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

DATE: OCT 18 2018

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Whiting Metals, LLC., Hammond, Indiana

FROM: Sarah Clark, Environmental Engineer
AECAB (IL/IN)

THRU: Nathan Frank, Section Chief
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Whiting Metals, LLC. (Whiting)

Facility Location: 2230 Indianapolis Boulevard, Hammond, Indiana, 46394

Date of Inspection: September 14, 2018

EPA Inspectors:
1. Sarah Clark, Environmental Engineer
2. Dakota Prentice, Environmental Engineer

Other Attendees
1. Kevin T. Davis, Senior Environmental Manager, Indiana Department of Environmental Management (IDEM)
2. Alex Gross, Managing Partner (Owner), Whiting
3. Joe Temple, Assistant Plant Manager, Whiting

Contact Email Address: agross@whitingmetals.com

Purpose of Inspection: Assess compliance with the Clean Air Act (CAA) and investigate lead emissions.

Facility Type: Nonferrous metals recycler

Arrival Time: 9:10 AM
Departure Time: 11:00 AM

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

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

Company Ownership: Mr. Gross explained that the former Federated Metals property is currently split amongst four owners. The Whiting facility was purchased in 2007 as Northern Indiana Metals and reorganized under Whiting in 2009. Recently, within the past year, the same owners of Whiting started another company on the former Federated Metals property, East Lake Metals, which operates as a steel processor.

Process Description:
Whiting currently operates two main processes, described by its permit as: a lead alloying process and a reclamation of tin-coating brass punchings process (detinning process). For the lead alloying process, Whiting processes lead-containing scrap and produces two lead alloys, 99.5+% lead and <99.5% lead, in sizes that range, according to Mr. Gross, from 5-pound pucks to 4,000-pound ingots. Whiting processes the lead-containing scrap in a sweat furnace, F-3, and/or the following kettles (or pots): K-6, K-10, K-11, K-12, K-13, K-14, and K-15. Mr. Gross explained that K-10, K-11, and K-12 operate infrequently and K-15 is a small solder pot. The furnace and the kettles operate at a temperature slightly above the melting point of lead, approximately 620 °F. F-3 reclaims lead by melting or "sweating" the lead from higher-temperature metals. The pots, heated by an indirect flame, separate lead from impurities that rise to the top of the mixture, in the form of dross, and are skimmed off. Once the lead has reached the desired purity, the molten metal is pumped into molds. Whiting continuously operates a spark arrester and a single compartment, 470-bag, 25,000 standard cubic feet per minute baghouse that draws from each of the hoods over the lead alloying process emission units. According to Mr. Gross, when a furnace is not operating, a damper closes the duct leading to that furnace.

For the detinning process, Whiting receives from brass manufacturers 'skeleton stock,' with tin coating, and produces tin-shot, a flux used in brass and copper foundries. Whiting processes the skeleton stock with sodium hydroxide and water, creating a strong base solution, in five modified cement mixers that hold up to 20,000 pounds (new) each. The combination of a strong base and agitation softens the tin and separates the tin coating from the brass/copper. The tanks are drained, dried out with an open flame, and what remains inside the mixer is unloaded and shipped back to the supplier. The drainage, containing a slurry of water, sodium hydroxide, copper, tin, and zinc, is pumped to a tank where the sediment settles out and is collected. The

slurry is pumped back to a cement mixer where the slurry, or tin shot, is dried, unloaded, and shipped. Whiting uses portable dust collectors, that exhausts indoors, to control particulates during unloading events.

Staff Interview:
Mr. Gross provided us with a copy of the facility layout. According to Mr. Gross, Whiting employs a staff of 13 (and East Lake Metals has 7 employees). Employees arrive as early as 5 am to start warming the lead pots. Whiting's operating hours are typically 7 am to 3 pm Monday through Friday and occasionally Saturday. Whiting has not operated their zinc furnace and kettles (F-2, K-2, K-3, K-4) in approximately 7-9 years. Within the past year, the facility decommissioned the zinc furnace and kettles by removing the burners. Mr. Gross estimated Whiting's production rate as approximately 750,000 – 2 million pounds of lead alloy per month.

