



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

DATE: *See date of Section Supervisor signature below*

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Eramet Marietta, Inc., Marietta, Ohio

FROM: Patrick Miller, Environmental Engineer
AECAB (MN/OH)

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

TO: File

BASIC INFORMATION

Facility Name: Eramet Marietta, Inc. (Eramet)

Facility Location: 16705 Ohio State Route 7, Marietta, Ohio 45750

Date of Inspection: November 9, 2022

EPA Inspector(s):

1. Karyn DeFranco, Environmental Engineer
2. Patrick Miller, Environmental Engineer
3. Meaghan Pashen, Environmental Engineer

Other Attendees:

1. Mark Carpenter, EHS Engineer

Contact Email Address: mark.carpenter@eramet.com

Purpose of Inspection: Determine compliance with 40 C.F.R. Part 63 Subpart XXX, including opacity limits on visible emissions from roof monitors by conducting visible emission observations

Facility Type: Ferromanganese and silicomanganese production facility

Regulations Central to Inspection: 40 C.F.R § 63.1620 – 63.1679, including 63.1623(b)(3)

On-site Arrival Time: 1:15 PM

On-site Departure Time: 5:15 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. Reason: Not a Small Business
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Mr. Carpenter unless otherwise noted.

Process Description:

Eramet produces silicomanganese and ferromanganese from ore in two electric arc furnaces (EAFs) and the metal oxygen refining (MOR) process furnace. The ore is sorted and stored outside in piles. The ore contains about 48 percent manganese. Other raw materials include pet coke, coal, silicon, and iron. Furnace #1 produces silicomanganese and primary emissions from melting are controlled by a newly constructed baghouse. Furnace #12 produces ferromanganese and primary emissions from melting are controlled by a venturi scrubber. A third EAF, Furnace #18, is inoperable after suffering an upset that damaged the furnace.

Each furnace uses three electrodes to melt the ore. Metal and slag are formed in the furnace as the ore melts. The furnace is tapped, and the molten metal and slag are cast into ladles through a runner. Furnace #1 has a hood over the tap hole and the ladle to help capture emissions during tapping and route them to the new baghouse. Furnace #12 does not have hoods over the tap hole and ladle but there is duct work near these areas. Slag, which is less dense and floats on top of the metal, overflows from the main transfer ladle into another smaller ladle. Once the transfer ladle is full, the furnace is plugged to end casting. The transfer ladle is then positioned at the next stage where slag is skimmed off the top surface of the ladle.

The transfer ladle is then brought to the MOR for refining. Once the target chemistry is reached, the metal is cast in fines on the ground. Emissions from the casting process are controlled by side draft hoods routed to the MOR baghouse. Once solidified and cooled, the metal is crushed and processed. Any smaller pieces and dust from baghouses can be reused in the process or sold as a product.

TOUR INFORMATION

EPA Tour of the Facility: Yes

EPA observed tapping, slag raking, and casting operations and the process fugitive emission capture system at #12 Furnace. Eramet added metal around the duct opening above the tap hole to aid in the capture of process fugitive emissions at #12 Furnace. EPA observed visible emissions rising to the roof monitor during portions of tapping and throughout slag raking and casting at #12 Furnace. Some particulate generated during these operations are pulled into the ductwork and ultimately controlled by the wet scrubber.

While touring the facility, EPA observed visible emissions from the #12 Furnace roof monitor from outside the C2F building. EPA was told the visible emissions were from tapping #12 Furnace into an empty ladle which is a worst-case scenario for emissions during tapping. EPA also observed visible emissions from the wet scrubber stack for #12 Furnace. EPA was told that operational changes are made when the visible emissions from the wet scrubber stack turn yellow to mitigate excess emissions.

EPA toured and observed the outdoor storage piles of raw materials and final products.

EPA observed the MOR during the refining process and #1 Furnace. #1 Furnace was operating but tapping and slag raking were not observed due to the timing of the tour.

Data Collected and Observations:

Onsite visible emission observations were conducted in accordance with EPA Alternative Method 082 on the roof monitor of #12 Furnace on November 9, 2022. Visible emissions were observed from the roof monitor of #12 Furnace during the facility walkthrough. Visible emissions on November 9, 2022, were analyzed in accordance with EPA Alternative Method 082. The highest 6-minute average opacity was 58% at the roof monitor of #12 Furnace.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

- Visible emission observations were conducted on November 9, 2022. See Appendix B for opacity reports.

RECORDS REQUEST

EPA requested the following information and records:

- Start and stop times of tapping, slag raking, and casting during visible emission observations of the #12 Furnace Roof Monitor on 11/9/22 (starting around 4:20 pm);
- Confirm the dates of the recent #1 Furnace outage 10/24-11/6;
- Confirm the date when the bags were changed out of the #1 Furnace main baghouse;
- 8/1/22-Present Final Product Storage Pile (F002) Load-Out and Wind Erosion Inspection Records required by Permit P0091078 Condition C.2.d.2; and

- 8/1/22-Present Daily Pressure Drop Readings and any investigation reports if the pressure drop deviated from the pressure drop range for the Baghouses that control the Crushers (P917) required by Permit P0091078 Condition C.5.d.3.

CLOSING CONFERENCE

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

Requested documents:

Concerns: EPA discussed concerns the lack of capture of emissions despite ductwork pickups near several locations at Furnace #12 and the potential for visible emissions out of the roof monitor.

