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

N822372138

FACILITY: Cosma Casting Michigan		SRN / ID: N8223
LOCATION: 10 N Clark Rd, BATTLE CREEK		DISTRICT: Kalamazoo
CITY: BATTLE CREEK		COUNTY: CALHOUN
CONTACT: Mason Tinch , HSE Manager		ACTIVITY DATE: 03/21/2024
STAFF: Jared Edgerton	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced air quality inspection		
RESOLVED COMPLAINTS:		

On March 21st, 2024, Air Quality Division (AQD) staff (Jared Edgerton and Rachel Benaway) arrived at 10 N Clark Rd, Battle Creek Michigan at 10:30 am to conduct an unannounced air quality inspection of Cosma Casting Michigan. Staff met with Mason Tinch, HSE Manager. He is listed as the onsite contact for this facility, and he answered all operation questions.

This facility has been in operation for 10 years, with roughly 400 staff members employed. Three shifts run Monday through Friday. The facility uses high pressure die casters to mold aluminum into car parts for General Motors, Stellantis, and Ford. Cosma Casting is a synthetic minor source for HAPs as established in Permit to Install (PTI) No. 166-13G. Within the PTI, there is an emergency engine, 6 aluminum melt furnaces, and 4 nitrogen degassing stations.

Exempt Equipment:

The facility has two small cold cleaners, one in the tool room area, and the other with the metal working equipment. Both cleaners are not heated and do not use halogenated solvent. The units also have separate servicing companies. Cystal Clean and Mirachem provide mineral based solvents. Proper operation stickers were provided for Mr. Tinch to post on the units, due to the old ones wearing away. The lids on both cleaners were also down while they were not in use. The cold cleaners are exempt from PTI requirement pursuant to Rule 281(2)(h). Various metal working equipment was also located nearby. Band saws, cutters, and lathes that vent in-plant are also exempt per Rule 285(2)(l)(vi)(B). There were some welding areas that vent in-plant and is exempt per Rule 285(2)(i). In previous inspection reports, 37 natural gas fired air make-up units and two office heaters were located at the facility. During this inspection, none of these devices were found, and Mr. Tinch knew of no such units. Laser process equipment that is used to etch an identification label on finished parts was on site and exempt per Rule 285(2)(r)(v). Throughout the facility, 28 CNC machine lines operate and are exempt per Rule 285(2)(l)(vi)(B). The facility presently has 12 aluminum die casting machines. They are rated up to 4,400 tons of pressure and vent in-plant through electrostatic self-cleaning filters. The die casting process equipment is exempt per Rule 285(2)(l)(ii).

Inspection Walkthrough:

The inspection started with Mr. Tinch walking AQD staff to the back of the facility where the raw aluminum ingots arrive by truck. Aluminum comes from either Real Alloy or Trialco Aluminum, LLC. The facility then melts down internal scrap in the FGFURNACES which meet the definition of clean charge and is exempt from regulation under 40 CFR Part 63(MACT), Subpart RRR for secondary aluminum production. As the inspection continued, staff walked past multiple CNC lines used to finish the parts to specification. Large machine lines were also seen operating,

pouring molten aluminum into the casts. Staff asked Mr. Tinch if these die casting machines had control devices and was told that they had filter control units. Parts also get dipped in a bath to bring the temperature down so staff can grab them. The facility has plans to improve the in-plant environment with new filtration systems. None of the die cast machines vent externally to the ambient air.

FGFURANCES and FGDEGAS: FGFURANCES consists of 5 fully operational furnaces which melt either A380 or non-A380 aluminum alloys. Each furnace is given an alloy composition and does not change to prevent contamination of the alloys. The 6th furnace was not operating at the time of inspection, but Mr. Tinch stated that the facility was close to starting the furnace up. These furnaces are active 24 hours a day unless maintenance is required. FGDEGAS is a recent addition to the facility, with two of four units starting operation in December 2023. The other two units finished construction in February and were stack tested by Impact compliance testing. These tests took place on February 27th-March 1st. During the inspection, Mr. Tinch stated that the facility has not yet commenced operation of these new units but will in the near future. After observing metal being poured from the furnaces, staff began to walk towards more CNC machines. These units continued into their own dedicated room. Robotic arms were observed to be moving parts from one machine to the next, grinding metal away to finish the product. This room also contained the small laser etch machine. Mr. Tinch continued to lead the inspection back to the larger die casting machines, through the main room to get to an adjacent storage area for old pallets, and tubs. A door led outside to EUENGINE. This unit is a 2180 kW (2922 hp) diesel-fueled emergency engine manufactured in 2008. The model is a Cummins QSK60-G6 compression ignition engine and is certified to comply with emission limits under 40 CFE Part 60 (NSPS) Subpart IIII. The engine at the time of inspection appeared to be in good working order, with run hours at 279.6. The engine has been started a total of 571 times and only runs during emergency situations.

