart C GHG emission factors. Other emissions are calculated using emission factors derived from previous stack tests. Control Efficiency for EP 26 baghouse is 99% for particulate and 90% for HCl. Control Efficiency for EP 57 baghouse is 95% for particulate and 90% for HCl. Control Efficiency for EPs 129, 130, 135, & 136 is 98% for PM, 97.69% for PM_{10}, 97.39% for $PM_{2.5}$, and 90% for HCl. Capture efficiency for the sidewell hood is 98% and the building provides 90% control for the particulate emissions released inside. Emission factor for HCl for EP57 – Multichamber Furnace was previously 0.3 lb/ton as a precontrol number. It appears this number should have been post control, and was corrected with V-20-004 R1. This is supported by data from recent stack tests, where the post control emission factor is 0.28 lb/ton. The updated precontrol emission factor is 2.8 lb/ton. Regardless, the unit remains under the 0.4 lb/ton post control limit. This change accounts for the large HCl increase between V-20-004 and its first revision.

Emission Group 4: Group 1 Furnaces Without Add-On Controls (EPs 04, 17, 42, 131, & 137)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	AP-42, Chapter 1.4; Previous Stack Tests	Monthly calculation, monitoring, & recordkeeping
PM	0.40 lb/ton	40 CFR 63.1505(i)(1)	AP-42, Chapter 1.4; Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
HF	0.40 lb/ton	40 CFR 63.1505(i)(4)	Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
HCl	0.40 lb/ton	40 CFR 63.1505(i)(4)	Previous Stack Tests	5-year testing, monitoring, recordkeeping, & reporting
NO_x (EPs 131 & 137)	0.032 lb/ton & 6.52 tons/yr, on an individual basis	401 KAR 51:017	63.55 lb/mmscf; Vendor emissions estimate	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO (EPs 131 & 137)	0.042 lb/ton & 8.61 tons/yr, on an individual basis	401 KAR 51:017	84.0 lb/mmscf; AP-42, Chapter 1.4 & BACT	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
VOC (EPs 131 & 137)	0.031 lb/ton & 6.26 tons/yr, on an individual basis	401 KAR 51:017	0.031 lb/ton; 99% UPL of 9/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO_2e (EPs 131 & 137)	12,309 tons/yr, on an individual basis	401 KAR 51:017	40 CFR 98, Subparts A & C	BACT Design, GCOP, monitoring, recordkeeping, & reporting

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (tons/hr)	Burner Maximum Capacity (MMBtu/hr)	Construction Commenced
04 (1005-2)	Hold Furnace (East) (DC1)	45.0	15.0	6/15/1981
17 (1005-5)	Hold Furnace (West) (DC2)	45.0	15.0	6/15/1981
42 (1006-2)	Hold Furnace (DC3)	61.3	15.0	11/26/1991
131 (9053)	Holder A (DC4)	46.7	24.0	7/12/2016
137 (9054)	Holder B (DC4)	46.7	24.0	10/1/2016

EP04, EP17, & EP42 are Holding Furnaces for the Direct Chill Lines (DC1-DC3). Under 40 CFR 63, Subpart RRR, these Holding Furnaces are classified as existing Group 1 Furnaces without add-on pollution control devices, and are in an existing SAPU (SAPU A). These units use natural gas as their primary fuel, but have the ability to use propane as a backup fuel in case of natural gas curtailment.

Emission Group 4: Group 1 Furnaces Without Add-On Controls (EPs 04, 17, 42, 131, & 137)

EP131 & EP137 are Holding Furnaces for Direct Chill Line 4 (DC4). Under 40 CFR 63, Subpart RRR, these Holding Furnaces are classified as new Group 1 Furnaces without add-on pollution control devices, and are in a new SAPU (SAPU C). These units only use natural gas as fuel.

All of the Holding Furnaces support reactive fluxing and process only "clean charge".

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for EP131 & EP137, for NO_x, CO, VOC, & GHG

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

401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production,* applies to each new and existing group 1 furnace without add-on control devices located at a secondary aluminum production facility located at a major source of HAPs.

State-Origin Regulation:

401 KAR 63:021, *Existing sources emitting toxic air pollutants*, for EP04, EP17, & EP42

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for EP04, EP17, & EP42 for PM, VOC, & NO_x

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP131 & EP137 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Natural Gas and propane emissions are calculated using emission factors from AP-42, Chapter 1.4 and 1.5, and 40 CFR 98, Subparts A & C. Other emissions are calculated using emission factors derived from previous stack tests.

Emission Group 5: In-Line Fluxers (EPs 22-A, 22-B, 22-C, & 132)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis		Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	EP22 A-C	0.81 lb/hr; 8/2009 Stack Test	Monthly calculation, monitoring, & recordkeeping
			EP132	0.47 lb/hr; RRR Allowable	
PM	0.01 lb/ton	40 CFR 63.1505(j)(2)	EP22 A-C	0.0049 lb/ton; 8/2009 Stack Test	5-year testing, monitoring, recordkeeping, & reporting
			EP132	RRR Allowable	

Emission Group 5: In-Line Fluxers (EPs 22-A, 22-B, 22-C, & 132)					
HCl	0.04 lb/ton	40 CFR 63.1505(j)(1)	EP22 A-C	0.017 lb/ton; 10/2012 Stack Test	5-year testing, monitoring, recordkeeping, & reporting
			EP132	RRR Allowable	

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (tons/hr)	Control Device	Construction Commenced
22-A (1001-1)	Flux Box (DC1)	166.3 combined	Lime-Injected Baghouse (constructed 3/2003)	6/15/1981
22-B (1001-1)	Flux Box (DC2)			6/15/1981
22-C (1001-1)	Flux Box (DC3)			11/26/1991
132 (9050FB)	Flux Box A (DC4)	46.7	None	7/12/2016

EP22-A, EP22-B, and EP22-C are three Flux Boxes **(**Direct Chill Lines (DC1-DC3)). The three Flux Boxes process only molten aluminum from the existing holding furnaces and accommodate limited reactive fluxing with chlorine gas. Emissions from the Flux Boxes are controlled by a lime-injected baghouse shared by all three units. The lime-injected baghouse is not used to demonstrate compliance with the emission standards in 40 CFR Part 63 Subpart RRR, however, the baghouse must be operated at all times the In-Line Fluxers are operating.

EP132 is a flux box that processes molten aluminum from Holder A and Holder B. Emissions generated by Flux Box A will be collected and ducted out of an uncontrolled, shared stack with the exhaust flow from Holder A.

Applicable Regulations:

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

401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production,* applies to each new and existing secondary aluminum processing unit located at a secondary aluminum production facility located at a major source of HAPs.

State-Origin Regulation:

401 KAR 63:021, *Existing sources emitting toxic air pollutants*, for EP22-A-C

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for EP22-A-C for PM & VOC

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP132 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Emissions from EPs 22-A, B, & C are calculated using results from previous stack tests. Emissions from EP132 are calculated using the 40 CFR 63, Subpart RRR allowable.

Emission Group 6: Scalping Process (EPs 05, 154, & 25)					
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**		**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	EP05	2.05 lb/hr; May 2018 Testing	Monthly calculation, monitoring, & recordkeeping
			EP154	4.16 lb/hr; May 2018 Testing	
			EP25	2.5 lb/hr; Material Balance	
PM (EPs 05 & 154)	13.36 tons/yr	To preclude 401 KAR 51:017, Sections 8-14	EP05	0.0097 lb/ton; May 2018 Testing	5-year testing, monitoring, recordkeeping, & reporting
			EP154	0.0099 lb/ton; May 2018 Testing	
PM_{10} (EPs 05 & 154)	16.68 tons/yr	To preclude 401 KAR 51:017, Sections 8-14	EP05	0.0059 lb/ton; May 2018 Testing	5-year testing, monitoring, recordkeeping, & reporting
			EP154	0.009 lb/ton; May 2018 Testing	
$PM_{2.5}$ (EPs 05 & 154)	12.78 tons/yr	To preclude 401 KAR 51:017, Sections 8-14	EP05	0.0033 lb/ton; May 2018 Testing	5-year testing, monitoring, recordkeeping, & reporting
			EP154	0.0065 lb/ton; May 2018 Testing	

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Lubricant Usage (gal/hr)	Maximum Hourly Capacity (ton/hr)	Maximum Annual Capacity (ton/yr)	Construction Commenced
05 (2005-1C)	Scalper 1 (routed to Cyclone 3)	0.83	212	1,956,051	6/15/1981
154 (2005-2D)	Scalper 2 (routed to Cyclone 4)	0.50	420		12/20/2015; Modified 2022
25 (1009-1C)	Chip Conveyor for Swarf Furnace	N/A	12.5	109,500	11/15/1997

Cast ingots from the casting operation are brought to the scalping process and loaded by overhead crane. The scalpers also have the ability to process externally produced ingots. Ingots can be loaded onto a roller table feeding Scalper 2 from the exterior of the production building. Scalper 2 is equipped with an automated racetrack-type ingot handling system to maximize the available operating time for Scalper 2 to scalp the rolling surfaces of the ingots. Once scalped, aluminum ingot will be transferred to either the carbottom furnaces [Carbottom Furnaces 1-3, EP 06(2010-A)] or pusher furnaces [Pusher Furnace 1&2, EP 18 (2011-A), Pusher Furnace 3, EP 19 (2011-B), and Pusher Furnace 4, EP126 (2011-C)] for thermal conditioning prior to transfer to the Hot Rolling area. Scraps from the scalping process are blown through 2 cyclones into 4 storage silos were they are then gravity fed and conveyed to either the Swarf Furnace or the

Emission Group 6: Scalping Process (EPs 05, 154, & 25)

Briquetting System. The Scalpers' combined capacities are limited by the downstream Reversing Mill operating capacity. The cyclones are used to recover aluminum from the exhaust stream and do not act as control equipment.

Applicable Regulations:

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

State-Origin Regulation:

401 KAR 63:021, ***Existing sources emitting toxic air pollutants,*** for EP25

Precluded Regulations:

401 KAR 51:017, ***Prevention of significant deterioration of air quality***, for EP05 & EP25 for PM, VOC, & NO_x

401 KAR 51:017, ***Prevention of significant deterioration of air quality, Sections 8-14,*** for EP05 & EP154 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Scalpers 1 & 2 are together considered part of the "Ingot Scalping Process". Emissions are calculated using the results of stack testing performed in May 2018. Condensable emissions based on lubricant usage.

Emission Point: Sow Dryer (EP44)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	0.04 lb/hr; AP-42, Chapter 1.4	Monthly calculation, monitoring, & recordkeeping

Initial Construction Date: September 1998

Process Description:

The Sow Dryer removes moisture from pigs and sows prior to melting. The dryer uses natural gas as the primary fuel, but has the ability to use propane as a backup fuel in case of natural gas curtailment.

Maximum Capacity: 47.1 ton/hr
Burner Maximum Capacity: 24 MMBtu/hr
Control Device: None
Fuel: Natural Gas (Primary), Propane (NG Curtailment)

Emission Point: Sow Dryer (EP44)
Applicable Regulation: **401 KAR 59:010*, New process operations,*** applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975. **State-Origin Regulation:** **401 KAR 63:020, *Potentially hazardous matter or toxic substances*** **Comments:** Emissions calculated using AP-42, Chapter 1.4 and 1.5, and 40 CFR 98, Subparts A & C.

Emission Group 7: Skimming & Drossing Houses (EPs 01 & 140)					
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**		**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Weekly qualitative observations, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	EP01	2.2 lb/hr; 11/1992 Stack Test	CAM, monthly calculation, testing, monitoring, & recordkeeping
			EP140	0.78 lb/hr; AP-42, Chapter 11.17	

Emission Group 7: Skimming & Drossing Houses (EPs 01 & 140)

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (tons/hr)	Control Device	Construction Commenced
01 (1002-1)	Aluminum Skimming House	2.90	Baghouse (C-1002-1)	6/15/1981
140 (9070)	Dross House	7.07	Baghouse (C-9090)	2016

The Aluminum Skimming House (EP01) and Dross House (EP140), receive dross skimmings from the direct cast processes and are equipped with baghouses.

Applicable Regulations:

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

401 KAR 63:010, *Fugitive emissions,* applies to emissions into the air outside buildings, structures, and equipment other than from a stack or air pollution control equipment exhaust.

40 CFR 64, *Compliance Assurance Monitoring (CAM)* for EP01 for PM

State-Origin Regulation:

401 KAR 63:021, *Existing sources emitting toxic air pollutants,* for EP01

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for EP01 for PM & VOC

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP140 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Emissions from EP01 calculated using data from a 11/1992 stack test, scaled up to account for test to test variability. Emissions from EP140 calculated using the sum of EFs from Drop Point and Product Loading in AP-42, Chapter 11.17 and a capture efficiency of 98%.

Emission Group 8: Carbottom & Pusher Furnaces (EPs 06, 18, 19, & 126)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis		Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	EP06	0.31 lb/hr; AP-42, Chapter 1.4	Monthly calculation, monitoring, & recordkeeping
			EP18	2.09 lb/hr; Jan 2020 Test	
			EP19	0.75 lb/hr; Jan 2020 Test	

Emission Group 8: Carbottom & Pusher Furnaces (EPs 06, 18, 19, & 126)					
			EP126	0.32 lb/hr; 2/2019 Stack Test	
NO_x (EP126)	168.0 lb/MMscf & 58.9 tons/yr	401 KAR 51:017	Vendor data based on 120 ppmv at 5% O_2 on a dry basis		GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO (EP126)	60.6 lb/MMscf & 21.2 tons/yr	401 KAR 51:017	Vendor data based on 80 ppmv at 3% O_2 on a dry basis		GCOP, 5-year testing, monitoring, recordkeeping, & reporting
VOC (EP126)	5.5 lb/MMscf & 1.93 tons/yr	401 KAR 51:017	5.5 lb/MMscf; AP-42, Chapter 1.4		GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO_2e (EP126)	42,068 tons/yr	401 KAR 51:017	40 CFR 98, Subparts A & C		BACT Design, GCOP, monitoring, recordkeeping, & reporting

Process Description:

Emission Point (Unit ID)	Unit Name	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
06 (2010-A)	Carbottom Furnaces 1 - 3	100.26	None	6/15/1981
18 (2011-A)	Pusher Furnaces 1 & 2	224.8	None	1/16/1990
19 (2011-B)	Pusher Furnace 3	124.0	None	10/1999
126 (2011-C)	Pusher Furnace 4	105.0	None	4/12/2016

The Carbottom and Pusher Furnaces are used to heat the aluminum before the Reversing Mill. All of the furnaces use natural gas as the primary fuel, but have the ability to use propane as a backup fuel in case of natural gas curtailment.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for EP126 for NO_x, CO, VOC, & GHG

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

State-Origin Regulation:

401 KAR 63:021, *Existing sources emitting toxic air pollutants,* for EP06, EP18, & EP19

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for EP06 & EP18 for PM, VOC, & NO_x

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP126 for PM, PM_{10}, & $PM_{2.5}$

Emission Group 8: Carbottom & Pusher Furnaces (EPs 06, 18, 19, & 126)
Comments: Emissions calculated using AP-42, Chapter 1.4 and 40 CFR 98, Subparts A & C, along with vendor data, where available. Where stack testing has been performed, emissions calculations have been revised to use the stack test data, where it is higher than the initial emissions estimates. The Pusher 4 Furnace operates via a semi-batch process where ingots are periodically loaded into the furnace and unloaded from the furnace to accommodate a specific heating cycle which can extend up to 24 hours or more. During the heating cycle the Pusher 4 Furnace dynamically progresses through a pre-defined firing pattern to accommodate the desired changes in ingot temperature profile over the cycle. All burners in the furnace do not fire at their maximum burner capacity on a simultaneous basis as such an operating mode would overheat the ingots nullifying the intended "heat soaking" process. Based on these operating practices, the Pusher Furnace burners are inherently constrained to an annual capacity factor of no more than 60 percent.

Emission Point: Reversing Mill (EP07)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	0.013 lb/ton; 7/2016 Stack Test	CAM, monthly calculation, monitoring, & recordkeeping
VOC	10.0 lb/hr & 32.82 tons/yr	401 KAR 51:017	0.035 lb/ton; 7/2016 Stack Test	Good work practice, 5-year testing, monitoring, recordkeeping, & reporting

Initial Construction and Modification Date: 6/15/1981; Modified 2017 & 2022

Process Description:
The Reversing Mill is used to roll aluminum ingots to a specific thickness. It is equipped with dedicated Inertial Separators to control PM emissions which provide no control for VOC emissions. This mill is the bottleneck for all of the upstream Scalping Process operations and downstream finishing mill operations.
Maximum Capacity: 336 ton/hr
Control Device: Inertial Separators (C-2015-1)

Applicable Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality,* for VOC
401 KAR 59:010, *New process operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.
40 CFR 64, *Compliance Assurance Monitoring (CAM)* for PM

State-Origin Regulation:
401 KAR 63:021, *Existing sources emitting toxic air pollutants*

Emission Point: Reversing Mill (EP07)

Precluded Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM & VOC
401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for PM, PM_{10}, & $PM_{2.5}$

Comments:
Emissions calculated using MSDS/Material Balance and stack test data from a 7/2016 stack test. The hooding provides 52.4% capture efficiency of emissions, and the Inertial Separators provide 80% control for PM, 65% control for PM_{10}, and 50% control for $PM_{2.5}$. Uncaptured emissions are controlled by the building enclosure at 70% for PM, 50% for PM_{10}, and 15% for $PM_{2.5}$.

Emission Point: Finishing Mill (EP08)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	Can Body: 0.0098 lb/ton; Can End: 0.0205 lb/ton; based on grain loading of 0.0013 gr/dscf	CAM, monthly calculation, monitoring, & recordkeeping
VOC	73.2 lb/hr & 239.2 tons/yr	401 KAR 51:017	0.271 lb/ton; 4/2012 Stack Test	Good work practice, 5-year testing, monitoring, recordkeeping, & reporting

Initial Construction and Modification Date: 6/15/1981; Modified 2011, 2017, & 2022

Process Description:
The Finishing Mill is used to roll aluminum ingots to a specific thickness and is equipped with control for PM emissions. The aluminum sheets from the Reversing Mill are fed to the Finishing Mill.

Maximum Capacity: Can Body Stock - 317 ton/hr; Can End Stock – 174 ton/hr
Control Device: Bulk Entrainment Separator (BES) & Second Stage Mist Eliminators (SSMEs) (C-2015-2)

Applicable Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality,* for VOC
401 KAR 59:010, *New process operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.
40 CFR 64, *Compliance Assurance Monitoring (CAM)* for PM, PM_{10}, & $PM_{2.5}$

Emission Point: Finishing Mill (EP08)

State-Origin Regulations:
401 KAR 63:020, *Potentially hazardous matter or toxic substances,* applies to any pollutants not included in the list of pollutants under **Group 13, Existing Sources Emitting Toxic Air Pollutants**.
401 KAR 63:021, *Existing sources emitting toxic air pollutants*
Precluded Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM & VOC
401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for PM, PM_{10}, & $PM_{2.5}$

Comments:
Emissions calculated using the grain loading for the new BES equipment of 0.0013 gr/dscf. The upgraded hooding provides 95% capture efficiency of emissions, and the previously used control efficiencies of the SSMEs of 95.22% control for PM, 91.65% control for PM_{10}, and 87.62% control for $PM_{2.5}$ were used to estimate pre-control emissions. Uncaptured emissions are controlled by the building enclosure at 70% for PM, 50% for PM_{10}, and 15% for $PM_{2.5}$. EP08 is not a source of condensable PM.

Emission Group 9: Cold Mills 1 & 2 with Roll Coolant Recovery System (RCRS) (EPs 30, 32, & 59)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	2.41 lb/hr; January 8-9, 2020 stack test	Monthly calculation, monitoring, & recordkeeping
VOC	118.5 tons/yr	To preclude 401 KAR 51:017	12.4 lb/hr, normal operation; January 8-9, 2020 stack test 23 lb/hr, bypass operation; March 2023 engineering test	Good work practice, 5-year testing, monitoring, recordkeeping, & reporting

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (ton/hr)	Construction Commenced
30 (3005-1)	Cold Mill 1 (CM1)	243.1	6/15/1981
32 (3010-1)	Cold Mill 2 (CM2)	94.4	6/15/1981
59 (3010-2)	Control Device for CM1 & CM2: Roll Coolant Recovery System (RCRS)		2011

Emission Group 9: Cold Mills 1 & 2 with Roll Coolant Recovery System (RCRS) (EPs 30, 32, & 59)

The Cold Mills process aluminum coils to reduce their gauge thickness. Exhaust gases from each Cold Mill are routed to a Roll Coolant Recovery System, where the roll coolant is recovered for reuse. The RCRS consists of an absorption column and rectification column with vacuum pump, degassing column, rolling oil distillate and electric heater

Applicable Regulations:

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

40 CFR 64, ***Compliance Assurance Monitoring (CAM)*** for PM, PM_{10}, $PM_{2.5}$, & VOC

Precluded Regulations:

401 KAR 51:017, ***Prevention of significant deterioration of air quality***, for PM & VOC

401 KAR 51:017, ***Prevention of significant deterioration of air quality, Sections 8-14,*** for PM, PM_{10}, & $PM_{2.5}$

Comments: Cold mill 1 & 2 were formerly EP 10 & 14.

Emissions calculated using stack test data from the January 2020 Compliance Test on the cold mills and RCRS. The VOC emission factor during bypass operations was determined during a March 2023 engineering test conducted by the source. An anticipated maximum of six 32-hour bypass events (192 hours total) per year is factored in for bypass operation emission estimates. The fume exhaust system provides 90% capture efficiency of emissions. Uncaptured emissions are controlled by the building enclosure at 15% for PM, PM_{10} and $PM_{2.5}$.

