

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

A427938340

FACILITY: KAYDON BEARING CO		SRN / ID: A4279
LOCATION: 2860 MC CRACKEN, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Greg Hutchison , Senior Manufacturing Engineer		ACTIVITY DATE: 01/18/2017
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: The purpose of this inspection was to determine the facility's compliance status with PTI No. 172-97A and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

AQD staff Chris Robinson (CR) and Steve Lachance (SL) were on-site to conduct a scheduled unannounced inspection on Wednesday January 18, 2017. CR and SL arrived at the Kaydon Bearing Co. located at 2860 McCracken Street, Muskegon, MI, at approximately 9:15 am and met with Mr. Greg Hutchison, Sr. Manufacturing Engineer. No odors or visible emissions were detected. AQD staff presented Mr. Hutchison with business cards and informed him that AQD was there to perform an inspection of the facility to determine compliance status with respect to Opt-out PTI No. 172-97A and other applicable air rules and regulations. Mr. Hutchison informed AQD that there have not been any significant changes since the last inspection conducted on 5/2/2012.

FACILITY DESCRIPTION

Kaydon is currently an SKF group company, acquired by SKF in 2013. It is considered to be a World War II era facility that manufactures bearings for various markets such as aerospace & defense, heavy equipment, industrial machinery, oil & gas, medical systems, renewable energy and semi-conductor manufacturing. The majority of the parts manufactured out of the Muskegon facility are for the US military for use in vehicles and airplanes. The primary operations that are utilized to manufacture the bearings are types of steel and steel alloy machining, cleaning, heat treating, and quenching to harden the metal.

COMPLIANCE EVALUATION

The majority of the process equipment at this facility were either installed prior to August 15, 1967 and considered "grand-fathered" or installed after August 15, 1967 and considered exempt from NSR permitting requirements. Emissions from these units have been properly accounted for in the facility wide VOC and HAPs emission calculations (Attachments A & B), provided by Mr. Hutchison, as required by FGFACILITY of their permit. These emission units are also properly reported to MAERS (Attachment C).

A summary of this equipment is detailed below.

Rule 201 Exemptions

The facility utilizes 17 cold cleaners to clean metal parts prior to the heat treating portion of the process. These cold cleaners primarily use mineral spirits, although other solvents are also used (See Attachment D). All of the cold cleaners were closed and properly labeled at the time of this inspection.

The facility currently has one (1) cold cleaner that utilizes **Rule 285(2)(r)(i)** for Surface treatment of metals venting to the in-plant environment, nine (9) cold cleaners that utilize **Rule 281(2)(h)** for units with less than 10 ft² vapor/air interface and seven (7) cold cleaners that utilize **Rule 290** for units with limited emissions. Records provided in Attachment D demonstrate that the maximum 2016 VOC emissions from all seven (7) 290 cold cleaners combined was 977lbs. in July. The facility is below **Rule 290** monthly emission limits of 1,000lbs/month/unit.

The facility has seven (7) heat treat units that are considered "grandfathered". Heat treating of the parts is required to aid in the hardening of the metal. This hardening lends to the stability and structure of the bearing. All of these units treat clean metal parts. These units are a variety of electric and natural gas fired. The atmosphere generators in the units typically use a methanol/nitrogen blend. Methanol, which is a HAP, is not emitted during these processes, but broken down and used by the unit.

The facility has six (6) quench tanks, which are also considered "grandfathered". The quench tanks are also used in the hardening process. This step aids in setting the hardness of the part. The emissions from these units are primarily particulate matter (PM). All of these units are reported to MAERS with PM emissions calculated.

PTI No. 172-97A

This permit is an Opt-out permit that includes individual emission unit conditions for the passivation and nital etch metal surface treatment lines, the magnaflux, and facility wide conditions for HAPs and VOCs.

