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

M479364238

FACILITY: FORD ENGINE MFG DEVELOPMENT OPERATIONS		SRN / ID: M4793
LOCATION: 17000 SOUTHFIELD RD, ALLEN PARK		DISTRICT: Detroit
CITY: ALLEN PARK		COUNTY: WAYNE
CONTACT: Manny Appiah , Plant Environmental Control Engineer		ACTIVITY DATE: 07/26/2022
STAFF: Samuel Liveson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection.		
RESOLVED COMPLAINTS:		

On July 26, 2022, AQD staff Sam Liveson and Maureen Conner conducted an announced, scheduled inspection of Ford Motor Company - Engine Manufacturing Development Operations (EMDO) located at 17000 Southfield Road in Allen Park, Michigan. The purpose of the inspection was to determine the facility's compliance with the federal Clean Air Act; Part 55, Air Pollution Control, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; the Michigan Air Pollution Control Rules (Rules); and the conditions of Permit to Install (PTI) No. 321-98B.

### Pre-Inspection Meeting and Facility Overview

#### 1. Scheduling, Arrival, and Safety Overview

Due to the ongoing COVID pandemic, this inspection was announced. AQD called facility environmental contact Manny Appiah, Plant Environmental Control Engineer, on the afternoon of July 25, 2022 about visiting the following morning.

On July 26, 2022, we arrived at the facility around 9:00 AM and parked in the south parking lot off Southfield Road. Weather was partly cloudy and the temperature was 68 °F. We met with Manny Appiah, showed him our state-issued identification, and stated the purpose of our visit.

Personal protection equipment to have on site includes safety glasses. AQD also wore safety vests and safety shoes.

#### 2. General Facility Overview

Ford EMDO builds and tests Ford engines. The facility is involved in early development (building and testing trial engines) and providing support for engines from vehicles (testing those engines and breaking them down).

The facility has fuel tanks, machining equipment, parts washers, and laboratory equipment. The facility PTI No. 321-98B is for four hot test cells on site. There are no boilers or emergency generators on site.

PTI 321-98B was issued on December 2, 2020 as a new version of PTI 321-98A. PTI 321-98B removed three engine dynamometers that were permitted under PTI 321-98A. These dynamometers appear to be permanently shut down.

#### 3. Complaint/Compliance History

AQD has not received complaints for this facility. Reviewing the results of inspections conducted since 2003, the facility was determined to be in compliance with permit conditions and applicable state and federal regulations. Inspections were conducted on

October 20, 2016, March 21, 2013, September 20, 2011, January 26, 2010, January 5, 2006, and July 17, 2003. There are no outstanding consent orders or violation notices.

## **Facility Walkthrough: Process Overview and Compliance Status**

### 1. Exempt Equipment

During the inspection, AQD referred to an inventory of exempt equipment provided as a record during the 10/20/2016 AQD inspection per Rule 278a(1)(a) and (b). Equipment has been added, removed, or modified since the inventory was provided.

#### *1.1. Grinding/Machining Equipment that Exhausts Internally - Rule 285(2)(l)(vi)(B)*

The facility has dry and wet machining equipment such as lathes, saws, presses, grinders, and CNC machines which exhaust into the in-plant environment. Machining equipment that uses coolant and oil has smog hog oil mist collectors which exhaust internally. The facility considers the machining equipment which exhausts indoors to be exempt from obtaining a Permit to Install per Rule 285(2)(l)(vi)(B) for metal machining and grinding equipment that emits only into the general in-plant environment.

#### *1.2. Grinding/Machining Equipment that Exhausts Externally – Rule 285(2)(l)(vi)(C)*

Some machining equipment exhausts to ambient air. AQD visited Mattison Machine Work ID No. G0041 in location C-11. This is a grinding machine which exhausts externally. AQD observed a water-based scrubber control in place. According to Manny, there is a filter control in place before emissions exhaust to ambient air.

AQD observed two media blasters in location F-51 which appear to exhaust to ambient air. These were labeled as K-3147 glass bead blaster and K-3147 sand blaster. Filters and magnehelic gauges are located on each media blaster. The facility changes filters when the magnehelic readings indicate that pressure is building on the filters so that they need to be replaced. Manny explained that each facility has a store that holds products such as replacement filters. Staff can put in tickets to have filters replaced by maintenance staff. AQD visited the facility store on site and observed shelves of items including filters.

The facility considers these grinders and media blasters exempt from obtaining a Permit to Install per Rule 285(2)(l)(vi)(C) for grinding and shot blasting equipment which has externally vented emissions controlled by a fabric filter and mechanical pre-cleaner for operations with metal.

#### *1.3. Laboratories – Rule 283(2)(b)*

The inventory of facility equipment from 2016 lists several test areas on site. AQD visited the Non-Destructive Electromagnetic Field Testing. This appears to be a laboratory area with equipment for detecting leaks and cracks. This testing appears to be exempt from obtaining a PTI per Rule 282(2)(b) for laboratory equipment.

#### *1.4. Heat Treat Electric Furnace – Rule 282(2)(a)(i)*

AQD visited electric heat treating furnace K-3147. It exhausts to ambient air. The facility does not use oil quench or oil coated parts. The facility considers it exempt from obtaining a PTI per Rule 282(2)(a)(i) for electrically heated furnaces for heat treating that does not involve oil coated parts or oil quenching.

