

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

A430258967

FACILITY: MAHLE Engine Components USA, Inc.		SRN / ID: A4302
LOCATION: 2020 Sanford Street, MUSKEGON HTS		DISTRICT: Grand Rapids
CITY: MUSKEGON HTS		COUNTY: MUSKEGON
CONTACT: Barb Hoffman , EHS/Quality Coordinator		ACTIVITY DATE: 06/11/2021
STAFF: Scott Evans	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-site air quality compliance inspection.		
RESOLVED COMPLAINTS:		

Introduction

On Friday, June 11, 2021 State of Michigan Department of Environment, Great Lakes, and Energy Air Quality Division (AQD) staff member Scott Evans (SE) conducted an air quality inspection of the MAHLE facility located at 2020 Sanford Street in Muskegon Heights Michigan to assess compliance with air quality regulations. This inspection was an announced, on-site inspection. The decision to conduct this as an announced inspection was made in order to best ensure the ability of AQD and facility staff to follow safety protocols such as personal protective equipment (such as masks) during the ongoing COVID-19 pandemic.

MAHLE is a facility that tests various engines to assess performance standards. The facility has 19 test cells, which are each enclosed and monitored stations. Emissions from these cells are vented from the enclosures through a single stack. It is worth noting that this facility has a soil groundwater remediation system that is located on a historic foundry site. The foundry was demolished in 2015. It is notable that the facility is located in the western part of Muskegon County, which is currently classified as non-attainment for ozone by the U.S. Environmental Protection Agency.

The facility is a Title V facility and has a currently active Renewable Operating Permit (ROP): MI-ROP -A4302-2020A. This ROP was renewed in 2020 and revised in 2021 to reflect ownership changes of specific equipment within the facility. Specifically, the cold cleaners and engine test cells are now separately owned by different groups within the MAHLE organization. These changes did not impact equipment or regulatory aspects of the facility or ROP. The ROP is now separated into two sections, with Section 1 covering regulations applicable to the engine test cells and cold cleaners and Section 2 covering the tray stripper and soil vapor extraction unit on site. During the initial New Source Review permit application process, a Best Available Control Technology review was conducted for Volatile Organic Compounds (VOCs) and determined that good combustion practices and limiting fuel usage and no additional control measures met BACT. Multiple test cells were determined to be exempt from New Source Review (NSR) requirements as they were installed prior to August 15, 1967, and so can be classified as grandfathered equipment. No reconstruction or modification to the cells have been made since then.

The facility is subject to Title 40 of the CFR Part 70 as the potential to emit (PTE) of carbon monoxide and nitrogen oxide is greater than 100 tons per year (tpy). The facility has accepted source-wide permit conditions (described in further detail below) that limit the PTE of singular and aggregated Hazardous Air Pollutants (HAPs) and allow it to be classified as a Synthetic Minor source for HAPs. It is worth noting that the PTE of the facility for CO remains above 100 tpy despite the accepted limits due to the presence of multiple grandfathered test cells (Cells 3-13). These cells are not included in the permitted limits due to their grandfathered status, but still contribute to the PTE

for the facility at large. The HAP limits exempt the facility from National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart DDDDD for boilers and heaters as well as NESHAP 40 CFR Part 63 Subpart PTTTT for test cells. No emission units are subject to prevention of significant deterioration regulations of Act 451 as carbon monoxide PTE was less than 250 tpy during initial NSR permitting. No units are subject to Compliance Assurance Monitoring 40 CFR Part 64 as the pre-control PTE of each emission unit does not exceed major source thresholds.

Facility Inspection

Upon arrival, SE observed the perimeter of the facility to assess any odors or visible emissions that may be originating from the site. There were no visible emissions observed nor were any odors observed. Upon entry, SE was greeted by Environmental Health and Safety coordinator Barb Hoffman (BH) and Head of Engine Testing Kimm Karris (KK). After a brief discussion of the intent of the visit, a walking inspection of the facility was conducted. This inspection covered all 19 test cells, the external emissions stack, maintenance areas, the boiler room, and a visit to the groundwater remediation system at the former site of the now demolished foundry. All permitted equipment and exempt equipment such as boilers, plasma coaters, baghouses, and generators were observed during this inspection (more details described later in this report).

