

N1019

MANILA

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

N101952285

FACILITY: NORTHFIELD MANUFACTURING		SRN / ID: N1019
LOCATION: 38549 WEBB, WESTLAND		DISTRICT: Detroit
CITY: WESTLAND		COUNTY: WAYNE
CONTACT: Scott Tynan ,		ACTIVITY DATE: 01/23/2020
STAFF: Jill Zimmerman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Target Inspection and Odor complaint follow-up		
RESOLVED COMPLAINTS:		

DATE OF INSPECTION : 01/23/2020  
 TIME OF INSPECTION : 1:30 pm  
 INSPECTED BY : Jill Zimmerman  
 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 34 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

An odor complaint was received on January 14, 2020 through PEAS. The complainant described unpleasant odors similar to sulfur to a city official who called the PEAS hotline. The city official drove through the area and suspected that Northfield Manufacturing was the source of the odors. Prior to this complaint, the most recently received odor complaint was received in 2014.

### 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. According to an employee, John, the unit operates at approximately 750,000 Btu heat input. 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 kept 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 1:30 pm for the scheduled inspection and to discuss the recently received odor complaint. Mr. Tynan said that he had been investigating the odors since informed him about the complaint. He explained that he walked outside of the facility and smelled an unusual burning rubber odor that was tricky to place. However, as he walked near the sand reclaimer, he suspected that this was the source of the odor. In June 2019 the facility changed the bags in the baghouse. The new bags were sold as being higher quality and lasting longer. Typically, the facility changed the bags every six months. However, with the new quality bags, they were told that the bags should last about a year. It has been less than eight months since the bags were changed. The company suspects that they higher quality bags were not as efficient as advertised and need to be changed more frequently than they thought. The company has ordered a full set of replacement bags and the new bags will be installed once the outdoor temperature reaches 50 degrees so that it is safe for the employees to complete the work.

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. Employees have the option of working up to ten hours per day, based on their own preference, which has created a more satisfied working environment and has resulted in more efficient production. During the inspection, the facility was creating cores and working on the production line. Minimal haze was observed on the production floor. Since the last inspection, no equipment has been removed or added to the process.

The other goal of this inspection was to determine the facility compliance with 63 Subpart ZZZZZZ and Rule 949 for the area MACT for iron and steel foundries. I shared a copy of the regulation as well as a fact sheet with Mr. Tynan. I asked Mr. Tynan to complete a potential to emit for HAPs since each chemical used in the sand core binder contains at least one HAP. Mr. Tynan believes that he is subject to this regulation and will work to comply with all requirements. Mr. Tynan stated that during 2019, the facility melted 1,125 tons of metal, categorizing this facility as a small source.

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.

**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 emptying 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 – Records kept as part of preventative maintenance program indicate inspections of dust collectors.

The facility operates three electric furnaces, with a capacity of 3,000 lbs, 2,000 lbs and 400 lbs. These furnaces are exempt from permitting Rule 282 (2)(a)(vi).

The facility appears to be subject to 40 CFR 63 ZZZZZ and Rule 949 for Iron and Steel Foundries Area Source. I gave Mr. Tynan a copy of this regulation as well as a fact sheet for this regulation. Based on the production from last year of 1,125 tons melted, this facility is considered a small foundry. Mr. Tynan is working to complete the PTE calculations for HAPs based on the chemical composition of the materials used in the core binder chemicals. I explained that annual records of amount of metal melted and HAPs usage would need to be kept to demonstrate compliance.

**MAERS REPORT REVIEW**

NA

**FINAL COMPLIANCE DETERMINATION**

Northfield Manufacturing appears to be operating in compliance with all conditions of the Wayne County Permits C-6714 through C-6719. The facility is subject to 40 CFR 63 subpart ZZZZZ and Rule 949. The facility is working to complete all requirements for this regulation.

NAME *Jill Zimmerman*

DATE *1/31/2020*

SUPERVISOR *JK*