

State Registration Number
B6230

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B6230-2022

Ford Motor Company - Research & Engineering Center

State Registration Number (SRN): B6230

Located at

1701 Village Road, 2101 Village Road, and 21500 Oakwood Blvd.,
Dearborn, Wayne County, Michigan 48124

Permit Number: MI-ROP-B6230-2022

Staff Report Date: December 20, 2021

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division

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December 20, 2021 - STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan’s Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source’s applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	Ford Motor Company One American Road Dearborn, Michigan 48126
Source Registration Number (SRN):	B6230
North American Industry Classification System (NAICS) Code:	541710
Number of Stationary Source Sections:	3
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201800075
Responsible Official:	Sections 1 and 2: Richard Danes, Manager, ELD/PFSL, Engine Lab 313-805-2887 Section 3: Joseph Vicari, Manager, Ford Land Maintenance and Operations 313-999-0364
AQD Facility Contact:	Jorge Acevedo, Senior Environmental Engineer 313-456-4679
AQD ROP Contact:	Kaitlyn DeVries, Senior Environmental Quality Analyst 616-558-0552
Date Application Received:	June 1, 2018
Date Application Was Administratively Complete:	June 1, 2018
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	December 20, 2021
Deadline for Public Comment:	January 19, 2022

Source Description

The Ford Motor Company Research and Engineering Facility is comprised of forty (40) buildings for research and development engaging in testing various automobile engines and components. The facility is located in the city of Dearborn in Wayne County, Michigan. The buildings are located on both the east and west sides of Oakwood Boulevard, and south of Michigan Avenue. The buildings are primarily in a residential and commercial area, with the nearest residential area located immediately to the north, west, and south sides of the facility. The Rouge River also runs adjacent to the facility on the northeast side.

The Ford Motor Company Research and Engineering Facility (Ford R&E) operates combustion engine test cells with associated dynamometers. The exhaust gas from certain engines are controlled by a thermal oxidizer. There is also chlorofluorocarbon (CFC) containing equipment located throughout the facility, which makes the source subject to 40 CFR Part 82.

The source is divided into three (3) sections. Section 1 is the Dynamometer Building; Section 2 is the Research Innovation Center (RIC); and Section 3 is the Research and Engineering Center Building. Each section will be further described below.

Section 1: Dynamometer Building

In the Dynamometer Building, Ford has six (6) wings (A, C, D, E, F, G) and tests internal combustion engines in dynamometer cells. The dynamometers are electrical diagnostics devices measuring the mechanical performance of the engines. All the dynamometers are interfaced with personal computers that continuously monitor engine feedback parameters. The Dynamometer building engine tests primarily focus on endurance of the engines. Emissions result from the combustion of the various fuels by the engines. Emissions from most of the buildings are controlled by one of several thermal oxidizers. Typical engine tests conducted at the facility include:

1. Engine Durability – the durability test evaluates the effect of running the engine under harsh conditions for extended periods of time. This is accomplished by operating the engine for extended periods at varying engine speeds.
2. Engine Performance – the performance test takes the engine to a particular speed, stops the engine for several minutes; takes the engine to the next speed, stopping for several minutes, and continuing the cycle for performance evaluation.
3. Engine Break-in – during the engine break-in test, speed and load points are varied to “break-in” the engine.
4. Transient Emissions – the transient emissions test operates the engine for a period, stops and allows the engine to return to ambient temperature.
5. Transient Performance Test – This test takes the engine from zero revolutions per minute (RPM) to maximum horsepower in a few seconds. The engine is then stopped, and the test is immediately repeated.
6. Engine Component Testing – Some of the test cells evaluate the performance of specific engine components (oil pump, throttle body, etc.), often without running the engine under its own power.
7. Engine Mapping Test – the engine mapping test consists of running the engine at various speeds, load, spark, and fuel set points where data is taken to determine engine performance, fuel economy, exhaust emission, etc., according to the engine program.

Section 2: Research Innovation Center (RIC)

Ford’s Research Innovation Center (RIC) tests internal combustion engines in ten (10) dynamometer cells. The focus of the RIC is similar to the Dynamometer Building, except the RIC focuses on how the engines and their components react with different fuel types. This building also focuses on projects that are in the development stage and are approximately 3-10 years from production.

Section 3: Research and Engineering Center Building

This section is primarily consisting of ancillary equipment including engines and boilers. There are five (5) emergency diesel fired generators that are owned and operated by Edison Energy Services. These generators provide electricity to the facility whenever Edison interrupts the electricity supply. Ford has agreed to allow Edison to interrupt their electricity supply in exchange for a cheaper electricity rate.

