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

B787055124

FACILITY: EAGLE ALLOY INC		**SRN / ID:** B7870
LOCATION: 5142 EVANSTON AVE, MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: Steven Spiwak , Environmental Health and Safety Specialist		**ACTIVITY DATE:** 09/17/2020
STAFF: Eric Grinstern	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Full Compliance Inspection		
RESOLVED COMPLAINTS:		

EAGLE ALLOY INC. (SRN: B7870)

FACILITY DESCRIPTION

Eagle Alloy is located in Egelston Township in Muskegon County. Eagle Alloy aka Eagle Group consists of two facilities that are considered one stationary source. The facilities consist of Eagle Alloy and Eagle Precision Cast Parts. Eagle Alloy is a steel foundry and Eagle Precision is an investment casting operation.

REGULATORY ANALYSIS

The stationary source has an opt-out permit (No. 95-01G) that covers all permitted processes. PTI 95-01G was issued in July 2018, and included the replacement of two 5,000 lb. melt furnaces and the addition of two new 5,000 lb. melt furnaces. Additionally, the facility added a dust collector to improve indoor air quality. The dust collector was considered exempt and not evaluated as part of the permit.

Within the permit, Emissions Units 1 thru 17 and 43, 44, EUSHAKEOUT and EUPOURCASTCOOL are located in Eagle Alloy, Emissions Units 18 thru 37 are located in Eagle Precision.

The facility is subject to and considered a "large" existing area source under the Iron and Steel Foundry Area Source NESHAP, Subpart ZZZZZ. NESHAP subject processes include all iron/steel foundry operations in regards to compliance with the fugitive emissions limits. The melting furnaces are also NESHAP subject in regards to scrap metallic/mercury requirements, emission limits, operation and maintenance requirements and testing.

COMPLIANCE EVALUATION

Due to COVID 19, the inspection was scheduled with the facility so that current facility status regarding entry procedures and possible onsite COVID 19 cases would be known. At the time of scheduling the inspection, the facility had no known cases of COVID 19. Prior to entering the facility, staff completed the EGLE COVID Screening form. At the facility, staff competed the facility COVID 19 screening. Staff wore proper PPE while onsite, including a face mask.

At the facility, AQD staff consisting of Eric Grinstern (EG) met with Steven Spiwak, Environmental, Health and Safety Specialist, Dave Fazakerley, VP of Manufacturing and Debbie Pipoly, General Manager, Eagle Precision.

Below is a compliance evaluation based on PTI No. 95-01G and applicable air quality rules and regulations.
Facility records were requested and provided by the facility on August 24, 2020.

Eagle Precision

Eagle Precision is an investment casting operation that primarily produces ferrous castings and to a lesser extent, non-ferrous castings. Being one stationary source with Eagle Alloy, Eagle Precision is subject to the requirements of Subpart ZZZZZ as a large area source.

EU23

Assorted Mold Dip Trees

Emissions Limits

Visible emissions are limited to 10%.

During the inspection no visible emissions were seen from Eagle Precision.

EU24

Two (250 KW) Induction Furnace panels that operate two 1,000-lb pots, one 400-lb pot and one 500-lb pot.
Additionally, the facility has two melt furnaces (500 lb. and 1000 lb.), which have been considered as exempt from permitting under Rule 282(2)(a)(iv).

The furnaces are subject to Subpart ZZZZZ.

Emissions Limits

Emission unit contains a "No visible emission" limit.

During the inspection no visible emissions were seen to be emanating from the furnaces in Eagle Precision.

FG09

Cleaning & Finishing Equipment

Emission Units: EU27, EU28, EU29, EU30, EU31, EU32, EU33, EU35, EU36, and EU37

Emissions Limits

The flex group contains limits on particulate emissions (0.01 lb./1,000 pounds of exhaust gases)

Compliance with the particulate emission limit is based upon proper operation of baghouse control.

