

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

N702767488

FACILITY: Century Foundry Inc		SRN / ID: N7027
LOCATION: 339 W Hovey, MUSKEGON HTS		DISTRICT: Grand Rapids
CITY: MUSKEGON HTS		COUNTY: MUSKEGON
CONTACT: Dan Strouf , Plant Manager		ACTIVITY DATE: 05/11/2023
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Compliance inspection - EJ Initiative		
RESOLVED COMPLAINTS:		

Unannounced inspection of Century Foundry – Plant 1 and Plant 3

FACILITY DESCRIPTION

Century Foundry - Plant 1 and Plant 3 are considered one stationary source for air quality regulation. The facilities are located across the street from each other in the City of Muskegon Heights. There are residential homes adjacent to the facility to the south. Plant 1 is a green sand aluminum casting foundry and Plant 3 is an air-set sand aluminum casting foundry. Plant 1 has approximately 35-40 employees and Plant 3 has approximately 10-15 employees. Both facilities operate from 05:00 - 13:30. Subsequent to the inspection, Plant 3 was consumed by a fire and is no longer in operation.

The facility was targeted for inspection in FY 23 under the statewide initiative evaluating secondary metal processing facilities located in Environmental Justice (EJ) areas. The facility is located in an EJ area using EPA EJSCREEN, based on the population within a one-mile radius of the facility having a Demographic Index, Population of Color and Linguistically Isolated at or above the 75th percentile on a state-wide basis.

REGULATORY ANALYSIS

The stationary source holds one air use permit, PTI No. 43-05C. PTI No. 43-05C addresses emission units located in both Plant 1 and Plant 3. The stationary source is subject to Subpart ZZZZZZ, based on the metal throughput exceeding the 600-ton threshold and the use of alloys with a metal HAP content over the NESHAP threshold. Century submitted an initial notification in 2015.

COMPLIANCE EVALUATION

Prior to entering the facility, a survey of the perimeter was made, no opacity or odors were noted from the facility.

At the facility EG met with Dan Strouf Plant Manager, Plant Manager.

Below is an evaluation of compliance based on PTI No. 43-05C and applicable rules and regulations.

Mr. Strouf accompanied EG on a tour of the facility.

PLANT 1 GREENSAND

EUPT1REVERB1

4,000 lb. capacity gas-fired reverberatory aluminum melting furnace. No capture or control. Stack for combustion gases.

The furnace's emissions from melting vent uncontrolled into the in-plant atmosphere. The natural gas combustion emissions vent to the outside atmosphere through a stack.

Emissions of PM, PM10 and PM2.5 are limited on a pound per hour basis (PM: 0.15 pph, PM10: 0.15 pph, PM2.5: 0.15 pph. Compliance is demonstrated through the requirement that the facility melt only clean charge and comply with daily flux use limits. Charge/feed to the furnaces is limited to "clean charge" as defined by Subpart RRR. Inspection of the charge material showed aluminum ingot and internal runaround. Additionally, compliance can be demonstrated via emissions testing upon

request. Testing has not been requested. The facility provided particulate emission records based on a monthly average. Review of the provided records showed exceedances of the PM emission limit from January 2022 through March 2023. Additionally, the PM10 and PM2.5 emission limits were exceeded from January 2022 through May 2023. The highest recorded PM emission rate was 0.35 pph, and the highest PM10 and PM2.5 emission rates recorded were 0.86 pph and 0.72 pph, respectively.

The emission unit has material usage limits for feed/charge and flux (feed/charge: 2,190 tpy, flux: 4.0 lb./day). Compliance is demonstrated through the requirement that the facility maintain daily records of the flux and charge usage, as well as monthly and 12-month rolling time period records of the total charge materials melted in the furnace. The facility provided daily records of melt, remelt and flux. Records for 2023 until current showed no flux usage in the furnace. The facility records show the last time flux was used was August 2022. Review of the monthly and 12-month rolling time period records showed compliance with the 2,190 tpy limit. The highest observed value was 513 tons.

The stack (SVPLANT1A), combustion emissions, is required to have a stack that has a maximum diameter of 24 inches and a minimum height of 30 feet. Actual measurements were not taken, however, visual observation of the stack showed that it appear to comply with the dimensions.

EUSANDHANDLING

Greensand handling system consisting of an 80,000 lb. silo, muller, and conveyor.

The permit specifies that emissions are controlled by a 4,440 cfm baghouse.

Emissions of PM are limited on a pound per hour basis and pound per 1,000 pounds of exhaust gases (PM: 2.0 pph, PM: 0.10 lb./1,000 lbs. of exhaust gases). Compliance is demonstrated through the requirement that the process have baghouse control. Additionally, compliance can be demonstrated via emissions testing upon request. Testing has not been requested.