Since the last permit issuance, Permit to Install (PTI) 194-15A was issued to the facility in 2017 and will be incorporated into the permit during this renewal. This permit was related to FGTESTCELLS and FG_WINGA, in section 1, for the dynamometer test cells. Additionally, AQD Consent Order AQD No. 14-2010, with the facility, was terminated on September 17, 2015 and the conditions and references to the consent order were removed through a minor modification.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year 2020.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	583
Lead (Pb)	0
Nitrogen Oxides (NO _x)	40.5
Particulate Matter (PM)	3.6
Sulfur Dioxide (SO ₂)	3.3
Volatile Organic Compounds (VOCs)	26.4

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2020 by AQD:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
Formaldehyde	0.19 pounds
Benzene	0.15 pounds
Acetaldehyde	0.12 pounds
Total Hazardous Air Pollutants (HAPs)	< 1 ton

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

Wayne County is currently designated by the United States Environmental Protection Agency (USEPA) as a non-attainment area with respect to the 8-hour ozone standard.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of carbon monoxide, nitrogen oxides, and volatile organic compounds exceeds 100 tons per year and the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air

Act, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

The facility is subject to 40 CFR Part 82 for ozone-depleting substances. The AQD is not currently delegated for this Regulation. This is due to the CFC containing equipment.

FGTHERDYNO at the stationary source was subject to review under the Prevention of Significant Deterioration regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality, because at the time of New Source Review permitting the potential to emit of carbon monoxide, nitrogen oxides, and volatile organic compounds was greater than 250 tons per year.

FGEMERG-JJJJ, in section 3 at the stationary source are subject to the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ. These emission units are also subject to Subpart ZZZZ; compliance with Subpart ZZZZ is demonstrated through compliance with Subpart JJJJ.

FGEMERG-III, in section 3 at the stationary source are subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and III. These emission units are also subject to Subpart ZZZZ; compliance with Subpart ZZZZ is demonstrated through compliance with Subpart III.

FGEMERGRICE in section 3 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ.

FGBOILERS in section 3 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Industrial Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD. Four (4) additional boilers installed in 2017 and two (2) boilers installed in 2021 at the Crash Barrier Building were identified and incorporated into this flexible group during this ROP Renewal.

Since the last ROP issuance, Consent Order AQD No. 14-2010 has been terminated. The Consent Order was terminated on September 17, 2015 and all conditions referencing the Consent Order were removed from the ROP.

The AQD's Rules 287 and 290 were revised on December 20, 2016. FGRULE287(2)(c) and FGRULE290 are flexible group tables created for emission units subject to these rules. Emission units installed before December 20, 2016, can comply with the requirements of Rule 287 and Rule 290 in effect at the time of installation or modification as identified in the tables. However, emission units installed or modified on or after December 20, 2016, must comply with the requirements of the current rules as outlined in the tables.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

FGTESTCELLS does not have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the unit(s) do not have a control device. Only the FGWINGA portion of this flexible group has a control device, and the emission from this portion of the flexible group that have pre-control emissions over major source threshold and are subject to CAM, are accounted for in FGWINGA.

FGC10759, in section 2, does not have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the flexible group does not have potential pre-control emissions over the major source thresholds and there is no control device.

The following Emission Units/Flexible Groups are subject to CAM:

Emission Unit/Flexible group ID	Pollutant/Emission Limit	UAR(s)	Control Equipment	Monitoring (Include Monitoring Range)	Emission Unit/Flexible Group for CAM	PAM ? *
FGWINGA	CO/3.0308 lb./MMBTU	R.336.1205(1)(a) & (3), 40 CFR 52.21(d)	Thermal Oxidizer	Combustion Chamber Temperature 1579°F minimum	FGWINGA	No
FGWINGA	VOC/0.05969 lb./MMBTU	R.336.1205(1)(a) & (3)	Thermal Oxidizer	Combustion Chamber Temperature 1579°F minimum	FGWINGA	No
FGTHERDYNO	CO/1416 pounds/day	R 336.2804 40 CFR 52.21 (d)	Thermal Oxidizer	Combustion Chamber Temperature 1400°F minimum	FGTHERDYNO	No

*Presumptively Acceptable Monitoring (PAM)

The Carbon Monoxide (CO) emissions from FGTHERDYNO, and the Volatile Organic Compounds (VOC) and the CO emissions for FGWING-A are subject to the provisions of 40 CFR Part 64 for Compliance Assurance Monitoring (CAM). Both flexible groups have thermal oxidizers which are used to control emissions. Maintaining a minimum temperature of each oxidizer at 1400°F for FGTHERDYNO and 1579°F for FGWINGA ensure that the oxidizers meet the minimum required destruction efficiency (DE). The decrease in temperature in the oxidizer would result in incomplete combustions of the pollutants, thus reducing the destruction efficiency. Therefore, maintaining the minimum temperature, as verified during performance testing, has been selected as the performance indicator for CAM.

