M4793
MANILA

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

M479337259

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 , Environmental H&S Engineer		**ACTIVITY DATE:** 10/20/2016
STAFF: Todd Zynda	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection
INSPECTED BY: Todd Zynda, AQD
PERSONNEL PRESENT: Manny Appiah, Senior Environmental, Health and Safety Engineer
FACILITY PHONE NUMBER: (734) 487-6318
FACILITY WEBSITE: ford.com

FACILITY BACKGROUND

Ford Motor Company (Ford) Engine Manufacturing Development Operations (EMDO) is located at 17000 Southfield Road, Allen Park, Michigan. The boundaries of the facility are as follows. To the north is interstate I-94. To east and west are industrial and commercial businesses. To the south are residential properties. The nearest residential properties is located approximately 350 feet to the south.

The facility currently has 115 employees and operates two shifts covering a span from 6 AM to 10 PM, five days a week. Weekend hours are possible depending on the demand.

PROCESS OVERVIEW

EDMO is primarily a research and development facility for automotive prototype engines. The facility is permitted for operation of up to four hot test cells capable of supporting four engines each and three dynamometers. There is no emission control equipment for each test cell. Test fuels may be gasoline or diesel. Fuels are stored in either a 250-gallon diesel above ground storage tank (AST) or a 500-gallon unleaded gasoline AST. Operations in the facility also include a tool shop and machine shop. The machine shop has several oil-mist collectors which are used for particulate matter control, for boring and grinding operations. The tool shop operates cold cleaners.

COMPLAINT/COMPLIANCE HISTORY

There have been no complaints for this facility.

During March 21, 2013, September 20, 2011, January 26, 2010, January 5, 2006, and July 17, 2003 the facility was inspected and was determined to be in compliance permit conditions and applicable federal and state regulations.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

INSPECTION NARRATIVE

On October 20, 2016 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspector, Mr. Todd Zynda conducted an inspection of Ford EMDO at 17000 Southfield Road, Allen Park, Michigan. During the inspection, Mr. Manny Appiah, Senior Environmental, Health and Safety Engineer, provided information and a tour of facility operations relating to air quality permits. The inspection was conducted

to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, and permit to install (PTI) 321-98A.

At 12:00 PM Mr. Zynda entered the facility, stated the purpose for the inspection, and was greeted by Mr. Appiah. During the opening meeting the facility operations and PTI 321-98A conditions were discussed. Mr. Appiah provided a brief overview of facility operations. Mr. Appiah stated that no new equipment has been installed since the last inspection. Mr. Appiah stated that the dynamometers have not been used since 2007, and that fuel usage is well below limits indicated in the permit.

Following discussion of record keeping requirements outlined in the inspection checklist, Mr. Appiah presented records maintained for compliance with PTI No. 321-98A. Mr. Appiah also provided gasoline and diesel readings reports.

Following discussion of operations and PTI No. 321-98A record keeping requirements, Mr. Appiah provided a tour of the facility. During the inspection the test cells were observed. Three of the four test cells are currently equipped with four hot test stands in each cell. The fourth hot test cell is equipped one hot test stand. Within each hot test cell, short-term tests are run on the engines. The tests are run to determine if the engine is running properly (noise, vibration, and harshness tests). A typical hot test run last approximately 30 minutes includes examination of fluid leaks and monitoring of temperature. Exhaust gases for each hot test stand are combined and vented through one stack.

During the inspection, two of the three dynamometer test cells were observed. Both cells did not appear to have recent activity. According to Mr. Appiah, the dynamometer cells are not used and have been used for storage and warehousing.

Additionally the 250-gallon diesel and 500-gallon unleaded gasoline ASTs were observed. The original gasoline UST was removed several years ago, and along with it the piping for the dynamometers was also removed.

During the inspection, Mr. Appiah also provided a brief tour of the tool shop and machine shop. The machine shop contained several oil mist collectors that vent inside the plant. The tool shop contained a cold cleaner (non-solvent based). During the inspection the cold cleaner lid was closed and operating methods were posted.

Following the inspection, Mr. Zynda inquired about the permit exempt equipment (oil mist collectors, cold cleaner, natural gas heaters, etc). Mr. Appiah provided an inventory of all PTI exempt equipment via email.

APPLICABLE RULES/PERMIT CONDITIONS

Permit to Install No. 321-98A

The General Condition (GC) and Special Condition (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased.

EUTESTCELLS

SC1.1a, SC 1.1b, SC 1.5. **IN COMPLIANCE**. The 12-month rolling carbon monoxide (CO) emissions do not exceed 89 tons per year (SC 1.1b) or 489 pounds per day (SC 1.1a). The highest 12-month rolling CO emission since the last inspection was 5.88 tons (December 2015). The highest average daily CO emission since the last inspection was 47.9 pounds (May 2015) (Attachment B).

SC 1.2 and 1.3. **IN COMPLIANCE**. Fuel usage does not exceed 7.8 million British thermal units (MMBtu) per calendar day or 2839 MMBtu per year based on a 12-month rolling time period. The highest 12-month rolling fuel usage since the last inspection was 209.39 MMBtu (December 2015). The highest average daily fuel usage since the last inspection was 0.8 MMBtu (May 2013, February, March and May 2015).

SC 1.4. **IN COMPLIANCE**. Shall complete all calculations is an acceptable format. Records provided are acceptable.

