

M4085

MANILA

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

M408556900

FACILITY: FCA US LLC - Mack Avenue Engine Plant		SRN / ID: M4085
LOCATION: 11570 WARREN AVENUE EAST, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Rebecca Payne, Environmental Specialist		ACTIVITY DATE: 01/28/2021
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: January 28, 2021 Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Rebecca Payne, Environmental Specialist; Paul Diven, Environmental Specialist

FACILITY PHONE NUMBER: (313) 423-4552

FACILITY WEBSITE: www.fcanorthamerica.com

FACILITY BACKGROUND

FCA US LLC (FCA) owns and operates the Mack Avenue Engine Plant (MAEP) located at 11570 Warren Avenue, Detroit, Wayne County, Michigan. The boundaries of the facility are as follows: to the north, east, and south are industrial and commercial businesses; immediately adjacent to the facility property on the east is the Conrail Railway; to the west are residential properties. The nearest residential properties are located approximately 250 feet to the west.

The facility has transitioned from an engine manufacturing plant to an auto assembly plant. On April 26, 2019, Permit to Install (PTI) No. 14-19 was approved for the installation of an auto assembly plant at 11570 Warren Avenue East, known as Detroit Assembly Complex Mack (DACM). Permit modification PTI 14-19A was approved on October 30, 2021. The new assembly plant is assigned the State Registration Number (SRN) of N2155 associated with FCA Jefferson North Assembly Plant (JNAP). All engine manufacturing equipment associated with MAEP have been removed or decommissioned in place.

MAEP is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit carbon monoxide (CO) exceeds 100 tons per year. No emissions units at the facility are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of CO was less than 250 tons per year.

PROCESS OVERVIEW

Activities at the MAEP formerly included engine component machining as well as assembly and testing of engines. MAEP comprises two primary buildings (Mack I [south] and Mack II [north]) under SRN M4085. On February 26, 2019, FCA announced that \$1.6 Billion would be invested to convert the MAEP into an auto assembly plant for the next generation Jeep Grand Cherokee and 3-row full size Jeep SUV (see facility file for press release). The assembly plant began trial operation during November 2020.

The equipment formerly used for engine manufacturing and engine testing has been removed. Remaining equipment from the MAEP include fire pump engines and natural gas heater units.

COMPLAINT/COMPLIANCE HISTORY

There have been no complaints for this facility.

During March 2, 2020 and February 27, 2019, the facility was inspected and determined to be in compliance.

During the previous inspection on October 30, 2017, the facility was determined to be in noncompliance with the stack conditions of MI-ROP-M4085-2015a, FG-HOTTESTS, SC VIII. Violation notices were issued on December 18, 2017 and February 12, 2018. The violations were resolved through the issuance of PTI 47-18 (issued on June 8, 2018).

During November 3 and 5, 2014, April 11, 2013, September 30, 2009, April 24, 2007, June 24, 2004, and August 26, 2002 the facility was inspected and was determined to be in compliance with permit conditions and applicable federal and state regulations.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

INSPECTION NARRATIVE

On January 28, 2021 the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted an inspection of FCA MAEP at 11570 Warren Avenue East, Detroit, Michigan. During the inspection, Ms. Rebecca Payne, Environmental Specialist, and Mr. Paul Diven, Environmental Specialist, provided information and a tour of facility operations relating to air quality permits. The inspection was conducted to determine the facility's compliance with Federal and State air quality regulations and ROP No. MI-ROP-M4085-2015a and PTI 47-18.

At 9:00 AM, Mr. Todd Zynda (AQD) arrived onsite and performed outside observations. No visible emissions were observed at the facility. Odors were not detected. At 9:10 AM Mr. Zynda entered the facility, stated the purpose for the inspection, and was greeted by Ms. Payne.

During the opening meeting, the facility operations and MI-ROP-M4085-2015a and PTI 47-18 conditions were discussed. During the opening meeting, an inspection checklist outlining ROP requirements was discussed. As determined during the previous inspection on March 2, 2020, a discussion was held regarding all equipment associated with M4085 (dynos, hot test stands, cold cleaners, machining equipment, etc.) having been removed, with the exception of the facility fire pumps and natural gas fired heating units. It was agreed records requested (FG-Facility, fire pumps

NSPS records) would be provided via email. Records were provided via email on February 4 and 9, 2021 (Attachment).

Following the opening meeting, a tour of the facility was provided. The inspection began with observation of the north building (Formerly Mack II). The north building is now operating as part of DACM. Previously there was no operating equipment at the north building under MAEP.