In addition to the selection of monitoring the temperature of the combustion chambers for the oxidizers, the facility is also conducting routine maintenance on the oxidizers including annual calibration or replacement of each thermocouple, semi-annual testing to verify the interlocks between all the oxidizers and the test cells work properly and can shutdown testing in the event of a malfunction, and annual inspections of the valve seals to ensure that the proper retention time for the destruction of VOC's and CO within the oxidizer is maintained.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-Wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B6230-2013 are identified in Appendix 6 of the ROP.

PTI Number			
185-98	C-10598	C-10597	174-09
C-11776	392-94A	122-04	

Streamlined/Subsumed Requirements

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-AECDYNOS	AEC dynamometer test cells	Rule 212(4)(e)	Rule 285 (2)(g)
EU-COOK	Two (2) 10 MMBTU Electric and Natural gas Bakery Ovens and Confection cookers for human consumption	Rule 212(4)(c)	Rule 282(2)(a)(v)
EU-NGHEATING	One hundred fourteen (114) Natural Gas Fired heaters less than 50 MMBTU/hr (complete listing below)	Rule 212(4)(c)	Rule 282(2)(b)
EU-GASTANKS	Gasoline Storage and handling equipment at loading facilities handling less than 20, 000 gallons per day or at dispensing facilities	Rule 212(4)(d)	Rule 284(2)(g)(i)
EU-PRESSURETANKS	Storage of butane, propane, or liquefied petroleum gas in a vessel that has a capacity of less than 40,000 gallons	Rule 212(4)(b)	Rule 284(2)(b)
EU-CNGTANK	CNG Storage tank and pump station	Rule 212(4)(d)	Rule 284(2)(g)(ii)
EU-VOCTANKS	Storage or transfer tanks for trichloroethylene and diesel fuel	Rule 212(4)(d)	Rule 284(2)(i)
EU-XVENTMACHINES	Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planning, sand blast cleaning, shot blasting, shot peening, polishing that is externally vented	Rule 212(4)(e)	Rule 285(l)(vi)(C)
EU-HOTWATERBOILERS	Twenty-Seven (27) hot water boilers located at various locations around the campus all with capacities less than 1.6 MMBTU/hr	Rule 212(4)(c)	Rule 282(2)(b)(i)

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
Storage Tanks (see below)	Various storage tanks with various capacities and contents all listed individually below	Rule 212(4)(d)	Various (see below)

Location of Natural Gas Fired Heaters (Building)	Description	Capacity (BTUs)
Building #6 - 20600 Rotunda Dr	HTEQ-116459	300,000
Building #6 - 20600 Rotunda Dr	HTEQ-80020	60,000
Conference & Event Center - 1151 Village Rd	RTUS-111231	850,000
Conference & Event Center - 1151 Village Rd	RTUS-111233	350,000
Conference & Event Center - 1151 Village Rd	RTUS-111234	800,000
Conference & Event Center - 1151 Village Rd	RTUS-111236	850,000
Conference & Event Center - 1151 Village Rd	RTUS-111237	500,000
Conference & Event Center - 1151 Village Rd	WHTR-116071	199,000
Conference & Event Center - 1151 Village Rd	WHTR-102780	250,000
Conference & Event Center - 1151 Village Rd	WHTR-116070	75,100
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-102865	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-102879	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-111739	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-116458	50,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-102888	45,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-111499	90,000

Location of Natural Gas Fired Heaters (Building)	Description	Capacity (BTUs)
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-111500	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-111664	100,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-113202	60,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-113223	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-114647	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-114699	75,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-114698	75,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39001	30,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39030	100,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39008	100,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39009	80,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39010	40,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39011	40,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39012	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39013	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39014	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39015	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39016	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39017	125,000

