



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Howmet Aerospace, Barberton, Ohio

FROM: Tess Russell, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Howmet Aerospace

Facility Location: 842 Norton Avenue, Barberton, Ohio 44203

Date of Inspection: March 29, 2023

EPA Inspector(s):

1. Tess Russell, Environmental Engineer
2. Patrick Miller, Environmental Engineer

Other Attendees:

1. Stacy Wahl, EHS Manager, Howmet
2. Connor Lynch, EHS Engineer, Howmet
3. Chris Brinkerhoff, Maintenance Superintendent, Howmet
4. Jimmy Webb, Plant Manager for Wheel Department, Howmet
5. Nathan Goebel, Plant Manager for Casting House, Howmet
6. Evan Wagner, EHS in training, Howmet

Contact Email Address: stacy.wahl@howmet.com; connor.lynch@howmet.com

Purpose of Inspection: To determine compliance with the facility's federally enforceable permit-to-install and operate with synthetic minor limits (FEPTIO), and with 40 C.F.R. Part 63, Subpart RRR – National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Secondary Aluminum Production

Facility Type: Fabricated Metal Product Manufacturer

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Regulations Central to Inspection: FEPTIO (Permits #P0122211, #P0123294, and #P0127414); Ohio SIP; 40 C.F.R. Part 63, Subpart RRR

Arrival Time: 1:10 PM

Departure Time: 3:30 PM

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided Small Business Resource Information Sheet
- ☐ Small Business Resource Information Sheet not provided.
- ☒ Provided CBI warning to facility

The following information was obtained verbally from facility representatives unless otherwise noted.

Company Ownership: The facility first opened in the 1980s under dual ownership of B&C Research and Alcoa. In 2010, Alcoa owned 100% of the business. In 2016, Alcoa split into an aluminum department under Alcoa and an engineering department under Arconic. In 2018, the facility began doing business under the name Howmet Aerospace, which is the parent company of the subsidiary company, Alcoa Wheel and Transportation Products, Inc. The facility still maintains the two legal names of B&C Castings / B&C Research for permitting purposes.

Process Description:

Howmet Aerospace produces Alcoa commercial truck wheels. The facility operates 24/7 processing about 365k pounds/day (lb/day) through the casting machine [Casting Department], which is equivalent to an average of 7.6 tons/hour (tph). The permit states the furnace melting capacity is 18,000 lb/hr, or 9 tph. Produced ingots are cut into billets at a different facility in Cleveland, but the wheels come back to Howmet for machining [Wheel Department]. Currently the department processes approximately 50k wheels/month, but the rate has in the past been nearly 150k wheels/month.

On-site chips/scrap (70-80%), returned wheels, and occasionally other scrap from outside the facility (30%) are the raw materials for the melting furnace's continuous, horizontal caster. The facility currently considers this mostly clean charge. Two casting lines (North and South) allow for the total production of 8 strands of 11-inch ingot. Strands then enter the homogenizing oven at 1000 degrees Fahrenheit for approximately 4 hours, soak for 4 hours, then cool down before undergoing an automated ultrasonic QAQC check. Passing ingots go to Cleveland to become billets, while failing ingots are re-fed into the melting furnace.

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Billets return to Howmet and go to the Wheel Department for processing (drilling, pre-stretch, machining, etc.) and coating/polishing, if desired by the customer.

Staff Interview: The caster began operating in 2013. Its regenerative burners have “zero emissions” because they utilize the hot air from the furnace, however, the furnace can also run on natural gas if necessary. The burner catalysts are replaced every 75 days, according to facility representatives, and monitored via pressure differentials. All gases exiting the melting furnace go through the regenerative catalyst bed, which according to facility representatives, should allow impurities to burn.

