N1019
MANILA

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

N101963960

FACILITY: NORTHFIELD MANUFACTURING		**SRN / ID:** N1019
LOCATION: 38549 WEBB, WESTLAND		**DISTRICT:** Detroit
CITY: WESTLAND		**COUNTY:** WAYNE
CONTACT: Scott Tynan ,		**ACTIVITY DATE:** 08/02/2022
STAFF: Jill Zimmerman	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

DATE OF INSPECTION : 08/02/2022

TIME OF INSPECTION : 2:00 pm

INSPECTED BY : Jill Zimmerman

Eric Grinstern, EGLE

PERSONNEL PRESENT : Scott Tynan, President

FACILITY PHONE NUMBER : 734-729-2890

FACILITY EMAIL ADDRESS : stynan@northfieldfoundry.com

FACILITY BACKGROUND

Northfield Foundry is a job specific metal foundry, making steel and iron castings, usually for the automotive industries with some governmental contract. The facility operates one shift per day, five days per week and employs 33 people. The facility has been at this location since 1984 and no major equipment has been added or removed since the initial set-up, according to staff. The facility is located just west of Hix Street in an industrial park between Ford Road and Warren Avenue in Westland, Michigan.

REQUIRED PPE

During the onsite inspection, I wore steel toed shoes and eye protection.

COMPLAINT/COMPLIANCE HISTORY

No odor complaints have been received since the last inspection on 9/22/2021.

PROCESS EQUIPMENT AND CONTROLS

The facility operates the process on a job specific basis, which means parts are made based on client need, and the parts are only made when the client orders the parts. The client sends the specifications for the part to the facility. A wooden structure is built in the woodworking area of the facility for the sand mold. A sand mold is created, which may include a sand core. The sand core is a holder placed in the mold. Each sand mold is used only once, though the sand is recycled and reused. The metal is melted in one of three furnaces. The raw materials include approximately 1/3 virgin pig iron, 1/3 scrap metal, and 1/3 remelting scrap created from molds poured at the facility. Additional metals such as copper or nickel are added as needed to meet the required specifications. There is a 3,000 pounds melting furnace, 2,000 pounds melting furnace, and 400 pounds melting furnace, and each is heated electrically. The liquid metal is poured into the mold and set. The sand is removed. Extra metal and scrap metal are remelted and reused. There are two melting lines, one for larger parts and one for smaller parts. The facility pours approximately 5 batches per day.

The facility operates one small heat treat furnace, which is fueled by natural gas. The heat treat furnace is 5 ft by 5 ft by 5 ft. The unit is heated by natural gas and runs at a maximum temperature of 1650F. Most heat treat work is sent to a third-party facility to be completed.

The facility controls the sand reclaimer units with one of two baghouses. The larger baghouse, located in between the two connected buildings, is rated at 40,000 cfm. The smaller baghouse is located on the east side of the building and is rated at 5,000 cfm. The units are inspected by the maintenance employee and a log is keep of all maintenance performed. The bags are changed on a routine schedule with new bags ordered when the bags are changed. The facility switched to a higher quality bag in June 2019. These bags were advertised to last approximately 12 months compared to the former bags that typically last 6 months. The baghouse maintenance log is attached to this report. All the bags in the baghouse were changed on June 14, 2019.

The final product is packed and shipped to the client. The part specifications are shipped to the client too, unless the part is made frequently in which case, the specifications are stored onsite.

INSPECTION NARRATIVE

I arrived at the facility at 2:00 pm and met with Eric Grinstern from EGLE to perform an unscheduled inspection. Initially we met with Mr. Scott Tynan, who explained the process and typical operations at the facility. It was explained that Mr. Grinstern, the EGLE specialist for this type of facility, was preforming the inspection as part of the environmental justice initiative. It was also explained that the purpose of the inspection was to verify compliance with 40 CFR 63 ZZZZZ.

Mr. Tynan explained that the company decided to operate one shift per day, five days per week mainly because the company is having some challenges hiring qualified workers. The workers

are given a choice of working between eight to ten hours per shift. Additional Saturday shifts are worked as needed. During the inspection, the facility was creating cores and working on the production line. Minimal haze was observed on the production floor.

The other goal of this inspection was to determine the facility compliance with 40 CFR 63 Subpart ZZZZZZ and Rule 949 for the area MACT for iron and steel foundries. Mr. Tynan stated that about 75% of work is ductile iron with the remaining work gray iron. Based on records shared by Mr. Tynan and attached to this report, the facility melted 1,333 tons of ferrous metal in 2021.

The sand cores are set with a Pep Set binder. The MSDS for these binders are attached to this report as are the usage amounts for each binder.

The facility operates a small metal heat treat natural gas fired furnace. This furnace, rated at 750,000 BTU per hour, is exempt from permitting by Rule 282(2)(a)(i) because the heat input is less than 10,000,000 BTU per hour.

While outside inspecting the baghouse, visible emissions of about 10% were observed, which appears to suggest that the baghouse is not operating properly.

During the onsite inspection it was discovered that a scrubber was used to control the sand core lines. It appears that the scrubber was not operating properly during the onsite inspection. Mr. Grinstern asked for the acid records for the scrubber, and the facility explained that only water was used in the scrubber.

APPLICABLE RULES/PERMIT CONDITIONS

The facility's equipment is operating under Wayne County Air Permits C-6714 through C-6719 for:

Two sand mixers and a sand silo with a bag house

Two coreless induction melters

Two coreless induction furnace melters

Sand mixers, a sand silo, and a sand reclaimer with a baghouse

A tumble blast unit with a dust collector

Sand reclaimer with a dust collector

These permits were issued on January 4, 1985, and the special conditions are as follows:

1. NA – Drop sleeves are required when empting dust hopper in closed containers. In the past the drop sleeves have been present, though I did not observe activities at the dust hopper during the onsite inspection.
2. Compliance – Exhaust stack from the baghouse is at least three feet above the top grade of the building. Visual inspections from the road show the stacks are at least three feet higher than the building. The stack was raised a few years ago when the company was received frequent odor complaints.
3. Compliance – The facility maintains a log for all maintenance preformed on the baghouse.

The facility operates three electric furnaces, with a capacity of 3,000 lbs, 2,000 lbs and 400 lbs. Initially, these furnaces were thought to be exempt from permitting Rule 282 (2)(a)(vi). However, it was discovered that the furnaces are electric induction furnaces and do not have a specific capture hooding. It was also discovered that one of the two 2,000-pound furnaces was replaced in 1994 with a 3,000-pound furnace which would need to be permitted, as described in Mr. Grinstern's inspection report.

The facility appears to be subject to 40 CFR 63 ZZZZZ and Rule 949 for Iron and Steel Foundries Area Source. Mr. Grinstern explained this regulation to Mr. Tynan. He also explained that it appeared that Northfield Manufacturing is subject to this regulation.

MAERS REPORT REVIEW
NA

FINAL COMPLIANCE DETERMINATION
Northfield Manufacturing appears to be subject to 40 CFR 63 subpart ZZZZZ and Rule 949. Based on the finding of Mr. Grinstern's inspection a violation notice was issued to the facility.

NAME _____ DATE 2/7/23 SUPERVISOR JK