SC 1.6. **IN COMPLIANCE**. Shall calculate the daily CO emission rate based upon monthly records for EUTESTCELLS, prorated to a daily rate. Should the prorated emission rate exceed 90 percent of the limit, the permittee shall keep daily records for a minimum of two months until the emission rate falls below 90 percent of

the limit. Daily CO emissions are based upon monthly records prorated to a daily rate. Emissions have been significantly less than 90 percent of the daily limit.

SC 1.8. **IN COMPLIANCE**. Shall calculate the daily fuel usage rate for EUTESTCELLS based upon monthly recordkeeping prorated to a daily rate. Should the prorated daily rate exceed 90 percent of the daily limit, the permittee shall commence daily recordkeeping for a minimum of two months until the daily rate falls below 90 percent of the daily limit. Fuel usage has been significantly less than 90 percent of the daily limit.

SC 1.9a. **IN COMPLIANCE**. During the inspection the stack for hot test cells appeared to meet permit requirements (13.6 inch max diameter, 22 feet minimum height). Measurements were not collected.

SC 1.9b through d. **IN COMPLIANCE**. During the inspection, the stack requirements for the dynamometers were not verified. According to email correspondence from Mr. Appiah on November 15, 2016, and phone conversation on November 15, 2016, the stacks for all dynamometer test cells are in place. The stack for test cell 1 (SVDYNO1) is capped, however, the cell is not is use has not been in use since 2007. Prior to use, the cap will be removed, allowing for exhaust gases to be discharged unobstructed vertically upward to ambient air. The stacks for test cell 2 and 3 are not capped.

Permit to Install Exempt Equipment

Natural Gas Heaters
The natural gas heating units are exempt from PTI under the following Rule.

R336.1282(b)(i): "Permit to install does not apply to.. Sweet natural gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour."

The facility provided an inventory of natural gas heaters at the facility. The largest heater is rated at 1.165 MMBTU per hour. The summation of the heat input for all natural gas heaters at the facility is 19,460,999 BTU per hour.

Oil Mist Collectors/Machining Equipment
The oil mist collectors/machining equipment at the facility are exempt from PTI under the following Rule.

R336.1285(l)(vi)(B): "Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, ... which has emissions that are released only into the general in-plant environment."

During the inspection, the number of oil mist collectors in operation at the facility was not verified.

Cold Cleaners
Cold cleaners at the facility are exempt from PTI under the following Rule.

R336.1281(h): "The Requirement of R 336.1201(1) to obtain a permit to install does not apply to.. Cold cleaners that have an air/vapor interface of not more than 10 square feet."

The facility submitted a permit exemption inventory that identifies several parts/washers or cold cleaners at the facility. The facility has listed Rule 283 (1) as the exemption for four cold cleaners/parts washers. The AQD believes the cold cleaners are likely exempt under Rule 281. During the inspection only one cold cleaner was observed. The cold cleaner observed is heated (130 °F) and has a mechanically assisted cover. The SDS for material used in the cold cleaner observed during the inspection was provided along with vapor pressure documentation. The vapor pressure is 20.9 mm Hg or 0.404 psi. During the inspection, the cold cleaner observed appears to be in compliance with the applicable requirements of R336.1707.

It is recommended that during the next inspection, visual inspection of all cold cleaners be conducted along with evaluation of exemption applied.

NESHAP/MACT

40 CFR Part 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning

According to 40 CFR 63.460(a), this standard applies to units that use solvents with concentrations of 5% or more by weight of halogenated compounds (methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform). The SDS provided indicates that material used in cold cleaners at the facility does not contain the above listed halogenated compounds. Therefore, this standard does not apply.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

Not applicable. All lots are paved.

MAERS REPORT REVIEW:

The 2015 MAERS report was submitted on time. Throughputs reported in MAERS were consistent with throughput records provided at the time of inspection.

POTENTIAL TO EMIT EVALUATION

A copy of the facility potential to emit evaluation was provided as part of the exemption analysis (see attached). The natural gas heaters potential to emit PTE was verified as part of the PTE review. The facility uses AP-42 emission factors to calculate the PTE for natural gas heaters at the facility. The facility calculated PTE is as follows.

Process	NOx	CO	VOCs	PM	SO2	LEAD	Total HAPS	Units
Combustion	8.52	7.16	0.47	0.65	0.05	0.00	0.47	Tons/year
Hot Test Cells	1.97	89.00	1.75	0.07	0.06	0.00	0.15	Tons/year
Other	0.00	0.00	11.06	11.19	0.00	0.00	4.44	Tons/year
Total	10.49	**96.16**	13.28	11.90	0.11	0.00	5.05	Tons/year

The facility CO PTE is 96.16 tons per year. While the PTE is less than 100 tons, the facility is very close to exceeding the 100 ton threshold. It is strongly recommended that the facility obtain a source wide facility opt-out permit for CO; currently, PTI 321-98A limits only the emissions from permitted equipment and does not limit emissions from exempt equipment.

While the installation dates of the natural gas heater units is unknown, it is possible that PTI 321-98A should have been subject to a public comment period as the CO emissions are greater than 90% of the Title V threshold for CO.

Should the facility, not want to pursue a facility opt-out limit for CO, the AQD may request testing per Rule 1001 (c) to verify CO emission factors included in PTI 321-98A.

FINAL COMPLIANCE DETERMINATION:

At this time, this facility appears to be in compliance with PTI 321-98A and federal and state regulations. It is strongly recommended that the facility submit a permit to install application to obtain a source wide facility opt-out limit for CO.

NAME _____ DATE 11/15/16 SUPERVISOR JK