A salt flux (Amlocks 90) is added to the melting furnace to promote skimming and dross removal. On each of two separate lines, melted material goes through a degasser before getting casted; the degasser agitates the molten metal, adds argon (inert gas), and adds more salt flux to induce more impurity removal. Because of salt flux addition, both the melting furnace and in-line degassers have potential to emit HCl. The facility’s permit has salt flux addition limits of 15.6 lb salt flux/hr at the melting furnace and 2.65 lb salt flux/hr at each in-line degasser. Additionally, the facility has a limit of 0.96 lb chlorine per ton of aluminum charge/feed. Skimmed dross is hauled off-site to get reprocessed; about 10k pounds of dross is removed each day. Stored dross has no air pollution controls.

After casting, ingots enter the homogenizing oven with a packet of ammonium fluoroborate, which can create hydrofluoric acid (HF) gas emissions. The homogenizing oven has no air pollution controls. The facility’s FEPTIO has an HF emission limit (9.79 tpy HF) and AFB usage limits (26,280 lb AFB/yr).

The last stack test performed on the melting furnace/caster stack was in 2017. The facility intends to retest in May 2023 to investigate the emissions when feeding DuraBright coated wheels (dirty scrap) into the melting furnace. Facility representatives estimated 1,900 coating wheels would be incorporated into the melter per year.

The Wheel Department polish includes the option of the DuraBright process which includes a series of anodizing dip tanks and two (hydro electrostatic) paint booths. A natural gas-run boiler helps heat the anodizing dip tanks. The paint booths utilize dry filters and are routed to an RTO for overspray emission control. Facility representatives indicated that the top dry filters are replaced weekly, and the second and third layers of dry filters are maintained monthly. The permit states the facility must maintain the filters according to the manufacturer’s recommendations. The facility assumes 100% RTO capture efficiency based on successful Method 204 testing performed in November 2017. The RTO’s calculated destruction efficiency was 96.2% from a December 2016 test, while the permit requires the paint booths to get at least 90% VOC control efficiency. The permit does not indicate another mandatory scheduled stack test after the facility completes its initial testing.. After the paint booth, products are sent to a natural gas-fired curing oven for an hour (uncontrolled) before being stickered and packaged.

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TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

EPA observed the updraft and side-draft, hydro electrostatic spray booths. Only one was operational; the other is intended to be rebuilt into a redundant cell. EPA observed the RTO panel which indicated a combustion chamber temperature of 1558°F and the exhaust fan at 243°F at 2:48pm. The permitted minimum combustion temperature is 1500°F. Facility representatives stated that visible emissions observations are taken weekly at the RTO stack; no visible emissions were observed during the time of the inspection. EPA also observed the stack of the melting furnace/caster, and no visible emissions were seen. EPA observed DuraBright wheels in a pile of scrap, but facility representatives stated that the pile would not be melted before the appropriate stack test was performed and the facility was permitted to input the coated charge into the furnace. EPA observed the melting furnace, the degassers, the ultrasonic QAQC check, the homogenizing oven, and a numerous cooling ingots.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- SDS Sheets for all fluxes used on site
- Records of feed/charge [lb/hr aluminum] (Jan 2021-present)
- Total reactive flux addition rate records [lb chlorine/ton of aluminum feed or charge] (Jan 2021-present)
- Input rates of AFB into homogenizing oven (Jan 2021-present)
- Total AFB used (Jan 2021-present)
- Most recent stack reports, for the melting furnace, homogenizing oven, and RTO
- RTO operating parameters (e.g. min and max combustion temperatures, pressure differential range)
- Records of RTO temperature data (Jan 2021-present)
- RTO downtime (Jan 2021-present)
- OM&M Plan
- Emissions calculation spreadsheets for the facility, broken down by department or operation, for all emission sources (Jan 2020-present)

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DIGITAL SIGNATURES

Report Author: Russell, Tess Digitally signed by
Russell, Tess
Date: 2023.05.25
15:14:16 -05'00'

Section Supervisor: Brian
Dickens Digitally signed by Brian
Dickens
Date: 2023.05.25
16:03:55 -05'00'