Location of Natural Gas Fired Heaters (Building)	Description	Capacity (BTUs)
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39018	80,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39019	80,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39020	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-112398	110,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39022	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39023	125,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-112396	110,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39028	60,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39029	100,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39030	100,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39032	60,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39033	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-39034	60,000
Crash Barrier Building - 20000 Oakwood Blvd	RTUS-106525	250,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-121018	90,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-116458	50,000
Crash Barrier Building - 20000 Oakwood Blvd	HTEQ-121018	90,000
DPG Control Tower - 20050 Oakwood Blvd	RTUS-113266	75,000
DPG Control Tower - 20050 Oakwood Blvd	UNIT-113265	40,000

Location of Natural Gas Fired Heaters (Building)	Description	Capacity (BTUs)
Driving Dynamics Laboratory - 20500 Oakwood Blvd.	AHUO-310004	2,400,000
Driving Dynamics Laboratory - 20500 Oakwood Blvd.	AHUO-310002	2,000,000
Driving Dynamics Laboratory - 20500 Oakwood Blvd.	AHUO-310003	2,400,000
Driving Dynamics Laboratory - 20500 Oakwood Blvd.	AHUO-310001	3,000,000
Dynamometer Building - 1701 Village Rd		240,000
Ford Engineering Laboratory- 21500 Oakwood Blvd	RTUS-116230	533,000
Gas Turbine Lab - 1751 Village Rd	RTUS-103154	60,000
Gas Turbine Lab - 1751 Village Rd	RTUS-103298	60,000
Gas Turbine Lab - 1751 Village Rd	RTUS-103384	100,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112387	120,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112388	120,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112389	200,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112392	200,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112393	200,000
Gas Turbine Lab - 1751 Village Rd	RTUS-112394	200,000
Gas Turbine Lab - 1751 Village Rd	RTUS-116002	120,000
Gas Turbine Lab - 1751 Village Rd	RTUS-116003	120,000
Gas Turbine Lab - 1751 Village Rd	RTUS-116004	350,000

Location of Natural Gas Fired Heaters (Building)	Description	Capacity (BTUs)
Gas Turbine Lab - 1751 Village Rd	RTUS-116005	120,000

Storage Tanks located at Ford R&E Facility

Facility	Tank size	Contents	Installation Date	NSR Permit Exemption
Wind Tunnel #4/5				
	2,000 gal 2,000 gal 2,000 gal	Salvage fuel Salvage fuel Salvage diesel Octane	9/12/1994	R 336.1284(2)(g)(i) R 336.1284(2)(2)(d)
	2,000 gal 2,000 gal 2,000 gal	Gasoline Gasoline Gasoline	9/12/1994	R 336.1284(g)(i)
	550 gal	Diesel		R 336.1284(2)(g)(i)
Dynamometer Laboratory				
	12,000 gal 4,000 gal 4,000 gal	Gasoline Glycol Oil	8/1/1992	R 336.1284(2)(i) Vapor pressure of glycol- .001psia
	12,000 gal 4,000 gal 4,000 gal	E-100 Oil Oil	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	12,000 gal 4,000 gal 4,000 gal	Gasoline Salvage oil Salvage gas	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	12,000 gal 4,000 gal 4,000 gal	Gasoline Salvage glycol Salvage diesel	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d), R 336.1284(2)(i)
	12,000 gal 4,000 gal 4,000 gal	Gasoline Gasoline Diesel	8/1/1992	R 336.1284(2)(g)(i)
	10,000 gal 10,000 gal	Gasoline Diesel	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	10,000 gal 10,000 gal	Diesel Diesel	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	10,000 gal 10,000 gal	Gasoline Gasoline	8/1/1992	R 336.1284(2)(g)(i)