The last stack test of Whiting's baghouse occurred in 2008 and was conducted while operating the zinc process only. Whiting has not conducted lead stack testing. Whiting inspects the baghouse daily to check that all bags are present and to check that the manometer is reading a differential pressure (dP) between 1.0 - 2.5 inches of water (in H_2O). Whiting uses a second manometer as a 'cross-check.' Whiting inspects the ductwork once per week. Whiting maintains records of baghouse and ductwork inspections. According to Mr. Gross, the bags last a 'long time;' Whiting generally only replaces bags in case of a fire. At the time of our inspection, Mr. Gross could recall two fires occurring at Whiting in the past 10 years. The last bag replacements were in approximately 2016, when half of the bags were changed and the baghouse was 'revamped,' and 2014 when the entire set was replaced. Whiting uses a spark arrester to prevent future fires. Each morning, Mr. Gross or another employee collect visible emission (VE) readings of the baghouse stack exhaust. The detinning portable dust collectors are inspected quarterly to check that the bags are present and that the seals are in good condition.

Regarding Whiting's management of lead scrap, Whiting purchases lead-containing scrap from scrap dealers, most of whom are based in the Midwest. Scrap includes solder, pipes, spent ammunition from shooting ranges, counterweights (used in pick-up trucks, for example), cables, copper sheeting, and 'high-melt' dross (70-80% metal). Whiting strips cables to remove and dispose of the exterior, collect the lead for processing, and briquette the copper for sale. Whiting rejects scrap with low metallic content and sorts soft and hard lead.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:
Mr. Temple joined us for the tour and helped explain the process and address questions.

Our tour began at the detinning process (Images #1 - #2). According to Mr. Temple, Whiting sells about 4 loads of tin shot per year; specifically, Whiting pumps slurry to one of the cement mixers about 4 times per year, and the process lasts about 3 days, 8-10 hours per day. The dust collector contents have an estimated consistency of 95% copper and zinc.

At the scrap holding area, we observed barrels of tin/lead solder (Image #3). We also observed a large box containing long, thick, insulated cable that Mr. Gross said would likely be sent back since the scrap would take extensive work to prepare the lead for processing. We also passed pallets containing Whiting's finished product, lead ingots.

At the lead alloying process area, we observed F-3 and the pot located behind F-3 that collects molten lead (Images #4 -7). We also observed K-13, K-14, and K-15 and the hoods and ducts that connect these kettles and F-3 to the baghouse (Images #8 - #9). At K-6, the largest kettle with a 60,000-pound capacity, inspectors observed two employees wearing respirators who, according to Mr. Gross, had recently stopped their activities at K-6. We did not observe fugitives emitting from K-6. Behind K-6, we observed a pallet of lime that, Mr. Gross explained, may be added to the pots to "dry the metal;" this contributes to the formation of dross on the surface of the molten metal (Images #10 - #11). Mr. Prentice observed spinning fans in roof monitors over the lead processing area. EPA believes the fans were spinning due to hot air within the lead alloying process area exiting through the roof monitors.

We observed the two Magnehelic dP gauges for the baghouse: both the indoor and outdoor gauges read approximately 2 in H_2O (Images #12, #14). Outside we observed the baghouse (Image #13); here, Mr. Gross indicated to inspectors where he collects VE readings. The Whiting staff informed us that Whiting generates roughly a couple drums per month of baghouse dust. The dust is mixed with dross in the zinc area and shipped offsite.

As we reentered the building through the same door adjacent to the kettles, Mr. Prentice observed an inward draft of external air into the lead process area. We observed that the zinc kettles, K-2, K-3, and K-4, were off (Images #15-16), and we observed that the ducts leading to these kettles were closed. As we left, we walked back through the lead alloying process area where we observed a pile of dross near K-6 (Image #17).

We observed the area where Whiting strips cables for lead and copper (Image #18). The area was partially enclosed by plastic sheeting. Nearby, over the East Lake Metals area, we observed workers on the roof. Mr. Gross explained that the roof was being replaced.