- EUDIPROCESS

The passivation and nital etch surface treatment lines are acid treatment lines that are used for inspection purposes. The acids treat the metal and allow for identification of parts that may not be hardened properly or under stress. The Nital Etch #2 line consists of the same tanks as the Nital Etch #1 line, just slightly larger tanks. These lines currently consist of the following tanks/compounds:

Tecty 900 oil - Tank #1 (methanol tank) - water (90-150°F) - Tank #2 (4% Nital solution, 3-5 parts Nitric Acid, 95-97 parts methanol, 65-85°F) - Tank #3 (4%HCL Etchant, 4-6 parts HCL, 65-85°F) - Tank #4 (Sodium Hydroxide Neutralizer)

All tanks and containers were closed during this inspection. Upon request, Mr. Hutchison provided adequate monthly/annual records. The maximum methanol emissions (Attachment E) for the EUDIPPROCESS was observed in March and May at 1.5 tpy (12-month rolling time period), which is well below the facility's emission limit of 6.0 tpy.

Mr. Hutchison also provided the following up to date records provided in Attachment E: Monthly records of amounts of nitric acid, hydrochloric acid, picric acid, sodium hydroxide, potassium hydroxide, and monthly/annual records for methanol added to each tank.

AQD staff did not specifically measure the height or diameters of stacks SV-NDT1 and SV-NDT2. However, visual inspections appear to reflect the measurements specified in permit No. 172-97A.

- EUMAGNAFLUX

The magnaflux is a surface treatment line that is used in the inspection process. This process is a series of washes that are used to help identify cracks and other imperfections in the parts.

The facility provided appropriate records as required by special condition 2.1 (Attachment E), which are attached. Based on these records, the magnaflux compound is 100% VOCs. Therefore, the facility assumes that all that is used is emitted. The emissions for December 2016 were recorded as 0.1 tpy based on a 12 month rolling time period. Emissions from EUMAGNAFLUX are included in the facility wide emissions as required by FGFACILITY.

Per conversations with Mr. Hutchison and a records review, the facility maintains a current list with chemical compositions, of all materials used as required by Special Condition 2.2.

- FGFACILITY

Kaydon has the following facility wide emission limits which include all process equipment at the facility including anything considered to be "grand-fathered" and exempt as well as EUMAGNAFLUX equipment previously discussed.

Pollutant	Limit	Max 2016 Emissions	Time Period
Individual HAP	< 9.0	1.5 (Methanol)	12-month rolling time period
Aggregate HAPs	< 22.5	1.5	
VOCs	< 80.1	6.4	

Facility wide emission records were provided and are attached (Attachments A & B). Based on these records, the maximum rolling 12-month emissions for VOC's were 6.4 tpy and total HAPs were 1.5 tpy, which is less than the individual HAP limit of < 9 tpy. The highest individual HAP emitted was methanol (1.5 tpy). Facility-wide emissions were all well below the limits for every month for the previous 12 months ending with December 2016.

The facility requested and received approval, on August 19, 2008, to use manufacturer's data in lieu of testing for the VOC and HAP content, water content and density of any material, as applied.

The following records, which are attached to this report, were provided to AQD staff during this inspection and found to be complete and current.

- a) Gallons or pounds of each HAP & VOC containing material used.
- b) As applicable, gallons or pounds of each HAP & VOC containing material reclaimed.
- c) HAP & VOC content, in pounds per gallon or pounds per pound, of each HAP and VOC containing material used.
- d) Individual and aggregate HAP and VOC emission calculations determining the monthly emission rate of each in tons per calendar month.
- e) Individual and aggregate HAP and VOC 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.

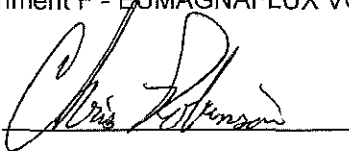
COMPLIANCE DETERMINATION

Based on observations and discussions made during the January 18, 2017 inspection, and a subsequent records review, Kaydon appears to be in compliance with PTI No. 172-97A and other applicable air quality rules and regulations.

List of Attachments

- Attachment A - FGFACILITY VOC Records
- Attachment B - FGFACILITY HAP Records
- Attachment C - 2015 MAERS Calculations
- Attachment D - #290 Exemption Records
- Attachment E - EUDIPPROCESS Records
- Attachment F - EJMAGNAFLUX VOC Records

NAME



DATE

2/3/2017

SUPERVISOR