Emission Group 10: Annealing Furnaces (EP12)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$ • P≥30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	0.12 lb/hr; AP-42, Chapter 1.4	Monthly calculation, monitoring, & recordkeeping

Process Description:

Emission Point (Unit ID)	Unit Name	Burner Maximum Capacity (MMBtu/hr)	Construction Commenced
12 (3030-B & D)	Annealing Furnaces 3 & 4	17 each, 34 total	6/15/1981

The annealing furnaces treat coiled aluminum and are classified as existing process heaters designed to burn gas 1 fuels under 40 CFR 63, Subpart DDDDD. The furnaces use natural gas as the primary fuel, but have the ability to use propane as a backup fuel in case of natural gas curtailment. These units are uncontrolled.

Emission Group 10: Annealing Furnaces (EP12)

Applicable Regulations:

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

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 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,* applies to each existing process heater designed to burn gas 1 fuels at a major source.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM, VOC, and NO_x

Comments:

Emissions calculated using AP-42, Chapter 1.4 and 1.5, and 40 CFR 98, Subparts A & C.

Emission Point: Parts Washer – Cold Mill 3 Area (EP53)

Initial Construction Date: 9/24/1992

Process Description:

At this parts washer, coiled aluminum and cast aluminum parts get dipped in a cleaning tank. The unit is classified as a cold cleaner under 401 KAR 59:185.

Maximum Capacity: 117 gal/hr
Control Device: Cover

Applicable Regulation:

401 KAR 59:185, *New solvent metal cleaning equipment,* applies to each cold cleaner 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 or marginal nonattainment for ozone in 401 KAR 51:010.

Comments:

Emissions calculated using AP-42, Chapter 4.6.

Emission Point: Coating Line 1 (EP09)					
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**		**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P<30 ton/hr: $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	2.18 lb/hr; 6/2015 Stack Test & AP-42, Chapter 1.4		5-ytear testing, monthly calculation, monitoring, & recordkeeping
PM	15 ton/yr (after	To preclude 401	Solvent	0.023 lb/ton;	5-year testing,

Emission Point: Coating Line 1 (EP09)					
	app. of 1,870,000 gal of coating per 12-month rolling period)	KAR 51:017	-Based	6/2015 Stack Test	monitoring, recordkeeping, & reporting
			Water-Based	0.12 lb/ton; 6/2015 Stack Test	
			NG	1.9 lb/MMscf; AP-42, Chapter 1.4	
VOC	90% reduction	40 CFR 60.462(a)(3)	Solvent -Based	99.1% DE; 6/2015 Stack Test	Meet the requirements of 40 CFR 60.463(c)(2)
			Water-Based	99.46% DE; 6/2015 Stack Test	
VOC	40 ton/yr (after app. of 1,870,000 gal of coating and/or 34,419 gal of MEK per 12-month rolling period)	To preclude 401 KAR 51:017	Solvent -Based	0.84 lb/ton; 6/2015 Stack Test	5-year testing, monitoring, recordkeeping, & reporting
			Water-Based	0.13 lb/ton; 6/2015 Stack Test	
			MEK Cleanup	0.0028 lb/gal; Material Balance	
			NG	5.5 lb/MMscf; AP-42, Chapter 1.4	
Organic HAP	< 20 ppmv on a dry basis	40 CFR 63.5120(a)(3)	Solvent -Based	1.0 ppm; 10/2005 Stack Test	Meet the requirements of 40 CFR 63.5170(c)(4)
			Water-Based	4.2 ppm; 10/2005 Stack Test	

Initial Construction Date: 6/15/1981; RTO Installed 9/2012

Process Description:
Aluminum is pre-treated and coated with various water- or solvent-based paints and dried in a bake-off oven. A regenerative thermal oxidizer (RTO) controls particulate and VOC emissions from the operation.

Maximum Capacity: 13.0 ton/hr
Maximum Solvent Application Rate: 5.25 gal/hr
Control Device: RTO (C-6020-A)

Applicable Regulations:
401 KAR 59:010, ***New process operations,*** applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.
401 KAR 60:005, Section 2(2)(zz), 40 C.F.R. 60.460 to 60.466 (Subpart TT), *Standards of Performance for Metal Coil Surface Coating,* applies to each prime coat operation in a metal coil surface coating operation which commenced construction after January 5, 1981.
401 KAR 63:002, Section 2(4)(xxx), 40 C.F.R. 63.5080 to 63.5200, Tables 1 to 2 (Subpart SSSS), *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil,* applies to each facility that is a major source of HAP, as defined in 40 CFR 63.2, at which a coil coating line is operated.

State-Origin Regulation:
401 KAR 63:021, ***Existing sources emitting toxic air pollutants***

Emission Point: Coating Line 1 (EP09)
Precluded Regulations: **401 KAR 51:017, *Prevention of significant deterioration of air quality***, for PM, VOC, & NO_x **401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,*** for PM, PM_{10}, & $PM_{2.5}$ **Comments:** Emissions calculated using MSDS/Material Balance, AP-42, Chapter 1.4 and 1.5, and previous stack test data.

Emission Group 11: Boilers #1, #2, #3, & #4 (EPs 15-A, 15-B, 15-C, 200)					
Pollutant	**Emission Limit or Standard**		**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	EPs 15-A, B, & C	0.36 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	1.9 lb/MMscf; AP-42, Chapter 1.4	Assumed based upon natural gas combustion
	EP200	0.34 lb/MMBtu			
Opacity	20% opacity		401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO_2	EPs 15-A, B, & C	1.38 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)	0.6 lb/MMscf; AP-42, Chapter 1.4	Assumed based upon natural gas combustion
	EP200	1.23 lb/MMBtu			

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (MMBTU/hr)	Fuels (Primary/ Secondary)	Control Device	Construction Commenced
15-A (4021-A)	Boiler #1	22	NG/Propane	None	6/15/1981
15-B (4021-A)	Boiler #2	22	NG/Propane	None	6/15/1981
15-C (4021-A)	Boiler #3	22	NG/Propane	None	6/15/1981
200	Boiler #4	22	NG/Propane	None	2022

These industrial boilers provide steam for the plant and are classified as units designed to burn gas 1 fuels. The boilers use natural gas as the primary fuel, but have the ability to use propane as a backup fuel in case of natural gas curtailment. EPs 15-A, 15-B, and 15-C are considered existing units for the purposes of 40 CFR 63, Subpart DDDDD. These units are uncontrolled.

Applicable Regulations:

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

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 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*, applies to the collection of all existing industrial boilers

Emission Group 11: Boilers #1, #2, #3, & #4 (EPs 15-A, 15-B, 15-C, 200)
within the unit designed to burn gas 1 subcategory at a major source. **401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc),** *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,* applies to EP200. **Precluded Regulation:** **401 KAR 51:017*, Prevention of significant deterioration of air quality*,** applies to EP15-A, B, & C for PM, VOC, & NOx **Comments:** Emissions calculated using AP-42, Chapter 1.4 and 1.5 and 40 CFR 98, Subparts A & C.

Emission Point: Propane Flare (EP46)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity for more than 3 minutes in any one day	401 KAR 63:015, Section 3	N/A	Daily Method 9 observations (when the flare is in use), recordkeeping, & reporting

Initial Construction Date: 6/15/1981

Process Description:
The Propane Flare is used periodically to test onsite propane mix.
Maximum Capacity: 100.0 MMBtu/hr

Applicable Regulation:
401 KAR 63:015, *Flares,* applies to each flare, as defined in 401 KAR 63:015, Section 2.

Precluded Regulation:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM, VOC, & NO_x

Comments:
Emissions calculated using AP-42, Chapter 1.5 and 40 CFR 98, Subparts A & C. Operates no more than 12 hours/yr.

Emission Point: Cooling Tower 1 (EP49)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly qualitative observations, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr	401 KAR 59:010, Section 3(2)	2.88 lb/hr; AP-42, Chapter 13.4	Monthly calculation, monitoring, & recordkeeping

Emission Point: Cooling Tower 1 (EP49)				
	• P≤30 ton/hr: $E = 3.59P^{0.62}$ • P≤30 ton/hr: $E = 17.31P^{0.16}$			

Initial Construction Date: 6/15/1981

Process Description:
The Cooling Tower removes heat from process water.
Maximum Capacity: 40,000 gal/min

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

Precluded Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM
401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 to 63.407, Table 1 (Subpart Q), *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers*

Comments:
PM emissions calculated using AP-42 Section 13.4. PM_{10} and $PM_{2.5}$ emission factors are derived from the PM emission factor calculated above using the methodology presented in "Calculating Realistic PM10 Emissions from Cooling Towers" by Joe Reisman and Gordon Frisbie, Environmental Progress, Volume 21, Issue 2 (April 20, 2004) and a TDS value of 705.5 ppm.

Emission Group 12: Petroleum Liquid Storage Tanks < 40,000 gal (EPs 48 & 58)

Initial Construction Date: 6/15/1981 for EP48 & EP58

Process Description:
Water Services Tank 6A (EP48) stores emulsified waste oil and Hot Mill Tank 2 (EP58) stores mineral coolant used in the Reversing and Finishing Mills.

Maximum Capacity: 42,000 gallons for EP48, 120,000 gallons for EP58

Applicable Regulations:
401 KAR 59:050, *New storage vessels for petroleum liquids,* applies to each affected facility with a storage capacity greater than 40,000 gallons commenced on or after April 9, 1972 and prior to July 24, 1984, including the provisions of Sections 3(3) and (4), 4(3) and 6.
401 KAR 60:005, Section 2(2)(q), 40 C.F.R. 60.110a to 60.115a (Subpart Ka), *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984*, applies to each storage vessel with a storage capacity greater than 40,000 gallons that is used to store petroleum liquids for which construction is commenced after May 18, 1978 and prior to July 23, 1984.

State-Origin Regulation:
401 KAR 63:021, *Existing sources emitting toxic air pollutants*

Emission Group 12: Petroleum Liquid Storage Tanks < 40,000 gal (EPs 48 & 58)

Precluded Regulation:
401 KAR 51:017, ***Prevention of significant deterioration of air quality****,* for EP48 for VOC

Comments:
Emissions from EP48 calculated using the results of a 12/1994 stack test scaled to account for converting from annual to short-term losses. Emissions from EP58 calculated using EPA Tanks v3.0.

Emission Point: Gasoline Tank (EP50)

Initial Construction Date: 6/15/1990

Process Description:
A gasoline storage tank.
Maximum Capacity: 4,000 gallons
Applicable Regulations:
401 KAR 59:050, ***New storage vessels for petroleum liquids,*** applies to each affected facility with a storage capacity less than 40,000 gallons commenced on or after April 9, 1972 and prior to July 24, 1984, and to each affected facility with a storage capacity less than 10,567 gallons commenced on or after July 24, 1984, which is located at a major source of VOC.

Comments:
Emissions Calculated using TanksESP and AP-42, Chapter 7.1.

Emission Group 14: New Emergency CI RICE Less Than 500 HP (EPs 121, 123, 150, 151, & 188)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
$NMHC+NO_x$ (EP188)	3.0 g/HP-hr	40 CFR 60.4205(c)	Engine Spec Sheet	Purchase of a certified engine
PM (EP188)	0.15 g/HP-hr	40 CFR 60.4205(c)	Engine Spec Sheet	Purchase of a certified engine
CO (EP188)	2.6 g/HP-hr	40 CFR 60.4205(c)	Engine Spec Sheet	Purchase of a certified engine

Process Description:

Emission Point (Unit ID)	Unit Name	Power Output (HP)	Displacement (L/cylinder)	Construction Commenced
121 (4021-25)	Wetlands Emergency Generator Engine	134	1.125	9/2009
123 (4021-27)	Sanitary System Emergency Generator Engine	32	0.5	2013
150 (4021-28)	CM2 Computer Room Generator Engine	93	1.125	9/1/2017
151 (4021-24)	Gatehouse Emergency Generator Engine	56	1.125	1/26/2017

Emission Group 14: New Emergency CI RICE Less Than 500 HP (EPs 121, 123, 150, 151, & 188)

188 (4021-9)	Fire Water Loop Pump Engine - East	399	1.50	2018

Diesel-fired emergency use engines.

Applicable Regulations:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applies to stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 (for non-fire pump engines) or manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

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*, applies, however, pursuant to 40 CFR 63.6590(c) new stationary RICE located at area source may comply with requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. No further requirements apply under 40 CFR 63.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii) and 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP123, EP150, and EP151 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Emissions calculated using Engine Spec Sheet Data, AP-42, Chapter 3.3, 40 CFR 98, Subparts A & C, and an assumption of 500 hrs/yr to account for emergency operation.

Emission Group 15: Existing Emergency CI RICE Less Than 500 HP (EPs 60, 61, 62, 63, & 65)

Process Description:

Emission Point (Unit ID)	Unit Name	Power Output (Hp)	Manufacture Date
60 (4021-21)	Boiler Room Emergency Generator Engine	134	Prior to 1993
61 (3040-6)	CM3 Autogen Emergency Generator Engine	186	11/2004
62 (4021-22)	Fire Water Loop Pump Engine - North	290	6/2004
63 (4021-23)	Fire Water Loop Pump Engine - South	290	6/2004

Various Diesel-Fired emergency engines around the plant to provide back-up power in case of a power loss or provide water in case of a fire.

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*

Emission Group 15: Existing Emergency CI RICE Less Than 500 HP (EPs 60, 61, 62, 63, & 65)

Reciprocating Internal Combustion Engines, applies to each existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, that commenced construction of the stationary RICE before June 12, 2006.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

Comments:
Emissions calculated using Engine Spec Sheet Data, AP-42, Chapter 3.3, 40 CFR 98, Subparts A & C, and an assumption of 500 hrs/yr to account for emergency operation.

Emission Group 16: New Emergency CI RICE Greater Than 500 HP (EP122)

Process Description:

Emission Point (Unit ID)	Unit Name	Power Output (HP)	Displacement (L/cylinder)	Construction Commenced
122 (4021-26)	Admin/IS Emergency Generator Engine	560	2.15	2011

Diesel-fired emergency use non-fire pump engine.

Applicable Regulations:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applies to stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006.

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*, applies, however, pursuant to 40 CFR 63.6590(c) new stationary RICE located at area source may comply with requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. No further requirements apply under 40 CFR 63.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii) and 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

Comments:
Emissions calculated using Engine Spec Sheet Data, AP-42, Chapter 3.3, 40 CFR 98, Subparts A & C, and an assumption of 500 hrs/yr to account for emergency operation.

Emission Group 17: New Emergency SI RICE Less Than 500 HP (EPs 124, 141, 142, & 152)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
NO_x (EPs 141 & 142)	1.57 g/hp-hr & 0.041 tons/yr	401 KAR 51:017	Vendor Spec Sheet	Purchase of a certified engine
CO (EPs 141 & 142)	133.4 g/hp-hr & 3.46 tons/yr	401 KAR 51:017	Vendor Spec Sheet	Purchase of a certified engine
VOC (EPs 141 & 142)	2.87 g/hp-hr & 0.075 tons/yr	401 KAR 51:017	Vendor Spec Sheet	Purchase of a certified engine
CO_2e (EPs 141 & 142)	14.53 tons/yr	401 KAR 51:017	40 CFR 98, Subpart C	Calculation, monitoring, & recordkeeping

Process Description:

Emission Point (Unit ID)	Unit Name	Power Output (HP)	Construction Commenced
124 (1012-1)	Remelt UPS Emergency Generator Engine	231	2014
141 (9030G1)	DC4 Generator Engine #1	47	2016
142 (9030G2)	DC4 Generator Engine #2	47	2016
152 (1013-1)	Recycle UPS Generator Motor	230	9/14/2017

Natural gas fired emergency use non-fire pump engines.
EP141 & EP142 are 4-stroke rich burn engines.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for EP141 and EP142, for NO_x, CO, VOC, & GHG

401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 to 60.4248, Tables 1 to 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines,* applies to stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006 where the stationary SI ICE are manufactured after on and after January 1, 2009.

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*, applies, however, pursuant to 40 CFR 63.6590(c) new stationary RICE located at area source may comply with requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. No further requirements apply under 40 CFR 63.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4243(d)(2)(ii)-(iii) and 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for EP124, EP141, EP142, and EP152 for PM, PM_{10}, & $PM_{2.5}$

Comments:

Emissions calculated using Engine Spec Sheet Data, AP-42, Chapter 3.2, 40 CFR 98, Subparts A & C, and an assumption of 500 hrs/yr to account for emergency operation.

Emission Group 18: Decoating Kilns (EPs 128 & 134)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
THC	0.06 lb/ton or 0.20 lb/ton (w/ afterburner)	40 CFR 63.1505(d)(1)(i) or 40 CFR 63.1505(e)(1)(i)	0.09 lb/ton w/afterburner; 5/2019 Stack Test	5-year testing, monitoring, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P≤30 ton/hr: $E = 3.59P^{0.62}$	401 KAR 59:010, Section 3(2)	0.59 lb/hr w/control; Vendor Est.	5-year testing, monthly calculation, monitoring, & recordkeeping
PM	0.08 lb/ton or 0.30 lb/ton (w/ afterburner)	40 CFR 63.1505(d)(1)(ii) or 40 CFR 63.1505(e)(1)(ii)	0.026 lb/ton w/control; Vendor Est.	5-year testing, monitoring, recordkeeping, & reporting
D/F	0.25 µg/Mg D/F TEQ or 5.0 µg/Mg D/F TEQ (w/ afterburner)	40 CFR 63.1505(d)(1)(iii) or 40 CFR 63.1505(e)(1)(iii)	12/2022 Stack testing	5-year testing, monitoring, recordkeeping, & reporting
HCl	0.80 lb/ton or 1.50 lb/ton (w/ afterburner)	40 CFR 63.1505(d)(1)(iv) or 40 CFR 63.1505(e)(1)(iv)	0.3 lb/ton; 12/2022 Stack testing	5-year testing, monitoring, recordkeeping, & reporting
NO_x	6.5 lb/hr & 28.47 tons/yr, on an individual basis	401 KAR 51:017	0.37 lb/ton; 12/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO	14.14 lb/hr & 61.94 tons/yr, on an individual basis	401 KAR 51:017	70.7 lb/ton; 90% UPL of 10/2018 Stack Test	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
VOC	1.99 lb/hr & 8.72 tons/yr, on an individual basis	401 KAR 51:017	0.0884 lb/ton w/ control; BACT	GCOP, 5-year testing, monitoring, recordkeeping, & reporting
CO_2e	27,662 tons/yr, on an individual basis	401 KAR 51:017	207.3 lb/ton; Vendor Est. & 40 CFR 98, Subpart A & C	BACT Design, GCOP, monitoring, recordkeeping, & reporting
Process Description:				

Emission Group 18: Decoating Kilns (EPs 128 & 134)

Emission Point (Unit ID)	Unit Name	Maximum Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
128 (9033)	Decoater A	22.5	30.2	Baghouse (C-9097_BH); Afterburner (C-9033_TO)	7/12/2016
134 (9037)	Decoater B	22.5	30.2	Baghouse (C-9098_BH); Afterburner (C-9037_TO)	10/1/2016

Decoaters A & B are charged with shredded aluminum scrap from the shredding systems. The indirect-fired rotary decoating kilns remove lacquers, oils, water, dust, and fines from aluminum scrap prior to charging to one of the sidewell melt furnaces in the DC4 casting line.

The rotary decoaters are new affected sources subject to 40 CFR 63, Subpart RRR, and are classified as scrap dryers/delacquering kilns/decoating kilns.

Emissions from these decoaters are controlled by a lime-injected baghouse for PM and HCl and afterburner for CO and VOCs. The afterburner has a burner rating of 30.2 MMBtu/hr, a combustion chamber temperature of at least 1400°F, and a minimum residence time of 1.0 seconds.

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for NO_x, CO, VOC, & GHG

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

401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production,* applies to each new scrap dryer/delacquering kiln/decoating kiln located at a secondary aluminum production facility located at a major source of HAPs.

40 CFR 64, *Compliance Assurance Monitoring (CAM)* for PM, PM_{10}, & $PM_{2.5}$

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for PM, PM_{10}, and $PM_{2.5}$.

Comments:

Emissions calculated using Vendor Estimates, Stack Test Data, and control efficiencies of 99% for CO & VOC, 98% for PM, 97.72% for PM_{10}, 97.69% for $PM_{2.5}$, and 90% for HCl. Because the Decoaters are equipped with an airlock system, capture efficiency is assumed to be 100%. Short term potential capacity has increased with the addition of Shred Line C.

Emission Group 19: Remelt 2 & Cold Mill 4 Project Ancillary Operations (EPs 145, 148, 155 – 159, 162, 165, 166, 196-198, & 201)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
VOC (EPs 155 & 166)	1.82 tons/yr, on an individual basis	401 KAR 51:017	AP-42, Chapter 7.1	Monthly calculation, monitoring, & recordkeeping

Process Description:

Emission Point	Unit Name	Maximum Capacity	Construction Commenced
145	Remelt 2 Filter Box Pre-Heater	32.82 MMscf/yr	7/12/2016
148	Remelt 2 Comfort Heating Systems	15.89 MMscf/yr	7/12/2016
155	Cold Mill 4 Storage Tank: Dirty Coolant	33,580 gallons	6/1/2019
156	Cold Mill 4 Storage Tank: Bulk Magiesol	14,000 gallons	8/1/2019
157	Cold Mill 4 Storage Tank: Pre-Coat	925 gallons	9/1/2019
158	Cold Mill 4 Storage Tank: Body Mix	925 gallons	9/1/2019
159	Cold Mill 4 Storage Tank: Body Feed	925 gallons	9/1/2019
162	Cold Mill 4 Heating Systems	29.57 MMscf/yr	10/16/2017
165	Remelt 2 Diesel Fuel Storage Tank	3,000 gallons	7/12/2016
166	Cold Mill 4 Storage Tank: Clean Coolant	24,093 gallons	6/1/2019
196	Cold Mill 4 Storage Tank: Clean VRS	1,000 gallons	8/1/2019
197	Cold Mill 4 Storage Tank: Dirty VRS	2,500 gallons	8/1/2019
198	Cold Mill 4 Storage Tank: AH2 Hydraulic	1,215 gallons	6/1/2019
201	Cold Mill 4 Storage Tank: Body Mix #2	925 gallons	2022

The listed units are supplementary activities involved with the Remelt 2 Project (V-13-020 R1), Cold Mill 4 Project (V-13-020 R2), and Hot Mill Upgrade Project (V-20-004 R2).