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

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

1. Facility layout
2. Ms. Clark reviewed the baghouse dP, VE, and inspection logs for the baghouse

CLOSING CONFERENCE

Ms. Clark asked Mr. Gross why, according to their baghouse logs, the manometer was changed on June 11, 2018. Mr. Gross explained that "we used to have to do it every six months, so we've maintained that practice just because."

We asked Mr. Gross for the capacity of the portable dust collectors. He said that he would have to get back to us. We asked how Whiting estimates actual lead emissions. Mr. Gross provided us with the name and contact information for his environmental consultant to follow up. We told Mr. Gross that we would email his consultant to request the stack testing report and emission factors/estimates.

Requested documents:

- Capacity of portable dust collectors used in the detinning process
- Emission factors/estimates
- Copy of most recent stack test

SIGNATURES

Report Author: Sarah Clark Date: 10/5/2018

Section Chief: [signature] Date: 10/12/18

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log
2. Attachment: Facility Layout

Facility Name: Whiting Metals, LLC.
Facility Location: 2230 Indianapolis Boulevard, Hammond, Indiana
Date of Inspection: September 14, 2018

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Sarah Clark	2. **Date of Inspection:** September 14, 2018
3. **Company/Facility Name:** Whiting Metals, LLC.	4. **Street Address, City, State:** 2230 Indianapolis Boulevard, Hammond, Indiana
5. **Number of Images:** 18	6. **Archival Record Location:** CD-R labeled as, "Whiting Metals, LLC., 2230 Indianapolis Blvd., Hammond, IN, Inspection Photos, 9-14-2018"

Image Number	File Name	Date and Time (CDT)	Latitude and Longitude	Description of Image
1	P9140001.JPG	9/14/2018 10:07	41.673889, -87.494722	Detinning rotary mixers
2	P9140002.JPG	9/14/2018 10:08	41.673889, -87.494722	Cover and open-flame apparatus for drying the detinning rotary mixers
3	P9140003.JPG	9/14/2018 10:14	41.673889, -87.494722	Tin/lead solder
4	P9140004.JPG	9/14/2018 10:17	41.673889, -87.494722	Lead pot (behind F-3)
5	P9140005.JPG	9/14/2018 10:17	41.673889, -87.494722	Lead pot (behind F-3)
6	P9140006.JPG	9/14/2018 10:19	41.673889, -87.494722	F-3
7	P9140007.JPG	9/14/2018 10:19	41.673889, -87.494722	F-3
8	P9140008.JPG	9/14/2018 10:19	41.673889, -87.494722	Left to right: K-12, K-13, K-14, K-15 (tiny), F-3 and ducts
9	P9140009.JPG	9/14/2018 10:19	41.673889, -87.494722	Ducts for K-13, K-14, and F-3
10	P9140010.JPG	9/14/2018 10:24	41.673889, -87.494722	Lime
11	P9140011.JPG	9/14/2018 10:24	41.673889, -87.494722	Lime
12	P9140012.JPG	9/14/2018 10:25	41.673889, -87.494722	Indoor Magnehelic dP gauge for baghouse

13	P9140013.JPG	9/14/2018 10:27	41.673889, -87.494722	Baghouse (left) and spark arrester (right)
14	P9140014.JPG	9/14/2018 11:30*	41.682018, -87.48846	Outdoor Magnehelic dP gauge for baghouse
15	P9140015.JPG	9/14/2018 11:31*	41.681944, -87.488333	Decommissioned zinc pots K-2 and K-3
16	P9140016.JPG	9/14/2018 11:31*	41.681944, -87.488333	Decommissioned zinc pot K-4
17	P9140017.JPG	9/14/2018 11:34*	41.679444, -87.472222	Dross pile near K-6
18	P9140018.JPG	9/14/2018 11:36*	41.679444, -87.472222	Cable lead stripping and copper briquetting area

*Camera Error: Incorrect time zone (EDT instead of CDT)