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

B168657947

FACILITY: KAISER ALUMINUM FABRICATED Products LLC		SRN / ID: B1686
LOCATION: 5205 Kaiser Drive, KALAMAZOO		DISTRICT: Kalamazoo
CITY: KALAMAZOO		COUNTY: KALAMAZOO
CONTACT: Andrew Frisbie , EHS Manager		ACTIVITY DATE: 04/21/2021
STAFF: Amanda Chapel	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT:		
RESOLVED COMPLAINTS:		

On April 16, 2021 Air Quality Division's Amanda Chapel (staff) received the requested records from Kaiser Aluminum Fabrication located at 5205 Kaiser Drive, Kalamazoo Michigan. Due to the ongoing COVID-19 pandemic, EGLE has provided guidance to complete inspections and records reviews in a way to reduce possible time of exposure. Because of this, the records were requested digitally before the scheduled on-site inspection. The on-site inspection will be completed on April 21, 2021. The purpose of this records review and inspection is to determine compliance with the company's current Permit to Install (PTI) No. 113-09D and all other applicable state and federal air quality regulations.

Kaiser melts aluminum scrap to produce cast aluminum billets and extruded aluminum products. The facility is a synthetic minor source for Hazardous Air Pollutants (HAPs) and nitrogen oxides. The facility has one active PTI and is subject to the Secondary Aluminum NESHAP 40 CFR Part 63, Subpart RRR for EUMELTFURNACE only. According to the previous inspection report, on February 16, 2012 EPA Region 5 sent Kaiser an approval letter that allows for operation of EUMELTFURNACE as a Group 2 furnace melting only clean charge without reactive fluxing and without any required air pollution control equipment.

The malfunction abatement plan (MAP) and operation, maintenance, and monitoring plan (OM&M) were last updated on October 11, 2019. Copies were sent to the office as required by the PTI. EUMELTFURNACE generally operates as a Group 1 furnace and only operates as a Group 2 furnace on an intermittent basis. The AQD received written notifications on 2/27/20, 3/4/20, 7/13/20, and 12/7/20 for switching EUMELTFURNACE from Group 1 to Group 2 operation. In these scenarios, the switch over lasted less than 24 hours to 3 days.

During the last inspection, AQD wrote a violation notice for a rain cap on the stack of the melt furnace and homogenizing furnace stack. In review of correspondence, this has been corrected and this will be verified during the inspection. Also, during the last inspection, there was discussion about changing the size of the cooling intake as part of a fume extraction project and whether or not it would need a new PTI. On September 18, 2018 the facility submitted a 278a and 285(2)(c) meaningful change analysis to demonstrate that the change is exempt. On December 4, 2018 the district sent an email acknowledging that the project appears to not trigger Rule 278 and the meaningful change analysis shows the project is exempt from NSR under Rule 285(2)(a) and 285(2)(c).

On February 2, 2020 the facility submitted documentation on a new Sorbacal delivery system which includes a silo and associated dust collector, loss in weight feeder and new blower package for transferring the Sorbacal. The facility completed a Rule 278 and 278a analysis as well as a Rule 291 analysis. Based on the supplied information, the facility installed the new Sorbacal delivery

system under these exemptions and it is currently operational. This will also be evaluated during the on-site inspection.

EUMELTFURNACE – Group 1

A natural gas-fired aluminum reverberatory furnace when operating as a Group 1 furnace with a maximum heat input of 81 MMBtu/hr during direct firing mode and 54 MMBtu/hr during regenerative firing modes.

The facility submitted records for the calibration of the feed scale, charge car, and hot baghouse temperature control. The charge car was last calibrated in January 2021, the feed scale on 10/8/20, and the temperature control on 12/15/20 and 3/31/21. Bag leak detection was last calibrated on 3/31/21. A service report was provided showing the lenses and a filter were cleaned to restore proper operation of the leak detection.

The facility also supplied a copy of the protocol for the hot baghouse Sorbacal delivery monitoring procedure. During operation, the casting department is required to verify that Sorbacal is being delivered at a minimum of 12 lbs/hr. Records including date, time, employee signature, and Sorbacal loss in weight pounds is required to be recorded once every 8 hours. If any malfunction is found, charging of aluminum to the melt furnace is shut down until the system is operating properly and all corrective action is recorded.

Facility is tracking pounds per batch on a daily basis. They are denoting if the batch is in group 2 operations. If a batch is larger than the amount allowed in the permit, the number is bolded and highlighted in red. Batch exceedances occurred on 1/15/20, 1/27/20, 2/4/20, 3/11/20, 6/12/20, 7/25/20, 7/28/20, 8/29/20, 8/30/20, 9/17/20, 10/14/20, 11/11/20, 11/16/20, 12/7/20, 12/14/20, and 12/15/20. The highest exceedance was 149,373 lbs with most exceedances being within 1,000 lbs of the permitted 146,000 lbs/batch limit. The facility appears to not be using any reactive flux in the furnace.