The facility installed a new baghouse since the last inspection in response to an issue with worker silica exposure.
The new baghouse handles all of the finishing operations, except for a couple of small blast units that are controlled by a small baghouse the vents internally. The new baghouse had a pressure drop of 1.8" at the time of the inspection. Observation of the baghouse exhaust showed no visible emissions. The baghouse appears to have been installed under Rule 285(2)(l)(vi)(c).

Eagle Alloy

Eagle Alloy is a steel foundry that utilizes shell molds and to a lesser extent furan no-bake molds. Cores consist primarily of shell cores.

EU43

Phenolic Shell Sand Thermal Reclamation System with baghouse control.

Emissions Limits/Testing

The emission unit contains limits on particulate emissions and VOCs.

Compliance with the particulate emission limit is based upon proper operation of the baghouse and initial compliance testing. Compliance with the VOC limit is based on maintaining the combustion chamber above 1150 degrees and initial compliance testing.

The facility conducted initial compliance testing on August 13-14, 2013. Test results showed compliance with the PM and VOC limits.

	Limit	Test Result
PM	0.01 lb/1,000	0.0005 lb/1,000
PM10	1.12 pph	0.251 pph
PM2.5	1.12 pph	0.251 pph
VOCs	1.83 pph	0.260 pph

Material Limits/Records
The process is restricted to an hourly sand throughput limit of 4.25 tons per hour.
The facility is required to monitor and records the sand throughput rate on an hourly basis. Records for August 2-8 were requested and provided to demonstrate compliance with the 4.25 ton per hour limit.
The sand throughput rate was below 3.75 tons per hour for the records reviewed.

Process/Operational Restrictions/Records
Requires a minimum temperature of 1150 degrees to be maintained in the combustion chamber. During the inspection a temperature of 1425 degrees was observed in the final zone (hood). The facility is required to monitor and record the temperature on a continuous basis.

A sampling of temperature records were requested and provided by the facility (6/10/2020, 6/24/2020, 7/15/2020,7/18/2020, 8/3,4,5,6/2020. Review of the records showed that the temperature was always above 1150 degrees (hood top reading) while the process was operating. A majority of the time the temperature was above 1400 degrees.

The baghouse is required to be equipped with a device to monitor the pressure drop on a continuous basis. The facility is also required to record the pressure drop on a daily basis. Observation of the pressure drop during the inspection showed a reading of -2.61 inches on the gauge near the baghouse. Pressure drop records were requested and provided for the months of June and July 2020. Review of records showed the pressure drop to be within the established normal operating range of -0.25 and -9.0 inches while the processes was operating. A majority of the reading were between -2.50 and -2.75 inches of pressure drop.

EU44

Sand Coating Plant. Reclaimed sand or new sand is transferred from the storage silo to a sand heater, then combined with resin and additives in a batch pug mill and then fed into a continuous mixer. After the mixer, the recoated sand is fed through a triple deck vibratory screener and cooled before it is then fed through an additional screener. Particulate emissions generated from the silo to the pug mill are controlled with a bag house. Organic emissions from the sand coating operation, including hazardous air pollutants are controlled with a thermal oxidizer.

Emissions Limits/Testing

The emission unit contains limits on particulate emissions, VOCs, Formaldehyde and Phenol. The permit also limits opacity to 5%.

Compliance with the opacity and particulate emission limit is based upon proper operation of the baghouse and initial compliance testing. Compliance with the VOC, opacity, Formaldehyde and Phenol limit is based on maintaining the thermal oxidizer above 1300 degrees and initial compliance testing for VOC.

The facility conducted initial compliance testing on August 13-14, 2013. Test results showed compliance with the PM and VOC emission limits. The permit requires that the facility re-verify VOC emissions every two years. The initial performance test was conducted on August 13-14, 2013, therefore requiring retesting by August 14, 2015. The facility missed the required test date and a VN was issued on September 30, 2016. The facility conducted testing on November 22, 2016, at which time compliance with the VOC limit was demonstrated. The facility requested and was granted a waiver, in accordance with the PTI, to forego testing required by November 2018. The next test is due by November 2020. During the inspection the facility stated that they have contacted the stack testing firm to schedule testing prior to the deadline.