Applicable Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality,* for NO_x, CO, VOC, & GHG

401 KAR 59:050, *New storage vessels for petroleum liquids,* applies to each affected facility with a storage capacity less than 40,000 gallons commenced on or after April 9, 1972 and prior to July 24, 1984, and to each affected facility with a storage capacity less than 10,567 gallons commenced on or after July 24, 1984, which is located at a major source of VOC. Applies to EP157 through EP159, EP196 through EP198, and EP201.

401 KAR 63:010, *Fugitive emissions*, applies to each apparatus, operation, or road which emits or may emit emissions of any air contaminant into the open air other than from a stack or air pollution control equipment exhaust, 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.

Precluded Regulations:

401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for PM, PM_{10}, & $PM_{2.5}$.

Comments:

Emissions calculated using AP-42, Chapter 7.1.

Emission Group 20: Cold Mill 4 with Heavy Oil Scrubber (EPs 161-02 & 161-01)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P≤30 ton/hr: $E = 3.59P^{0.62}$ • P≤30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	2.31 lb/hr; Design Spec for HOS	5-year testing, monthly calculation, monitoring, & recordkeeping
VOC	6.88 lb/hr & 30.13 tons/yr	401 KAR 51:017	Design Spec for HOS	Initial & 5-year testing, monitoring, recordkeeping, & reporting

Initial Construction Date: 10/16/2017

Process Description:
Cold Mill 4 processes aluminum coils to reduce their gauge thickness. Exhaust gases from Cold Mill 4 will be routed to a Heavy Oil Scrubber, where the roll coolant (in the form of mist and vapor emissions) will be recovered for reuse.

Maximum Capacity: 350 tons/hr
Control Device: Heavy Oil Scrubber (HOS)

Applicable Regulations:
401 KAR 51:017, *Prevention of significant deterioration of air quality,* for VOC
401 KAR 59:010, *New process operations,* applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.
40 CFR 64, *Compliance Assurance Monitoring (CAM)* for PM, PM_{10}, $PM_{2.5}$, & VOC
Precluded Regulation:
401 KAR 51:017, *Prevention of significant deterioration of air quality, Sections 8-14,* for PM, PM_{10}, & $PM_{2.5}$.

Comments:
Emissions are calculated using the provided design specifications for the HOS. Capture efficiency is 98% for PM, PM_{10}, $PM_{2.5}$, and VOC.

Emission Group 21: Petroleum Liquid Storage Tanks < 40,000 gal (EPs 167 – 187 & 202)

Process Description:

Emission Point (Unit ID)	Unit Name	Contents	Tank Capacity (gal)	Construction Commenced
167	Hot Mill Tank 10	Hot Mill Base Rolling Oil	10,000	6/15/1981
168	Hot Mill Tank 18	Hot Mill Base Rolling Oil w/ additives	1,100	6/15/1981
169	Cold Mills 1 & 2 Tank 2	Cold Mill Rolling Oil/Gear Lubricant	10,000	6/15/1981
170	Cold Mills 1 & 2 Tank 4	Cold Mill Rolling Oil	10,000	6/15/1981
171	Cold Mills 1 & 2 Tank 5	Cold Mill Rolling Oil	10,000	6/15/1981
172	Cold Mills 1 & 2 Tank 6	Hot Mill Base Rolling Oil	10,000	6/15/1981
173	Cold Mills 1 & 2 Tank 7	Process/Lubricating Oil	10,000	6/15/1981
174	Cold Mills 1 & 2 Tank 8	Mineral Oil-Based Coolant	30,000	6/15/1981
175	Cold Mills 1 & 2 Tank 11	Mineral Oil-Based Coolant	30,000	6/15/1981
176	Cold Mills 1 & 2 Tank 12	Mineral Oil-Based Coolant	30,000	6/15/1981
177	Cold Mills 1 & 2 Tank 13	Kerosene	6,000	6/15/1981
178	Cold Mill 3 Tank TA03	Mineral Oil-Based Coolant	1,200	1991
179	Cold Mill 3 Tank TA04	Mineral Oil-Based Coolant	3,000	1991
180	Cold Mill 3 Tank TA06	Mineral Oil-Based Coolant	1,200	1991
181	Cold Mill 3 Tank TA07	Mineral Oil-Based Coolant	5,350	1991
182	Cold Mill 3 Tank TA08	Mineral Oil-Based Coolant	1,500	1991
183	Cold Mill 3 Tank TA09	Mineral Oil-Based Coolant	1,500	1991
184	Water Services Tank 5	Mineral Oil-Based Coolant	22,500	6/15/1981
185	Water Services Tank 7A	Mineral Oil-Based Coolant	31,500	6/15/1981
186	Water Services Tank 7C	Mineral Oil-Based Coolant	31,500	6/15/1981
187	Water Services Tank 9	Mineral Oil-Based Coolant	32,500	6/15/1981
202	Cold Mill 3 Tank TA11	Mineral Oil-Based Coolant	4,300	2022

Various tanks that store mineral coolant, lubricants, and rolling oil used in the Hot and Cold Mill area.

Applicable Regulation:

401 KAR 59:050, ***New storage vessels for petroleum liquids,*** applies to each affected facility with a storage capacity less than 40,000 gallons commenced on or after April 9, 1972 and prior to July 24, 1984, and to each affected facility with a storage capacity less than 10,567 gallons commenced on or after July 24, 1984, which is located at a major source of VOC.

Precluded Regulation:

401 KAR 51:017, ***Prevention of significant deterioration of air quality,*** for EP184, EP185, EP186, & EP187 for VOC

Comments:

Emissions Calculated using TanksESP and AP-42, Chapter 7.1.

Emission Group 22: Cold Mill 3 Area Units (EPs 21, 23, & 24)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Opacity	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Monthly Method 9, recordkeeping, & reporting
PM	• P ≤0.5 ton/hr: 2.34 lbs/hr • P≤30 ton/hr: $E = 3.59P^{0.62}$ • P≤30 ton/hr: $E = 17.31P^{0.16}$	401 KAR 59:010, Section 3(2)	2.98 lb/hr; 1997 Stack Test	Monthly calculation, 5-year testing for EP 21, monitoring, & recordkeeping

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity	Control Device	Construction Commenced
21 (3040-1A)	Cold Mill 3	96.0 ton/hr	Progressive Purification System & Condenser (C-3040-1A)	1/7/1991; Modified 2022
23 (3040-C)	Cold Mill 3 Coolant Filtration Mix Tanks (Body Feed Tanks #1 & #2, Pre-Coat Tank, & Filtering Aid Handling System)	Body Feed Tanks: 1,504 gal, each; Pre-Coat Tank: 374 gal; 0.014 ton/hr filtering aid	Bag Dump Station Dust Collector	1/7/1991
24 (3040-5)	Cold Mill 3 Tanks TA01, TA02, & TA05	TA01: 160,000 gal; TA02: 24,000 gal; TA05: 15,000 gal	None	6/26/1991

Cold Mill 3 processes aluminum coils to reduce their gauge thickness. Cold Mill 3 is equipped with a Progressive Purification Filter and Condenser to control PM and VOC emissions, respectively. The Cold Mill 3 Coolant Filtration Mix Tanks consists of 3 tanks and a filtering aid handling system. Only the filtering aid handling system is equipped with a fabric filter for control of PM emissions.

Applicable Regulation:

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

Precluded Regulation:

401 KAR 51:017, ***Prevention of significant deterioration of air quality***, for PM & VOC

Comments:

Emissions Calculated using TanksESP and AP-42, Chapter 7.1 for EP23 & 24. For EP 21, Emissions are calculated using a 1997 stack test scaled to account for test to test variability, a capture efficiency of 98%, and a control efficiency of 85% for particulate emissions and 50% for VOC emissions.

Emission Group 23: Miscellaneous Process Operations (EPs 28, 47, 51, 190, 191, & 192)

Process Description:

Emission Point (Unit ID)	Unit Name	Contents	Tank Capacity (gal)	Construction Commenced
28	Water Services Tank 6B	Demulsified Oil	41,500	6/1/1990
47 (4021-6)	Propane Tanks 1, 2, 3, & 4	Propane	Tank 1: 90,000; Tanks 2-4: 48,000, each	6/15/1981
51 (6035-A)	Coating Tanks A, B, & C	Coating Material	12,000 each	6/9/1992
190 (4021-10B)	Water Services Tank 4	Emulsified Oil	200,000	6/15/1981
191	Water Services Tank 7B	Diesel Fuel	31,500	6/15/1981
192	Water Services Tank 8	Emulsified Oil	200,000	6/1/1990

Various tanks that store diesel, emulsified oil, propane, and coatings for Coating Line 1. The emissions from these units are small, but they are included in Section B of the permit due to their inclusion in group PSD preclusion limits and/or 401 KAR 63:021 limits.

Applicable Regulations:
State-Origin Regulation:
401 KAR 63:021, *Existing sources emitting toxic air pollutants*, for EP51 & EP190
Precluded Regulation:
401 KAR 51:017, *Prevention of significant deterioration of air quality*, for EP28, EP47, EP190, EP191 & EP192 for VOC

Comments:
Emissions Calculated using TanksESP and AP-42, Chapter 7.1.

Emission Group 24: Mobile Engine-Powered Bale Breakers & Mobile Engine-Powered Screener (EPs 193A & B, 199A & B, 203A & B, and 204A & B)

Process Description:

Emission Point (Unit ID)	Unit Name	Maximum Capacity (ton/hr)	Power Output (HP)	Liter/Cylinder	Construction Commenced
193A	Mobile Bale Breaker Engine #1	N/A	755	3.02	2020
193B	Mobile Bale Breaker #1	40	N/A	N/A	2020
199A	Mobile Bale Breaker Engine #2	N/A	755	3.02	2021
199B	Mobile Bale Breaker #2	40	N/A	N/A	2021
203A	Mobile Screener Engine	N/A	74	0.55	2023
203B	Mobile Screener	100	N/A	N/A	2023

Emission Group 24: Mobile Engine-Powered Bale Breakers & Mobile Engine-Powered Screener (EPs 193A & B, 199A & B, 203A & B, and 204A & B)

204A	Mobile Bale Breaker Engine #3	N/A	755	3.02	2023
204B	Mobile Bale Breaker #3	40	N/A	N/A	2023

The mobile bale breakers provide additional large scrap bale breaking capability. Each is powered by a non-road diesel engine and has no control device equipped.

The mobile screener separates gravel from the aluminum scrap from storage on gravel pads. It is powered by a non-road diesel engine and has fogging system equipped for fugitive dust control.

Applicable Regulations:

401 KAR 63:010, *Fugitive emissions.* Applicable to emissions into the air outside buildings, structures, & equipment other than from a stack or air pollution control equipment exhaust.

Precluded Regulation:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

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*

Comments:

Emissions Calculated using Vendor Estimate, AP-42, Chapter 3.3, and the ISRI Title V applicability workbook.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

Emission Point(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 Compliance Testing
01 (ASH)	Baghouse	PM	401 KAR 59:010	Every 5 yrs	Method 5	6.95 lb/hr	0.607 lb/hr	18.767 ton/hr	CMN20190012	8/27/2019
02 (DC1 Melt Furnace)	None	NOx	Update EF for PSD preclusion	As needed	Method 7E	N/A	360 lb/mmscf	22.6 ton/hr	CMN20100002	5/26/2010
02 (DC1 Melt Furnace)	None	PM	401 KAR 59:010	As needed	Method 5	30.29 lb/hr	0.46 lb/hr	33 ton/hr	CMN20100006	9/23/2010 – 9/24/2010
	None	NOx	Update EF for PSD preclusion	As needed	Method 7E	N/A	210.5 lb/mmscf	33 ton/hr		
03 (DC2 Melt Furnace)	None	PM	401 KAR 59:010	As needed	Method 5	30.04 lb/hr	0.59 lb/hr	31.56 ton/hr	CMN20110004	9/13/2011
	None	NOx	Update EF for PSD preclusion	As needed	Method 7E	N/A	157.78 lb/mmscf	31.56 ton/hr	CMN20110004	9/13/2011
04 (DC1 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	20.2 ton/hr	CMN20050008	7/20/2005 – 7/21/2005
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.09 lb/ton	20.2 ton/hr		
04 (DC1 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	24.8 ton/hr; 0.64 lb/ton flux rate	CMN20070014	8/14/2007 – 8/16/2007
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.07 lb/ton			
04 (DC1 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	26.8 ton/hr; 0.79 lb/ton flux rate	CMN20120005	8/28/2012 – 8/29/2012
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.08 lb/ton			

Emission Point(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 Compliance Testing
05 (Scalper 1)	Cyclone	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 17 & 202	41.71 lb/hr	2.02 lb/hr	222.4 ton/hr	CMN20180001	5/8/2018 – 5/9/2018
05 (Scalper 1)	Cyclone	PM	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 17 & 202	41.71 lb/hr	TBD	TBD	TBD	2023
05 (Scalper 1)	Cyclone	VOC	Update EF	Every 5 yrs	Method 25A	N/A	TBD	TBD	TBD	2023
06 (Carbottom Furnaces 1-3)	None	PM	401 KAR 59:010	As needed	Method 5	7.86 lb/hr	0.057 lb/hr; 4.96 lb/mmscf	3.54 ton/hr	CMN20190014	9/19/2019 – 9/20/2019
07 (Reversing Mill)	Inertial Separators	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	41.0 lb/hr	3.6 lb/hr; 0.013 lb/ton	219 ton/hr	CMN20160003	7/19/2016
	Inertial Separators	PM_{10}	Establish EF	Every 5 yrs	Method 5/202	N/A	0.017 lb/ton	219 ton/hr		
	Inertial Separators	$PM_{2.5}$	Establish EF	Every 5 yrs	Method 5/202	N/A	0.016 lb/ton	219 ton/hr		
	None	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	2.1 lb/hr; 0.011 lb/ton	218 ton/hr		
07 (Reversing Mill)	Inertial Separators	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF	Every 5 yrs	Method 5	41.35 lb/hr	2.982 lb/hr	219.30 ton/hr	CMN20200005	10/5/2021
	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	10.0 lb/hr	2.668 lb/hr	219.30 ton/hr	CMN20200005	10/5/2021
08 (Finishing Mill)	SSME	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	15.81 lb/hr	3.55 lb/hr; 0.019 lb/ton	187.9 ton/hr (Can body)	CMN20120002	4/10/2012 – 4/12/2012
	SSME	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	15.81 lb/hr	1.99 lb/hr; 0.014 lb/ton	141.2 ton/hr (Can	CMN20120002	4/10/2012 – 4/12/2012

Emission Point(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 Compliance Testing
								end)		
	SSME	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	15.81 lb/hr	3.08 lb/hr; 0.016 lb/ton	193.6 ton/hr (1 fan only)	CMN20120002	4/10/2012 – 4/12/2012
08 (Finishing Mill)	None	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	24.8 lb/hr; 0.13 lb/ton	187.9 ton/hr (Can body)	CMN20120002	4/10/2012 – 4/12/2012
	None	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	23.3 lb/hr; 0.17 lb/ton	141.2 ton/hr (Can end)	CMN20120002	4/10/2012 – 4/12/2012
	None	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	19.65 lb/hr; 0.1 lb/ton	193.6 ton/hr (1 fan only)	CMN20120002	4/10/2012 – 4/12/2012
08 (Finishing Mill)	SSME	PM	401 KAR 59:010; Update EF	Every 5 yrs	Method 5	41 lb/hr	4.01 lb/hr; 59.8% CE	219.1 ton/hr (Can body)	CMN20160001	3/2/2016
	None	VOC	Update EF	Every 5 yrs	Method 25A	N/A	25.5 lb/hr;	219.1 ton/hr (Can body)		
08 (Finishing Mill)	SSME	PM	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5	40.64 lb/hr	7.48 lb/hr; 0.036 lb/ton	208.07 ton/hr (Can body)	CMN20170002	6/28/2017 – 6/30/2017 & 7/27/2017
	SSME	PM		Every 5 yrs	Method 5	37.28 lb/hr	8.43 lb/hr; 0.07 lb/ton	121.44 ton/hr (Can end)		
08 (Finishing Mill)	SSME	PM_{10}	Update EF for PSD preclusion	Every 5 yrs	Method 5/202; ACI	N/A	0.033 lb/ton	208.07 ton/hr (Can body)	CMN20170002	6/28/2017 – 6/30/2017 &

Emission Point(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 Compliance Testing
	SSME	PM_{10}		Every 5 yrs	Method 5/202; ACI	N/A	0.065 lb/ton	121.44 ton/hr (Can end)		7/27/2017
08 (Finishing Mill)	SSME	$PM_{2.5}$	Update EF for PSD preclusion	Every 5 yrs	Method 5/202; ACI	N/A	0.03 lb/ton	208.07 ton/hr (Can body)	CMN20170002	6/28/2017 – 6/30/2017 & 7/27/2017
	SSME	$PM_{2.5}$		Every 5 yrs	Method 5/202; ACI	N/A	0.057 lb/ton	121.44 ton/hr (Can end)		
08 (Finishing Mill)	SSME	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF	Every 5 yrs	Method 5	TBD	TBD	TBD	CMN20200004	12/15/2021
08 (Finishing Mill)	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	73.2 lb/hr	TBD	TBD	CMN20200004	12/15/2021
09 (Coating Line 1)	RTO	VOC	40 CFR 63.1520(a)(3)	Every 5 yrs	Method 25A	<20 ppmv as Propane	3.4 ppm	Solvent Based Coating RTO Temp: 663°C	CMN20040001	5/27/2004
09 (Coating Line 1)	RTO	VOC	40 CFR 63.1520(a)(3)	Every 5 yrs	Method 25A	<20 ppmv as Propane	1.0 ppm	Solvent Based Coating RTO Temp: 519°C	CMN20050011	10/19/2005
09 (Coating Line 1)	RTO	VOC	40 CFR 60.462(a)(3); 40 CFR 63.1520(a)(1)	Every 5 yrs	Method 25A	90% DE; 98% DE	99.1% DE; 10.0 lb/hr; 0.84 lb/ton; 0.04 lb/gal	Solvent Based Coating RTO Temp: 764°C	CMN20150002	6/16/2015 – 6/19/2015
	RTO	PM	401 KAR 59:010;	Every 5 yrs	Method 5	17.15 lb/hr	0.29 lb/hr;	12.46 ton	CMN20150002	6/16/2015 –

Emission Point(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 Compliance Testing
			Establish EF				0.023 lb/ton	Al/hr; 263.3 gal solvent based coating/hr; 0.01 mmscf/hr		6/19/2015
	RTO	NOx	Establish EF	Every 5 yrs	Method 7E	N/A	5.25 lb/hr; 449.6 lb/mmscf; 0.41 lb/ton			
	RTO	CO	Establish EF	As needed	Method 10	N/A	28.22 lb/hr; 2653.31 lb/mmscf; 2.47 lb/ton			
09 (Coating Line 1)	RTO	VOC	40 CFR 63.1520(a)(3)	Every 5 yrs	Method 25A	<20 ppmv as Propane	1.7 ppm	Water Based Coating RTO Temp: 548°C	CMN20040001	5/27/2004
09 (Coating Line 1)	RTO	VOC	40 CFR 63.1520(a)(3)	Every 5 yrs	Method 25A	<20 ppmv as Propane	4.2 ppm	Water Based Coating RTO Temp: 744°C	CMN20050011	10/19/2005
09 (Coating Line 1)	RTO	PM	401 KAR 59:010; Update EF	Every 5 yrs	Method 5	16.57 lb/hr	1.35 lb/hr; 0.11 lb/ton	11.8 ton Al/hr; 202 gal water based coating/hr; 0.011 mmscf/hr	CMN20150002	6/16/2015 – 6/19/2015
	RTO	NOx	Update EF	Every 5 yrs	Method 7E	N/A	4.39 lb/hr; 389.47 lb/mmscf; 0.37 lb/ton			

Emission Point(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 Compliance Testing
	RTO	CO	Update EF	As needed	Method 10	N/A	8.61 lb/hr; 744.14 lb/mmscf; 0.73 lb/ton			
	RTO	VOC	40 CFR 60.462(a)(3); 40 CFR 63.1520(a)(1)	Every 5 yrs	Method 25A	90% DE; 98% DE	99.46% DE; 1.57 lb/hr; 0.13 lb/ton; 0.0078 lb/gal	Water Based Coating RTO Temp: 746°C	CMN20150002	6/16/2015 – 6/19/2015
09 (Coating Line 1)	RTO	PM	401 KAR 59:010; Update EF	Every 5 yrs	Method 5	Solvent Based (SB): 16.84 lb/hr; Water Based (WB): 16.87 lb/hr	SB: 0.62 lb/hr; WB: 0.34 lb/hr	SB: 12.1 ton/hr; WB: 12.1 ton/hr	CMN20200008	12/3/2020-12/4/2020; 12/17/2020 - 12/18/2020
	RTO	NOx	Update EF	Every 5 yrs	Method 7E	N/A	SB: 0.03 lb/gal; WB: 0.02 lb/gal	SB: 12.1 ton/hr; WB: 12.1 ton/hr	CMN20200008	12/3/2020-12/4/2020; 12/17/2020 - 12/18/2020
	RTO	CO	Update EF	As needed	Method 10	N/A	SB: 0.03 lb/gal; WB: 0.04 lb/gal	SB: 12.1 ton/hr; WB: 12.1 ton/hr	CMN20200008	12/3/2020-12/4/2020; 12/17/2020 - 12/18/2020

