



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Spectrum Machine, Ravenna, OH

FROM: Gunnar Brown, Environmental Scientist/Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Supervisor
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Spectrum Machine

Facility Location: 7071 Peck Road, Ravenna, OH 44266

Date of Inspection: July 17, 2024

EPA Inspector(s):

1. Gunnar Brown, Environmental Scientist/Engineer
2. Jacob Herbers, Environmental Engineer

Other Attendees:

1. Eric Buckley, Office Manager, Spectrum Machine
2. Larry Foster, Plant Manager, Spectrum Machine (opening only)
3. Matt DeYoung, Maintenance, Spectrum Machine (tour only)

Contact Email Address: ebuckley@spectrummachine.com

Purpose of Inspection: To evaluate compliance with the CAA and the facility's air permit.

Facility Type: Nonferrous metal casting foundry and processing facility.

Regulations Central to Inspection: The Facility's operating permit, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart TTTTIT.

Arrival Time: 10:30 EDT

Departure Time: 12:30 EDT

Inspection Type:

☒ Unannounced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided Small Business Resource Information Sheet (with inspection report)
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Eric Buckley, Larry Foster, or Matt DeYoung unless otherwise noted.

Process Description:

Spectrum Machine's Plant 2 in Ravenna (the Facility) uses furnaces to melt down metals, and then casts them into bars. The majority of raw material arrives as scrap, and the rest as ingots. The raw material is brought either to the top of "the deck" where two vertical casting furnaces are (P002 and P003) or to the horizontal casting furnace (P004). The furnaces have covers on top which are closed when material is not being added or mixed (Image 6). While the covers are open and a casting furnace is operating, movable exhaust vents are positioned above the top of the casting furnace (Images 5, 8). Return air exhaust ducts are also present on the walls near the furnaces (Images 3-4). P002 and P003 output molten metal to a tundish where the molten metal is directed downward into casting molds to produce bars (Image 7). Casting furnace emissions are directed to a baghouse (Bag001).

All types of metal received, and all types of metal bars cast have their elemental composition analyzed on site, some include lead up to 7%.

The Facility also has a tool and die shop within the building that uses graphite to create molds for the casting process (Image 7). Emissions from the tool and die machines are directed to a separate baghouse (Bag002). The Facility also has general exhaust fans and a makeup air unit (Images 9, 13-14).

Staff Interview:

The Facility opened in 2011 or 2012 and operates continuously from Monday at 06:00 to Friday at 12:00 or 14:00 with two shifts starting at 06:00 and 18:00. This schedule is followed year-round except for shutdowns around the winter and summer holidays. Every two years there is an environmental cleanup of the Facility: the next is scheduled for September 2024, and the most recent was in May 2022. Estimates for total material throughput are 2,979 lb/hr, 12,000 lb/day, and 50,000 lb/week on the high end. No stack testing has ever been performed.

The setpoints for the furnace baghouse alarm system are 2.2 and 6.4 inches of H₂O. Concrete tundishes are created behind the Facility where a wood fire is used for heat and the exhaust is vented to the atmosphere.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

Before the tour, EPA inspectors noticed a faint metallic odor outside the Facility in the parking lot.

EPA inspectors toured the melting and casting area and the tool and die shop inside. Doors closest to the furnaces were open with fans blowing into the facility (Images 1-2). Bay doors across from the tool and die shop were open with no fans (Image 11).

Outside the building, EPA toured the baghouses (Images 14-17). The differential pressures were observed to be 2.4 inH₂O for Bag001 (Images 18-19), and 1.8 inH₂O for Bag002 (Image 12). The latter appeared to be below a lower differential pressure threshold marked on the gauge. EPA inspectors observed the small, roofed, open to air site used for the wood fire to create the concrete tundish outside the main facility building near the baghouses.

Photos and/or Videos: were taken during the inspection and are listed in Appendix A.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

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

Requested documents:

- Manufacturer manuals for the baghouses
- IWI report or record containing the suggestion for the baghouse differential pressure setpoints
- Facility blueprints
- Process Flow Diagram
- Metal ingot certifications provided to Spectrum Machine
- Metal ingot certifications created by Spectrum Machine
- Record of the most recent annual calibration of the machine used to analyze metal samples
- Low volume air testing results
- All previous stack test reports

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DIGITAL SIGNATURES

Report Author: **GUNNAR BROWN**  Digitally signed by GUNNAR BROWN
Date: 2024.08.05 06:32:20 -05'00'

Section Supervisor: **SARAH MARSHALL**  Digitally signed by SARAH MARSHALL
Date: 2024.08.05 07:21:58 -05'00'

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APPENDIX A: DIGITAL IMAGE LOG AND DIGITAL VIDEO LOG

Inspector Name: Gunnar Brown **Archival Record Location:** EPA Electronic Files

Image #	File Name	Date & Time (CDT)	Image Description
1	P7170043.PNG	7/17/2024 09:57	Fan blowing air into the casting facility next to door between the office and furnace room
2	P7170044.PNG	7/17/2024 09:58	Fan blowing air into the casting facility near P002
3	P7170045.PNG	7/17/2024 10:02	Return air vents from baghouse vent system on the “deck” where P002 and P003 operate
4	P7170046.PNG	7/17/2024 10:02	Venting system above return air vents in image 3
5	P7170047.PNG	7/17/2024 10:04	P002 with cover while active
6	P7170048.PNG	7/17/2024 10:04	P003 with cover while inactive
7	P7170049.PNG	7/17/2024 10:07	Front of furnaces where tundish sits. P003 is closer on the left, P002 is far on the left
8	P7170050.PNG	7/17/2024 10:09	P004 with cover while active
9	P7170051.PNG	7/17/2024 10:15	Exhaust fans high on the back wall of the casting building
10	P7170052.PNG	7/17/2024 10:19	Tool and die room with exhaust ducts
11	P7170053.PNG	7/17/2024 10:20	Bay doors open across the floor from the tool and die room
12	P7170054.PNG	7/17/2024 10:21	Bag002 differential pressure readout: 1.8 inH ₂ O
13	P7170055.PNG	7/17/2024 10:23	Air return ducts and wall filters
14	P7170056.PNG	7/17/2024 10:26	Makeup Air Unit
15	P7170057.PNG	7/17/2024 10:27	Bag002
16	P7170058.PNG	7/17/2024 10:31	Bag001. Furnace emissions enter the baghouse system from duct attached to the wall on right side of photo
17	P7170059.PNG	7/17/2024 10:32	Bag001 side view.
18	P7170060.PNG	7/17/2024 10:43	Bag001 differential pressure gauge: 2.4 inH ₂ O
19	P7170061.PNG	7/17/2024 10:44	Bag001 differential pressure gauge: 2.4 inH ₂ O

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