Following observation of the north building, the north building fire pumps were observed. The north building fire pumps were replaced on January 3, 2020. The facility provided documentation on the new fire pumps as part of the previous inspection via email on March 10, 2020 and as part of this inspection on February 10, 2021. During the inspection, the hour meters read as follows: north fire pump 1 – 127.0 hours; north fire pump 2 – 36.8 hours.

Following observation of the north building and north building fire pumps, the south building (Mack I) was observed. During the inspection, the south building was in operation as part of DACM. During the inspection the former locations of the hot test stands and dynamometers were observed. The engine testing and all engine manufacturing equipment (machining lines) have been removed from the south building. According to Ms. Payne the oil mist collectors (that formerly served the engine machining lines) located on the mezzanine have either been removed or decommissioned in place. The former oil mist collectors are not part of the new assembly plant.

The tour concluded with observation of the fire pump for the south building. This fire pump has not been replaced and has an installation date of January 11, 1999. At the time of inspection, the south fire pump hour meter read 480.8 hours.

APPLICABLE RULES/PERMIT CONDITIONS

ROP No. MI-ROP-M4085-2015a

MI-ROP-M4085-2015a special conditions (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased.

FG-DYNOS

FG-DYNOS was not evaluated. All dynos were removed by June 25, 2019.

FG-HOTTESTS

FG-HOTTESTS was not evaluated. All hot test stands were removed by June 25, 2019.

FG-EMERG-RICE

The south building fire pump is included under FG-EMERG-RICE and is not subject to the NSPS 40 CFR 60 Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because the date of the installation is prior to the affected date. The special conditions for FG-EMERG-RICE were obtained from MACT standards under the National Emission

Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR, Part 63, Subparts A and ZZZZ. The AQD is not the delegated authority for the area source provisions of this MACT. Therefore, conditions were not evaluated for compliance.

The north building fire pumps are evaluated below under 40 CFR Part 60, Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

FG-RULE 290

The conditions for FG-Rule 290 were not evaluated. All Rule 290 equipment was removed during the months of June and July 2019.

FG-GAS-DISP

FG-GAS-DISP was not evaluated. The AQD is not the delegated authority for this area source MACT. According to Ms. Payne the gasoline storage tanks were emptied June 28, 2019 and removed September 5, 2019.

FG-RULE331

FG-RULE331 was not evaluated. All Rule 331 subject equipment was removed from the facility during June and July 2019.

FG-FACILITY

SC I. 1. **COMPLIANCE.** The 12-month rolling NO_x emissions shall not exceed 93.7 tons per year. The facility currently tracks natural gas usage facility wide (includes both equipment under MAEP and DAMC) through one natural gas meter (all heaters/air handling units along with assembly equipment [ovens, etc.]). The facility wide natural gas usage is used to calculate NO_x emissions. Because the emission record now includes both MAEP and DAMC emissions from natural gas usage, the AQD accepts the annual summation of NO_x emissions for the 12-month rolling NO_x emissions. The facility has agreed to maintain the 12-month rolling emissions going forward. The facility is using the new emission factor for DAMC (36 lb/MMcf) versus the emission factor listed in MI-ROP-M4085-2015a (100 lb/MMcf). The emission factor used comes from the PTI application for PTI 14-19 for DAMC. According to Mr. Diven, the lower NO_x emission factor used in the PTI application is due to the increased efficiency of new equipment installed as part of the assembly plant. When using the NO_x emission factor from MI-ROP-M4085-2015a (100 lb/MMcf), the 12-month emissions from January 2020 through December 2020 is 14.1 tons.

SC I. 2. **COMPLIANCE.** The 12-month rolling CO emissions shall not exceed 244 tons per year. Because the emission record now includes both MAEP and DAMC emissions from natural gas usage, the AQD accepts the annual sum of CO emissions for the 12-month rolling CO emissions. The 12-month CO emissions for January 2020 through December 2020 is 12 tons.

SC II. 1. **COMPLIANCE.** Natural gas usage shall not exceed 725.3 million cubic feet per year on a 12-month rolling time period. Because the natural gas usage now includes the new assembly plant

natural gas usage in addition to MAEP natural gas usage, the AQD accepts the annual sum of natural gas usage for the 12-month rolling natural gas usage. The 12-month natural gas usage for January 2020 through December 2020 is 286.35 MMcf.

SC II. 2. **NOT APPLICABLE.** Unleaded gasoline usage shall not exceed 135,000 gallons per year on a 12-month rolling time period. This condition is no longer applicable. According to Ms. Payne the gasoline storage tanks were emptied June 28, 2019 and removed September 5, 2019.