Emission Point(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 Compliance Testing
	RTO	VOC	40 CFR 60, Subpart TT 40 CFR 63, Subpart SSSS	Every 5 yrs	Method 25A	Refer to permit	SB: 0.30 lb/gal; WB: 0.02 lb/gal	SB: 12.1 ton/hr; RTO Temp: 801.2°C; DE: 94.67% WB: 12.1 ton/hr; RTO Temp: 763.3°C; DE: 98.49%	CMN20200008	12/3/2020-12/4/2020; 12/17/2020 - 12/18/2020
17 (DC2 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	33.1 ton/hr; 0.67 lb/ton flux rate	CMN20070014	8/14/2007 – 8/16/2007
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.10 lb/ton			
17 (DC2 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.01 lb/ton	38.2 ton/hr; 0.74 lb/ton flux rate	CMN20120005	8/30/2012 – 8/31/2012
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.08 lb/ton			
17 (DC2 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.03 lb/ton	36.7 ton/hr; 0.88 lb/ton flux rate	CMN20170005	8/16/2017 – 8/17/2017
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.14 lb/ton			
17 (DC2 Hold	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2022

Emission Point(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 Compliance Testing
Furnace)[1]	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	TBD	2022
18 (Pusher Furnaces 1 & 2)	None	PM	401 KAR 59:010	As needed	Method 5	40.37 lb/hr	0.204 lb/hr; 9.56 lb/mmscf	198.7 ton/hr; 0.0572 mmscf/hr	CMN20190019	1/14/2020 – 1/16/2020
19 (Pusher Furnace 3)	None	PM	401 KAR 59:010	As needed	Method 5	34.95 lb/hr	0.134 lb/hr; 6.4 lb/mmscf	81.07 ton/hr	CMN20190013	9/17/2019
21 (Cold Mill 3)	PPS	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	35.7 lb/hr	4.0 lb/hr; 0.043 lb/ton	91.6 ton/hr	CMN20190018	1/7/2020
	Condenser	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	0.308 lb/ton	91.6 ton/hr		
21 (Cold Mill 3)	PPS	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	TBD	TBD	TBD	TBD	2025
	Condenser	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	TBD	TBD	TBD	2025
22-A, B, C (DC1-3 Flux Boxes)	Lime Inj. Baghouse	PM	401 KAR 59:010	Every 5 yrs	Method 5	33.4 lb/hr	0.29 lb/hr	61.2 ton/hr PWR; 0 lb/hr lime rate	CMN20090003	8/4/2009
26 (Swarf Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.04 lb/ton	10.24 ton/hr	CMN20060011	8/8/2006 – 8/10/2006
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.04 lb/ton	10.24 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.06 µg/Mg D/F TEQ	10.24 ton/hr		

Emission Point(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 Compliance Testing
26 (Swarf Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.05 lb/ton	8.8 ton/hr	CMN20100004	8/30/2010 – 9/1/2010
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.005 lb/ton	8.8 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.21 µg/Mg D/F TEQ	8.8 ton/hr		
26 (Swarf Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.05 lb/ton	10.4 ton/hr	CMN20140003	8/26/2014
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.003 lb/ton	10.4 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.05 µg/Mg D/F TEQ	10.4 ton/hr		
26 (Swarf Furnace)	Lime Inj. Baghouse	HF	Establish EF	Initial	Method 26A	N/A	0.0143 lb/hr	8.6 ton/hr; 4.3 lb flux/cycle	CMN20170004	8/10/2017
26 (Swarf Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.023 lb/ton	9.64 ton/hr	CMN20190011	8/27/2019 – 8/28/2019
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.0008 lb/ton	9.64 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.104 µg/Mg D/F TEQ	9.64 ton/hr		
26 (Swarf Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2024
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	TBD	2024
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	TBD	TBD	TBD	2024

Emission Point(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 Compliance Testing
30 (Cold Mill 1)	RCRS	PM	401 KAR 59:010; Establish EF for PSD preclusion	As needed	Method 17/202	40.46 lb/hr	Inlet: 20.26 lb/hr; 0.099 lb/ton	204.25 ton/hr	CMN20170003	6/20/2017 – 6/21/2017
	RCRS	PM_{10}	Establish EF for PSD preclusion	As needed	Method 17/202; ACI	N/A	Inlet: 19.57 lb/hr; 0.11 lb/ton	204.25 ton/hr		
	RCRS	$PM_{2.5}$	Establish EF for PSD preclusion	As needed	Method 17/202; ACI	N/A	Inlet: 13.08 lb/hr; 0.07 lb/ton	204.25 ton/hr		
32 (Cold Mill 2)	RCRS	PM	401 KAR 59:010; Establish EF for PSD preclusion	As needed	Method 17 & 202	13.12 lb/hr	Inlet: 8.30 lb/hr; 0.136 lb/ton	61.11 ton/hr	CMN20170003	6/20/2017 – 6/21/2017
	RCRS	PM_{10}	Establish EF for PSD preclusion	As needed	Method 17& 202; ACI	N/A	Inlet: 7.99 lb/hr; 0.13 lb/ton	61.11 ton/hr		
	RCRS	$PM_{2.5}$	Establish EF for PSD preclusion	As needed	Method 17& 202; ACI	N/A	Inlet: 6.74 lb/hr; 0.11 lb/ton	61.11 ton/hr		
42 (DC3 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	41.5 ton/hr	CMN20050008	7/20/2005 – 7/21/2005
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.08 lb/ton	41.5 ton/hr		
42 (DC3 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	40.5 ton/hr; 0.53 lb/ton flux rate	CMN20070014	8/14/2007 – 8/16/2007
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.15 lb/ton			

Emission Point(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 Compliance Testing
42 (DC3 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.03 lb/ton	51.3 ton/hr; 0.64 lb/ton flux rate	CMN20120005	8/29/2012 – 8/30/2012
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.14 lb/ton			
42 (DC3 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	47.1 ton/hr; 0.70 lb/ton flux rate	CMN20170005	8/15/2017
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.11 lb/ton			
42 (DC3 Hold Furnace)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	8/2022
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	TBD	8/2022
56 (Scrap Processing System)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	0.0015 gr/dscf	16.28 ton/hr	CMN20080011	5/14/2008
56 (Scrap Processing System)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	0.0007 gr/dscf	16 ton/hr	CMN20130004	6/11/2013 – 6/13/2013
	Baghouse	PM_{10}	To preclude 401 KAR 51:017	w/ Subpart RRR	Method 5	1.5 lb/hr	0.22 lb/hr	16 ton/hr		
56 (Scrap Processing System)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	0.0024 gr/dscf	10.1 ton/hr	CMN20180004	7/17/2018 – 7/18/2018
	Baghouse	PM_{10}	To preclude 401 KAR 51:017	w/ Subpart RRR	Method 5	1.5 lb/hr	0.828 lb/hr	10.1 ton/hr		
56 (Scrap Processing	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	TBD	TBD	TBD	7/2023
	Baghouse	PM_{10}	To preclude 401	w/ Subpart	Method 5	1.5 lb/hr	TBD	TBD	TBD	7/2023

Emission Point(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 Compliance Testing
System)			KAR 51:017	RRR						
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.06 lb/ton	12.7 ton/hr [50% Class III/50% Class I]	CMN20080011	5/13/2008
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.03 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	2.03 µg/Mg D/F TEQ			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.03 lb/ton	13.83 ton/hr [100% Class I]	CMN20080011	5/13/2008
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.02 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.58 µg/Mg D/F TEQ			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.06 lb/ton	9.2 ton/hr [80% UBC/ 20% Class I]	CMN20080011	5/14/2008
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.03 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.63 µg/Mg D/F TEQ			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.06 lb/ton	9.2 ton/hr [50% Class III/50% Class I]	CMN20080013	8/12/2008
	Lime Inj. Baghouse	PM	To preclude 401 KAR 51:017	Every 5 yrs	Method 5	1.6 lb/hr	0.5 lb/hr			
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.02 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.36 µg/Mg D/F TEQ			

Emission Point(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 Compliance Testing
	None	NOx	To preclude 401 KAR 51:017	Every 5 yrs	Method 7E	8.3 lb/hr	5.9 lb/hr			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.03 lb/ton	19.5 ton/hr [50% Class III/50% Class I]	CMN20100004	8/31/2010-9/1/2010
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.15 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	1.79 µg/Mg D/F TEQ			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.0042 lb/ton	16.3 ton/hr [Different scenario each run]	CMN20130004	6/11/2013 – 6/13/2013
	Lime Inj. Baghouse	PM	To preclude 401 KAR 51:017	Every 5 yrs	Method 5	1.6 lb/hr	0.068 lb/hr			
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.08 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	1.2 µg/Mg D/F TEQ			
57 (Multi-chamber Furnace)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.012 lb/ton	10.85 ton/hr [Different scenario each run]	CMN20180004	7/17/2018 – 7/18/2018
	Lime Inj. Baghouse	PM	To preclude 401 KAR 51:017	Every 5 yrs	Method 5	1.6 lb/hr	0.136 lb/hr			
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.085 lb/ton			
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	5.4 µg/Mg D/F TEQ			
	None	NOx	To preclude 401 KAR 51:017	Every 5 yrs	Method 7E	8.3 lb/hr	4.11 lb/hr			
57 (Multi-	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	CMN20220001	2/15/2022-2/16/2022

Emission Point(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 Compliance Testing
chamber Furnace)	Lime Inj. Baghouse	PM	To preclude 401 KAR 51:017	Every 5 yrs	Method 5	1.6 lb/hr	TBD	TBD	CMN20220001	2/15/2022-2/16/2022
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	CMN20220001	2/15/2022-2/16/2022
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	TBD	TBD	CMN20220001	2/15/2022-2/16/2022
	None	NOx	To preclude 401 KAR 51:017	Every 5 yrs	Method 7E	8.3 lb/hr	TBD	TBD	CMN20220001	2/15/2022-2/16/2022
59 (RCRS)	RCRS	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	36.8 lb/hr	0.59 lb/hr; 0.0053 lb/ton	111.3 ton/hr (CM 2 only)	CMN20130002	3/26/2013
	RCRS	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	2.1 lb/hr; 0.02 lb/ton			
59 (RCRS)	RCRS	PM	401 KAR 59:010; Establish EF	Every 5 yrs	Method 5	42.8 lb/hr	2.57 lb/hr	285.4 ton/hr CM1 & CM2 combined	CMN20140001	8/12/2014 – 8/13/2014
	RCRS	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	16.7 lb/hr			
59 (RCRS)	RCRS	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 17 & 202	42.18 lb/hr	4.54 lb/hr; 0.02 lb/ton	265.36 ton/hr CM1 & CM2 combined	CMN20170003	6/20/2017 – 6/21/2017
	RCRS	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 17& 202; ACI	N/A	3.84 lb/hr; 0.02 lb/ton			
	RCRS	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 17& 202; ACI	N/A	3.99 lb/hr; 0.02 lb/ton			

Emission Point(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 Compliance Testing
59 (RCRS)	RCRS	PM	Update EF for PSD preclusion	Every 5 yrs	Method 17 & 202	N/A	1.7 lb/hr	301 ton/hr CM1 & CM2 combined	CMN20190017	1/8/2020 – 1/9/2020
	RCRS	PM_{10}	Update EF for PSD preclusion	Every 5 yrs	Method 17& 202; ACI	N/A	2.5 lb/hr			
	RCRS	$PM_{2.5}$	Update EF for PSD preclusion	Every 5 yrs	Method 17& 202; ACI	N/A	2.5 lb/hr			
	RCRS	VOC	Update EF	Every 5 yrs	Method 25A	N/A	12.4 lb/hr			
59 (RCRS)	RCRS	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 17& 202	TBD	TBD	TBD	TBD	2025
59 (RCRS)	RCRS	VOC	Update EF	Every 5 yrs	Method 25A	N/A	TBD	TBD	TBD	2025
126 (Pusher Furnace 4)	None	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5	33.09 lb/hr	0.32 lb/hr; 0.00346 lb/ton	58.03 ton/hr	CMN20190001	2/12/2019 – 2/13/2019
	None	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.40 lb/hr; 0.00431 lb/ton	58.03 ton/hr		
	None	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.40 lb/hr; 0.00431 lb/ton	58.03 ton/hr		
	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	60.6 lb/ mmscf	6.147 lb/mmscf	58.03 ton/hr		
	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	5.5 lb/ mmscf	0.382 lb/mmscf	58.03 ton/hr		
	None	NO_x	401 KAR 51:017	Every 5 yrs	Method 7E	168.0 lb/ mmscf	116.8 lb/mmscf	58.03 ton/hr		

Emission Point(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 Compliance Testing
126 (Pusher Furnace 4)	None	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5/202	TBD	TBD	TBD	TBD	2024
126 (Pusher Furnace 4)	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	60.6 lb/ mmscf	TBD	TBD	TBD	2024
126 (Pusher Furnace 4)	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	5.5 lb/ mmscf	TBD	TBD	TBD	2024
126 (Pusher Furnace 4)	None	NO_x	401 KAR 51:017	Every 5 yrs	Method 7E	168.0 lb/ mmscf	TBD	TBD	TBD	2024
127 (Shredding System A)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	0.0006 gr/dscf	14.6 ton/hr	CMN20180006	9/11/2018
	Baghouse	PM	401 KAR 59:010	w/ Subpart RRR	Method 5	18.9 lb/hr	0.42 lb/hr	14.6 ton/hr		
	Baghouse	PM	Establish EF for PSD preclusion	Every 5 yrs	Method 5	N/A	Inlet/Outlet: 0.30/0.03 lb/ton	14.6 ton/hr		
	Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 5 /SEM/ ACI	N/A	0.004 lb/ton	14.6 ton/hr		
	Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 5 /SEM/ ACI	N/A	0.00024 lb/ton	14.6 ton/hr		
127 (Shredding	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	TBD	TBD	TBD	2023

Emission Point(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 Compliance Testing
System A)	Baghouse	PM	401 KAR 59:010	w/ Subpart RRR	Method 5	TBD	TBD	TBD	TBD	2023
	Baghouse	PM/ PM_{10}/ $PM_{2.5}$	Update EF for PSD preclusion	Every 5 yrs	Method 5 /SEM/ ACI	N/A	TBD	TBD	TBD	2023
128 (Decoater A)	Afterburner/ Baghouse	THC	40 CFR 63.1505(e)(1)(i)	Every 5 yrs	Method 25A	0.2 lb/ton	0.073 lb/ton	14.6 ton/hr	CMN20180012	10/9/2018
	Afterburner/ Baghouse	PM	40 CFR 63.1505(e)(1)(ii)	Every 5 yrs	Method 5	0.30 lb/ton	0.014 lb/ton	14.6 ton/hr		
	Afterburner/ Baghouse	D/F	40 CFR 63.1505(e)(1)(iii)	Every 5 yrs	Method 23	5 µg/Mg D/F TEQ	0.26 µg/Mg D/F TEQ	14.6 ton/hr		
	Afterburner/ Baghouse	HCl	40 CFR 63.1505(e)(1)(iv)	Every 5 yrs	Method 26	1.50 lb/ton	0.24 lb/ton	14.6 ton/hr		
128 (Decoater A)	Afterburner/ Baghouse	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5 & 202	18.90 lb/hr	0.290 lb/hr; 0.02 lb/ton	14.58 ton/hr	CMN20180013	10/9/2018 – 10/11/2018
	Afterburner/ Baghouse	NOx	401 KAR 51:017	Every 5 yrs	Method 7E	6.5 lb/hr	5.37 lb/hr	14.58 ton/hr		
	Afterburner/ Baghouse	CO	401 KAR 51:017	Every 5 yrs	Method 10	3.65 lb/hr[2]	9.02 lb/hr	14.58 ton/hr		
	Afterburner/ Baghouse	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	1.99 lb/hr	0.72 lb/hr	14.58 ton/hr		
128 (Decoater A)	Afterburner/ Baghouse	THC	40 CFR 63.1505(e)(1)(i)	Every 5 yrs	Method 25A	0.2 lb/ton	0.09 lb/ton	14.47 ton/hr	CMN20190004	5/21/2019
	Afterburner/ Baghouse	PM	40 CFR 63.1505(e)(1)(ii)	Every 5 yrs	Method 5	0.30 lb/ton	0.02 lb/ton	14.47 ton/hr		
	Afterburner/ Baghouse	D/F	40 CFR 63.1505(e)(1)(iii)	Every 5 yrs	Method 23	5.0 µg/Mg D/F TEQ	0.33 µg/Mg D/F TEQ	14.47 ton/hr		

Emission Point(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 Compliance Testing
	Afterburner/ Baghouse	HCl	40 CFR 63.1505(e)(1)(iv)	Every 5 yrs	Method 26	1.50 lb/ton	0.569 lb/ton	14.47 ton/hr		
128 (Decoater A)	Afterburner/ Baghouse	PM	Establish EF for PSD preclusion	Every 5 yrs	Method 5	N/A	0.019 lb/ton	14 ton/hr	CMN20190005	5/22/2019
	Afterburner/ Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.078 lb/ton	14 ton/hr		
	Afterburner/ Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.076 lb/ton	14 ton/hr		
128 (Decoater A)	Afterburner/ Baghouse	THC	40 CFR 63.1505(e)(1)(i)	Every 5 yrs	Method 25A	0.2 lb/ton	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	PM	40 CFR 63.1505(e)(1)(ii)	Every 5 yrs	Method 5	0.30 lb/ton	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	D/F	40 CFR 63.1505(e)(1)(iii)	Every 5 yrs	Method 23	5.0 µg/Mg D/F TEQ	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	HCl	40 CFR 63.1505(e)(1)(iv)	Every 5 yrs	Method 26	1.50 lb/ton	TBD	TBD	TBD	2024
128 (Decoater A)	Afterburner/ Baghouse	CO	401 KAR 51:017	Every 5 yrs	Method 10	14.14 lb/hr	6.82 lb/hr	15.2 ton/hr	CMN20210001	4/27/2021
129 (Sidewell A1)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.015 lb/ton	14.3 ton/hr	CMN20180012	10/9/2018
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26	0.40 lb/ton	0.25 lb/ton	14.3 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.27 µg/Mg D/F TEQ	14.3 ton/hr		
129 (Sidewell A1)	Lime Inj. Baghouse	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5	18.45 lb/hr	0.012 lb/hr; 0.19 lb/ton	14.04 ton/hr	CMN20180013	10/9/2018 – 10/11/2018

Emission Point(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 Compliance Testing
	Lime Inj. Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.18 lb/ton	14.04 ton/hr		
	Lime Inj. Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.082 lb/ton	14.04 ton/hr		
	None	NOx	401 KAR 51:017	Every 5 yrs	Method 7E	0.145 lb/ton[2]	0.185 lb/ton	14.04 ton/hr		
	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	0.158 lb/ton[2]	0.226 lb/ton	14.04 ton/hr		
	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.011 lb/ton[2]	0.076 lb/ton	14.04 ton/hr		
	Lime Inj. Baghouse	HF	Establish EF	Initial	Method 26A	N/A	0.0011 lb/ton	14.04 ton/hr		
129 (Sidewell A1)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.02 lb/ton	13.57 ton/hr	CMN20190004	5/21/2019
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.35 µg/Mg D/F TEQ	13.57 ton/hr		
129 (Sidewell A1)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2024
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26	0.40 lb/ton	TBD	TBD	TBD	2023
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	TBD	TBD	TBD	2024
130 (Sidewell A2)	Lime Inj. Baghouse	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5	18.51 lb/hr	0.25 lb/hr; 0.02 lb/ton	14.09 ton/hr	CMN20180015	9/19/2018
	Lime Inj. Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.034 lb/ton	14.09 ton/hr		

Emission Point(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 Compliance Testing
	Lime Inj. Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.028 lb/ton	14.09 ton/hr		
	Lime Inj. Baghouse	HF	Establish EF	Every 5 yrs	Method 26A	N/A	6.595 lb/ton	14.09 ton/hr		
130 (Sidewell A2)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.018 lb/ton	13.4 ton/hr	CMN20180011	9/27/2018
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.0015 lb/ton	13.4 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.086 µg/Mg D/F TEQ	13.4 ton/hr		
130 (Sidewell A2)	Lime Inj. Baghouse	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5	18.45 lb/hr	0.013 lb/hr; 0.208 lb/ton	14.04 ton/hr	CMN20180013	10/9/2018 – 10/11/2018
	Lime Inj. Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.191 lb/ton	14.04 ton/hr		
	Lime Inj. Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 201A/202	N/A	0.091 lb/ton	14.04 ton/hr		
130 (Sidewell A2)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.0131 lb/ton	14.9 lb/hr	CMN20200001	8/25/2020-8/27/2020
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26	0.40 lb/ton	0.022 lb/ton	14.9 lb/hr	CMN20200001	8/25/2020-8/27/2020
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.264 µg/Mg D/F TEQ	14.9 lb/hr	CMN20200001	8/25/2020-8/27/2020
130 (Sidewell A2)	Lime Inj. Baghouse	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5/ 201A/202	0.4 lb/hr	0.046 lb/hr	15 ton/hr	CMN20200003	8/24/2020-8/27/2020
	Lime Inj. Baghouse	HF	401 KAR 53:010	Every 5 yrs	Method 26	N/A	0.037 lb/hr	15 ton/hr	CMN20200003	8/24/2020-8/27/2020