After Mr. Frisbie looked back at the records, the high exceedance was attributed to adding additional alloy to the furnace to achieve the correct aluminum chemistry. The other exceedances can likely be attributed to this as well as this is not added during charging and is done to adjust the makeup in the furnace. The facility never exceeded the 9 batches per day limit in the permit.

The facility tracks the required monthly label inspections. The date of the inspection is tracked in their monthly recordkeeping sheet. It was completed on 10/30/20, 11/25/20, and 12/30/20 as the last inspections done in 2020.

The facility tracks the 3-day 24-hour average dioxin/furan emissions based on the most recent performance test completed and amount of metal charged to the furnace. The calculations provided in the emissions tracking spreadsheet show the facility is well below the D/F limit established in the permit.

Operating hours for the melt furnace are tracking in the supplied recordkeeping as well. In 2020, the furnace ran for 4102 hours in the first six months of the year and for 4264 hours in the last six months. The baghouse is regularly inspected and cleaned on a weekly, monthly, quarterly, annual, and semi annual basis.

The facility appears to be in compliance with the records requirements for EUMELTFURNACE Group 1 operations.

EUMELTFURNACE – Group 2

The facility provided records showing the total charge weight and batches per day when operating in group 2 operations mode. In 2021, there were no instances of the facility operating in Group 2 mode. In 2020, records show that the facility never charged more than 5 batches of clean aluminum to the furnace.

The facility appears to be in compliance with records requirements for EUMELTFURNACE – Group 2 operations.

EUHOLDFURNACE

According to records, no metal was charged to the holding furnace in 2020. The facility continuously monitors and records the pressure drop across the baghouse in their internal tracking system.

The facility appears to be in compliance with all records requirements for EUHOLDFURNACE.

EUDROSS

Visible emissions readings are taken daily. There is a visible emissions sheet located on the floor by the cold baghouse with initials for who completed the reading.

The facility appears to be in compliance with all records requirements for EUDROSS.

EUHMFURNACE

The facility is tracking the amount of surface conditioner used per day in their recordkeeping. There appear to be no exceedances of the 3.18 lbs/day limit.

The facility appears to be in compliance with all records requirements for EUHMFURNACE.

FGGASCOMBUSTION

All process equipment that burns natural gas is being tracked. Highest total natural gas usage at the facility in 2020 was 34.50 MMCF in January.

The facility appears to be in compliance with all records requirements for FGGASCOMBUSION.

FGMELTSHOP

The facility is keeping records, as required, for the monthly feed/charge weight and annual and 12-month rolling time period feed/charge weight. In March 2020, the highest monthly feed charge weight was 16,554,000 lbs/month. January 2020 had the highest 12-month rolling feed charge weight of 169,110,000 lbs/month.

The facility appears to be in compliance with all records requirements for FGMELTSHOP.

FGFACILITY

The facility recordkeeping tracks 12-month rolling NOx, HCl, and aggregate HAPs in order to maintain compliance with the limits established in the permit. February 2020 had the highest NOx emissions with 37 tons per year emitted on a 12-month rolling basis. This is well below the 84.5 tpy permit limit. January 2020 had the highest HCl emissions with 5.82 tons per year emitted on a 12-month rolling basis. This is well below the permitted limit of 8.9 tpy HCl. January 2020 also had the highest aggregate HAPs of 8.42 tpy which is well below the 24.5 tpy permitted amount.

The facility is also tracking monthly natural gas usage per piece of equipment. The facility appears to be in compliance with all records requirements for FGFACILITY.

Exempt Equipment

Aluminum logs, billets, and extruded parts may be stenciled with ink for identification. Ink usage is tracked on a monthly basis. The highest monthly usage is 35 gal/mon based on the records submitted. The process is exempt from permitting under Rule 287(2)(c) as long as ink usage remains below 200 gal/mon.

On-Site Inspection

The on-site inspection of Kaiser Aluminum occurred on April 21, 2021. When I arrived on site, I signed in, filled out a COVID questionnaire, and completed a temperature check. Mr. Frisbie opened the door and we went to a large conference room where we met other staff from Kaiser. I outlined the inspection and made a note that I wanted to go onto the roof and see the replaced rain cap on the melting furnace. I explained that we would walkthrough the facility from the beginning to the end of the process and then review any records that were not included in the email.

The facility runs 4 shifts, A, B, C, and D. Each shift is 12 hours long. The facility runs 24/7 with approximately 185 employees.

Mr. Andrew Frisbie, EHS Manager and Mr. Rich Kossen, Casting Manager walked around during the inspection of the melting area. The facility receives scrap from many different suppliers. The scrap is delivered by truck and passes through a radiation monitor prior to driving on a weigh scale. The scrap is stored in an enclosed area with multiple labeled bins to identify the specific material. The trucks unload and front-end loaders move the scrap into the appropriate bins.