Near the front entrance into the operation floor is the tool and metal-working area. The two cold cleaners were located here. Mainly this area is used to clean and perform routine maintenance on the die inserts. Parts can get damaged, and repairs are necessary when an operation run has been completed on a part. Staff ended the inspection by informing Mr. Tinch that there would be a records review portion of the inspection. A request was sent to the facility by email, and records were received by AQD staff within the time given. A summary of records review is listed below.

Conclusion of Inspection / Record Request Determination:

At the time of the inspection, based on what was observed during the walkthrough, emission units appeared to be complaint with permit No.166-13G or operate under various exemptions. Cosma Casting has emission limits for non-methane hydrocarbon with nitrogen oxide, carbon monoxide, PM, PM10, PM2.5, hydrogen chloride, and individual and aggregate HAPs. Material limits for usage of flux, and total amount of alloy metal processed are defined in the permit. Records were requested for the last two years.

EUENGINE:

1. Records of the total hours of operation and the hours of operation during non-emergencies. Records need to be on a monthly and 12-month rolling time period.

- Appears compliant? – Yes. Permit limit on hours run during emergencies is 500, and 100 for maintenance related activities. Facility reports run hours below the limits. Records are being kept in a satisfactory manner.

2. Records of fuel supplier certification records or fuel sample test data for each delivery of diesel fuel oil used in EUENGINE. Name of oil supplier, and sulfur content of the fuel oil.
    - Appears compliant? – Yes. Name of oil supplier is Crystal Flash, with sulfur content at 15 ppm max. Fuel type used is #2 ultra-low sulfur diesel. Records were provided and attached to report.

FGFURACES

1. Records of total weight of each alloy melted in each furnace of FGFURNACES, as well as total weight of all alloys melted in all the furnaces combined, including any final alloy additions to the melt while in the ladle. Records should be monthly and 12-month rolling time period.
    - Appears compliant? – Yes. Limits for non-A380 is 65,000 tons/yr and A380 at 7,000 tons/yr. The facility reports totals lower than the limits. Records are being kept adequately in monthly and 12 month rolling.
2. Records of the amount of flux used in each furnace of FGFURNACES on a daily, monthly, and 12-month rolling basis.
    - Appears compliant? – Yes. Daily records are being kept for flux usage in each furnace. Facility reports well below the 24 pounds per day limit. Flux usage is also below the yearly limit of 54,750 pounds per year, with monthly and 12 month rolling records being kept.

FGDEGAS

1. Provide records of the amount of flux used in each degassing unit of FGDEGAS on a monthly and 12-month rolling basis.
    - Appears compliant? – Yes. Degas flux usage is being kept monthly as well as daily. 12 month rolling data is not being kept due to the units being newly installed. EUDEGAS1 and EUDEGAS2 started operation in December 2023. EUDEGAS4 and EUDEGAS3 were recently completed and scheduled to start operations later in March 2024. Not enough time as passed for calculating 12-month rolling data.
2. Provide records of the identity of all degassing agents used in FGDEGAS on a daily basis, for March 1st, February 15th, February 1st, January 15th, and January 1st, 2024.
    - Appears complaint? – Yes. Records are being kept on a daily basis, and nitrogen is the only degassing agent used in the facility.

FGFACILITY

1. SDSs of solutions used in cold cleaners/part washers.
    - Appears compliant? – Yes. Facility provided safety data sheets for both cold cleaners located on site. Documents are attached to report.
2. Provide monthly and 12-month rolling basis records for the following.
    - a. Pounds of each flux used in FGFACILITY.
        - Appears compliant? – Yes. Flux is being kept for FGFACILITY as both monthly and 12 monthly rolling basis. Totals for flux usage is well below the permit limit.
    - b. Pounds of each HAP containing material used.
        - Appears compliant? – Yes. Each Hap containing material used is listed within a FGFACILITY total and is below the permit limit. Records are kept in a satisfactory manner.
    - c. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month. HAP emission calculations shall include HAPs generated from fluxing, and HAPs emitted from all HAP containing materials used in FGFACILITY.
        - Appears compliant? – Yes. Individual and total aggregate HAPs are calculated monthly and 12 month rolling.

- d. Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.
    - Appears complaint? – Yes. Records are satisfactory and accurate. Totals are below limits. Emission rates are reported in pounds by the emission source. Facility reports rates lower than 22.5 tons per year of aggregate HAPs. Individual HAPs are also below the limit of 9.0 tons per year.

3. Provide the natural gas usage in MMcf/yr for FGFACILITY. Records should be on a monthly and 12 month rolling basis for the last two years.
    - Appears compliant? – Yes. Records are being kept monthly and on a 12-month rolling basis. Facility reported well below the 270 MMcf/yr limit.

After reviewing what was observed during the on-site inspection and determining that the records were satisfactory to the permit requirements, it appears that the facility is currently in compliance with PTI No. 166-13G. Staff concluded the inspection at 12:05 PM -JLE

NAME [signature] DATE 6/13/24 SUPERVISOR [signature]