MI-ROP-A4302-2020A

This permit is a Title V ROP. As discussed above, it was renewed in 2020 and revised in 2021. It outlines special conditions for the following defined entities:

- Source-Wide
- Individual Emissions Units
 - EU-TestCell#14
 - EU-TestCell#15
 - EU-TestCell#16
 - EU-TestCell#17
 - EU-TestCell#18
 - EU-TestCell#19
 - EU-TestCell#20
 - EU-TestCell#21
 - EU-Parts Washer1
 - EU-Parts Washer2
 - EU-TRAYSTRIPPER
 - EU-SVESYSTEM
- Flexible Groups
 - FG-TESTCELLS
 - FG-RULE290
 - FG-COLDCLEANERS

Source-Wide Conditions

There are two source-wide emission limits in this ROP:

- 9.0 tpy of each individual HAP for each 12-month rolling annual time-period.
- 22.5 tpy of aggregate HAPs for each 12-month rolling annual time-period.

As discussed above, these limits qualify the facility as a synthetic minor facility for HAPs. Records demonstrating compliance with these limits are discussed below.

The ROP has one testing requirement, which is that the facility must determine HAP content of all materials used, using manufacturer's formulation data and safety data sheets (SDSs). During the inspection, MAHLE staff was able to present SE with these necessary data sheets, demonstrating compliance with this requirement.

The facility is required by the ROP to maintain the following records and have them ready to present by the 15th day of each calendar month:

- Individual and aggregate HAP emissions must be calculated using Mass Balance methodology.
- The following monthly records must be maintained:
 - Days of operation
 - Gallons or pounds of HAP containing material used.
 - HAP content of each HAP containing material used.
 - Monthly HAP emissions for individual and aggregate HAPs.
 - 12-month rolling annual HAP emissions for individual and aggregate HAPs.

The above records for the period of June 2020 through May 2021 were requested by SE and reviewed in detail after the conclusion of the inspection. During this detailed review, the following was determined:

- Mass Balance methodology was used and could be reviewed.
- Standard facility operation is 9 hours per day, 5 days per week. It was expressed that these hours were greatly reduced from June 2020 to September 2020 due to the COVID-19 Pandemic.
- The following was determined from the records:
 - 109,050 gallons of diesel fuel used in December of 2021.
 - 0.02 tons of Toluene emitted in February 2021.
 - 0.08 tons of Aggregate HAPs emitted in February 2021.
 - 0.12 tpy of Toluene emitted from July 2019 to June 2020.
 - 0.5 tpy of Aggregate HAPs emitted from July 2019 to June 2020.

The above records are representative of the full supplied set of data and demonstrate compliance with emission limits and recordkeeping requirements. It is worth noting that 12-month rolling totals being much lower in 2021 than 2020 is expected considering the reduced hours of operation described above.

FG-TESTCELLS

This flexible group encompasses EU-TestCell#14, EU-TestCell#15, EU-TestCell#16, EU-TestCell#17, EU-TestCell#18, EU-TestCell#19, EU-TestCell#20, and EU-TestCell#21, all of which are permitted to burn gasoline, compressed natural gas (CNG), liquefied petroleum gas (LPG), and diesel fuel.

The flexible group is held to the following emission limits:

- 0.15 lb. of NO_x per gallon of gasoline, CNG, or LPG per month.
- 0.138 lb. of NO_x per gallon of diesel fuel per month.
- 34.3 tpy of NO_x per 12-month rolling time period per month.
- 3.12 lbs. of CO per gallon of gasoline per month.

- 0.0137 lb. of CO per gallon of diesel fuel per month.
- 2.1 lbs. of CO per gallon of CNG per month.
- 2.5 lbs. of CO per gallon of LPG per month.
- 89.9 tpy of CO per 12-month rolling time period per month.

Records demonstrating compliance with these limits are discussed further below.