Emission Point(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 Compliance Testing
130 (Sidewell A2)	None	NOx	401 KAR 51:017	Every 5 yrs	Method 7E	0.22 lb/ton	0.18 lb/ton	17.2 ton/hr	CMN20210002	4/28/2021-4/29/2021
	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	0.52 lb/ton	0.26 lb/ton	17.2 ton/hr	CMN20210002	
	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.14 lb/ton	0.01 lb/ton	17.2 ton/hr	CMN20210002	
131 (Holder A)	None	PM	401 KAR 59:010	Every 5 yrs	Method 5	30.33 lb/hr	2.05 lb/hr	33.31 ton/hr	CMN20180009	9/27/2018
	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.003 lb/ton[2]	0.004 lb/ton	33.31 ton/hr		
	None	NO_x	401 KAR 51:017	Every 5 yrs	Method 7E	0.035 lb/ton	0.008 lb/ton	33.31 ton/hr		
	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	0.046 lb/ton	0.003 lb/ton	33.31 ton/hr		
131 (Holder A)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.06 lb/ton	33.31 ton/hr;	CMN20180010	9/27/2018
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.295 lb/ton	33.31 ton/hr		
131 (Holder A)	None	PM	Establish EF for PSD preclusion	Every 5 yrs	Method 5	N/A	0.017 lb/ton	51.2 ton/hr	CMN20190002	5/14/2019
	None	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.008 lb/ton	51.2 ton/hr		
	None	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	0.003 lb/ton	51.2 ton/hr		
131 (Holder A)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.017 lb/ton	51.25 ton/hr;	CMN20190003	5/14/2019
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.063 lb/ton	51.25 ton/hr		
131 (Holder A)[1]	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2024

Emission Point(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 Compliance Testing
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	TBD	2024
131 (Holder A)	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.031 lb/ton	0.000131 lb/ton	44.89 ton/hr	CMN20210003	4/29/2021
132 (Flux Box A)	None	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5	32.46 lb/hr	0.10 lb/hr; 0.0083 lb/ton	50.86 ton/hr; 0.16 lb/ton flux rate	CMN20180009	9/27/2018
132 (Flux Box A)	None	PM	40 CFR 63.1505(j)(2)	Every 5 yrs	Method 5	0.01 lb/ton	0.0019 lb/ton	50.58 ton/hr; 0.16 lb/ton flux rate	CMN20180010	9/27/2018
	None	HCl	40 CFR 63.1505(j)(1)	Every 5 yrs	Method 26A	0.04 lb/ton	0.00018 lb/ton			
132 (Flux Box A)	None	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5	32.46 lb/hr	TBD	TBD	TBD	2023
132 (Flux Box A)	None	PM	40 CFR 63.1505(j)(2)	Every 5 yrs	Method 5	0.01 lb/ton	TBD	TBD	TBD	2023
	None	HCl	40 CFR 63.1505(j)(1)	Every 5 yrs	Method 26A	0.04 lb/ton	TBD	TBD	TBD	2023
133 (Shred System B)	Baghouse	PM	401 KAR 59:010	w/ Subpart RRR	Method 5	18.99 lb/hr	0.53 lb/hr	14.68 ton/hr	CMN20190007	6/25/2019
	Baghouse	PM	Establish EF for PSD preclusion	Every 5 yrs	Method 5	N/A	Inlet/Outlet: 0.13/0.04 lb/ton	14.68 ton/hr		
	Baghouse	PM_{10}	Establish EF for PSD preclusion	Method 5/ SEM/ACI	Method 5	N/A	0.026 lb/ton	14.68 ton/hr		

Emission Point(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 Compliance Testing
	Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Method 5/ SEM/ACI	Method 5	N/A	0.0023 lb/ton	14.68 ton/hr		
133 (Shred System B)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	0.001 gr/dscf	14.63 ton/hr	CMN20190009	6/25/2019
134 (Decoater B)	Afterburner/ Baghouse	THC	40 CFR 63.1505(e)(1)(i)	Every 5 yrs	Method 25A	0.2 lb/ton	0.08 lb/ton	15.93 ton/hr	CMN20190010	7/9/2019 – 7/11/2019
	Afterburner/ Baghouse	PM	40 CFR 63.1505(e)(1)(ii)	Every 5 yrs	Method 5	0.30 lb/ton	0.029 lb/ton	15.93 ton/hr		
	Afterburner/ Baghouse	D/F	40 CFR 63.1505(e)(1)(iii)	Every 5 yrs	Method 23	5.0 µg/Mg D/F TEQ	0.63 µg/Mg D/F TEQ	15.93 ton/hr		
	Afterburner/ Baghouse	HCl	40 CFR 63.1505(e)(1)(iv)	Every 5 yrs	Method 26	1.50 lb/ton	0.315 lb/ton	15.93 ton/hr		
134 (Decoater B)	Afterburner/ Baghouse	THC	40 CFR 63.1505(e)(1)(i)	Every 5 yrs	Method 25A	0.2 lb/ton	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	PM	40 CFR 63.1505(e)(1)(ii)	Every 5 yrs	Method 5	0.30 lb/ton	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	D/F	40 CFR 63.1505(e)(1)(iii)	Every 5 yrs	Method 23	5.0 µg/Mg D/F TEQ	TBD	TBD	TBD	2024
	Afterburner/ Baghouse	HCl	40 CFR 63.1505(e)(1)(iv)	Every 5 yrs	Method 26	1.50 lb/ton	TBD	TBD	TBD	2024
134 (Decoater B)	Afterburner/ Baghouse	NOx	401 KAR 51:017	Every 5 yrs	Method 7E	6.5 lb/hr	TBD	TBD	TBD	2023
134 (Decoater B)	Afterburner/ Baghouse	CO	401 KAR 51:017	Every 5 yrs	Method 10	14.14 lb/hr	TBD	TBD	TBD	2023
134 (Decoater B)	Afterburner/ Baghouse	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	1.99 lb/hr	TBD	TBD	TBD	2023

Emission Point(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 Compliance Testing
134 (Decoater B)	Afterburner/ Baghouse	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5/202	TBD	TBD	TBD	TBD	2024
135 (Sidewell B1)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.029 lb/ton	15.85 ton/hr	CMN20190010	7/9/2019 – 7/11/2019
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.0058 lb/ton	15.85 ton/hr		
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.61 µg/Mg D/F TEQ	15.85 ton/hr		
135 (Sidewell B1)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2024
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26	0.40 lb/ton	TBD	TBD	TBD	2024
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	TBD	TBD	TBD	2024
135 (Sidewell B1)	Lime Inj. Baghouse	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 5/201A/ 202	TBD	TBD	TBD	TBD	180 days after flue re-routing
135 (Sidewell B1)	None	NOx	401 KAR 51:017	Every 5 yrs	Method 7E	0.22 lb/ton	0.21 lb/ton	16.4 ton/hr	CMN20210002	4/28/2021-4/29/2021
135 (Sidewell B1)	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	0.52 lb/ton	0.24 lb/ton	16.4 ton/hr	CMN20210002	
135 (Sidewell B1)	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.14 lb/ton	0.01 lb/ton	16.4 ton/hr	CMN20210002	
136 (Sidewell B2)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.025 lb/ton	15.2 ton/hr	CMN20190008	7/30/2019
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	0.00195 lb/ton	15.2 ton/hr		

Emission Point(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 Compliance Testing
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.22 µg/Mg D/F TEQ	15.2 ton/hr		
136 (Sidewell B2)	Lime Inj. Baghouse	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	0.0486 lb/ton	14.57 ton/hr	CMN20200001	8/4/2020-8/6/2020
	Lime Inj. Baghouse	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26	0.40 lb/ton	0.012 lb/ton	14.57 ton/hr	CMN20200001	8/4/2020-8/6/2020
	Lime Inj. Baghouse	D/F	40 CFR 63.1505(i)(3)	Every 5 yrs	Method 23	15.0 µg/Mg D/F TEQ	0.154 µg/Mg D/F TEQ	14.57 ton/hr	CMN20200001	8/4/2020-8/6/2020
137 (Holder B)	None	PM	40 CFR 63.1505(i)(1)	Every 5 yrs	Method 5	0.40 lb/ton	TBD	TBD	TBD	2024
	None	HCl	40 CFR 63.1505(i)(4)	Every 5 yrs	Method 26A	0.40 lb/ton	TBD	TBD	TBD	2024
137 (Holder B)	None	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	0.031 lb/ton	TBD	TBD	TBD	2023
137 (Holder B)	None	NO_x	401 KAR 51:017	Every 5 yrs	Method 7E	0.035 lb/ton	TBD	TBD	TBD	2023
137 (Holder B)	None	CO	401 KAR 51:017	Every 5 yrs	Method 10	0.046 lb/ton	TBD	TBD	TBD	2023
137 (Holder B)	None	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5/202	N/A	TBD	TBD	TBD	2024
140 (Dross House)	Baghouse	PM	401 KAR 59:010	Every 5 yrs	Method 5	24.67 lb/hr	0.40 lb/hr	23.4 ton/hr	CMN20180008	9/13/2018
	Baghouse	PM	Establish EF for PSD preclusion	Every 5 yrs	Method 5	N/A	Inlet/outlet: 0.0038/0.02 lb/ton	23.4 ton/hr		

Emission Point(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 Compliance Testing
	Baghouse	PM_{10}	Establish EF for PSD preclusion	Every 5 yrs	Method 5/ SEM/ACI	N/A	Inlet/outlet: 0.003/0.006 lb/ton	23.4 ton/hr		
	Baghouse	$PM_{2.5}$	Establish EF for PSD preclusion	Every 5 yrs	Method 5/ SEM/ACI	N/A	Inlet/outlet: 0.006/0.0004 lb/ton	23.4 ton/hr		
140 (Dross House)	None	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 5/ 201A	N/A	TBD	TBD	TBD	2023
154 (Scalper 2)	Cyclone	PM	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 17 & 202	35.4 lb/hr	0.69 lb/hr	89.8 ton/hr	CMN20180001	5/8/2018 – 5/9/2018
	Cyclone	VOC	Establish EF	Every 5 yrs	Method 25A	N/A	1.14 lb/hr	89.8 ton/hr		
154 (Scalper 2)	Cyclone	VOC	Update EF	Retest	Method 25A	N/A	0.026 lb/ton	101.9 ton/hr	CMN20180014	8/21/2018
154 (Scalper 2)	Cyclone	PM	401 KAR 59:010; Update EF for PSD preclusion	Every 5 yrs	Method 17 & 202	35.4 lb/hr	TBD	TBD	TBD	2023
154 (Scalper 2)	Cyclone	VOC	Update EF	Every 5 yrs	Method 25A	N/A	TBD	TBD	TBD	2023
161 (Cold Mill 4)	HOS	PM/ PM_{10}/ $PM_{2.5}$	401 KAR 59:010; Establish EF for PSD preclusion	Every 5 yrs	Method 17/202	41.81 lb/hr	0.440 lb/hr	248.3 ton/hr	CMN20200007	11/3/2020-11/4/2020
161 (Cold Mill 4)	HOS	VOC	401 KAR 51:017	Every 5 yrs	Method 25A	6.88 lb/hr	5.036 lb/hr	248.3 ton/hr	CMN20200007	11/3/2020-11/4/2020

Emission Point(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 Compliance Testing
205 (Shredding System C)	Baghouse	PM	40 CFR 63.1505(b)(1)	Every 5 yrs	Method 5	0.010 gr/dscf	TBD	TBD	TBD	TBD
	Baghouse	PM	401 KAR 59:010	w/ Subpart RRR	Method 5	TBD	TBD	TBD	TBD	TBD
	Baghouse	PM/ PM_{10}/ $PM_{2.5}$	Confirm EFs	Every 5 yrs	Method 5 /201A/202	N/A	TBD	TBD	TBD	TBD

Footnotes:

[1]Note: For the DC1, DC2, DC3 Hold Furnaces (EP04, EP17, & EP42), Holder A (EP131), and Holder B (EP137), no fluoride containing flux is used, therefore no HF testing has been performed. Additionally, pursuant to 40 CFR 63.1511(f), EP17 has been used as a representative furnace for EP04 testing, which is why no testing has occurred on EP04 for 40 CFR 63, Subpart RRR since 2012. If EP17 ceases to be representative of EP04, the 5-year testing schedule will be resumed.

[2]Note: The emission limit listed was revised subsequent to this testing.

[3]Note: Based on information provided to the Division on 7/1/19 and 5/22/2019, several units are considered to be "representative" of each other for the purposes of testing (excluding testing performed for 40 CFR 63, Subpart RRR, which has specific requirements for representative units). The unit pairs are: Decoater A and Decoater B, Holder A and Holder B, Sidewell Furnaces A1 and B1, Sidewell Furnaces A2 and B2.

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Point
250 tpy of PM, VOC, & NOx	To preclude 401 KAR 51:017	EPs 01, 02, 03, 04, 05, 06, 07, 08, 09, 30, 12, 32, 15, 17, 22, 46, 47, 48, 49, 59, 190
250 tpy of PM, VOC, & NOx	To preclude 401 KAR 51:017	EPs 01, 02, 03, 04, 07, 08, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 40, 42, 184, 185, 186, 187, 191, 192
17.92 tpy of PM, 6.33 tpy of PM_{10}, & 2.83 tpy of $PM_{2.5}$ (Net Emissions Increase)	To preclude 401 KAR 51:017, Sections 8-14	EPs 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 140, 141, 142, 145, 148, 161, 162
83.8 tpy of PM, 87.6 tpy of PM_{10}, & 71.4 tpy of $PM_{2.5}$ (Project Emissions Increase)		
100.2 lb/hr of Aluminum metal & oxide	401 KAR 63:021	EPs 01, 02, 03, 04, 06, 07, 08, 09, 17, 18, 19, 22, 25, 26, 27, 40, 42, 48, 51, 190
2.0 lb/hr of Arsenic		
5.0 lb/hr of Cadmium		
5.0 lb/hr of Chromium metal		
1.0 lb/hr of Cobalt		
10.0 lb/hr of Copper		
19.8 lb/hr of Formaldehyde		
227.5 lb/hr of Hydrogen Chloride		
2.0 lb/hr of Selenium		
39.6 lb/hr of Phosphoric Acid		
79.3 lb/hr of Potassium Hydroxide		

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Point
401 KAR 51:017, *Prevention of significant deterioration of air quality*. Applies to emissions of NOx, CO, VOC, and GHG for units installed as part of the Remelt Expansion Project associated with permit V-13-020 R1 & R2 and V-20-004.	EPs 07, 08, 126, 128, 129, 130, 131, 134, 135, 136, 137, 141, 142, 145, 148, 155, 156, 157, 158, 159, 161-01, 161-02, 162, 165, 166, 196, 197, 198
401 KAR 59:010, *New process operations*, applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR 59, commenced on or after July 2, 1975.	EPs 01, 02, 03, 04, 05, 06, 07, 08, 09, 12, 17, 18, 19, 21, 22-A, B, & C, 25, 26, 27, 30, 32, 40, 42, 44, 49, 56, 57, 59, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137,

Applicable Regulations	Emission Point
	140, 154, 161-01, 161-02, 205
401 KAR 59:015, *New indirect heat exchangers,* applies to indirect heat exchangers having a heat input capacity greater than one (1) MMBtu/hr commenced on or after April 9, 1972.	EPs 15-A, B, & C, 200
401 KAR 59:050, *New storage vessels for petroleum liquids***,** applies to each affected facility with a storage capacity less than 40,000 gallons commenced on or after April 9, 1972 and prior to July 24, 1984, and to each affected facility with a storage capacity less than 10,567 gallons commenced on or after July 24, 1984, which is located at a major source of VOC.	EPs 48, 50, 58, 157, 158, 159, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 196, 197, 198, 201, 202
401 KAR 59:185, *New solvent metal cleaning equipment***,** applies to each cold cleaner 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 or marginal nonattainment for ozone in 401 KAR 51:010.	EP 53
401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).	EP 200
401 KAR 60:005, Section 2(2)(q), 40 C.F.R. 60.110a to 60.115a (Subpart Ka), *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984,* applies to each storage vessel with a storage capacity greater than 40,000 gallons that is used to store petroleum liquids for which construction is commenced after May 18, 1978 and prior to July 23, 1984.	EPs 48, 58
401 KAR 60:005, Section 2(2)(zz), 40 C.F.R. 60.460 to 60.466 (Subpart TT), *Standards of Performance for Metal Coil Surface Coating,* applies to each prime coat operation in a metal coil surface coating operation which commenced construction after January 5, 1981.	EP 09
401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,* applies to stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 (for non-fire pump engines) or manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.	EPs 121, 122, 123, 150, 151, 188

Applicable Regulations	Emission Point
401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 to 60.4248, Tables 1 to 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines,* applies to stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006 where the stationary SI ICE are manufactured after on and after January 1, 2009.	EPs 124, 141, 142, 152
401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production,* applies to each new aluminum scrap shredder, existing group 2 furnace, new and existing group 1 furnace with add-on control devices, new and existing group 1 furnace without add-on control devices, new and existing secondary aluminum processing unit, and new scrap dryer/delacquering kiln/decoating kiln located at a secondary aluminum production facility located at a major source of HAP.	EPs 02, 03, 04, 17, 22-A, B, & C, 26, 27, 40, 42, 56, 57, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 205
401 KAR 63:002, Section 2(4)(xxx), 40 C.F.R. 63.5080 to 63.5200, Tables 1 to 2 (Subpart SSSS), *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil,* applies to each facility that is a major source of HAP, as defined in 40 CFR 63.2, at which a coil coating line is operated.	EP 09
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 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,* applies to each existing process heater designed to burn gas 1 fuels and the collection of all existing industrial boilers within the unit designed to burn gas 1 subcategory at a major source.	EPs 12, 15-A, B, & C, 200
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,* applies to each existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, that commenced construction of the stationary RICE before June 12, 2006.	EPs 60, 61, 62, 63, 121, 122, 123, 124, 141, 142, 150, 151, 152, 188
401 KAR 63:010, *Fugitive emissions***,** applies to each apparatus, operation, or road which emits or may emit emissions of any air contaminant into the open air other than from a stack or air pollution control equipment exhaust, 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.	EPs 01, 140, 145, 148, 155, 156, 157, 158, 159, 162, 165, 166, 193, 196, 197, 198, 199, 201, 203, 204
401 KAR 63:015, *Flares,* applies to each flare, as defined in 401 KAR 63:015, Section 2.	EP 46
401 KAR 63:020, *Potentially hazardous matter or toxic substances,* applies to any pollutants or emission points not included in the list of pollutants under **Group 13, Existing Sources Emitting Toxic Air Pollutants**.	EP 08

Applicable Regulations	Emission Point
401 KAR 63:021, *Existing sources emitting toxic air pollutants*, applies to a source in existence on January 19, 1999 which was issued a permit pursuant to 401 KAR 50:035 with conditions based on this administrative regulation or 401 KAR 63:022. The permittee must continue to comply with all conditions based on this administrative regulation or 401 KAR 63:022 unless they can demonstrate that a condition is no longer necessary to protect human health and the environment. The limits were established in permit F-97-003 and pertain to emissions of Aluminum Oxides, Arsenic, Cadmium, Chromium, Cobalt, Copper, Formaldehyde, Hydrogen Chloride, Selenium, Phosphoric Acid, and Potassium Hydroxide from the listed emission points.	EPs 01, 02, 03, 04, 06, 07, 08, 09, 17, 18, 19, 22, 25, 26, 27, 40, 42, 48, 51, & 190
40 CFR 64, ***Compliance Assurance Monitoring (CAM)*** for PM, PM_{10}, $PM_{2.5}$, & VOC. Applies to a pollutant-specific emissions unit (PSEU) at a major source that is required to obtain a Title V permit if the unit satisfies all of the following criteria: (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1); (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. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in 40 CFR 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.	EPs 01, 07, 08, 26, 30, 32, 56, 57, 59, 128, 134, & 161

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Point
401 KAR 51:017, ***Prevention of significant deterioration of air quality,*** for PM, PM_{10}, VOC, & NO_x. The emission limitations established for the listed units were established to prevent various projects from being considered new major stationary sources or major modifications of an existing major stationary source which would make the projects subject to the requirements of 401 KAR 51:017, including BACT. If these limits are changed or removed, each project associated with the limit must be re-evaluated as though construction never began.	EPs 01, 02, 03, 04, 05, 06, 07, 08, 09, 12, 15-A-C, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 40, 42, 46, 47, 48, 49, 56, 57, 59, 184-187, 190, 191, & 192
401 KAR 51:017, ***Prevention of significant deterioration of air quality, Sections 8-14,*** for PM, PM_{10}, & $PM_{2.5}$. The emission limitations established for the listed units (Refer to **Section D.6.** and **D.7.**) were established to prevent the Remelt 2 & Hot Mill/Cold Mill Expansion project (which otherwise triggered the requirements of 401 KAR 51:017, Sections 8-16 for NOx, CO, VOC, and GHG) from triggering the	EPs 05, 07, 08, 09, 30, 32, 59, 123, 124, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 140, 141, 142, 145,

Precluded Regulations	Emission Point
requirements of Sections 8-14, including BACT, for the specified pollutants. If these limits are changed or removed, the project must be re-evaluated as though construction never began.	148, 150, 151, 152, 154 - 161, 162, 165, 166
401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,* precluded by documenting that the engine does not remain in a single location for more than 12 consecutive months.	EPs 193A, 199A, 203A, 204A
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,* precluded by documenting that the engine does not remain in a single location for more than 12 consecutive months.	EPs 193A, 199A, 203A, 204A
401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 to 63.407, Table 1 (Subpart Q), *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers,* this regulation is precluded by not using chromium-based water treatment chemicals in the cooling tower.	EP 49

Table D - Summary of Non-Applicable Regulations:
N/A

Air Toxic Analysis
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has performed SCREEN View of potentially hazardous matter or toxic substances (All pollutants other than those listed for 401 KAR 63:021) 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.