The emission unit has material usage limits for sand and bentonite. (Olivine Sand: 107 tpy, Shell: 645 tpy, Bentonite: 20 tpy) Compliance is demonstrated through the requirement that the facility maintain monthly and 12-month rolling time period records for the use of each of the materials. The facility provided monthly and 12-month rolling time period records from 2021 until current. The facility records document compliance with each of the sand usage limits.

FGPTIFURNACES

Flex group that includes Six (6) 1,500 lb capacity gas-fired aluminum melting furnaces and the 400 lbs capacity portable furnace. No control, general ventilation. Stacks exhaust only combustion gases.

**EUPT1ROTO1, EUPT1ROTO2, EUPT1ROTO3, EUPT1SINTO1, EUPT1SINTO2, EUPT1SINTO3,
and EUPORTABLEFURN**

During the inspection, the facility stated that the 400-pound capacity portable furnace is no longer in use.

Emissions of PM, PM10 and PM2.5 are limited on a pound per hour basis (PM: 1.2 pph, PM10: 1.1 pph, PM2.5: 1.1 pph). Compliance is demonstrated through the requirement to calculate the average hourly PM, PM10, and PM2.5 emission rate for each calendar day. Compliance is also demonstrated through the requirement that the facility melt only clean charge and comply with daily flux and feed/charge use limits. Additionally, compliance can be demonstrated via emissions testing upon request. Testing has not been requested. The facility is calculating emissions based on a monthly average as opposed to the required daily average. The facility was requested to calculate emissions in pounds per hour based on a calendar day, time period going forward. Review of the provided records showed compliance with the emission limits.

Charge/feed to the furnaces is limited to "clean charge" as defined by Subpart RRR. Inspection of the charge material showed aluminum ingot and internal runaround.

The emission unit has material usage limits for feed/charge and flux (feed/charge: 15.0 tons per day based on monthly use records, flux: 110.0 lb./day, on a daily basis). Compliance is demonstrated through the requirement that the facility maintain daily records of the flux and charge usage, with feed/charge rates calculated based on monthly records of the weight of casting produced pro-rated to daily usage rates. Review of the requested records shows compliance with the feed/charge limit of 15.0 tons per day based on a monthly average. The highest daily feed/charge amount was 5.28 tons.

The facility provided daily flux usage records based on a monthly average. However, the facility also provided daily flux usage records for each furnace. Compliance can be determined through evaluation of the daily records for each furnace in the flex group. Review of daily flux usage for each furnace shows that usage is well below the 110 pound per day limit. The facility will be requested to keep records for the flex group showing daily flux usage.

FGCLEANING

Casting finishing processes

EUSHAKEOUT, EUDEBURRING, EUGRINDING, EUSHOTBLAST

Baghouses for EUGRINDING (with stack) and EUSHOTBLAST (no stack—vented in-plant). No emission control for EUDEBURRING or EUSHAKEOUT.

EUSHAKEOUT – The facility has a vibratory shakeout unit associated with the Sinto line that does not have any capture or control. The shakeout unit was observed operating with no visible emissions generated.

The permit requires that the permittee not operate FGCLEANING unless the associated baghouse dust collectors are installed, maintained, and operated in a satisfactory manner. Additionally, the permit requires the facility to monitor and record the baghouse pressure drop once per operating shift.

EUSHOTBLAST - The facility has replaced the original internally vented baghouse with a new baghouse that vents externally. The new baghouse is equipped with a drop out chamber but is not equipped with a pressure drop gauge, as required by the permit. The replacement of the baghouse appears to be exempt under Rule 285(2)(d).

EUGRINDING – During the inspection, the baghouse associated with grinding and sanding was observed not operating while the processes were operating. It appeared that the baghouse was not operational and likely needed repair. In the back building the facility has three (3) double sanding units. Two of the units are ducted to the non-operating baghouse, while one station is not equipped with capture or control. In the same building the facility has hand grinding stations that are not equipped with capture or control. The processes that do not have capture or control are exempt from permitting under Rule 285(2)(l)(vi).

The baghouse associated with EUGRINDING is required to have a stack (SVGRINDING) with a stack that has a maximum diameter of 15 inches and a minimum height of 8 feet. Visual observation of the stack showed that it appeared to meet the required dimensions.

PLANT 3 AIRSET

Subsequent to the inspection of Plant 3, the building was consumed by a large fire.

No processes associated with Plant 3 are currently operational.

EUMOLDMAKING

Two-part no-bake sand binder system.