The flexible group is held to the following material limits:

- 55,709 gallons of gasoline, CNG, and LPG per 12-month rolling time period per month.
- 437,000 gallons of diesel fuel per 12-month rolling time period per month.

Records demonstrating compliance with these limits are discussed further below.

The facility is required to maintain the following records for a period of no fewer than five years:

- Gasoline, CNG, LPG, and Diesel Fuel usage per 12-month rolling time period per month.
- NO_x emissions per month and per 12-month rolling time period per month.
- CO emissions per month and per 12-month rolling time period per month.

The above records for the time period of June 2020 to May 2021 were requested by SE and provided by MAHLE staff for detailed review. Review of these records showed the following:

- ~53000 gal of Diesel fuel used from July 2019 to June 2020
- ~10000 gal of Gasoline (E-85), CNG, and LPG used From June 2020 to May 2021
- ~0.5 tons of NO_x in December 2020.
- ~5 tpy of NO_x from July 2019 to June 2020.
- ~4.2 tons of CO in December 2020.
- ~15 tpy of CO from July 2019 to June 2020.

The above analyses are representative of the full supplied set of data and demonstrate compliance with emission limits and recordkeeping requirements.

The flexible group is subject to the following reporting requirements:

- Prompt reporting of any deviations during operation.
- Semiannual reporting of monitoring and deviations.
- Annual reporting of monitoring and deviations.

Upon review of the facility's file maintained by the AQD, the following determinations could be made:

- Since the last inspection conducted in 2018, there were no reported deviations. This appears accurate.
- Since the last inspection conducted in 2018, all semiannual reports were submitted on time and complete with no deviations reported.
- Since the last inspection conducted in 2018, all annual reports were submitted on time and complete with no deviations reported.

These reports demonstrate compliance with the requirements outlined in the ROP.

This flexible group has one exhaust stack described in the ROP. This stack is required to meet the parameters of 24.0 inches in diameter and 60.0 feet above ground level. The stack was not directly measured during the inspection, but it appeared to meet the requirements.

FG-RULE290

This flexible group applies to every piece of equipment that emits air contaminants but is exempt from air permitting pursuant to Rule 278, Rule 278a, and Rule 290. At this facility that includes EU-TRAYSTRIPPER and EU-SVESYSTEM. It is notable that these two emissions units were installed prior to December 20, 2016 and are allowed to demonstrate compliance with Rule 290 at the time of installation or modification.

Emission limits for this flexible group are as outlined in Rule 290. For brevity, these limits will not be reiterated directly in this report. However, as discussed below, records are required to demonstrate compliance and a detailed review of these records will include explanations of how recorded emissions compare to the relevant limits.

The facility is expected to maintain a list of all emission units that are exempt from permitting as described in Rule 290 as well as retain records that demonstrate exemption status as outlined in Rule 290. During the inspection the list of exempt equipment was reviewed and all equipment was confirmed through visual inspection. Below each unit is described along with verification of any and all records retained to confirm exempt status per Rule 290.

There is a soil vapor extraction unit at the facility that is exempt under 290 rules. This unit has one air stripper and three SVE Skids. In 2020, the unit emitted 11.07 lbs. of TCE and 25.62 lbs. of BTEX. Through May of 2021, the unit emitted 9.26 lbs. of TCE and 14.32 lbs. of BTEX. These annual emission rates demonstrate compliance with Rule 290 limits of 20 lbs. of emissions per month.

As with FG-TESTCELLS, the facility is required report annual and semiannual deviations. As described above, the facility is compliant with these requirements as of the writing of this report.

FG-COLDCLEANERS

This flexible group pertains to any and all cold cleaners that are grandfathered or exempt from permitting requirements by Rule 278, Rule 278a, Rule 281(2)(h), and Rule 285(2)(r)(iv). There are two described emission units within the ROP: EU-Parts Washer1, EU-Parts Washer2

The ROP describes a material limit requiring that the facility shall not use cleaning solvents containing more than five percent by weight of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1 trichloroethane, carbon tetrachloride, or chloroform. During the inspection, this was discussed and verified with safety data sheets that the facility is compliant.

