

State Registration Number
A8638

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-A8638-2022

Detroit Diesel Corporation

State Registration Number (SRN): A8638

Located at

13400 Outer Drive West, Detroit, Wayne County, Michigan 48239

Permit Number: MI-ROP-A8638-2022

Staff Report Date: May 2, 2022

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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May 2, 2022 - STAFF REPORT

ROP Number

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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:	Detroit Diesel Corporation 13400 Outer Drive West Detroit, Michigan 48239
Source Registration Number (SRN):	A8638
North American Industry Classification System (NAICS) Code:	333618
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201700022
Responsible Official:	Del Spooner, Director of Technical Services 313-592-5000
AQD Contac: Field Inspector	Mr. Stephen Weis, Senior Environmental Engineer 313-720-5831
AQD Contact: ROP Writer	Ms. Julie Brunner, P.E., Environmental Quality Specialist 517-275-0415
Date Application Received:	February 3, 2017
Date Application Was Administratively Complete:	February 3, 2017
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	May 2, 2022
Deadline for Public Comment:	June 1, 2022

Source Description

Detroit Diesel Corporation is a roughly 3 million square foot diesel engine manufacturing, development and testing facility in Redford Township. Detroit Diesel produces medium-duty and heavy-duty on-highway diesel engines; front, rear and tandem axles; transmissions, turbos, engine components, and e-batteries for the commercial truck market. The main building at the facility contains office areas, manufacturing areas, and engine testing/research and development laboratories.

The facility is located along the east side of Telegraph Road, stretching north from Plymouth Road to the Chesapeake and Ohio railroad right-of-way. The Detroit Diesel property extends east to Outer Drive. The eastern side of the property, located in the City of Detroit, contains the Administration and Child Care buildings and parking; the remainder of the property is located in Redford Township and has the manufacturing and test operations, along with support buildings. The area to the north and south of the Detroit Diesel facility are residential. The area to the west of the facility primarily contains businesses of a commercial and light industrial classification. To the east is the Rouge Golf Course.

The manufacturing area includes metal component machining, assembly, and testing. The engines that are produced at the facility are coated with a low volatile organic carbon (VOC) containing, water-reduced clearcoat in spray booths with particulate controls.

In the engine research and development (R&D) laboratory, diesel engines are tested in rooms, or “test cells”, in which the engines are fueled and operated while various mechanical, performance, and emissions control parameters are measured. There are test cells dedicated for performance (including two that are used for EPA emission certification testing), durability, and production. The performance test cells are used to test engine operation and performance under the simulation of normal (expected) operating loads and usage. The engines that are tested are typically equipped with the air pollution control devices that they would be equipped with during on-road customer use to analyze the engine’s performance under actual operating conditions. The current air pollution control and aftertreatments that are utilized on the engines produced at the facility consists of a selective catalytic reduction (SCR) catalyst, a diesel oxidation catalyst, or a diesel particulate filter. The durability test cells involve testing engines as they run in cycles, varying the engine speed and running them under more extreme loads. The diesel engines that are manufactured and assembled at the facility also undergo a testing, which is a short duration run of each engine to ensure that it meets quality parameters.

From the perspective of air quality regulations, the following is a listing of the process equipment that is currently in operation at the facility:

- EU600, EU601, and EU602 – These are coating spray booths used to apply low-VOC containing, water-reduced, air-dried coatings to diesel engines. The booths are equipped with dry filters for particulate control. These emission units were installed in 2007, and originally permitted by Permit to Install (PTI) No. 165-06.
- EUBOILER1, EUBOILER4 and EUBOILER5 – Three (3) natural gas-fired boilers provide facility high-pressure steam for comfort heat and process needs. Boilers 1 and 5 are Babcock and Wilcox water tube boilers that are rated at 72 MMBTU/hour, and Boiler 4 is a Wicks water tube boiler that is rated at 48 MMBTU/hour. All were originally permitted on PTI No. 125-05.
- EUHDCELLS and EUNATGASCELLS – These emission units represent the test cells in both the R&D laboratory and production area and were permitted by PTI No. 125-05.
- EU701, EU702, EU703, EU705, and EU706 – Reciprocating internal combustion engine (RICE) generators that are used for emergency backup power for security, lighting, and computers, and to drive fire pumps used for fire suppression.
- EUGASOLINEAST1 - one, 500-gallon, double-walled aboveground storage tank (AST) for the storage and dispensing of gasoline for select facility vehicles.
- A fuel tank farm, which consists of 11 above ground storage tanks (AST) with a total storage capacity of 220,000 gallons.