Air set mold making consists of one sand mixer that mixes sand and resin, from which molds and cores are manually filled.

The permit states that there is no emission control, however there is a cyclone followed by a baghouse that is used to control emissions from the sand system. Observation of the baghouse showed sand on the ground around the unit. EG requested that the facility assure proper operation of

the baghouse and to improve housekeeping practices to address sand and other potential fugitive dust sources around the building.

The permit has an emission limit of no visible emissions from EUMOLDMAKING. No visible emissions were observed from the mold making process during the inspection.

The emission unit has material usage limits for sand and resin. Sand: 18,380 tpy, Resin Part 1: 68,175 tpy, Resin Part II: 472,680 tpy) Compliance is demonstrated through the requirement that the facility maintain monthly and 12-month rolling time period records for the use of each of the materials. The facility provided monthly and 12-month rolling time period records that demonstrate compliance with the usage limits.

FGPT3FURNACES

Flex group that includes two 1,500 lb capacity gas-fired aluminum melting furnaces and the 400 lbs capacity portable furnace. No control. No stack. Exhaust is vented through a vent in the roof, SVPLANT3A.

EUPT3FURNACE1, EUPT3FURNACE2, EUPORTABLEFURN

During the inspection, the facility stated that the 400-pound capacity portable furnace is no longer in use.

Emissions of PM, PM10 and PM2.5 are limited on a pound per hour basis (PM: 0.2 pph, PM10: 0.18 pph, PM2.5: 0.18 pph) on a daily basis). Compliance is demonstrated through the requirement to calculate the average hourly PM, PM10, and PM2.5 emission rate for each calendar day. Compliance is also demonstrated through the requirement that the facility melt only clean charge and comply with daily flux and feed/charge use limits. Additionally, compliance can be demonstrated via emissions testing upon request. Testing has not been requested. The facility is calculating emissions based on a monthly average as opposed to the required daily average. The facility was requested to calculate emissions in pounds per hour based on a calendar day, time period going forward. Review of the provided records showed exceedances of the PM10 and PM2.5 emission rate for the month of May 2023. The recorded PM10 and PM2.5 emission rates were both 0.24 pph.

Charge/feed to the furnaces is limited to "clean charge" as defined by Subpart RRR. Inspection of the charge material showed aluminum ingot and internal runaround.

The emission unit has material usage limits for feed/charge and flux (feed/charge: 2.5 tons per day based on monthly use records, flux: 20.0 lb./day, on a daily basis). Compliance is demonstrated through the requirement that the facility maintain daily records of the flux and charge usage, with feed/charge rates calculated based on monthly records of the weight of casting produced pro-rated to daily usage rates. Review of the requested records shows compliance with the feed/charge limit of 2.5 tons per day based on a monthly average. The highest daily feed/charge amount was 0.55 tons.

The facility provided daily flux usage records based on a monthly average. However, the facility also provided daily flux usage records for each furnace. Compliance can be determined through evaluation of the daily records for each furnace in the flex group. Review of daily flux usage for each furnace shows that usage is well below the 20 pound per day limit. The facility will be requested to keep records for the flex group showing daily flux usage.

Subpart ZZZZZZ

The facility is subject to Subpart 6Z and submitted an initial notification in 2015. As part of this inspection the facility was requested to provide a current copy of the management practices plan as required by Subpart 6Z. The facility provided a copy of the plan detailing the minimization of emissions by using the furnace covers and melting scrap that is depleted of HAPs (The facility only melts internal runaround scrap).

Conclusion

Based on the information and observation made during this inspection, the facility appears to be in compliance with the applicable air quality rules and regulations, with the exception of the following:

EUPT1REVERB1, Reverberatory aluminum melting furnaces. Exceedances of the PM emission limit from January 2022 through March 2023. Additionally, the PM10 and PM2.5 emission limits were exceeded from January 2022 through May 2023. PTI No. 43-05C, EUPT1REVERB1, Conditions I.1., 2. &3.

FGCLEANING, Shotblast cleaning unit (EUSHOTBLAST) Failure to maintain baghouse with a pressure drop gauge. PTI No. 43-05C, FGCLEANING, Condition VI.1.

FGCLEANING, Grinding operations (EUGRINDING) Operating processes without the associated baghouse operating. PTI No. 43-05C, FGCLEANING, Condition IV.1.

FGPT3FURNACES, Aluminum melting furnaces. Exceedances of the PM10 and PM2.5 emission limits in May 2023. PTI No. 43-05C, FGPT3FURNACES, Conditions I.2. & 3.

A Violation Notice will be issued for the above listed violations.

NAME *Eric Grinstern*

DATE 07/17/2023

SUPERVISOR *HH*