Material Limits/Records
The process is restricted to an hourly sand throughput limit of 10.0 tons per hour.
The facility is required to monitor and records the sand throughput rate on an hourly basis. Sand throughput records were requested for (6/10/2020, 6/24/2020, 7/15/2020,7/18/2020, 8/3,4,5,6/2020) The facility stated that the computer that stores the data for the sand plant lost power on 6/10/2020, and that data was lost from 6/10/2020 through 7/1/2020, during which time they operated 6 days. Additionally, the process did not operate on August 3rd of August 4th. Review of the facility's records showed compliance with the 10.0 ton per hour limit. The facility previously stated that the first and last readings provide erroneous data, which was observed in the requested records.

Design/Equipment Parameters/Records
Requires the installation and operation of a thermal oxidizer. Proper operation includes 90% capture, 95% VOC destruction and maintaining a minimum temperature of 1300 degrees. At the time of the inspection the thermal oxidizer temperature was 1461 degrees. The facility is required to continuously monitor and record the thermal oxidizer temperature. Records were requested for (6/10/2020, 6/24/2020, 7/15/2020,7/18/2020, 8/3,4,5,6/2020) The facility stated that the computer that stores the data for the sand plant lost power on 6/10/2020, and that data was lost from 6/10/2020 through 7/1/2020, during which time they operated 6 days. Additionally, the process did not operate on August 3rd of August 4th. For the observed records the temperature was above 1300 degrees, with the exception of some erroneous readings (3.40E10) that were discussed as well as a single reading on August 8, 2020, (1273 degrees) that the facility will be investigating since the systems operation is interlocked and requires a minimum of 1300 degrees to operate.

The facility is required to record the baghouse pressure drop once daily. At the time of the inspection the baghouse pressure drop was 4.2 inches. Records were requested for June and July 2020. Review of the records showed that all readings were within the established normal operating range of 1 - 9 inches of pressure drop. All reviewed readings were between 3 and 5 inches of pressure drop.

FG04
Shakeout (2 Dust Collectors, one shared with EU06 Discharge In-plant)

The facility has a Didion unit that is used to shakeout shell molds. .

Shell mold shakeout (knock-out) is performed at the end of the cooling tunnels. The mold is knocked out manually with the sand being placed in a hopper that is controlled by the two baghouses. The castings are then processed through the Didion unit.

Emission Units: Didon tumbler

Design/Equipment Parameters

Requires the installation and operation of baghouse control.

During the inspection observation of the baghouses showed that they had been installed and appeared to be operating properly. No visible emissions were observed from the baghouse exhaust during the inspection.

FG05
Cleaning and Finishing System

Emission Units: EU09, EU10, EU11, EU12, EU13, EU14, and EU15

Emissions Limits

The emission unit contains limits on particulate emissions.

Compliance with the particulate emission limit is based upon proper operation of baghouse control.

During the inspection observation of the baghouses showed that they had been installed and appeared to be operating properly.

No VE was observed from any of the baghouses at the time of the inspection.

Design/Equipment Parameters

Requires the installation and operation of baghouse control.

During the inspection observation of the baghouses showed that they had been installed and appeared to be operating properly.

FG06
Sand Reclamation System

Emission Units: EU16 and EU17

Emissions Limits

The emission unit contains limits on particulate emissions.

Compliance with the particulate emission limit is based upon proper operation of baghouse control.

During the inspection observation of the baghouses showed that they had been installed and appeared to be operating properly.

Design/Equipment Parameters

Requires the installation and operation of baghouse control.

During the inspection observation of the baghouses showed that they had been installed and appeared to be operating properly.

