

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

B453851673

FACILITY: PSG GRAND RAPIDS (Previously Blackmer, A Dover Co)		SRN / ID: B4538
LOCATION: 1809 CENTURY AVE SW, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Charles Hacht , EHS Coordinator		ACTIVITY DATE: 12/12/2019
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced inspection		
RESOLVED COMPLAINTS:		

**FACILITY DESCRIPTION**

PSG, formerly Blackmer, is located in the city of Grand Rapids and employees approximately 289 workers. The facility has been in operation for over 100 years and produces pumps for various applications. The facility can be divided into two segments, (1) Assembly , (2) Foundry. The foundry casts the iron components of the pumps which are machined and assembled in the Assembly portion of the plant. In addition to the iron pumps that are cast on-site, the facility also receives and finishes/assembles pumps manufactured off-site, including bronze pumps.

The facility informed AQD that they will be closing the foundry portion of the plant at the end of March 2020.

**REGULATORY ANALYSIS**

The facility is a synthetic minor source that operates under Opt Out Permit No. 171-09. The facility is subject to the Iron and Steel Foundry Area Source NESHAP, Subpart ZZZZZ. The facility is considered an existing small area source under the NESHAP.

**COMPLIANCE EVALUATION**

At the facility, Eric Grinstern (EG) met with Charles Hacht, Safety and Environmental Coordinator, PSG Grand Rapids.

Below is an evaluation of compliance based on PTI No. 171-09 and applicable rules and regulations:

**ASSEMBLY**

The assembly portion of the facility consists of various assembling, machining, painting and packaging operations. Only the paint booths have specific emission unit requirements. The permit also addresses two small heat treat ovens and gas fired space heaters. These emission units are regulated under FGFACILITY, through overall natural gas usage records and facility-wide emission limits.

Along with the machining operations, the facility has numerous parts cleaners that are ducted to internally vented Torit collectors. Additionally the facility uses coolants and rust inhibitors. All of these processes appear to be exempt from permitting under Rule 285(2)(r). Emissions from the processes need to be accounted for under FGFACILITY.

Since the last inspection the facility has added a small plastic injection molding operation for the production of pump vanes.

A small internally vented Torit collector controls emissions from the injection molders. The injection molders are exempt from permitting under Rule 286(2)(b).

**EUPAINTING**

PTI No. 171-09 addresses five paint booths under EUPAINTING.

EUPAINTING requires the booths to be maintained with exhaust filters and for the facility to maintain records of monthly paint usage and to calculate the amount of VOC emissions on a monthly basis.

Observation of each of the booths showed exhaust filters installed and maintained. The filters are changed

either on a set schedule or based on the pressure drop across the filter.

The facility supplied records from 2018 until current, documenting compliance with the recordkeeping requirement for paint usage and VOC emissions. The records also track HAPs/toxic air emissions. Usage and emissions are not restricted under EUPAINTING. Emissions are included in determining compliance with the opt-out limits in FGFACILITY.

### **FOUNDRY**

The foundry portion of the facility consists primarily of pattern making, core making, mold making, charge preheating and melting, pouring, cooling, shakeout, finishing operations (grinding, cut-off, and shotblasting), sand handling, and heat treating.

### **EUCOREMOLDMAKING**

The facility utilizes shell cores and phenolic no bake cores. The emission unit also includes the (4) green sand mold lines.

The permit addresses five (5) shell core machines, ((1) Dependable, (2) Redford and (2) Harrison core machines). Emissions are exhausted to the ambient air uncontrolled.

The phenolic no-bake cores are made via the two-part Ashland core process which consists of a binder, catalyst and sand. The binder and catalyst are combined in an automatic mixer and then manually rammed into a core mold. A portion of the cores are coated. Emissions from core making are uncontrolled. Hooding over the mold filling and curing area vents emissions uncontrolled to the ambient air.

The facility utilizes a green system for molds. The facility has four (4) green sand molding machines. Two (2) of the machines make the smaller molds and are automated (Hunter), while the other two make the larger molds and are primarily manually operated. Mold making emissions are uncontrolled.

There are no emission unit specific conditions for core and mold making. EUCOREMOLDMAKING is restricted under FGFACILITY (facility-wide emission limit) as emissions are included in determining compliance with the opt-out limits in FGFACILITY.

### **EUPOURING**

Emission unit includes pouring and cooling.

Mold pouring and cooling is conducted on a conveyor system. Emission from pouring and cooling are not captured or controlled. There are no emission unit specific conditions for pouring. EUPOURING emissions are accounted for under FGFACILITY opt-out limits.

### **EUPREHEATER**

The facility has a 275,000 Btu preheater that is uncontrolled. The preheater heats steel scrap (bushling), Sorel pig iron, and gates and risers to a temperature of about 700 degrees prior to charging the furnace.