The EUMELTFURNACE was running during the inspection. Mr. Kossen explained that they had just finished charging the furnace and it can take about 3 to 4 hours to complete the melting, depending on the amount and the aluminum type in the furnace. Also depending on the amount and type of aluminum, it can take between 8 and 12 pushes of metal into the furnace to fill it. The facility aims for about 25,000 lbs of metal per push at the maximum. The facility does not use any flux during the melting process.

The label required for Group 1 and Group 2 operations is located by the furnace. A placard is attached to the label to flip if the facility switches between Group 1 and 2 operations. A date on the sign denotes that it was updated in October 2020 with the newest information determined from the 2019 stack test. Important information includes a minimum sorbacal feed rate of 12

lbs/hr, maximum baghouse temperature of 370.8 degrees F, and no more than 30% painted scrap in the charge.

After the metal is charged and melting, the chemistry is checked and if there are any adjustments that need to be made, that is done in a separate vessel to the side which acts like a large blender, mixing in the alloy with the melted metal. The furnaces are cleaned a minimum of 1 time per week, per shift. Dross is removed after every charge.

At the time of the inspection, the pressure drop reading was 6.2", BLD reading 1.6 mg/m^3, and temperature of the fabric filter inlet was 241.3 degrees F. There is a screen on the hot baghouse control area that shows the 10 minute and 8-hour sorbacal flow average. Every 8 hours the sorbacal amount is recorded, by hand, on a sheet by the baghouse control. At the time of the inspection, the 8-hour average was 12.1 lbs/hour. A new sorbacal silo was installed, under the Rule 291 exemption in early 2020. An exemption determination with a Rule 278a and Rule 291 demonstration were submitted to the department in February 2020. The facility receives deliveries of sorbacal about once per quarter.

The sorbacal delivery system is inspected weekly including things like inspecting the gaskets, bags, and air purge system. Additionally, monthly, quarterly, 6-month, and yearly preventative maintenance (PM) is performed and documented. The last monthly PM was performed on April 10, 2021. The bags from the cyclone are changed every couple days, depending on the cleaning and if there are any audible alarms. The baghouse bags are changed about every 6 months. The facility monitors the state of the bags with a BLD system and do visolite checks.

The EUHOLDFURNACE runs through the cold baghouse. It was on during the inspection but empty. There is no aluminum charged to the holding furnace, only alloy if needed for the chemistry. Visible emissions readings for the baghouse are kept on the floor. Visible emissions are completed daily. The permit states the visible emissions readings must be "method 9 or equivalent." Mr. Frisbie said the observers are not method 9 certified but they do an internal training on how to properly observe emissions. According to the baghouse control area, the pressure drop was 3.8' and the temperature was 60.07 degrees F during the inspection. There does not appear to be a BLD on this baghouse but there is a switch with an indication if there are any broken bags in the baghouse.

The EUDROSS storage area also runs through the cold baghouse. There are hoods installed above the dross bins as well as the dross roll-off which is sent back to Schupan. It had been recently replaced and was almost empty except for a small amount of dross.

The EUHMFURNACE was running during the inspection. It can take between 8 and 12 hours to fully cure a log. Mr. Frisbie showed me the area and scale where the surface conditioner is weighed and packaged before being taped onto the logs. This furnace consists of an automated U -shape cooling line where robots pick up the logs and move them to increase conditioning time.

From here, the logs are sent to the extrusion lines where they are extruded into multiple shapes, as needed, for the facility to sell to customers. Some of the finished products are sent to one of the five aging ovens before being sent to the metal finishing or logistics area.

After walking through the facility, Mr. Frisbie and I walked up to the roof to confirm the rain cap had been removed from the melting furnace stack, as noted in the previous inspection reports

and subsequent email communications. Once we got to the roof, the stack for the melting furnace was identified and there was no rain stack. It was noted that a stack to the holding furnace did have a rain cap on it. Additional research was done, and it was discovered that this stack is the furnace stack which emits mostly products of combustion as clean molten would have minimal emissions. This furnace is also routed to a baghouse. The permit appears to only list the baghouse stack on the emission unit even though this stack was included in the original PTI application submitted in 2012. AQD recommends that Kaiser Aluminum request to add the stack to the emission unit in the permit. No violation notice will be written for the rain cap as the stack has no permit requirement to emit unobstructed vertically upward.

Mr. Frisbie and I walked down from the roof and we obtained a large conference room in which to finish the records review, which is addressed above. The facility appears to be in compliance with all PTI No. 113-09D conditions and all other applicable state and federal air quality regulations.

NAME [signature] DATE 5/7/21 SUPERVISOR RVL 5/19/21