401 KAR 63:021, *Existing sources emitting toxic air pollutants*
The Division for Air Quality (Division) performed refined air dispersion modeling using ISCST-2 in 1997 of potentially hazardous matter or toxic substances (Aluminum Oxides, Arsenic, Cadmium, Chromium, Cobalt, Copper, Formaldehyde, Hydrogen Chloride, Selenium, Phosphoric Acid, and Potassium Hydroxide) that may be emitted by the listed units based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant at that time. Based upon this information, the Division established the emission limitations in **Section B** of the permit to assure compliance with the requirements of 401 KAR 63:021. These limitations cannot be removed unless the permittee can demonstrate that a condition is no longer necessary to protect human health and the environment.

Single Source Determination
N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
S-95-041	State-Origin	Unknown	1/10/1995	4/11/1995	Modification of the Shredder	N/A
S-96-130	State-Origin	Unknown	2/7/1996	3/15/1996	Modification to west melter	N/A
F-97-003	Initial F Permit	APE20050005	2/3/1997	3/26/1997	Construction of Swarf & Reservoir Furnaces & Inc. Operation	Syn Minor
V-97-034	Initial Title V	E919	3/10/1997	4/14/1998	Construction/ Operation	Syn Minor
V-97-034 R1	Admin Revision	F677	6/9/1998	6/10/1998	Correction to Coating Line Capacity	N/A
V-97-034 R2	Sig Revision	G112	8/11/1999	4/12/2000	Construction of Pusher Furnace; Modification	Syn Minor
V-03-017	Renewal	APE20050001	12/15/2002	6/17/2003	Renewal/ Construction	PSD
V-03-017 R1	Sig Revision	APE20040002	7/26/2004	10/28/2004	Construction/ Operation	Syn Minor
V-03-017 R2	Minor Revision	APE20050006	12/27/2005	2/3/2006	Inc. Hourly Coating Line 1 Throughput	N/A
V-03-017 R3	Minor Revision	APE20060004	9/29/2006	11/21/2006	Inc. Scalper Throughput	N/A
V-03-017 R4	Sig Revision	APE20060006	12/18/2006	4/16/2007	Addition of the Multichamber Furnace	Syn Minor
V-08-011	Renewal	APE20070005	4/7/2008	8/26/2008	Increase/ Removal of Limits	N/A
V-08-011 R1	Minor Revision	APE20080002	10/28/2008	1/29/2009	Update to Fume Exhaust System	N/A
V-08-011 R2	Minor Revision	APE20090007	11/20/2009	3/1/2010	Addition of Low NOx Burners in EP 02 and a new (EP121) Generator Motor	N/A
V-08-011 R3	Minor Revision	APE20100002	6/8/2010	9/24/2010	Finishing Mill Fume Exhaust Upgrade (EP 08) and added 401 KAR 63:020 for EP 08.	N/A

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-08-011 R4	Minor Revision	APE20100004	10/8/2010	1/27/2011	Addition of Low NOx burners in EP03 and a new (EP122) Generator Motor	N/A
V-08-011 R5	Sig Revision	APE20100009	2/3/2011	7/20/2011	Replacement of control devices on CM1 & CM2 with an Absorption Column; Upgrade of Cooling System equipment & motor gear ratio to increase production in CM1 & CM2	Syn Minor
V-08-011 R6	Minor Revision	APE20110002	11/16/2011	2/24/2012	Adding new Swarf Furnace Baghouse due to Consent Decree.	N/A
V-08-011 R7	Minor Revision	APE20110005	7/19/2012	9/24/2012	Addition of a new exhaust system at the tower charger of the Multichamber Furnace EP57 (1011-1)	N/A
V-13-020	Renewal	APE20130001	8/29/2014	2/25/2015	Renewal	N/A
V-13-020 R1	Sig Revision	APE20150001	12/23/2015	5/4/2016	Remelt 2 Expansion Project	PSD/Syn Minor
V-13-020 R2	Sig Revision	APE20160007	1/26/2017	9/24/2017	Modification of Remelt 2 Project – Hot Mill/Cold Mill Expansion	PSD/Syn Minor
V-20-004	PSD Sig. Rev. / Renewal	APE20190005 ; APE20190008	8/6/2019; 10/22/2019	12/28/2020	Modification of BACT limits for Hot Mill/Cold Mill and Remelt 2 Project for as-built parameters	PSD/Syn Minor
V-20-004 R1	Minor Revision	APE20210003	6/24/2021	10/20/2021	As-Built Modifications to Remelt 2 Project, Addition of	N/A

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
					Mobile Bale Breaker, and Approval of Use of Salt Flux in EP57 – Multichamber Furnace	
V-20-004 R2	Sig Revision	APE20210008	1/6/2022	5/24/2022	Hot Mill upgrade project	N/A
V-20-004 R3	Minor Revision	APE20230007	1/26/2024	5/24/2024	Addition of EP205	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

Permit Number: V-20-004 R3 Activities: APE20230007

Received: 11/17/2023 Application Complete Date(s): 1/26/2024

Permit Action: ☐ Initial ☐ Renewal ☐ Significant Rev ☒ Minor Rev ☐ Administrative

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

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

- ***APE20220002 – Section 502(b)10 Change:*** *Addition of a second baghouse to EP01, addition of lubricant to Slitter 4 (adding IA72), addition of DC4 mobile scrap conveyor (IA73), removal of Cast Water Emergency Back-up Pump Engine (EP 65).*
- ***APE20230001 – Section 502(b)10 Change:*** *Addition of a Mobile Engine-Powered Screener (EP203A & B) to Group 24.*
- ***APE20230004 – Section 502(b)10 Change:*** *Addition of Mobile Engine-Powered Bale Breaker #3 (EP204A & B) to Group 24.*

Description of Action:
On November 17, 2023, the Division received a minor permit revision application for the Title V permit V-20-004 R2 held by Logan Aluminum, Inc. (Logan).

In this application, Logan is adding Shredding System C. The purpose of this shred line is to reduce the average size of feedstock scrap for ease of handling and melting in downstream process equipment. The shredding line will be classified as a new aluminum scrap shredder as defined under 40 CFR 63, Subpart RRR. Emissions generated by Shredding System C will be collected and ducted to a dedicated baghouse (C-9099) prior to discharge from a dedicated baghouse stack. Specific changes included in the scope of the Shred Line C project are as follows:

- Decoater A and B are expected to experience an increase in both short-term potential aluminum throughput and actual annual throughput due to the increased scrap shredding capabilities of the scrap processing area with the addition of Shredding System C. With respect to the potential short-term aluminum process rate change expected to be achieved in the three (3) shred line on two (2) decoater arrangement after the project, the listed capacity for Decoaters A and B under the Group 18 emission unit description has been increased from 20 ton/hr to 22.5 ton/hr. This change in maximum hourly process rate is not associated with any physical or operational changes associated with Decoaters A and B, but is a result of debottlenecking. With an increased volume of shredded scrap generated by the three (3) shred lines and available to be supplied to the decoaters after the proposed project is implemented, these downstream decoating operations can simply achieve higher, sustained hourly throughput rates than when they are only supported by two (2) shred lines under the existing configuration. Logan did not apply to change any emission limits for the Decoaters previously established under 401 KAR 51:017.

The Shred Line C project will also affect the following unmodified, existing sources because the debottlenecking is expected to cause an increase in actual annual emissions at the following downstream emission units:

- Sidewell Melting Furnaces A1, A2, B1, and B2 [EPs 129 (9041-1& 2), 130 (9045-1& 2), 135 (9046-1&2), and 136 (9047-1& 2);
- Holding Furnaces A and B [EPs 131 (9053) & 137 (9054)];
- Flux Box A [EP 132 (9050FB)]
- Dross House [EP 140 (9070)]

For establishing baseline emissions from these units, Logan selected the timeframe of January 2021 to December 2022.
The following table lists the project emissions increase expected from the Shred Line C project, taking into account the project actual emissions and the emissions the units could have accommodated prior to the project occurring.

Pollutant	**Project Emissions Increase**	**Significant Emission Rate (SER)**	**PSD Applicable**
	Tons per year (tpy)		
CO	26.92	100	No
GHGs (CO_2e)	17,944	75,000	No
NO_x	21.65	40	No
PM (filterable, only)	17.39	25	No
PM_{10} (filterable & condensable)	12.45	15	No
$PM_{2.5}$ (filterable & condensable)	5.62	10	No
SO_2	0.73	40	No
VOC	2.39	40	No

Accordingly, the project does not exceed the significant emission rate (SER) and does not trigger further review under 401 KAR 51:017.

V-20-004 R3 Emission Summary				
Pollutant	2022 Actual (tpy)	Revised PTE V-20-004 R2 (tpy)	Change (tpy)	Revised PTE V-20-004 R3 (tpy)
CO	226.62	583.71	+1.91	585.62
NOx	319.21	820.76	+24.41	845.17
PT	217.80	284.43	+34.42	318.85
PM_{10}	201.71	350.63	+21.84	372.47
$PM_{2.5}$	169.68	294.27	+9.48	303.75
SO_2	3.04	7.68	+0.34	8.02
VOC	634.34	916.11	+3.12	919.23
Lead	0.07	0.12	+0	0.12
Greenhouse Gases (GHGs)				
Carbon Dioxide	266,614	744,425	+8,603	753,028
Methane	5.09	14.22	+0.25	14.47
Nitrous Oxide	0.52	1.45	+0.05	1.50
CO_2 Equivalent (CO_2e)	266,896	745,214	+8,622	753,836
Hazardous Air Pollutants (HAPs)				
Arsenic (and Compounds)	0.44	0.87	+0.02	0.89
Formaldehyde	0.51	1.35	+0.04	1.39

V-20-004 R3 Emission Summary				
Pollutant	2022 Actual (tpy)	Revised PTE V-20-004 R2 (tpy)	Change (tpy)	Revised PTE V-20-004 R3 (tpy)
Hexane; N-Hexane	3.29	9.42	+0	9.42
Hydrochloric Acid	101.47	498.41	-81.03*	417.38
Methanol	5.49**	5.30	+0	5.30
Combined HAPs:	111.72	516.49	-80.87	435.62

*Note: This change in emissions is due to revising emission calculations for the Decoaters to reflect the results of testing instead of the allowable from 40 CFR 63, Subpart RRR.
**Note: This is a reporting error that is not yet corrected in KYEIS.

Permit Number: V-20-004 R2 Activities: APE20210008

Received: 11/6/2021 Application Complete Date(s): 1/6/2022

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

Description of Action:
On November 6, 2021, the Division received a significant revision application for the Title V permit V-20-004 R1 held by Logan Aluminum, Inc. (Logan).

In this application, Logan is upgrading the Hot Mill. Specific changes included in the scope of this project are as follows:

- Finishing Mill (EP08) upgrades including drive motor and gearbox changes in all 3 mill stands, drive motor changes for the exit end coiler, coolant supply systems changes to increase coolant flow capacity and fume exhaust system upgrades.
- Change in the method of operation of the Reversing Mill (EP07) resulting in an increased short term capacity due to the changes made to the Finishing Mill.
- Scalper 2 (EP154) ingot handling system upgrades to implement a “racetrack” style design shortening cycle times. With this change, Scalper 2 will become the primary scalper in the scalping process.
- Replacing Hot Mill Tank 17 (EP58) with a new Hot Mill Tank 19, both insignificant activities, using the shell of the old tank and decreasing the number of compartments from 5 to 4.
- Adding Hot Mill Tank 20 an as insignificant activity, a new “expansion tank” compartment to serve the “clean coolant” storage function of the compartment removed from Hot Mill Tank 17.
- Adding Hot Mill Tank 21 as an insignificant activity, a new “expansion tank” compartment to serve as a dirty coolant holding tank for use in Finishing Mill coolant supply management and use during periodic tank compartment cleaning events/scheduled maintenance outages.
- Adding Cooling Tower 4 as an insignificant activity, a multi-cell, mechanical draft cooling tower.
- Adding Boiler #4 (EP200), a new 22 MMBtu/hr natural gas fired, steam boiler.

- Adding Slitter #5 as an insignificant activity, a new coil slitter.

As a nominally separate project, Logan is also making changes to the Cold Mill 4 (EP 161-02) coolant supply system. This project involves installation of a new plate filter (a second unit operating in parallel with existing plate filter) serving the Cold Mill 4 coolant supply system (not an emission point) requiring the installation of a "Body Mix Tank #2" (VOC emissions source from evaporative losses of coolant) with an identical design and operating practice to the existing "Cold Mill 4 Storage Tank: Body Mix" (EP158). In addition, a new "CM4 Filtering Aid Handling System #2" will be installed to support the filtering aid mixing process associated with the new body mix tank in the Cold Mill 4 coolant area. This emission point has been added as an insignificant activity.

As another nominally separate project, Logan is applying to make product quality driven changes impacting Cold Mill 3 (EP 21). Product quality considerations primarily include preventing coil surface defects across the full Cold Mill 3 product mix and line speed operating range with a focus on water/oil-emulsion based roll coolant and mineral oil-based bite lube supply system management. Specifically, Logan is making the following physical and operational changes primarily affecting the coolant filtration system, bite lube supply system, and fume exhaust system:

- Increase the "oil phase" processing capacity of the CM3 coolant filtration system by installing:
  - New higher flow capacity, dirty coolant compartment oil layer skimmers associated with main coolant tank (EP24 - Cold Mill 3 Tank TA01)
  - New set of oil phase skimmer pumps to supply the "sludge filtration" process.
  - New sludge filter (second unit operating in parallel with existing filter) with a flatbed air vacuum filter design to remove solids and other contaminants from the recovered oil phase.
  - New separation tank storing filtered oil (second tank in same service operating in parallel with existing separation tank) (designated as Cold Mill 3 Tank TA11).
- Increase the bite lube supply system flow capacity by installing:
  - Larger and higher flow capacity bite lube supply pumps connected to the existing network of bite lube supply piping, spray headers, and spray nozzles.
  - Consistent use of bite lube sprays at the existing interstand 2-3 cooling table facilitated by the increase in bite lube supply volume.
- Optimize the performance of the existing cooling tower water-cooled condenser providing VOC control in the CM3 fume exhaust system control train by:
  - Adding a cooling water chiller system consisting of a "closed-loop" water/glycol cooling fluid supply/return circuit.
  - Installing new cooling fluid supply and return piping to connect the new cooling fluid chiller system to existing condenser internal piping.

The Hot Mill upgrade project will also affect the following unmodified, existing sources because direct process connections to these emission units exist via shared raw materials or products:

- Pusher Furnaces 1-4
- Cold Mill 1 and Cold Mill 2 Roll Coolant Recovery System
- Cold Mill 3, and
- Cold Mills 1-3 Uncaptured Emissions
- Finishing Mill Coolant Area "Neat Oil" Supply Tanks
- Cold Mill 3 Coolant Area Tanks

For the purposes of conservatively determining whether this project is a major modification subject to PSD review, these 3 projects and associated increases have been aggregated together.

Pollutant	Project Emissions Increase	Significant Emission Rate (SER)	PSD Applicable
	Tons per year (tpy)		
CO	8.79	100	No
GHGs (CO_2e)	19,495	75,000	No
NO_x	11.64	40	No
PM (filterable, only)	6.23	25	No
PM_{10} (filterable & condensable)	8.29	15	No
$PM_{2.5}$ (filterable & condensable)	7.70	10	No
SO_2	0.10	40	No
VOC	35.69	40	No

Additionally, the requirements of 401 KAR 51:017, Section 16(5), the "Reasonable Possibility Rule", have been added to Section D to ensure appropriate records are maintained regarding this project moving forward.

The 401 KAR 59:015 limits were established as follows:

Summary of All Affected Facilities Used to Determine 401 KAR 59:015 Emission Limits								
EU	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
15-A	NG; Propane	22	1981	Section 4(1)(c)	66	Section 5(1)(c)2.	66	
15-B	NG; Propane	22	1981	Section 4(1)(c)	66	Section 5(1)(c)2.	66	
15-C	NG; Propane	22	1981	Section 4(1)(c)	66	Section 5(1)(c)2.	66	
200	NG; Propane	22	2022	Section 4(1)(c)	88	Section 5(1)(c)2.	88	

Permit Number: V-20-004 R1 Activities: APE20210003

Received: 5/28/2021 Application Complete Date(s): 6/24/2021

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

- APE20210001 – 502(b)(10) Change – Cold Mill 4 Ancillary Operations "As-Built" Revisions
- APE20210002 – 502(b)(10) Change – Addition of a Mobile Bale Breaker (EP197A & B)

Description of Action:
On May 28, 2021, the Division received two 502(b)(10) change requests and a minor revision application for the Title V permit V-20-004 held by Logan Aluminum, Inc. (Logan).

The Section 502(b)(10) change under APE20210001 requested changes to the Title V permit with respect to Cold Mill 4 (CM4) and ancillary operations due to differences between the permitted and as-built design and operating specifications. EP155 through EP159 (CM4 storage tanks), EP162 (CM4 heating systems), and EP166 (CM4 storage tank) had changes to maximum capacities, which was updated in Section B of the permit. EP160 was removed from Section B and replaced with EP196 – CM4 Clean VRS Storage Tank, EP197 – CM4 Dirty VRS Storage Tank, and EP198 – CM4 AH2 Hydraulic Storage Tank in Section B, Group 19, and these three tanks will continue to be subject to 401 KAR 51:017 and meet the same BACT requirements that would have been required of EP160 (installation of a submerged fill pipe). Additionally, 401 KAR 59:050, New storage vessels for petroleum liquids, was reviewed for applicability to EP157-159 and EP196-198. This regulation applies to storage vessels for non-fuel oil petroleum liquids which have a capacity less than 10,567 gallons that are located at a major source of VOCs, and accordingly applies to EP157 through EP159 and EP196 through EP198.

For EP164 - Cold Mill 4 Area Cooling Tower (Insignificant Activity 51), the permittee requested that the emission factors and throughput be updated; however, these changes did not affect the cooling tower's status as an insignificant activity.

The second Section 502(b)(10) change under APE20210002 requested the addition of a second, mobile bale breaker to Section B, Group 24, designated EP199 A and B, identical to the existing bale breaker #1. The engine associated with the bale breaker is considered a nonroad engine, and will not remain in one location for more than 12 consecutive months.

The minor revision application under APE20210003 requested that the use of reactive salt flux in the Multichamber Furnace previously approved by the Division for temporary use and testing in December 2017 be granted permanent authorization for use with this revision.

None of these actions constituted a project exceeding the significant emission rate for 401 KAR 51:017, Prevention of Significant Deterioration, nor did they modify, affect, or otherwise change previously established emission or operational limits for units subject to 401 KAR 51:017.

V-20-004 R1 Emission Summary				
Pollutant	2020 Actual (tpy)	Previous PTE V-20-004 (tpy)	Change (tpy)	Revised PTE V-20-004 R1 (tpy)
CO	167.84	575.31	+0.47	575.78
NOx	279.77	800.96	+16.28	817.24
PT	143.98	284.68	-1.18	283.50
PM_{10}	168.96	340.45	-1.14	339.31
$PM_{2.5}$	145.17	277.75	-1.08	276.67
SO_2	2.53	7.58	+0.04	7.62
VOC	427.31	894.56	-6.25	888.31
Lead	0.05	0.12	0	0.12
Greenhouse Gases (GHGs)				
Carbon Dioxide	248,200	728,737	+4,361	733,098
Methane	4.68	13.84	+0.16	14.00
Nitrous Oxide	0.47	1.40	+0.03	1.43
CO_2 Equivalent (CO_2e)	248,455	729,501	+4,374	733,875
Hazardous Air Pollutants (HAPs)				
Arsenic (and Compounds)	0.40	0.87	0	0.87
Formaldehyde	0.47	1.31	+0.03	1.34
Hexane; N-Hexane	Not Reported	9.23	+0.02	9.25
Hydrochloric Acid	142.27	480.67	+17.74*	498.41
Methanol	Not Reported	5.34	0	5.34
Combined HAPs:	199.82	498.51	+17.85	516.36

*See comments under Emission Group 3 regarding emission factors.

Permit Number: V-20-004 Activities: APE20190005; APE20190008

Received: 6/6/3019; 8/23/2019 Application Complete Date(s): 8/6/2019; 10/22/2019

Permit Action: ☐ Initial ☒ Renewal ☒ Significant Rev ☐ Minor Rev ☐ Administrative

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

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

- APE20170004 – 502(b)(10) Change – Multichamber Furnace Salt Flux Trial Approval
- APE20170006 – Off-Permit Change – Baghouse 22 Replacement & Flux Box Baghouse Duct Burner Installation
- APE20180006 – Off-Permit Change – Addition of DC4 Sow Dryers #1 & #2 (EP194 & EP195)
- APE20180007 – 502(b)(10) Change – Addition of Fire Water Loop Pump Engine – East (EP188)
- APE20190002 – 502(b)(10) Change – Sidewell A2-B2 Main Hearth Flue Re-routing Project
- APE20200004 – 502(b)(10) Change – Addition of a Mobile Bale Breaker (EP193A & B)

Description of Action:
On June 6, 2019, the Division received a significant revision application for modification of BACT limits set for units involved in the previous Hot Mill and Cold Mill expansion and Remelt 2 project and an update to "as-built" parameters. The proposed BACT limit changes required re-evaluation of the Hot Mill/Cold Mill expansion and the Remelt 2 PSD project, previously authorized in permit V-13-020 R1 and V-13-020 R2. On September 11, 2019, Logan submitted the associated Class II modeling analysis for the revised project. The EPA and federal agencies were provided with this application on September 24, 2019. On September 26, 2019, the Division held a meeting with Logan to discuss the submittals and request additional information. Logan provided a follow-up submittal on December 5, 2019. After review, the Division transmitted this update to the EPA and federal agencies on February 3, 2020. Logan provided additional cost information regarding CatOx applicability to the Decoaters on March 11, 2020. On March 27, 2020, Logan submitted a 502(b)(10) Change application to re-route the baghouse ducts for the Decoaters and Sidewells A1/B1. The Division informed Logan that because this change could affect the BACT analysis under review for the Decoaters and Sidewell Furnaces, the application could not be processed as a 502(b)(10) Change and should be submitted as an addendum to the PSD/Significant Revision application currently under review. On May 22, 2020, Logan submitted the addendum as part of the significant revision application. The Division transmitted this update to the application to the EPA and federal agencies on June 18, 2020.