There are no emission unit specific conditions for the preheater. EUPREHEATER emissions are accounted for under FGFACILITY opt-out limits.

### **EUMELTING**

The facility has two (2) electric induction furnaces with each having a 3 ton holding capacity. Only one furnace is run at a time, with the power supply being switched between the two crucible pots. Emissions from the furnaces are not captured or controlled.

The permit limits the charge rate to 2.26 tons on an hourly basis. The facility is required to maintain records of the daily charge rate to EUMELTING.

Records for the previous 30 days were requested. Review of charge records supplied by the facility showed compliance with the permitted charge rate. For all days reviewed, the charge rate was below 2 tons/hr. Emissions are not restricted under EUMELTING. Emissions are included in determining compliance with the

opt-out limits in FGFACILITY.

### **EUI NOCCULATION**

Approximately 50% of the iron produced is inoculated to produce ductile iron. The facility performs inoculation in a standard ladle that they place a hood over during treatment. Emissions are vented uncontrolled. There are no emission unit specific conditions for the inoculation. Emissions are not restricted under EUMELTING. Emissions are included in determining compliance with the opt-out limits in FGFACILITY.

### **EUSHOTBLAST**

(1) Cinto Shotblast - Facility has one Cinto shotblast unit that has replaced the previous two Rotoblast units. The Cinto unit is controlled by an internally vented Torit unit.

Permit requires the facility to continuously monitor and record the pressure drop (daily) across the dust collector. Pressure drop records for the previous 30 days (10/12/19-12/2/19) were requested and reviewed. The facility has an established maximum pressure drop of 9.0 inches. Review of the records showed all readings to be 4.2 inches or less. The pressure drop was 7.0 inches at the time of the inspection.

No emissions were observed to be venting from the baghouse exhaust (internal).

### **FGFOUNDRY**

Flex group includes EUFINISHING and EUSANDHANDLING

Finishing consists of shakeout, Didion drum, bench grinders, snag grinders and cutoff saws.

Sand handling consists of the sand reclamation system.

Cut-off saws 1-2-3-4, Pedestal grinders, Snag grinders 1-2-3-4, Bench grinders 1-2-3-4  
All equipment used to clean-up castings is vented to the internally vented Torit baghouse.

Sand System - The sand handling system is vented to the north Dustar baghouse. The system recycles used sand, adds in new sand, clay, water, and cereal bonding ingredients.

Shakeout - Shakeout consists of a dump table, which dumps the molds on to a vibrating conveyor table. The vibrating conveyor table is completely enclosed and is vented to the Dustar baghouse. The conveyor carries the castings and sand toward a rotary tumbler. Prior to entering the rotary tumbler the sand falls out and goes to the sand reclamation system. The exit end of the rotary tumbler is exhausted to the same baghouse as the vibrating conveyor table.

Emissions of PM and visible emissions are limited from the baghouse controlling the flex group. PM is limited to 0.01 lb./1000 lbs. gas and opacity to 10%. Compliance is demonstrated through proper operation of the baghouse, which in part is demonstrated through the requirement to continuously monitor and record the pressure drop daily. The facility provided requested record for the past 30 days. The pressure drop readings for the records reviewed were below the established maximum level. The facility contracts Waltz Holtz to handle baghouse maintenance.

The Dustar baghouse was observed and no VE was noted. The pressure drop was 5.0 inches at the time of the inspection.

### **FGFACILITY**

FGFACILITY establishes facility-wide PM, PM10, NOx and VOC limits, as well as opt-out limits for HAP emissions. The flex group also incorporates some of the requirements of Subpart ZZZZZ.

Restricts emission of PM, PM10, NOx, VOC and HAP emissions. Compliance with the emission limits is demonstrated via the requirement that the facility calculates and maintain monthly and 12-month rolling time period records of emissions.

The facility provided the most recent monthly/12-month rolling average records. Review of the records

demonstrated compliance with the emission limits. (records attached)

Restricts metal throughput to 19,900 tons melted/year and sand throughput to 56,700 tons/year. Compliance is demonstrated via the requirement that the facility calculates and maintain monthly records of sand and metal throughput. The facility supplied records documenting compliance with the material usage limits. (records attached)

Requires the facility to monitor and record the monthly natural gas usage for FGFACILITY. The facility provided records of the natural gas usage readings. (records attached)

The facility is subject to the Area Source Iron and Steel Foundry NESHAP, Subpart ZZZZZ. The facility submitted an initial notification. The facility also submitted the notification of size classification and notification of compliance with the metallic scrap management plan. The facility has been timely with submitting semi-annual compliance certifications.

The facility provided records demonstrating compliance with the NESHAP requirement to keep records of the annual quantity and composition of each HAP-containing material. (records attached)

#### Summary

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

NAME



DATE

12/20/19

SUPERVISOR