- There are other, small regulated processes at the facility: cold cleaners and aqueous parts washers; a non-production, limited use paint spray booth (EU017) used to coat facility maintenance items; and other miscellaneous processes such as as-needed engine parts cleaning tanks (EU019).

Emission units that have been removed from the facility include:

EU0086 - This emission unit, the Series 149/4000 paint booth, which was used for miscellaneous metal parts painting, has been permanently removed from operation. This equipment was dismantled as of January 1, 2014 and was originally permitted by Wayne County in permit No. C-6680 and then modified by PTI No. 102-00.

EU078 - This emission unit was an offline paint booth that was used for applying a second finish on engine blocks. This equipment was dismantled in May 2014. This emission unit was originally permitted by Wayne County permit No. C-6708.

EU603 – Offline paint booth originally permitted by PTI No. 208-05.

EU704 - Diesel fuel-fired generator 149 (located on NE corner of M-13; DDC Series 16V149TI Engine) installed in 1977.

EU840 - The cold cleaner that was designated as EU840 (Oakite tank) has been removed (dismantled in December 2013).

EUNONROADCELLS - These test cells were used to test marine and MTU America off-highway diesel engines. This equipment has been permanently removed from the facility. These test cells were originally permitted by PTI No. 125-05.

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)	17.5
Lead (Pb)	0.000045
Nitrogen Oxides (NO _x)	89.5
PM10*	1.0
Sulfur Dioxide (SO ₂)	3.5
Volatile Organic Compounds (VOCs)	16.1

* Particulate matter (PM) that has an aerodynamic diameter less than or equal to a nominal 10 micrometers.

The following table lists the potential to emit of Hazardous Air Pollutant emissions as calculated by the applicant:

Individual Hazardous Air Pollutants (HAPs)*	Tons per Year
Acetaldehyde	0.2
Acrolein	0.03
Benzene	0.3
Formaldehyde	0.4
Hexane	1.7
Napthalene	0.02
Toluene	0.1
Xylenes	0.08
1,3-butadiene	0.01
Total Hazardous Air Pollutants (HAPs)	4.6**

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

** Due to coating operations, AQD estimates that if all coating VOCs are HAPs, the potential to emit of HAPs from coating only at worse-case is 42 tons per year. Facility estimated 0.0004 tons per year of HAPs due to the use of low HAP coatings.

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.

The stationary source is in Wayne County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants except for 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 nitrogen oxides and carbon monoxide exceeds 100 tons per year.

The stationary source is a "synthetic minor" source regarding HAP emissions because the stationary source accepted state-only enforceable permit conditions limiting the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year.

Emission units at the stationary source have not been subject to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451 or 40 CFR 52.21, because at the time of New Source Review (NSR) permitting the potential to emit of each criteria pollutant was less than 250 tons per year. Emission units at Detroit Diesel have been subject to minor NSR.

The stationary source is considered a "synthetic minor" source in regards to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451 or 40 CFR 52.21 because the stationary source accepted legally enforceable permit conditions limiting the potential to emit of nitrogen oxides to less than 250 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.

EU701, EU702, and EU703 were installed prior to August 15, 1967. As a result, this equipment is considered "grandfathered" and is not subject to New Source Review (NSR) permitting requirements.

Diesel fuel-fired engine generator EU706 at the stationary source is subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and IIII because construction of the engine was commenced after July 11, 2005.

Diesel fuel-fired engine generators identified as EU701, EU702, EU703, EU705, and EU706 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63, Subparts A and ZZZZ. EU701, EU702, EU703, and EU705 are existing stationary RICE because construction was commenced before June 12, 2006. EU706 is a new stationary RICE meeting the requirements in 40 CFR Part 60, Subpart IIII and no further requirements apply under 40 CFR Part 63, Subpart ZZZZ.

EU600, EU601, and EU602 at the stationary source are not subject to the National Emission Standard for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products promulgated in 40 CFR Part 63, Subparts A and MMMM if there are federally enforceable permit conditions limiting the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year. The permit

conditions limiting the potential to emit of any single HAP and all HAPs combined are state-only enforceable.

EUHDCELLS and EUNATGASCELLS at the stationary source are not subject to the National Emission Standard for Hazardous Air Pollutants for engine test cells/stands promulgated in 40 CFR Part 63, Subparts A and PPPPP if there are federally enforceable permit conditions limiting the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year. The permit conditions limiting the potential to emit of any single HAP and all HAPs combined are state-only enforceable.

EUBOILER1, EUBOILER4, and EUBOILER5 at the stationary source are not subject to the National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources promulgated in 40 CFR Part 63, Subparts A and JJJJJJ because they meet the definition of a gas-fired boiler. *Gas-fired boiler* includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year. The AQD is not delegated the regulatory authority for this area source regulation.