#### *1.5. Parts Washers and Cold Cleaners – Rule 281(2)(e), 281(2)(h), and 285(2)(r)(iv)*

The facility has several parts washers and cold cleaners. The facility provided exemptions and safety datasheets (SDS) for parts washers.

AQD visited the parts washers below. Where indicated, AQD took note of whether the lid was closed, instructions were posted, and whether the air/vapor interface surface area was less than 10 square feet. This information is in the table below. AQD talked with the facility about posting instructions and keeping lids closed.

Parts Washer Name	Cleaning Solution	Applicable Exemption	Lid closed?	Instructions posted?	Surface Area < 10 square feet?
Parts Washer B	Techniclean 3602	281(2)(e)	--	Yes	--
PW003	Castrol Techniclean MP Flex	285(2)(r)(iv)	Yes	Yes	Yes
PW005	Techniclean 3602	281(2)(e)	--	--	--
PW009	Castrol Techniclean MP Flex	285(2)(r)(iv)	Yes	Yes	Yes
PW012	Castrol Techniclean MP	281(2)(h)	--	Yes	Yes
PW015	Castrol Techniclean MP	281(2)(h)	No	Yes	Yes

Parts Washer B and PW005 use material Techniclean 3602, which is an aqueous solution that contains <10% triethanolamine (CAS #102-71-6). According to PubChem, this ingredient's vapor pressure is less than 0.01 mmHg at 68 degrees F. These parts washers appear to be exempt from obtaining a PTI per Rule 281(2)(e) for equipment used for washing if no VOCs have a vapor pressure greater than 0.1 mm Hg and no oil or solid fuel is burned.

Parts washers PW012 and PW015 appear to be exempt from obtaining a PTI per Rule 281(2)(h) for cold cleaners with an air/vapor interface not more than 10 square feet.

Parts washers PW003 and PW009 vent indoors. They appear to be exempt from obtaining a PTI per Rule 285(2)(r)(iv) for the metal cleaning that emits to the in-plant environment.

## 2. Four Engine Hot Test Cells – PTI 321-98B – FGTESTCELLS

AQD visited the four facility hot test cells. These are four rooms where engines can be rolled in and tested. There are no dynamometers in these rooms. AQD visited hot test cell four, which was operating during the inspection. One engine was hooked up to piping to be tested, as well as to water being used as coolant. The engine heats the water to greater than 100 °F. Exhaust was connected to piping to exhaust to ambient air. There appeared to be space for four engines to be run in the room.

Associated with the engine hot test cells are two aboveground outdoor fuel storage tanks. AQD observed these storage tanks. The aboveground storage tanks appeared to be in good condition.

### *2.1 FGTESTCELLS Special Conditions and Compliance Status*

SC(s)	Brief Condition Summary	Determination	Explanation
I.1, VI.2	CO emission limit of 42.93 tpy; keep monthly & 12-month rolling CO records	Compliance	On August 26, 2022, Manny provided monthly and 12-month rolling CO emissions records through August of 2022. The highest 12-month rolling emissions since PTI 321-98B was issued were 2.7 tons in December of 2020.
II.1, II.2, VI.3, and VI.4	Fuel usage limit of 55 MMBtu per calendar week, and 2833 MMBtu per 12-month rolling time period.	Compliance	Weekly records provided since December of 2020 indicate the highest weekly fuel MMBtu was 6.9 MMBtu the week of 7/19/2021. Monthly records indicate the highest 12-month fuel usage since December 2020 was 144.2 MMBtu in February of 2022.
II.3	Only burn unleaded gasoline, blends with 10% alcohol, and diesel fuel	Compliance	Fuels used in records indicate they are gasoline and diesel. AQD did not request the percent alcohol of gasoline used on site.
III.1	Don't operate engines in Wide-Open Throttle (WOT).	Compliance	The facility explained that engines are often run on idle and tests are usually capped at 1500-2000 revolutions per minute (RPM). This is below the RPM that would be considered WOT. WOT is the fully opened state of a throttle on an engine or the point at which the maximum amount of fuel is being injected relative to the amount of air pumped by the engine.
VI.1	Keep records in an acceptable format by the 20 <sup>th</sup> day of the calendar month for the previous calendar month.	Compliance	Records provided on August 26, 2022 include the previous calendar month of July 2022.
VIII	Stack dimensions and venting unobstructed vertically.	Compliance	AQD went outside to observe the stack for the test cells. It discharged unobstructed vertically. Visually, it appeared to have dimensions similar to those specified in PTI 321-98B.

### 3. Permanently Shut Down Dynamometers

AQD observed dynamometers on site which the facility considers decommissioned in place. Power to equipment has been removed, lines cut, and fuel removed. The underground

storage tanks that fed these dynamometers have been decommissioned in place. (Dynamometers didn't use the aboveground storage tanks that are in place for FGTESTCELLS.) The day tank has also been removed. These dynamometers appear to be permanently shut down and they were removed from the facility's permit to install when PTI 321-98B was issued and replaced PTI 321-98A.

### Conclusion

The facility appears to be in compliance with PTI No. 321-98B and with applicable state and federal regulations.

NAME  DATE 10/26/22 SUPERVISOR JK