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

SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Aludyne, Benton Harbor, Michigan
FROM:	Natalie Schulz, Environmental Engineer AECAB (MN/OH)
THRU:	Brian Dickens, Section Supervisor AECAB (MN/OH)
TO:	File

BASIC INFORMATION

Facility Name: Aludyne

Facility Location: 1320 Paw Paw Avenue, Benton Harbor, Michigan 49022

Date of Inspection: March 28, 2023

EPA Inspector(s):
1. Natalie Schulz, Environmental Engineer
2. Meaghan Pashen, Environmental Engineer

Other Attendees:
1. Art Caldwell, Aludyne, Environmental Health and Safety Manager
2. Jason Howland, Aludyne, Operations Manager – Stevensville Location

Contact Email Address: art.caldwell@aludyne.com

Purpose of Inspection: Hazardous air pollutant emissions from secondary aluminum production

Facility Type: Secondary aluminum production

Regulations Central to Inspection: Permit-to-Install

Arrival Time: 10:35 a.m.
Departure Time: 12:00 p.m.

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 Art Caldwell unless otherwise noted.

Company Ownership: Company ownership has not changed in the past five years; however, the name has been changed from Alutech, LLC.

Process Description:
Aludyne is a secondary aluminum production facility that makes parts for the automotive industry. The facility does not pre-treat the scrap metal before melting and only melts aluminum that is already processed, in the form of crushed wheels, sows, and remelt secondary ingot. National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production (NESHAP RRR) excludes from applicability secondary aluminum production facilities that only melt clean charge, customer returns, or internal scrap, as defined in NESHAP RRR.

The scrap is placed into one of the facility's three reverberatory furnaces, listed in the permit as EUREVERB2, EUREVERB3, and EUREVERB5. The hoods above the reverberatory furnaces exhaust directly to the atmosphere. The melted aluminum is then pumped to the crucible furnaces. Fluxing material is manually added to the crucible furnaces. The amount of magnesium, strontium, or iron added is based on in-house sampling of the aluminum composition. Nitrogen is added with the flux to bring up impurities. The impurities are then skimmed off as slag and taken to a third party. The aluminum is then cast. There are some holding stations between the processes to keep the melted aluminum warm; the material is kept at temperature of approximately 1300 to 1400°F. The parts are placed in a quench tank after casting; the castings are then sawed and trimmed.

The facility's two enclosed heat treatment ovens operate asynchronously. Every part undergoes heat treatment for approximately eight hours. The finished parts undergo liquid penetrant inspection (LPI) to test for cracks and defects; the liquid is washed off prior to the part being sent out for delivery. There is no coating of the parts completed at the facility.

Staff Interview:
Fluoride or chlorine is not used in fluxing or other portions of the process. There are approximately three dust collectors at the facility; the dust collectors are not included in the facility's permit-to-install No. 170-19.

The permit requires no visible emissions from openings and vents of the building housing the reverberatory furnace #5. No visible emissions were observed.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
Inspectors observed the scrap metal prior to being placed into the furnace; the scrap appeared to be clean charge. Inspectors observed fluxing material being ladled into the crucible furnace.

Inspectors observed finished parts undergoing LPI. Safety data sheets for LPI requested for review.

The amount of scrap charged to each furnace is limited in the permit by the reverberatory furnaces' melt rates; each reverberatory furnace is limited to 86 pounds per day of fluxing material. The crucible furnaces are limited by the permit to use no more than 15 pounds per hour of flux. The permit requires that the facility record the weight of all charge materials and fluxing materials added to the furnaces on a daily basis; three months of these logs are requested for later review.

The permit requires that the facility maintain a listing of the chemical composition of each flux material used; the SDS sheets are requested for later review.

Photos and/or Videos: were 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:
- Three months of charge logs
- Facility air permits
- SDS sheets for LPI, additives, and fluxes
- Facility flow diagram
- Maintenance schedule for dust collectors

DIGITAL SIGNATURES

Report Author: NATALIE SCHULZ Digitally signed by NATALIE SCHULZ Date: 2023.05.25 10:01:59 -05'00'

Section Supervisor: Brian Dickens Digitally signed by Brian Dickens Date: 2023.05.25 14:41:39 -05'00'

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Natalie Schulz	2. **Archival Record Location:** Electronic Records System

Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_0469.JPG	March 28, 2023, 10:50 a.m. CST	Reverbatory furnace B
2	IMG_0470.JPG	March 28, 2023, 10:51 a.m. CST	Reverbatory furnace B