After review of the applications and all follow up submittals, the Hot Mill and Cold Mill expansion and Remelt 2 project will continue to be a major modification under the Prevention of Significant Deterioration (PSD) construction permitting program. Since Logan County has been designated by EPA as unclassified/attainment area for all criteria pollutants, the proposed project is only subject to PSD requirements. The changes to the project scope and BACT analysis will consist of the following:

- Change from a shared baghouse for Shredders A & B to a dedicated baghouse for each shredder, including changes to stack parameters;
- Removal of Method 202 testing requirements for the Shredders due to the lack of condensable PM;
- Update to capture efficiency testing requirements throughout the permit to reflect that inward flow verification should only be performed where the individual hood/exhaust pickup points can be accessed safely;
- For the Shredder baghouses, a change from requiring monitoring fan RPM to monitoring fan AMPs;
- Update to Shredder A & B emission factors for captured and uncaptured emissions using stack test data;
- Change from shared baghouses for Decoaters A & B and Sidewell Furnaces to individual baghouses, including changes to stack parameters;
- Updates to Decoater A & B afterburner information to reflect the "as-built" condition including a reduction in burner design capacity from 32 MMBtu/hr to 30.2 MMBtu/hr;
- Increase to Decoater A & B CO BACT emission limitation based on initial performance testing;
- Removal of reference to uncaptured emissions and uncaptured emissions testing for the Decoaters to reflect the "as-built" fully enclosed airlock system for feeding and removing shreds from the Decoaters and presumed 100% capture of emissions;
- Update to the Sidewell Furnaces stack parameters;

- Increase in the burner rating in each Sidewell Furnace from 29 MMBtu/hr to 33 MMBtu/hr;
- Increase to the Sidewell Furnaces NOx, CO, VOC, and GHG BACT limits based on "as-built" changes and performance testing;
- For the Sidewell Furnace baghouses, a change from requiring monitoring fan RPM to monitoring fan AMPs;
- Rerouting of the Sidewell Furnace Main Hearth Flues to their respective baghouses;
- Change to Holding Furnace burners, from two 13 MMBtu/hr burners to one each of a 14.5 MMBtu/hr burner and a 9.5 MMBtu/hr burner;
- Update to the Holding Furnaces stack parameters;
- Increase to the Holding Furnaces VOC BACT emissions limitation based on initial performance testing;
- Decrease to the Holding Furnaces BACT emissions limitations for all other combustion pollutants (NOx, CO, and GHG) due to the decrease in burner size from a total of 26 MMBtu to 24 MMBtu;
- Update to Holding Furnace emission factors using stack test data;
- Removal of Flux Box B from the permit and project scope, as it was never installed;
- Update to the Dross House stack parameters;
- Removal of Method 202 testing requirements for the Dross House due to the lack of condensable PM;
- For the Dross House baghouse, a change from requiring monitoring fan RPM to monitoring fan AMPs;
- Change the burner maximum heat input for Pusher Furnace 4 from 136.6 MMbtu/hr to 105 MMBtu/hr;
- Decrease to the Pusher Furnace burner size from 136.6 MMBtu to 105 MMBtu. No change requested to the annual natural gas consumption operating limitation, therefore no changes to the BACT evaluation or limits were made.
- Change to the DC4 Generator Engines size from 224 HP to 47 HP and a corresponding change to the BACT emission limitations to reflect the data on the specification sheets for the "as-built" engines and applicable requirements due to the decrease in size;
- Change to the Remelt 2 Filter Box Pre-Heater from 2 MMBtu/hr to 3.84 MMbtu/hr;
- Removal of the two Remelt 2 Crucible Pre-Heating Stations from the permit and the project scope, as they were never installed;
- Removal of the Remelt 2 Sanitary Heating Systems from the permit and the project scope, as they were installed as electric units instead of natural gas units;
- Update to the Remelt 2 Diesel Fuel Storage tank capacity from 1,000 gallons to 3,000 gallons;
- Removal of the Remelt 2 Air Compressor Cooling Tower from the permit and the project scope, as this unit was never installed;
- Update to the Remelt 2 Casting Bay Cooling Tower capacity from 3,000 gal/min to 1,500 gal/min and TDS from 818 ppm to 484 ppm;
- Addition of 2 Alkaline Reagent Silos for the Decoater Baghouse – the potential emissions from these units were subtracted from the PSD avoidance limits in Section D to allow them to be listed as an insignificant activity.

On August 23, 2020, Logan also submitted a Title V permit renewal application. Logan submitted additional information for the renewal application in a follow-up submittal on September 24, 2019. The Division requested additional information regarding the renewal application in an email on

April 2, 2020. Logan submitted the requested information on April 22, 2020. The Division requested additional information regarding the natural gas curtailment operating scenario on August 14, 2020. Logan submitted the requested information on August 17, 2020.

In the renewal application, the following requested changes were made:

- Addition of several tanks to the Insignificant Activity List that were previously unaccounted for, including two 8,000 gal refrigerant tanks, a 4,000 gal diesel tank, and Pusher Furnace 4 3,100 gal hydraulic oil tank;
- Moved several tanks previously listed in the Insignificant Activity List to Section B of the permit due to applicability of 401 KAR 59:050, which is not a generally applicable regulation;
- Update to the number of crucible pre-heating stations on the Insignificant Activity List from 2 to 5;
- Update the NOx emission factor for Pusher Furnace 3 from 117.9 lb/mmscf (previously based on a 1995 stack test on Pusher Furnaces 1 & 2) to 168.1 lb/mmscf based on a vendor estimate for the burners;
- Update the NOx emission factor for the Annealing Furnaces from 83.0 lb/mmscf (previously based on a 4/1994 stack test on the carbottom furnaces) to 281.9 lb/mmscf based on a vendor estimate;
- Change to the 40 CFR 63 Subpart RRR emissions limits for the Holding Furnaces from 40 CFR 63.1505(i)(2) to 40 CFR 63.1505(i)(1) due to the furnaces not meeting the definition of a "melting/holding furnace" in 40 CFR 63.1503;
- Change to the applicable requirements from 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ to correspond with the change in HP from 224 HP to 47 HP;
- Review & revised 401 KAR 59:050 applicability for all tanks at the facility;
- Added all compliance options under 40 CFR 63, Subpart SSSS in the permit for Coating Line 1;
- Removed the vacated portions of 40 CFR 60, Subparts IIII and JJJJ and 40 CFR 63, Subpart ZZZZ;
- Updated the regulatory language from 40 CFR 63, Subpart DDDDD;
- Updated the 40 CFR 64, Compliance Assurance Monitoring (CAM) analysis and CAM Plans in Appendix A of the permit;
- Removal of the Electric Induction Furnace (EP55) as it is no longer at the facility;
- Removal of Flux Box B (EP138) as it was never installed;
- Update to Scalper 2 cyclone configuration;
- Removal of the Used Oil Tank and used oil as a fuel option for Boilers #1 - #3;
- Removal of several insignificant activities including the Induced Air Floatation (IAF) Unit, the Castor Oil Tank, and the Castor Oil Sump;
- Removal of CAM applicability from Shredding Systems A & B for PM, Decoaters A & B for CO, Sidewell Furnaces A1, B1, A2, & B2 for PM, and the Dross House for PM based on stack test data;
- Added CAM applicability for the Swarf Furnace for PM, the Scrap Processing System for PM, the Multichamber Furnace for PM, and the Cold Mills 1 & 2 for PM, PM_{10}, $PM_{2.5}$, and VOC.

Because these the significant revision and renewal applications overlapped, and the permit would expire before issuance of the significant revision, the Division is processing both applications simultaneously and incorporating all changes together. In processing this application, the following additional changes were made to the permit:

- All emission units included in an emission limitation (for 401 KAR 63:021, or PSD preclusion in Section D) were moved to a separate listing in Section B of the permit if they had not been previously;
- An alternate operating scenario was added to Section H of the permit to make it clear which units have the ability to burn propane during periods of curtailment, this also included updates to KYEIS for each of the included units to ensure propane use could be tracked;
- Updates to 401 KAR 63:010 and 40 CFR 63, Subpart SSSS permit language to reflect changes to the regulations;
- Updates to all permit language to make it consistent and clear;
- Changes to visual emission observations – the permittee is now required to perform a monthly Method 9 observation on each unit with opacity requirements except for EP 01, EP 49 and EP 140;
- Reduction to the PSD PM, PM_{10}, and $PM_{2.5}$ preclusion limits to reflect the additional contemporaneous projects that occurred between establishment of those limits and start up of all units in the PSD project. Accordingly this reduced the limit by the PTE of the Scalped Chip Briquetting System Project (2017), the Flux Box Baghouse Duct Burner Project (2017), the Fire Loop Pump Engine East Project (2018), the DC4 Sow Dryers #1 & #2 Project (2018), and the two Decoater Baghouse Alkaline Reagent Silos such that these additional projects would not require additional tracking. No other changes to the PSD preclusion limits have been made;
- Changes to testing to reflect similarity between units as applicable;
- Update to the construction authorization in Section G of the permit to reflect only those units that have yet to be constructed or demonstrate initial compliance;
- Reconciled emission point numbers with what was already saved in KYEIS: Scalper 2 is now EP154 (previously EP124 in the permit), Remelt UPS Emergency Generator Engine is now EP124 (previously EP125 in the permit), Cold Mill 4 Storage Tank: Clean Coolant is now EP166 (previously EP154 in the permit); and Fire Water Loop Pump Engine – East is now EP188.

Additionally, PSD testing requirements for certain DC4 Line A and Line B units have been updated in the permit based on information provided to the Division on July 1, 2019 and May 22, 2019. Based on these submittals, several units are considered "representative" of each other for the purposes of testing (excluding testing performed for 40 CFR 63, Subpart RRR, which has specific requirements for representative units). The unit pairs are: Decoater A and Decoater B, Holder A and Holder B, Sidewell Furnaces A1 and B1, and Sidewell Furnaces A2 and B2. If the information pertaining to these units changes from what was previously provided, the permittee should provide an updated request for determination, or the units will no longer be considered "representative". Specifically, this modified the testing requirements to require alternate "representative" units to be tested during permit required testing events to demonstrate compliance. Any test performed on a single "representative unit" will provide a compliance demonstration for both units that it represents.

The changes made in this significant revision/renewal do not affect the previously established Operational Limitations to ensure the project does not trigger BACT requirements for PM, PM_{10}, and $PM_{2.5}$. The previously established Emission Limitations in Section D.6. were reduced by the PTE of the contemporaneous projects added since the limits were originally established. With the start up of the final unit involved in the Hot Mill/Cold Mill Expansion and Remelt 2 project on May 19, 2020, the contemporaneous window has now closed, and new projects need only be compared to the significant emission rate to see if PSD is triggered.

The BACT determinations, air dispersion modeling analysis and narrative have not appreciably changed since the project was permitted in V-13-020 R1 and again in V-13-020 R2. Only substantial changes or additions to the previously made determinations are discussed in this section.

I. Captured and Uncaptured Emissions

Nearly all of the emission points involved in the Remelt 2 and Hot Mill/Cold Mill expansion project and the associated netting calculation involve captured emissions and uncaptured emissions. The emission limitations set in the permit for each of the processes include both captured and uncaptured emissions (i.e. "total emissions") from a process. The only change to previously assumed capture efficiencies is to the Decoaters A & B – due to the interlock on the receiving and exiting shreds, there are expected to be no uncaptured emissions. Previously determined capture and building control emissions continue to be that same as during initial permitting. The associated capture efficiency and building control efficiency to be used for all units in the project are identified in Table 1, below. Compliance with the capture efficiency requirements is demonstrated through testing, monitoring, and recordkeeping requirements in **Section B** of the permit for each process that has an uncaptured component. The capture efficiency is assumed to be one number for all of the pollutants emitted by the process.

Table 1 – Capture and Building Control Efficiency

EP	Description	Capture Efficiency	Building Control Efficiency
07	Reversing Mill	52.4%	PM – 70%; PM_{10} – 50%; $PM_{2.5}$ –15%
08	Finishing Mill	95%	PM – 70%; PM_{10} – 50%; $PM_{2.5}$ –15%
30	Cold Mill 1	90%	PM – 70%; PM_{10} – 50%; $PM_{2.5}$ –15%
32	Cold Mill 2	90%	PM – 70%; PM_{10} – 50%; $PM_{2.5}$ –15%
125	Pusher Furnace 4	100%	N/A
127	Shredding System A	98%	90%
128	Decoater A	100%	N/A
129	Sidewell A1	98%	90%
130	Sidewell A2	98%	90%
131	Holder A	100%	N/A
132	Flux Box A	100%	N/A
133	Shredding System B	98%	90%

EP	Description	Capture Efficiency	Building Control Efficiency
134	Decoater B	100%	N/A
135	Sidewell B1	98%	90%
136	Sidewell B2	98%	90%
137	Holder B	100%	N/A
139	Prime Furnace	100%	N/A
140	Dross House	98%	0%
141	DC Generator Engine #1	100%	N/A
142	DC Generator Engine #2	100%	N/A
145	Remelt 2 Filter Box Pre-Heater	0%	0%
154	Scalper 2	100%	N/A
161	Cold Mill 4	98%	PM – 70%; PM_{10} – 50%; $PM_{2.5}$ –15%
155-160 & 166	Cold Mill 4 Area Storage Tanks	0%	0%
162	Cold Mill 4 Area Heating Systems	0%	0%
163	Cold Mill 4 Filtering Aid Handling System	0%	0%
164	Cold Mill 4 Area Cooling Tower	0%	0%
165	Remelt 2 Diesel Fuel Storage Tank	0%	0%
IA	Remelt 2 Casting Bay Cooling Tower	0%	0%

II. PSD Netting Analysis

The potential emissions of regulated air pollutants from the Remelt 2 and Hot Mill/Cold Mill expansion project have been updated and are located in **Table 2**. A brief description of the PSD analysis of each pollutant is also included, PSD requirements are discussed more thoroughly in **BACT ANALYSIS**, below.

Table 2 – Remelt 2 and Hot Mill/Cold Mill Project Emissions

Pollutant	Potential to Emit (PTE)	Significant Emission Rate (SER)	PSD Applicable
	Tons per year (tpy)		
CO	310.7	100	Yes
GHGs (CO_2e)	179,877	75,000	Yes
NO_x	194.9	40	Yes
PM (filterable, only)	61.6	25	Yes
PM_{10} (filterable and condensable)	82.6	15	Yes
$PM_{2.5}$ (filterable and condensable)	67.9	10	Yes
SO_2	3.8	40	No
VOC	252.8	40	Yes

For the pollutants for which the potential to emit from the project exceeded the SER (**Table 2**), the permittee performed netting. Logan considered projects within the contemporaneous netting period for creditable increases and/or decreases along with the new project increases to calculate the net emissions increase. This contemporaneous period ended on May 19, 2020 with the startup of the last unit in the project. The pollutants include CO, GHGs, NO_x, PM, PM_{10}, $PM_{2.5}$, and VOC. The projects in **Table 3** were within the contemporaneous netting period. As part of the original netting process, Logan made revisions to the historical baseline values for Cold Mills 1 & 2 and the Finishing Mill. This baseline adjustment did not involve emissions or control efficiencies involved in the 250 ton limits in **Section D** of the permit, did not cause an exceedance of an emission limitation that was legally enforceable during the baseline period, and was therefore creditable. The project involving Scalper 2 was also reevaluated as a Scalping Process Improvement Project rather than simply the addition of new equipment to account for the way this process operates. **Table 3** identifies the projects and the creditable emission changes from each project. The totals have been updated to reflect any recent testing completed for units involved in the netting analysis.

Table 3 – Contemporaneous Net Emissions

Project	Creditable Contemporaneous Project Net Emissions Changes Tons per year (tpy)							Baseline Period Selected
	PM	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO	GHG	
1. Scalping Process Upgrade (2015)	4.38	3.50	2.29	N/A	2.85	N/A	N/A	Dec 2013-Dec 2015
2. Remelt Area Emergency Generator (2014)	4.15×10^{-5}	5.38×10^{-3}	5.38×10^{-3}	0.018	0.023	0.194	61.84	N/A New Unit
3. Coating Line RTO Installation (2014)	3.52	3.29	2.72	35.2	2.11	69.1	-691	Apr 2011 – Mar 2013
4. Sanitary Systems Emergency Generator (2013)	2.33×10^{-3}	2.33×10^{-3}	2.33×10^{-3}	0.025	0.050	0.012	10.31	N/A New Unit
5. Cold Mill 1 & 2 RCRS Installation (2011)	-40.9	-70.0	-48.2	N/A	-7.20	N/A	N/A	Jan 2008 – Dec 2009
6. Finishing Mill Fume Exhaust Upgrade (2011)	-32.8	-30.3	-27.8	N/A	N/A	N/A	N/A	May 2009 – Apr 2011
7. CM2 Emergency Generator (2016)	0.012	0.012	0.012	0.160	4.10×10^{-3}	0.051	27.19	N/A New Unit
8. Gatehouse Emergency Generator (2016)	3.43×10^{-3}	3.43×10^{-3}	3.43×10^{-3}	0.081	4.36×10^{-3}	0.081	17.39	N/A New Unit
9. Recycle Emergency Generator (2017)	3.47×10^{-5}	4.50×10^{-3}	4.50×10^{-3}	2.88×10^{-3}	9.62×10^{-3}	2.58×10^{-3}	51.79	N/A New Unit
10. Scalped Chip Briquetting (2017)	0.711	0.359	0.359	N/A	N/A	N/A	N/A	N/A New Unit
11. Flux Box Baghouse Duct Burner (2017)	0.024	0.098	0.098	1.29	0.07	1.08	1,539	N/A New Unit
12. Fire Loop Pump Engine East (2018)	0.022	0.022	0.022	0.57	0.02	0.18	113	N/A New Unit
13. DC4 Sow Dryers #1 & #2 (2018)	0.053	0.212	0.212	1.37	0.15	2.83	3,334	N/A New Unit

As a result of the netting calculations, the net project emissions increase for NO_x, CO, VOC, and GHG exceeded the SER and a Best Available Control Technology (BACT) analysis must be performed for each pollutant. The BACT evaluation for each process follows below. The net project emissions increase for PM, PM_{10}, and $PM_{2.5}$ does not exceed the SER. As such, these pollutants are not subject to the PSD BACT requirements. **Table 4**, below, identifies the net project emissions increase using the information in **Tables 2 and 3**.

Table 4 – Net Emissions Increase from the Remelt 2 and Hot Mill/Cold Mill Expansion Project

Pollutant	Total Project Emissions Increase	Contemporaneous Emissions Changes	Net Emissions Increase	SER	PSD Applicable
	Tons per year (tpy)				
CO	310.7	73.52	384.22	100	Yes
GHGs (CO_2e)	179,877	4,464	184,341	75,000	Yes
VOC	252.8	-1.91	250.89	40	Yes
NOx	194.9	38.66	233.56	40	Yes
PM (filterable, only)	61.6	-66.6	-5.0	25	No
PM_{10} (filterable and condensable)	82.6	-90.4	-7.7	15	No
$PM_{2.5}$ (filterable and condensable)	67.9	-70.4	-2.4	10	No

The PSD preclusion limits established for PM, PM_{10}, and $PM_{2.5}$ in Section D.4. of the permit have been reduced by the project totals of the most recent contemporaneous projects so that no new emission tracking is required. This reduction included the PM, PM_{10}, and $PM_{2.5}$ PTE from the Scalped Chip Briquetting Project, the Flux Box Baghouse Duct Burner Project, the Fire Loop Pump Engine East Project, the DC4 Sow Dryers #1 & #2 project, and the two Decoater Baghouse Alkaline Reagent Silos.

III. Best Available Control Technology (BACT) Analysis

A. Background

The Division reviewed the information submitted by Logan, the RACT/BACT/LAER Clearinghouse (RBLC), and other sources in making BACT determinations for all the pollutants subject to PSD review. In light of the recent stack test data provided from initial performance testing and changes to equipment sizing, the Division reevaluated previously made BACT determinations for VOC, CO, NO_x, and GHGs as appropriate for each unit. Any previously made BACT determinations that have not changed will not be repeated here. Logan followed the same "top-down" process for the revised BACT as performed previously.

A summary of the updated BACT analyses and Division decisions is outlined below.

B. BACT for CO

1. General Control Measures for CO

Thermal oxidation is an available control measure for CO emissions resulting from processes involving combustion of fuel. Thermal oxidation is the process of oxidizing combustible materials by raising the temperature of the material above its auto-ignition point in the presence of oxygen and maintaining it at high temperature for sufficient time to complete combustion, converting CO to carbon dioxide and water. Thermal oxidizers used to control gases coming from a process where combustion is incomplete are also referred to as afterburners and are used to oxidize combustible contaminants in a combustion chamber, reducing CO emissions.

Catalytic oxidation (CatOx) is an available control measure for CO. A catalytic oxidation system is designed such that the combustion gas passes over a catalyst bed where CO is converted to CO2. Catalytic oxidation allows oxidation to take place at a faster rate and at a lower temperature than thermal oxidation. Catalytic oxidation is effective in the range of 600°F to 800°F.