SC IV.1. **COMPLIANCE.** Shall install, calibrate, maintain, and operate in a satisfactory manner, a device to monitor and record natural gas usage. The facility appears to meet this requirement.

SC VI. 1. **COMPLIANCE.** Shall keep records in an acceptable format. The records provided meet this requirement.

SC VI. 2. **COMPLIANCE.** Shall keep the following records on a monthly basis: FG-HOTTESTS days of operation, gallons of gas, MMCF natural gas usage, NOx emissions, and CO emissions (monthly and 12-month rolling). The facility appears to be maintaining the required records. As described above the AQD has provided at "grace period" for the 12-month rolling natural gas usage and emissions as the facility is working out how to separately track the emissions from MAEP natural gas equipment to the natural gas equipment associated with DAMC. At this time, there is one natural gas meter for all facility wide natural gas equipment. The hot test stand records and gasoline usage records are no longer applicable as the associated equipment have been removed.

PTI 47-18

FG-HOTTESTS

-
FG-HOTTESTS was not evaluated. All hot test stands were removed by June 25, 2019.

40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The north plant fire pumps at the facility are subject to 40 CFR Part 60, Subpart IIII as the engines were constructed after July 11, 2005 and manufactured after April 1, 2006 per §60.4200(a)(2).

Owner/operator must comply with emission standards specified in this subpart (§60.4205).

COMPLIANCE. The facility provided a picture of the U.S EPA Certificate of Conformity for the engines.

Install a non-resettable hour meter (§60.4209(a)). **COMPLIANCE.** Both units are installed with a non-resettable hour meter.

Limit maintenance checks and readiness testing to 100 hours per year (§60.4211(f)). **COMPLIANCE.** The facility tracks hours of operation on log sheets. During 2020 north fire pump 1 operated 105.6 hours and north fire pump 2 operated 33.2 hours. Fire pump 2 has 2.5 hours as of March 1, 2020.

For the north fire pump 1, the 105.6 hours appears to be allowed under §60.4211(f)(2)(i): “Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.” According to the FCA, “DACM was required to operate the north fire pump more than 100 hours during the year in order to meet the requirements of the National Fire Protection Association (NFPA), and City of Detroit Fire Marshall for the installation of new or updated fire suppression systems. Per NFPA, new systems must be flushed, and hydro tested. All centers (i.e., Body Shop, Paint, and General Assembly) required updated and/or new fire suppression systems that required repeated tested during installation. Due to the system’s design, much of the new system testing relied upon the main fire pump (North 1).”

Permit to Install Exempt Equipment

Previously, FCA operated the following PTI exempt equipment: engine manufacturing equipment (machining lines), cold cleaners, and engine teardown washer. This equipment has been removed from the facility for the construction of the new assembly plant.

Storage Tanks

The 500-gallon diesel storage tanks associated with facility fire pumps are exempt from PTI requirements under R336.1284(2)(d): “storage of no. 1 to no. 6 fuel oil...or diesel fuel oils nos. 2-D and 4-D.”

The former 5,000-gallon gasoline storage tanks were exempt from PTI under R336.1284(2)(g)(iii): “equipment exclusively serving dynamometer facilities for gasoline and/or gasoline/ethanol blends...”

Fire Pumps

The south plant fire pump operates at 386 break horsepower (bhp). The new north plant fire pumps are rated at 350 bhp. Based on calculations, 386 BHP power output rating is equivalent to 0.98 million British thermal units (MMBTU) rated input. At a 25% efficiency conversion, the maximum converted rating is approximately 3.92 MMBTU/hr. Based on the calculated rating, the fire pumps are exempt from PTI requirements under the following Rule.

R336.1285(2)(g): “Permit to install does not apply to...Internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input.”

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

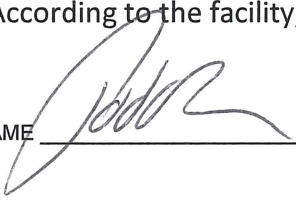
Not applicable. All lots are paved.

MAERS REPORT REVIEW:

The 2019 MAERS report was submitted on time. The MAERS audit was passed.

FINAL COMPLIANCE DETERMINATION:

At this time, this facility appears to be in compliance with MI-ROP-M4085-2015a and PTI 47-18. FCA has indicated that the remaining equipment under SRN M4085 (fire pumps and natural gas heaters) will be incorporated into the JNAP ROP (SRN N2155) 12 months after commencing trial operation of the new coating/assembly operation (see previous inspection correspondence dated). According to the facility, the assembly plant (DAMC) began trial operation in November 2020.

NAME  _____

DATE 2/23/21 SUPERVISOR JK _____