DIGITAL SIGNATURES

Report Author: **PATRICK MILLER**  Digitally signed by
PATRICK MILLER
Date: 2023.01.06
14:39:11 -06'00'

Section Supervisor: **Brian Dickens**  Digitally signed by Brian
Dickens
Date: 2023.01.05
16:22:45 -06'00'

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APPENDICES AND ATTACHMENTS

1. Digital Image Log
2. Opacity Reports for November 9, 2022

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APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Meaghan Pashen	2. Archival Record Location: Enf_Eramet Marietta Inc_OH_21/Enf_Eramet Marietta Inc_OH_23_Inspection/Digital Images
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Image No.	File Name	Date and Time (Eastern)	Lat. and Long.	Description of Image
1	IMG_3608.JPG			Visible emissions during #12 Furnace tapping
2	IMG_3609.JPG			Visible emissions during #12 Furnace tapping
3	IMG_3610.JPG			Visible emissions during #12 Furnace tapping
4	IMG_3611.JPG			Visible emissions during #12 Furnace tapping
5	IMG_3612.JPG			Visible emissions during #12 Furnace tapping
6	IMG_3613.JPG			Visible emissions during #12 Furnace tapping
7	IMG_3614.JPG			Visible emissions during #12 Furnace tapping
8	IMG_3615.JPG			Visible emissions during #12 Furnace tapping
9	IMG_3616.JPG			Visible emissions during #12 Furnace tapping
10	IMG_3617.JPG			Visible emissions during #12 Furnace tapping
11	IMG_3618.JPG			Visible emissions during #12 Furnace tapping
12	IMG_3619.JPG			Visible emissions during #12 Furnace tapping
13	IMG_3620.JPG			Visible emissions during #12 Furnace pouring
14	IMG_3621.JPG			Visible emissions during #12 Furnace tapping
15	IMG_3622.JPG			#12 Furnace pouring
16	IMG_3623.JPG			#12 Furnace pouring
17	IMG_3624.JPG			#12 Furnace pouring
18	IMG_3625.JPG			#12 Furnace pouring
19	IMG_3626.JPG			Visible emissions during #12 Furnace tapping
20	IMG_3627.JPG			#12 Furnace slag raking
21	IMG_3628.JPG			#12 Furnace slag raking
22	IMG_3629.JPG			Visible emissions during #12 Furnace slag raking
23	IMG_3630.JPG			Visible emissions during #12 Furnace slag raking

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24	IMG_3631.JPG		Visible emissions during #12 Furnace slag raking
25	IMG_3632.JPG		Visible emissions during #12 Furnace slag raking
26	IMG_3633.JPG		Visible emissions during #12 Furnace slag raking
27	IMG_3634.JPG		Visible emissions during #12 Furnace slag raking
28	IMG_3635.JPG		Visible emissions during #12 Furnace slag raking
29	IMG_3636.JPG		Visible emissions during #12 Furnace slag raking
30	IMG_3637.JPG		Visible emissions during #12 Furnace slag raking
31	IMG_3638.JPG		Visible emissions during #12 Furnace slag raking
32	IMG_3639.JPG		Visible emissions during #12 Furnace slag raking
33	IMG_3640.JPG		Visible emissions during #12 Furnace slag raking
34	IMG_3641.JPG		Visible emissions during #12 Furnace slag raking
35	MVI_3642.JPG		Video of visible emissions during #12 Furnace casting
36	MVI_3643.JPG		Video of visible emissions during #12 Furnace casting and ductwork
37	IMG_3644.JPG		Visible emissions during #12 Furnace casting and ductwork
38	IMG_3645.JPG		Visible emissions during #12 Furnace casting and ductwork
39	IMG_3646.JPG		Visible emissions during #12 Furnace casting and ductwork
40	IMG_3647.JPG		Visible emissions during #12 Furnace casting and ductwork
41	IMG_3648.JPG		Visible emissions during #12 Furnace casting
42	IMG_3649.JPG		Visible emissions during #12 Furnace casting
43	IMG_3650.JPG		Visible emissions during #12 Furnace casting
44	MVI_3651.JPG		Video of visible emissions during #12 Furnace casting
45	IMG_3652.JPG		Visible emissions during #12 Furnace casting
46	IMG_3653.JPG		Visible emissions during #12 Furnace casting
47	IMG_3654.JPG		Visible emissions during #12 Furnace casting

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48	IMG_3655.JPG			Visible emissions during #12 Furnace casting
49	IMG_3656.JPG			Visible emissions during #12 Furnace casting
50	IMG_3657.JPG			Visible emissions during #12 Furnace casting
51	IMG_3658.JPG			Visible emissions during #12 Furnace casting
52	IMG_3659.JPG			#12 Furnace operations
53	IMG_3660.JPG			#12 Furnace operations
54	IMG_3661.JPG			#12 Furnace operations
55	IMG_3662.JPG			Visible emissions from #12 Furnace stack
56	IMG_3663.JPG			Visible emissions from #12 Furnace stack
57	IMG_3664.JPG			Visible emissions at #12 Furnace roof monitor
58	IMG_3665.JPG			Visible emissions at #12 Furnace roof monitor
59	IMG_3666.JPG			Visible emissions at #12 Furnace roof monitor

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APPENDIX B: OPACITY REPORTS FOR NOVEMBER 9, 2022