Good Combustion and Operating Practices (GCOP) are an available control measure for CO. A GCOP plan promotes efficiency: optimizing fuel usage and minimizing pollutant generation by ensuring proper operation of the combustion device.

2. **Decoaters A & B**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of in-process afterburners and GCOP constitutes BACT for CO for this equipment. The permit establishes limitations on CO emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. Additionally, the permit contains requirements to maintain a minimum afterburner combustion chamber temperature and residence time and to operate and maintain the control devices associated with the Decoaters according to the manufacturer's written recommendations, instructions, and/or operating manual(s) unless alternatives are approved in writing by the Division. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Logan conducted searches of U.S. EPA's RACT/BACT/LAER Clearinghouse (RBLC) and air permits of similar sources to identify possible controls for CO. The search revealed that similar facilities did not use add-on control devices to comply with limitations on emissions of CO, but integral afterburners are available and in use for control of CO emissions from decoating operations.

The RBLC lists a similar unit with a lower BACT limit of 0.02 lb/ton (TX-0459, Alcoa – San Antonio). This limit is an approximation of the expected rate of CO emissions from natural gas combustion alone. Considering the limited amount of information on the nature of this source, the Division has concluded that this BACT limitation most likely applies to emissions from natural gas combustion, alone, without considering the contribution from off-gas combustion. The Division has therefore determined that this limit is not comparable to the BACT limit established for Logan.

Other facilities listed in the RBLC database have lower BACT limits, but through initial testing performed on Logan's Decoaters, it has become clear that either these limits are on natural gas combustion alone, or the scrap feed mixture greatly differs between facilities.

The only comparable BACT limit that the Division was able to locate was the limit of 13.3 lb/hr for Novelis Berea. This limit is shared between Holding furnaces, degassers, and decoating furnaces. Removing contributions from the other sources, an equivalent limit for the degassers would be 11.65 lb/hr. This facility is also equipped with a urea-based selective non-catalytic reduction (SNCR) NOx control system used to limit NOx to 13.0 lb/hr. Through conversations with this facility and stack testing, it is clear that NOx and CO emissions are a trade-off – if you optimize one, the other increases, and vice versa.

Because Logan's NOx emission limit is so much lower that Novelis' and achievable in practice, a higher CO emission limit based on performance test data may be appropriate.

An in-process afterburner is already a part of the Decoaters' design and will control emissions of CO.

Catalytic oxidation was previously determined to be technically infeasible, however, in the process of re-evaluating BACT for the decoaters, Logan reached out to control equipment vendors regarding CatOx, who indicated that the control technology was, in fact, technically feasible for their gas stream. However, taking into account the quoted cost of the control equipment, and analyzing both separate gas streams and combined gas streams with other units, the annualized control cost of implementing catalytic oxidation would exceed $14,000 per ton of CO removed, therefore it is not considered cost effective.

GCOP ensuring that natural gas usage is minimized and combustion parameters are tuned correctly are feasible and will be implemented at the Decoaters.

The Division has determined that BACT for the Decoaters consists of an in-process afterburner, GCOP, and emission limits. CO BACT limits for the Decoaters will be total CO emissions (captured and uncaptured) for each Decoater of 14.14 lb/hr. Long term limits will be total CO emissions of 61.94 tpy each on a rolling 12-month basis. These emission limits were set using the 90% UPL of the October 2018 performance test on Decoater A.

3. **Sidewell Furnaces A1, A2, B1, & B2**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of GCOP constitutes BACT for CO for the listed equipment. The permit establishes limitations on CO emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Logan conducted searches of the RBLC and air permits of similar sources to identify possible controls for CO. The search revealed that similar facilities did not use add-on control devices to comply with limitations on emissions of CO.

Thermal oxidation of combustion products alone continues to be infeasible because it would require use of supplemental natural gas to maintain the high required temperature, producing the same pollutants as the units it is designed to control. Implementation of thermal oxidation would likely cause adverse environmental impacts in excess of the achieved environmental benefit, therefore it is not considered viable.

Catalytic oxidation is technically feasible for control of CO emissions from the Sidewell Furnaces, however, Logan demonstrated to the Division that the annualized control cost of implementing catalytic oxidation would exceed $30,000 per ton of CO removed, therefore it is not considered cost effective.

GCOP ensuring that natural gas usage is minimized and combustion parameters are tuned correctly are feasible and will be implemented at the listed units.

For Sidewell Furnaces A1, A2, B1, and B2, unit specific emission limits are not available in the RBLC for similar sources (except for limits based on AP-42 emission factors). For Sidewell Furnaces A1, A2, B1, and B2, the Division has determined that BACT consists of GCOP and emission limits. CO BACT limits for Sidewell Furnaces A1, A2, B1, and B2 will be total CO emissions (captured and uncaptured) of 0.52 lb/ton of aluminum, each. Long term limits will be total CO emissions of 34.66 tpy each on a rolling 12-month basis. These emission limits were set using the 95% UPL of the October 2018 performance test on Sidewell A1.

4. **Holding Furnaces A & B**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of GCOP continues to constitute BACT for CO for the listed equipment. The permit establishes limitations on CO emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

With this revision, and the decrease in burner size from a total of 26 MMBtu to 24 MMBtu, the emission limitations for CO have been lowered to reflect this decrease.

For Holding Furnaces A & B, the Division has determined that BACT consists of GCOP and emission limits. CO BACT limits for Holding Furnaces A & B will be lowered to 0.042 lb/ton of aluminum, each. Long term limits will be lowered to total CO emissions of 8.61 tpy each on a rolling 12-month basis.

C. BACT for VOC

1. **General Control Measures for VOC**

Incineration: Incineration (thermal oxidation) is a process of burning gases, such as VOCs, at a high temperature to reduce the gas into CO_2 and water. Temperature of the gas is raised in the presence of oxygen and maintained at a high temperature to complete combustion. Per the U.S. EPA Air Pollution Control Technology Fact Sheet for Thermal Incinerator, destruction of VOC efficiencies range from 98 to 99.99 percent effective for this type of control. Design parameters such as chamber temperature, residence time, inlet VOC loading, compounds, and mixing affect the final destruction efficiency. Thermal incinerators are not well suited to highly variable flow waste gas streams.

Add-on air pollution controls that accomplish incineration of pollutants include regenerative thermal oxidizers (RTOs), regenerative catalytic oxidizers (RCO), recuperative thermal oxidizers, and recuperative catalytic oxidizers. All of these controls are known to reduce VOC in waste gas streams.

Scrubbers: These controls, which can be used for particulate removal, can also be used for the removal of other pollutants, such as VOCs. For the removal of organics, a liquid solvent is sprayed through an organics containing gas stream. Contact between the absorbing liquid (solvent) and the vent gas can occur in a number of different configurations (counter current spray tower, scrubber, or packed or plate columns). For wet scrubbers, the process gas stream is either sprayed with a liquid or forced into contact with

a liquid in order to impact and remove particles entrained in the gas. The liquid droplets, containing the captured organic, are collected from the gas stream in a mist eliminator. The resulting liquid must then be treated. Dry scrubbers, that use alkaline slurries or sorbents, are generally used for the removal of acid gases and their precursors such as sulfur oxides (SO_2 and SO_3) and Hydrogen Chloride (HCl).

Carbon Adsorption: This is a process by which gas molecules are passed through a bed of solid carbon particles and are held on the surface of the solids by attractive forces. Adsorption is a surface-based process and in this form, activated carbon, that has a high number of tiny low-volume pores (i.e., it is microporous), is used as the adsorbent. The adsorbed gas molecules can be removed from the adsorbent by heat or vacuum when the adsorbent is regenerated. Activated carbon is commonly used to remove VOCs from a gas stream.

Absorption: This is a process whereby certain components in a gas stream (such as VOCs) are removed by dissolving them into a liquid. The gas may be simply dissolved within the liquid (straight dissolution) or irreversibly reacted with a chemical liquid absorbent (dissolution with chemical reaction). This process differs from adsorption in that in adsorption, the pollutant collects on a solid surface. In absorption the pollutant passes into the liquid and is distributed throughout the liquid phase. Absorption is often used in the control of acid gases such as sulfuric acid gas (H_2SO_4), hydrochloric acid gas (HCl), and nitric acid gas (HNO_3).

Condensation: This is a technique where the temperature of a waste gas stream is lowered at constant pressure or pressure is increased at a constant temperature to force VOC(s) to change from the gas or vapor state to a liquid state. The VOC(s) in liquid form is then collected. Condensers are mostly used when there are only one or two VOCs in the waste gas stream. There are two general types of condensers: Conventional systems that use chilled water; and refrigeration/cryogenic units that use chemical refrigerants, even liquid nitrogen, to achieve extremely low temperatures. Condensation is often used when recovered VOCs have high economic value. They can also be used to concentrate the VOC stream before sending it to a second control device such as an RTO for thermal destruction.

Combustion Optimization: This is a work practices method for minimizing fuel use and emissions from the fossil fuels. If the combustion and combination of necessary elements are not controlled, the combustion of the fuel is incomplete and undesirable emissions, such as VOCs, form. By taking measures to optimize the combustion process, pollutants are minimized. Preparation of a specific plan for achieving combustion optimization, such as a Good Combustion and Operation Practices (GCOP) Plan, that defines, measures, and verifies the use of operational and design practices specific to a piece of equipment for the reduction of a specific pollutant provides verifiable implementation of this work practices method. Although it is not an add-on control, efficient operation of combustion equipment is often an effective means to reduce VOCs and other combustion related pollutants.

2. **Decoaters A & B**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of in-process afterburners and GCOP constitutes BACT for VOC for this equipment. The permit establishes limitations on VOC emissions

from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. Additionally, the permit contains requirements to maintain a minimum afterburner combustion chamber temperature and residence time and to operate and maintain the control devices associated with the Decoaters according to the manufacturer's written recommendations, instructions, and/or operating manual(s) unless alternatives are approved in writing by the Division. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Logan conducted searches of U.S. EPA's RACT/BACT/LAER Clearinghouse (RBLC) and air permits of similar sources to identify possible controls for VOC. The search revealed that similar facilities did not use add-on control devices to comply with limitations on emissions of VOC, but integral afterburners are available and in use for control of VOC emissions from decoating operations.

An in-process afterburner is already a part of the Decoaters' design and will control emissions of VOC.

Catalytic oxidation was previously determined to be technically infeasible, however, in the process of re-evaluating BACT for the decoaters, Logan reached out to control equipment vendors regarding CatOx, who indicated that the control technology was, in fact, technically feasible for their gas stream. However, taking into account the quoted cost of the control equipment, and analyzing both separate gas streams and combined gas streams with other units, the annualized control cost of implementing catalytic oxidation would exceed $50,000 per ton of VOC removed, therefore it is not considered cost effective.

GCOP ensuring that natural gas usage is minimized and combustion parameters are tuned correctly are feasible and will be implemented at the Decoaters.

VOC BACT limits for the Decoaters will remain unchanged and remain at total VOC emissions (captured and uncaptured) for each Decoater of 1.99 lb/hr. Long term limits will also remain unchanged at total VOC emissions of 8.72 tpy each on a rolling 12-month basis.

3. **Sidewell Furnaces A1, A2, B1, & B2**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of GCOP constitutes BACT for VOC for the listed equipment. The permit establishes limitations on VOC emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Logan conducted searches of the RBLC and air permits of similar sources to identify possible controls for VOC. The search revealed that similar facilities did not use add-on control devices to comply with limitations on emissions of VOC.

Thermal oxidation of combustion products alone continues to be infeasible because it would require use of supplemental natural gas to maintain the high required temperature,

producing the same pollutants as the units it is designed to control. Implementation of thermal oxidation would likely cause adverse environmental impacts in excess of the achieved environmental benefit, therefore it is not considered viable.

Catalytic oxidation is technically feasible for control of VOC emissions from the Sidewell Furnaces, however, Logan demonstrated to the Division that the annualized control cost of implementing catalytic oxidation would exceed $100,000 per ton of VOC removed, therefore it is not considered cost effective.

GCOP ensuring that natural gas usage is minimized and combustion parameters are tuned correctly are feasible and will be implemented at the listed units.

For Sidewell Furnaces A1, A2, B1, and B2, unit specific emission limits are not available in the RBLC for similar sources (except for limits based on AP-42 emission factors). For Sidewell Furnaces A1, A2, B1, and B2, the Division has determined that BACT consists of GCOP and emission limits. VOC BACT limits for Sidewell Furnaces A1, A2, B1, and B2 will be total VOC emissions (captured and uncaptured) of 0.14 lb/ton of aluminum, each. Long term limits will be total VOC emissions of 9.37 tpy each on a rolling 12-month basis. These emission limits were set using the 95% UPL of the October 2018 performance test on Sidewell A1.

4. **Holding Furnaces A & B**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division has determined that the use of GCOP continues to constitute BACT for VOC for the listed equipment. The permit establishes limitations on VOC emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Catalytic oxidation is technically feasible for control of VOC emissions from Holding Furnaces A & B, however, Logan demonstrated to the Division that the annualized control cost of implementing catalytic oxidation would be excessive per ton of VOC removed, therefore it is not considered cost effective.

For Holding Furnaces A & B, the Division has determined that BACT consists of GCOP and emission limits. VOC BACT limits for from Holding Furnaces A & B will be 0.031 lb/ton of aluminum, each. Long term limits will be total VOC emissions of 6.26 tpy each on a rolling 12-month basis. These emission limits were set using the 99% UPL of the September 2018 performance test on Holding Furnace A.

D. BACT for NOx

1. **General Control Measures for NOx**

Selective Catalytic Reduction (SCR) is an available control measure for NOx emissions in post-combustion streams. Ammonia is injected upstream of a catalyst bed in which ammonia and NOx react to form nitrogen and water. The optimum temperature range for operation of SCR is 575°F to 750°F. In this range, NOx control efficiencies of 70 to 90 percent can be achieved.

Selective Non-catalytic Reduction (SNCR) is an available control measure for NOx emissions in post-combustion streams. Urea or ammonia is injected into the stream which reacts with NOx to produce nitrogen and water. The optimum temperature range for operation of SNCR is 1,600°F to 2,000°F, but the bottom of the range can be lowered to at least 1,200°F through the use of proprietary chemicals. In this range, NOx control efficiencies of 30 to 65 percent can be achieved.

Good Combustion and Operating Practices (GCOP) are an available control measure for NOx. A GCOP plan promotes efficiency: optimizing fuel usage and ensure that excess air and flame temperature are minimized, reducing emissions of NOx.

2. **Sidewell Furnaces A1, A2, B1, & B2**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division determines that the use of GCOP and low-NOx burners constitutes BACT for NOx for the listed equipment. The permit establishes limitations on NOx emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

Logan conducted searches of the RBLC, air permits of similar sources, and industry literature to identify possible controls for NOx. The search revealed that similar facilities did not use add-on control devices to comply with limitations on emissions of NOx.

GCOP ensuring that excess air and flame temperature are minimized are feasible and will be implemented at the each of the listed units.

For Sidewell Furnaces A1, A2, B1, and B2, unit specific emission limits are not available in the RBLC for similar sources (except for limits based on AP-42 emission factors). For Sidewell Furnaces A1, A2, B1, and B2, the Division has determined that BACT consists of GCOP and emission limits. NOx BACT limits for Sidewell Furnaces A1, A2, B1, and B2 will be total NOx emissions (captured and uncaptured) of 0.22 lb/ton of aluminum, each. Long term limits will be total NOx emissions of 14.63 tpy each on a rolling 12-month basis. These emission limits were set using the 99% UPL of the October 2018 performance test on Sidewell A1.

3. **Holding Furnaces A & B**

Decision: Consistent with the BACT evaluation conducted and submitted by the applicant, the Division determines that the use of GCOP and low-NOx burners constitutes BACT for NOx for the listed equipment. The permit establishes limitations on NOx emissions from these units and requires testing, monitoring, and recordkeeping to ensure compliance with those limits. The permit also requires the development of a GCOP plan and incorporation of the GCOP plan into the facility's standard operating procedures (SOP).

With this revision, and the decrease in burner size from a total of 26 MMBtu to 24 MMBtu, the emission limitations for NOx have been lowered to reflect this decrease.

For Holding Furnaces A & B, the Division has determined that BACT consists of GCOP and emission limits. NOx BACT limits for Holding Furnaces A & B will be lowered to 0.032 lb/ton of aluminum. each. Long term limits will be lowered to total NOx emissions of 6.52 tpy each on a rolling 12-month basis.

E. BACT for GHG

1. General Control Measures for GHG

Carbon capture and storage (CCS) is a potential control measure for GHG. Implementation of CCS requires GHG separation, transportation, and a viable storage location.

- CO_2 Capture: CO_2 can be captured by low pressure scrubbing with solvents, solid sorbents, or membranes. Of these capture media, only solvents have been demonstrated on a commercial scale.
- CO_2 Transport: CO_2 must be compressed to pipeline pressure (around 2,000 psia) for transportation, requiring a significant amount of power. Pipelines are the most viable method of CO_2 transportation.
- CO_2 Storage: CO_2 can be injected into subsurface formations for long-term sequestration. Underground injection of CO_2 can also boost production efficiency of oil and gas by re-pressurizing oil reservoirs or increasing oil mobility.

To successfully implement CCS, it would be necessary to convey CO_2 from Logan to Tinsley, Mississippi via a new pipeline in which CO_2 could be transported to oil fields along the Gulf Coast. The Division has determined that the cost of capturing, pressurizing, and constructing a pipeline for the purpose of CCS implementation is prohibitive. For these reasons, CCS is not considered an available control technology for this project.

The selection of fuel is an available measure for control of CO_2 emissions. Natural gas has the lowest emission rate of CO_2 per unit of energy. All of the new units associated with this project which combust fuel will combust natural gas to minimize emissions of GHG.

GCOP are an available control measure for GHG. A GCOP plan promotes efficiency by optimizing fuel usage and minimizing pollutant generation by ensuring proper operation of the combustion device. All new units associated with this project will implement GCOP and meet specific design and operation requirements in Section B for each unit.

The Division has determined that BACT is a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing NOx, CO, and GHG emissions. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall include, but not be limited to: a list of combustion optimization practices and a means of verifying that the practices have occurred, a list of combustion and operation practices to be used to lower energy consumption and a means of verifying that the practices have occurred, and a list of the design choices determined to be BACT and the verification that designs were implemented in the final construction.

2. Sidewell Furnaces A1, A2, B1, & B2

Decision: With this revision, and the increase in burner size from 29 MMBtu/hr to 33 MMBtu/hr, the emission limitations for GHG have been increased to reflect this increase.

For Sidewell Furnaces A1, A2, B1, and B2, the Division has determined that BACT consists of GCOP and emission limits. GHG BACT limits for Sidewell Furnaces A1, A2, B1, and B2 will be increased to 16,925 tpy each on a rolling 12-month basis.

The design and operational requirements previously established will remain unchanged.

3. **Holding Furnaces A & B**

Decision: With this revision, and the decrease in burner size from a total of 26 MMBtu to 24 MMBtu, the emission limitations for GHG have been lowered to reflect this decrease.

For Holding Furnaces A & B, the Division has determined that BACT consists of GCOP and emission limits. GHG BACT limits for Holding Furnaces A & B will be lowered to 12,309 tpy each on a rolling 12-month basis.

The design and operational requirements previously established will remain unchanged.

F. BACT for DC4 Emergency Generator Engines #1 & #2

Emergency generators are sources of CO, NOx, VOC, and GHG. Emergency generators are used infrequently, not allowing for the start-up time generally required for efficient operation of add-on control devices.

With this revision, and the decrease in engine size from 224 HP to 47 HP, the emission limitations have been changed to reflect the change in size and specifications.

For the emergency generators, the Division has determined that BACT consists of GCOP. CO, NOx, VOC, and GHG emissions will be individually limited to the values in the table below, based on vendor guarantees for the individual units.

Unit	g NOx/ hp-hr	NOx TPY	g CO/ hp-hr	CO TPY	g VOC/ hp-hr	VOC TPY	CO_2e TPY
DC4 Emergency Generator #1	1.57	0.041	133.4	3.46	2.87	0.075	14.53
DC4 Emergency Generator #2	1.57	0.041	133.4	3.46	2.87	0.075	14.53

G. PSD Modeling Analysis

This updated air quality modeling analysis submitted for the revised project continued to demonstrate for the Class II area that emissions of the applicable pollutants (CO, NOx, and NOx as a precursor to $PM_{2.5}$) from the proposed project will not: 1) cause or significantly contribute to a violation of the National Ambient Air Quality Standards (NAAQS), 2) cause or significantly contribute to ambient concentrations that are greater than allowable PSD increments (NO_2 only), or 3) cause any other additional adverse impacts to the surrounding area (i.e., impairment to visibility, soils and vegetation and air quality impacts from general commercial, residential, industrial and other growth associated with the source).

V-20-004 Emission Summary		
Pollutant	2019 Actual (tpy)	PTE V-20-004 (tpy)
CO	169.68	575.31
NOx	281.42	800.96
PT	149.46	284.68
PM_{10}	170.97	340.45
$PM_{2.5}$	145.34	277.75
SO_2	2.53	7.58
VOC	413.25	894.56
Lead	0.05	0.12
Greenhouse Gases (GHGs)		
Carbon Dioxide	248,200	728,737
Methane	4.68	13.84
Nitrous Oxide	0.47	1.40
CO_2 Equivalent (CO_2e)	248,455	729,501
Hazardous Air Pollutants (HAPs)		
Arsenic (and Compounds)	0.40	0.87
Formaldehyde	0.47	1.31
Hexane; N-Hexane	Not reported	9.23
Hydrochloric Acid	126.40	480.67
Methanol	Not Reported	5.34
Combined HAPs:	256.01	498.51

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
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
MMBtu/hr – million BTU per hour