There are two described operational restrictions for this flexible group in the permit:

- Clean parts shall be drained for at least fifteen seconds or until dripping stops.
- Cold cleaners should be maintained by manufacturer specifications.

During the inspection, processes and maintenance procedures were discussed and the facility appeared to be compliant with the restrictions.

The cold cleaners are subject to many design parameters. For brevity, these parameters will not be described in this report. They can be reviewed within the ROP. During the inspection the cold cleaners were inspected and confirmed to be compliant with lids closed and all design parameters described.

The facility is required to keep records of the following items in regards to this flexible group:

- Once per week temperature monitoring of heated solvent for any new cold cleaner.
- Written procedures for operation of each cold cleaner.
- Record of solvent waste removal for any stored in open containers.
- The following info for all cold cleaners
 - Unique identifier such as serial or model number.
 - Installation, manufacture, or first operational date.
 - Surface area for all units claimed as exempt under Rule 281(2)(h)
 - Applicable exemption rules.
 - Reid vapor pressure of solvents used.
 - If applicable, the option chosen to comply with Rule 707(2)

During the inspection, the above records were reviewed. The following information was gathered for each unit through discussion and on-site records reviews to confirm compliance with the record keeping requirements:

- No solvent is heated for use.
- Procedures were written and available for each unit.
- All waste is contained in closed containers.
- Each cold cleaner had the required information available.

As with FG-TESTCELLS and FG-RULE290, the facility is required to report annual and semiannual deviations. As described above, the facility is compliant with these requirements as of the writing of this report.

Other Items

Exempt Items

The facility has one active boiler on site. This is a 3.5 mmBtu, natural gas fired unit. It is exempt from permitting requirements by Rule 282(2)(b)(i) as it has a capacity of less than 50 mmBtu. It is not subject to New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart Dc as it has a capacity of less than 10 mmBtu. It is not subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) CFR 40 Part 63 Subpart JJJJJ as it is natural gas fired.

The facility has one plasma coater that is exempt from air permitting requirements by Rule 285(2)(i). This exempt unit is controlled by a baghouse that is exempt from air permitting requirements by Rule 285(2)(f) as it only controls a unit and does not generate emissions of its own.

The facility has one emergency generator on site. This generator has a capacity of 228 hp and is natural gas fired. It is exempt from air permitting requirements per Rule 285(2)(g) as it has a capacity of less than 10 mmBtu. This unit is not subject to NSPS 40 CFR Part 60 Subpart JJJJ as it was installed prior to January 1, 2009. This unit appears to be subject to NESHAP 40 CFR Part 60 Subpart ZZZZ. However, as this NESHAP requires compliance with NSPS 40 CFR Part 60 Subpart JJJJ which does not impose further requirements due to the manufacture date. As this is the case, there are no further requirements to demonstrate compliance.

In the maintenance area of the facility are various pieces of equipment used for machining of various parts and components used throughout the facility. It was discussed that this equipment is only used when needed for specific parts and not in any production basis. This appears to be exempt from air permitting requirements by Rule 285(2)(l)(vi).

MAERS

The facility had submitted their MAERS report for the 2020 reporting period. The submission had been submitted completely and there were no found issues during audit. Below is a summary table of reported emissions. It is worth noting that the below reported values are much lower than what the facility has reported in the past. This is expected as, during the COVID-19 pandemic, the facility was operating at a much-reduced capacity due to reduced staff presence.

Pollutant	Amount
Ammonia	11.30 lb
CO	49991.00 lb
NOX	8448.60 lb
PM10, Filterable	1770.84 lb
PM10, Primary	26.83 lb
PM 2.5 Filterable	1770.42 lb
PM2.5, Primary	26.83 lb
SO2	1649.79 lb
TOC	1963.02 lb
VOC	3871.10 lb

Conclusions

At the conclusion of the inspection, the facility appeared to be compliant with MI-ROP-A4302-2020A and all other applicable air quality regulations.

NAME Scott Evans

DATE 7/20/2021

SUPERVISOR HH