EUGASOLINEAST1 at the stationary source is subject to the National Emissions Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities promulgated in 40 CFR Part 63, Subparts A and CCCCCC. The monthly throughput from EUGASOLINEAST1 is less than 10,000 gallons of gasoline. The AQD is not delegated the regulatory authority for this Generally Available Control Technology (GACT) standard which applies to area sources of HAPs.

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."

No emission units have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

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-A8638-2012 are identified in Appendix 6 of the ROP.

PTI Number			
102-00*	125-05	208-05*	165-06
C-6680*	C-6708*	C-11674*	

* Dismantled and conditions removed from ROP.

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
EU324 & EU325	Performance test cell / engine dynamometers 26 & 27, diesel fuel, Siemens Model No. 1SR9353 (845 HP), installed 2003	Rule 212(4)(e)	Rule 285(2)(g)
EU367 & EU368	Production test cell / engine dynamometers 68 & 69, diesel fuel, Schenck Model No. 1100 (1475 HP), installed 1993	Rule 212(4)(e)	Rule 285(2)(g)
EU371 – EU382	Production test cell / engine dynamometer, diesel fuel, GE Model No. TH352 (1000 HP), installed pre-1987	Rule 212(4)(e)	Rule 285(2)(g)
EU383 – EU394	Production test cell / engine dynamometers 73-84, diesel fuel, Schenck Model No. 1100 (1475 HP), installed 1986	Rule 212(4)(e)	Rule 285(2)(g)
EU395 & EU396	Production test cell / engine dynamometers 101-112, diesel fuel, Schenck Model No. 1100 (1475 HP), installed 2000	Rule 212(4)(e)	Rule 285(2)(g)
EU414	Training center test cell / chassis dynamometers 113 & 114, diesel fuel, SuperFlow Model No. SF-601 (700 HP), installed ~1991	Rule 212(4)(e)	Rule 285(2)(g)
EU715	Acetylene fired carburizing furnaces for heat treating metal parts	Rule 212(4)(c)	Rule 282(2)(a)(i)

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-T9	AST Diesel Fuel – 05Y00095 (20,000 gallon), installed 1969	Rule 212(4)(d)	Rule 284(2)(g)(iii)
EU-T10	AST Diesel Fuel – 05Y00060 (15,000 gallon), installed 1989	Rule 212(4)(d)	Rule 284(2)(g)(iii)
EU-T11	AST Diesel Emission Fluid (5,000 gallon), installed 1989	Rule 212(4)(d)	Rule 284(2)(g)(iii)

Draft ROP Terms/Conditions Not Agreed to by Applicant

The following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant’s objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant’s Objection
Source-Wide Conditions	HAPs Limits in Special Conditions 1.2 and 3	AQD omitted the “federally enforceable” footnote in the 2012 final ROP, which was previously contained in DDC’s final 2001 ROP, DDC’s final 2007 ROP, and the DRAFT 2012 ROP provided to DDC, and in DDC’s marked-up version returned to AQD.

In order for synthetic minor limits on HAPs to be federally enforceable, these limits need to be assessed in a PTI per Rule 205. The permit action for PTI No. 102-00 included “the removal of minor source hazardous air pollutant (HAP) limits.” And, the cover letter for PTI No. 102-00 dated April 17, 2003 further includes the following sentence, “It appears that the minor source hazardous air pollutant (HAP) limits which are contained in the facility’s Renewable Operating Permit No. 199600128 and Wayne County Permit C-11674, were erroneously placed into those permits.” Therefore, the synthetic minor limits on HAPs in the 2012 ROP and the draft ROP have the underlying applicable requirement of Rule 213(2). Rule 213(2) is state-only enforceable which means that the limitation or condition is derived solely from the act and the air pollution control rules and is not federally enforceable because the rule is not part of Michigan’s State Implementation Plan (SIP).

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 Christopher Ethridge, Field Operations Manager. 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
A8638

RENEWABLE OPERATING PERMIT
June 6, 2022 - STAFF REPORT ADDENDUM

ROP Number
MI0-ROP-A8638-2022

Purpose

A Staff Report dated May 2, 2022, 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:	Del Spooner, Director of Technical Services 313-592-5000
AQD Contact: Field Inspector	Stephen Weis, Senior Environmental Engineer 313-720-5831
AQD Contact: ROP Writer	Julie Brunner, P.E., Environmental Quality Specialist 517-275-0415

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.

Changes to the May 2, 2022 Draft ROP

No changes were made to the draft ROP.