	10,000 gal 10,000 gal	Gasoline Gasoline	8/1/1992	R 336.1284(2)(g)(i)
	10,000 gal 10,000 gal	Gasoline Ethanol Blend	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	5,000 gal 5,000 gal 5,000 gal 5,000 gal	Gasoline Gasoline Gasoline Gasoline	8/1/1992	R 336.1284(2)(g)(i)
	5,000 gal 5,000 gal 5,000 gal 5,000 gal	Ethanol Blend Gasoline Diesel Gasoline	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	10,000 gal 10,000 gal	Diesel Gasoline	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	10,000 gal 10,000 gal	Gasoline Diesel	8/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(d)
	1,000 gal 1,000 gal 1,000 gal 1,000 gal 1,000 gal	Gasoline Ethanol Blend Gasoline Ethanol Blend Gasoline	8/1/1992	R 336.1284(2)(d) R 336.1284(2)(g)(i)
	1,000 gal 1,000 gal 1,000 gal 1,000 gal 1,000 gal	Diesel Diesel Gasoline Gasoline Diesel	8/1/1992	R 336.1284(2)(d) R 336.1284(2)(g)(i)
	20,000 gal	Various fuels	8/1/1992	R 336.1284(2)(d) R 336.1284(2)(g)(i)
	100 gal	Diesel		R 336.1284(2)(i)
Central Fuel Dispensing Station				
	10,000 gal 10,000 gal	Gasoline Diesel	5/1/2004	R 336.1284(2)(g)(i), R 336.1284(2)(i)
	20,000 gal	Gasoline	5/1/2004	R 336.1284(g)(i)
	217 gal	Diesel		R 336.1284(2)(i)
	1000 gal	Diesel		R 336.1284(2)(i)
Research Innovation Center				
	15,000 gal	Gasoline	1/1/1992	R 336.1284(2)(g)(i)
	15,000 gal	Diesel	1/1/1992	R 336.1284(2)(i)
	15,000 gal	Gasoline Diesel	1/1/1992	R 336.1284(2)(g)(i) R 336.1284(2)(i)
	24,000 gal	Gasoline	1/1/1992	R 336.1284(2)(g)(i)

	550 gal	Diesel		R 336.1284(2)(i)
	4,000 gal	Gasoline Used oil	7/1/1993	R 336.1284(2)(g)(i) R 336.1284(2)(d)
Powertrain & Fuel Subsystems Laboratory				
	5,000 gal	Salvage gas	1/1/1987	R 336.1284(2)(g)(i)
	5,000 gal	Gasoline	12/28/1990	R 336.1284(2)(g)(i)
	5,000 gal	Gasoline	1/1/1990	R 336.1284(2)(g)(i)
	550 gal	Diesel		R 336.284(2)(i)
Advanced Electrification Center				
	2,000 gal	Gasoline	10/1/1991	R 336.1284(g)(i)
	150 gal	Diesel		R 336.284(2)(i)
	1,000 gal	Diesel		R 336.284(2)(i)
	1,000 gal	Diesel		R 336.284(2)(i)
	500 gal	Diesel		R 336.284(2)(i)
	125 gal	Oil		R 336.284(2)(i)
	125 gal	Oil		R 336.284(2)(i)
Test Track Fuel Station				
	10,000 gal	Gasoline	1/1/1990	R 336.284(2)(g)(i)
	10,000 gal	Gasoline	9/1/1990	R 336.284(2)(g)(i)
	5,000 gal	Gasoline	9/1/1993	R 336.284(2)(g)(i)
	5,000 gal	Diesel	9/1/1993	R 336.284(2)(i)
	5,000 gal	Gasoline	9/1/1993	R 336.284 (2)(g)(i)
	5,000 gal	Diesel	9/1/1993	R 336.284(2)(i)
	10,000 gal	Gasoline	9/1/1993	R 336.284(g)(i)
	5,000 gal	Gasoline	9/1/1993	R 336.284(g)(i)
	5,000 gal	Diesel	9/1/1993	R 336.284(2)(i)
	5,000 gal	Gasoline	9/1/1993	R 336.284(g)(i)
	550 gal	Diesel		R 336.1284(2)(i)
	150 gal	Oil		R 336.1284(2)(d)
Building #3				
	550 gal	Diesel		R 336.284(2)(i)
Building #4				
	125 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)
	770 gal	Oil		R 336.1284(2)(d)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by EGLE, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Dr. April Wendling, Detroit District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

State Registration Number
B6230

RENEWABLE OPERATING PERMIT
February 1, 2022 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-B6230-2022

Purpose

A Staff Report dated December 20, 2021, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Sections 1 and 2: Richard Danes, Manager, ELD/PFSL, Engine Lab 313-805-2887 Section 3: Joseph Vicari, Manager, Ford Land Maintenance and Operations 313-999-0364
AQD Contact:	Kaitlyn DeVries, Senior Environmental Quality Analyst 616-558-0552

Summary of Pertinent Comments

The following comments were received from the United States Environmental Protection Agency (USEPA).