FGFACILITY

Emission Limits/Material Limits

FGFACILITY contains limits for PM, PM10, PM 2.5, Individual HAP and Aggregate HAPs. Compliance with the emission limits is demonstrated through the requirement that the facility maintain records of emissions.

Review of facility supplied records for the previous 12 months showed compliance with FGFACILTY emission limits. In calculating emissions the facility assumed a 25% capture efficiency associated with structural control for the processes vented inside tunnels. Assuming 25% control is not appropriate since the tunnels have fans that exhaust directly uncontrolled to the outside atmosphere. It appears the facility will still be incompliance without the use of the control assumption. The facility will be requested to recalculate emissions, as was requested following the last compliance inspection.

Data ending in July 2020

PM limit	**89.9 tons/year**	**recorded emissions**	**22.82 tons**
PM10 limit	**89.9 tons/year**	**recorded emissions**	**23.12 tons**
PM2.5 limit	**89.9 tons/year**	**recorded emissions**	**23.12 tons**
Ind. HAP limit	**8.9 tons/year**	**recorded emissions**	**2.27 tons (phenol)**
Agg. HAP limit	**22.4 tons/year**	**recorded emissions**	**2.87 tons**

The flex group also contains material limits for steel production, lake sand usage, sand binder, shell sand binder and shell sand. The facility provided material usage records demonstrating compliance with the limits.

Review of facility records for the previous 12 months showed compliance with the ton per year limits on a 12 month rolling time period.

Data ending in July 2020

Steel throughput limit 32,000 tons/year recorded actual usage 6,131.4 tons (12,692.1 tons charged)

Lake Sand limit	**15,720 tons/year**	**recorded actual usage**	**1,204.8 tons**
Sand Binder limit	**121.6 tons/year**	**recorded actual usage**	**12.5 tons**
Shell Sand Binder limit	**2000 tons/year**	**recorded actual usage**	**434.6 tons**
Shell Sand limit	**40,000 tons/year**	**recorded actual usage**	**8,063 tons**

FGMACTZZZZZ

The facility is considered an existing large area source under Subpart ZZZZZ.

Emission Limits
The facility is subject to PM or Total Metal HAP limits for the melting furnaces located in Eagle Alloy and Eagle Precision. The facility is also subject to a fugitive opacity limit of 20% for the buildings housing foundry processes.
The facility conducted testing on March 10, 2012 and demonstrated compliance with the emission limit for PM. The facility will need to retest by 2022 to demonstrate compliance with the PM limit. The facility has not documented any exceedances with the opacity limit.

The facility is demonstrating compliance with the PM emission limit through emissions averaging. The facility provided records demonstrating compliance via emissions averaging.

Material Limits/Process/Operational Restrictions

The facility is subject to restrictions regarding methanol depleted warm box catalyst which the facility has certified compliance with.

The facility is subject to work practice standards for scrap, which they have certified compliance with and was verified during this inspection. The facility only melts No. 1 busheling and internal scrap.

Design/Equipment Parameters

Requires the facility to install and maintain capture and collection systems for the melt furnaces unless they are part of an emissions averaging group. None of the furnaces at Eagle Alloy or Eagle Precision have capture or control. The facility is using the emissions averaging option.

Testing

Requires the facility to test the melting furnaces to demonstrate compliance with the emission limits for PM or Total Metal HAPs and fugitive opacity testing by July 1, 2011 and every 6-months thereafter.

The next test is due before March 2022.

The facility has been conducting the fugitive opacity testing. Testing is required every 6 months.

Monitoring/Recordkeeping

Requires the facility to maintain an O&M plan for each control device controlling emission from the melt furnaces.

None of the facility's furnaces have capture or control; therefore they do not have any O&M

plans.

Requires inspections of capture and control devices for the melt furnaces.

None of the facility's furnaces have capture or control; therefore they have not conducted any inspections.

CONCLUSION

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

NAME Eric Grinstern DATE 09/22/2020 SUPERVISOR HH