

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

B516948103

FACILITY: WHITEHALL PRODUCTS LTD		SRN / ID: B5169
LOCATION: 8786 WATER ST, MONTAGUE		DISTRICT: Grand Rapids
CITY: MONTAGUE		COUNTY: MUSKEGON
CONTACT: Chuck Krzykwa , VP Manufacturing		ACTIVITY DATE: 03/12/2019
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

The facility is an aluminum foundry that manufactures decorative castings, such as weather vanes, home address signs, memorials, etc. The facility is a green sand-casting operation that operates four gas-fired crucible furnaces.

REGULATORY ANALYSIS

The facility is a minor source that holds one air use permit, opt-out permit No. 142-07. The permit limits the potential emissions of HAPs below the major source level.

The facility has been in operation since prior to 1967, with some of the foundry processes (furnaces/sand system) being replaced in 1977. The facility obtained an opt out permit (No. 142-07) in 2007. The permit application addressed all existing processes at that time.

Subpart RRR, Secondary Aluminum Production – Not subject - The facility currently does not melt any charge material that is not defined as clean charge under Subpart RRR. Additionally, the facility does not operate any process that are affected sources under Subpart RRR.

Subpart ZZZZZZ, Area Source Aluminum, Copper, and other Nonferrous Foundries – The facility is not Subject to Subpart ZZZZZZ because their annual metal throughput remains below the applicability threshold of 600 tons. Total tons melted in 2018 was 356.5 tons.

No complaints or other compliance issues involving the facility have occurred since the last inspection in 2015.

COMPLIANCE EVALUATION

Prior to entering the facility, a survey of the perimeter was made. No odors or visible emissions were noted from the facility.

At the facility, staff met with Chuck Krzykwa, V.P. Manufacture. Mr. Krzykwa accompanied EG on a tour of the facility. Subsequent to the on-site inspection, Tim Swainston, Purchasing & Inventory - Whitehall Products, provided facility records as requested.

Sand System

The facility is a green sand foundry. The facility only uses sand with 6% bentonite clay, no sea coal, cereal or other binders. Additionally, no cores are used. Spend mold sand is conveyed to a rotary screen to remove residual aluminum. From the screen, the sand is conveyed to a silo. From the silo, bentonite is added to the sand on way to the muller. From the muller, sand is conveyed to hoppers located above the molding machines. The sand system does not have any direct external exhaust, however there is a duct that terminates adjacent to a building exhaust fan at the east end of the building. The duct exhausts steam from the muller. Observation of the exhaust from outside the plant showed no emissions and no staining on the building that would indicate particulate is exhausted from the duct. The facility utilizes nine (9) squeeze mold making machines. All emissions from the mold machines are internally vented.

Melting

The facility utilizes four (4) 1,000 pound gas-fired crucible furnaces to melt pure ingot and internal runaround. Flux (411) is utilized in the furnaces. The furnaces are located in a booth/bay, each with an exhaust fan and stack.

FG-FURNACES:

Emission Limits - Limits PM to 0.10 pounds/1,000 pounds. Compliance is based on the use of only clean charge material and compliance with the flux use limit. Compliance could also be determined through requiring stack testing, which has not been required to date.

Material Limits/Records – Limits charge material to that which meets the definitions of “clean charge” in accordance with Subpart RRR. Based on the charge material observed on-site and the facility’s statements, only clean charge is melted in the furnaces.

The facility is required to maintain records of the amount of aluminum melted and hours of operation. The facility provided records of the hours of operation on a daily basis and the amount of aluminum melted on a monthly basis. The facility melted a monthly high of 35.8 tons in 2018 and a total tonnage of 365.5 tons in 2018.

Flux usage is limited to 30 pounds per day. The facility uses a measuring can with a known weight (can holds 0.68 pounds of flux) to track flux usage. The facility provided daily flux use records for 2018. Review of the records showed a daily high usage of 6.8 pounds.

Stack/Vent Restriction

Each furnace has a stack with a required minimum height of 15 feet and a maximum diameter of 24 inches. Visual observation of the stacks showed that they appeared to meet the required dimension.

Pouring/Cooling/Shakeout

Molds are manually poured on the conveyors, where they are also cooled. After cooling, shakeout is conducted via two shakeout units that move between the conveyors. The mold sand is deposited in the floor conveyor that transports the sand to the rotary screen. Emissions from P/C/S vent internally.

Finishing

The facility has numerous finishing operations that take the casting up to the point of coating. The castings are coated at their facility in Whitehall. Finishing operations include the following:

Tumblast unit – controlled by a baghouse that vents externally. The facility stated that the unit is rarely used. The process was not operating at the time of the inspection.

Belt sanders, buffers, drills, cut-off saws - processes vent internally

Small welding station that has an external exhaust

The facility had a table CNC unit that ducted to a filter unit, however the unit was removed since the last inspection.

Finishing was mentioned in the permit application, but not specifically detailed in the permit. All of the finishing operations are also exempt under Rule 285(2)(l)(vi) or Rule 285(2)(i) (welding)

Finished castings are sent to the facility's Whitehall plant for painting. In the finishing area was a half full tote that contained painted castings sent back due to defects. The Mr. Krzykwa stated that the painted castings are sent to Padnos for recycling.

Miscellaneous

The facility cleans mold patterns by dipping them in a cleaner. The facility has a tank with an exhaust hood that vents to the ambient air uncontrolled. At the time of permitting the facility was using a lacquer thinner that contained toluene. The use of the lacquer thinner gave the facility a potential to emit HAPs over the major source threshold, resulting in the need for an opt out permit. The use of the lacquer thinner was contained in the permit application, but not specifically limited in the PTI. The facility switched to a HAP free cleaner (Bio Adhesive Remover) several years ago. The Bio Adhesive Remover is primarily acetone.

FGFACILITY

FGFACILITY limits the facility-wide HAP emissions below the major source threshold.


Emission limits – Limits individual HAPs to 9.0 tpy and aggregate HAPs to 22.5 tons tpy. Compliance is based on the requirement to maintain records of emissions and records of HAP containing material usage.

The facility provided records of HAP containing material usage and emissions. The spreadsheet contained information regarding toluene usage. This information was an artifact left on the spreadsheet from previous years. The facility no longer uses lacquer thinner with toluene.

The facility records show total HAP emissions for 2018 at 1,012.86 pounds. All of the accounted for HAP emissions are HCl from flux usage.

Conclusion

Based on the information and observations made during the inspection, the facility appears to be in compliance with applicable air quality rules and regulations.

NAME 

DATE 4/12/18

SUPERVISOR 