USEPA Comment 1:

Part E of Sections 1 and 2 of the draft ROP include non-applicability determinations stating that 40 CFR Part 63 Subpart P does not apply because the affected source is an existing affected source that is exempt from the requirements pursuant to 40 CFR § 63.9290(b). The draft ROP incorporates PTI 194-15A which authorized the construction of new test cells and potentially affects whether the affected source was reconstructed as defined at 40 CFR § 63.2. We understand that a previous analysis shows that the affected source was not reconstructed but this analysis does not appear to be included within the draft ROP's staff report or permit application. To ensure that the permit record supports the non-applicability determination included in the draft ROP, we request that you provide the analysis showing that the affected source was not reconstructed in PTI 194-15A.

AQD Response:

Permit to install (PTI) 194-15A, which was issued on April 6, 2017, and is being incorporated into this ROP renewal. The PTI was to modify the project permitted under PTI 194-15 to add three (3) additional test cells to an existing flexible group. PTI 194-15 was issued in order to allow several previously grandfathered test cells to be replaced with new test cells and to move four (4) existing test cells to another wing. In the PTI application for PTI 194-15 and 194-15A, Ford submitted cost analysis documentation detailing the cost of the construction of the new engine test cells versus the cost of a new facility in order to determine if the

source would trigger reconstruction as defined in 40 CFR Part 63.2. This analysis indicated that the cost of the construction for the new test cells would be less than 50% of the cost of a new facility at roughly 24.5% and is therefore not considered to be a reconstruction as defined in 40 CFR Part 63.2. Therefore, the regulatory applicability determination that 40 CFR Part 63 Subpart P does not apply because the affected source is an existing source that is exempt from the requirements pursuant to 40 CFR Part 63.9290(b) still stands.

USEPA Comment 2:

We request that you verify the following cross-references included in the draft ROP. It is unclear whether the referenced testing requirements are intended to demonstrate compliance with each emission limitation.

Section 1, FGOTHERDYNO SC I.3 and I.4 (page 22) are NO_x emission limitations referring to SC V.1, but SC V.1 only verifies the thermal oxidizer's CO and VOC efficiency.

Section 1, FGOTHERDYNO SC I.5 (page 22) is a 1,3-Butadiene emission limitation referring to SC V.1, but SC V.1 only verifies the thermal oxidizers CO and VOC efficiency.

AQD Response:

In Section 1, FGOTHERDYNO, Special Condition (SC) I.3 and I.4, on page 22, the emission limit for NO_x references SC V.1, which is for CO and VOC reduction efficiency. This is a typographical error in the emission limit table of SC I.3 and I.4. This has been updated to reflect the correct compliance demonstration of SV V.2 in the permit. Similarly in section 1 FGOTHERDYNO SC I.5, also on page 22, the emission limit for 1,3-Butadiene incorrectly only references SC V.1, which is for CO and VOC efficiency. Since 1,3-Butadiene is a VOC, that reference is correct, however, SC V.3 requires the verification of 1,3 butadiene concentration from FGOTHERDYNO. Thus, SC V.3 was added to the emission limit table, and now references SC V.3. This change was made to the permit.

USEPA Comment 3:

We request that you verify the following citations to origin and authority. These appear to be minor typographical errors that do not otherwise affect the applicability of any requirement in the permit.

Section 1, FGOTHERDYNO SC III.2 (page 23) cites R 336.12001 but should instead cite R 336.1201.

Section 3, FGEMERG-JJJJ SC I.1 - I.3 (page 113) each cite 40 CFR 60.6233(d) but should instead cite 40 CFR 60.4233(d).

AQD Response:

The citations identified in Section 1, FGOTHERDYNO SC III.2, on page 23, that referenced R 336.12001 were verified and identified as a typographical error. This should cite R 336.1201. This change was made to the permit. Similarly, in Section 2, FGEMERG-JJJJ SC I.1 – I.3, on page 113, the citation of 40 CFR 60.6233(d) was verified to be a typographical error. This should be 40 CFR 60.4233(d). This change was made to the permit.

Changes to the December 20, 2021 Draft ROP

The following changes were made to the draft ROP.

In Section 1:

The citation for FGOTHERDYNO SC III.2 on page 23 has been updated from R 336.12001 to R 336.1201.

In FGOTHERDYNO SC I.3 and I.4 the monitoring/testing method column of the table was updated to reflect the correct compliance demonstration for the emission limit. This correct reference is SC V.2.

In FGOTHERDYNO SC I.5 the monitoring/testing method column of the table was updated to include the reference to SC V.3, as a method to demonstration compliance with the emission limit.

In Section 2:

No changes were made to this section.

In Section 3:

The citation for FGEMERG-JJJJ SC I.1 – I.3 on page 113 has been updated from 40 CFR 60.6233(d) to 40 CFR 60.4233(d).