

State Registration Number
B1792

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B1792-2021

Warren Waste Water Treatment Plant

State Registration Number (SRN): B1792

Located at

32360 Warkop, Warren, Macomb County, Michigan 48093

Permit Number: MI-ROP-B1792-2021

Staff Report Date: September 27, 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).

TABLE OF CONTENTS

SEPTEMBER 27, 2021 - STAFF REPORT	3
NOVEMBER 2, 2021 - STAFF REPORT ADDENDUM	8

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RENEWABLE OPERATING PERMIT
SEPTEMBER 27, 2021 - STAFF REPORT

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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:	Warren Waste Water Treatment Plant 32360 Warkop Avenue Warren, Michigan 48093
Source Registration Number (SRN):	B1792
North American Industry Classification System (NAICS) Code:	221320
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202000151
Responsible Official:	Bryan Clor, Division Head WWTP 586-264-2530
AQD Contact:	Kerry Kelly, Senior Environmental Quality Analyst 586-506-9817
Date Application Received:	October 5, 2020
Date Application Was Administratively Complete:	October 26, 2020
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	September 27, 2021
Deadline for Public Comment:	October 27, 2021

Source Description

Warren Waste Water Treatment Plant is a municipal water treatment facility located in southwestern Macomb County. The plant property is immediately surrounded by residential properties. The nearest residence is less than 500 feet from the treatment plant processes. Red Run Drain runs along the southern and eastern boundary of the property.

The plant consists of a Liquid Processing section and a Solid Processing section. The raw sewage is first treated and clarified in the Liquid Processing section of the plant. The semi-solid by-product from the Liquid Processing section is sent to the Solid Processing section.

The Liquid Processing section consists primarily of large storage chambers and processing tanks with a capacity to treat 1,128,310 gallons per hour. Raw sewage (influent) flows into the Wet Well and from there it is pumped to the Grit Chamber where the wastewater treatment process begins. Exhaust from the Wet Well is treated using a chemical scrubber odor control system that neutralizes hydrogen sulfide (H₂S) in the exhaust. Odors from the Grit Chamber and Split Box for the primary tanks are controlled by a carbon adsorption unit when the wastewater temperature is above 60°F.

The Solid Processing Section includes three 2.2 meter sewage sludge belt filter presses with attached gravity belt thickeners and a multiple hearth sludge incinerator. The belt presses are used to de-water the liquid sludge to form a sludge cake that is approximately 80% water and 20% solid material. The sludge cake is combusted in a multiple hearth incinerator (EU-Incinerator) using natural gas as a supplemental fuel. The exhaust from the filter press room is vented to an activated carbon adsorption unit to assure worker safety by controlling possible H₂S emissions from the sludge. Particulate emissions from the incinerator are controlled by a VenturiPak Wet Scrubber which includes three stages: Quencher Stage, Subcooling Stage (impingement tray scrubber) and Venturi Stage.

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)	192.5
Lead (Pb)	< 0.1
Nitrogen Oxides (NO _x)	28.3
Particulate Matter (PM)	0.43
Sulfur Dioxide (SO ₂)	0.40
Volatile Organic Compounds (VOCs)	33.1

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.

Macomb 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 particulate matter and carbon monoxide 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.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality or 40 CFR 52.21 because the process equipment was constructed/installed prior to June 19, 1978, the promulgation date of the PSD regulations.

Although EU-Generator was installed after August 15, 1967, this equipment was exempt from New Source Review (NSR) permitting requirements, per R 336.36(c), at the time it was installed. However, future modifications of this equipment may be subject to NSR.

EU-Incinerator at the stationary source is subject to the emissions standards for existing sewage sludge incineration units promulgated in R 336.1972. R 336.1972 requires each sewage sludge incineration (SSI) unit for which construction was commenced on or before October 14, 2010, achieve final compliance with the requirements of the Model Rule included in the Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units (40 CFR Part 60, Subparts A and MMMM).

EU-HouseGenerator 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.

EU-Incinerator at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Beryllium promulgated in 40 CFR Part 61, Subparts A and C.

EU-Incinerator at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Mercury promulgated in 40 CFR Part 61, Subparts A and E.

EU-Generator and EU-HouseGenerator 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. EU-Generator, per 40 CFR 63.6590(b)(3), does not have to meet the requirements 40 CFR Part 63, Subparts A and ZZZZ, including initial notification requirements because EU-Generator is an existing emergency RICE with a site rating greater 500 HP located at a major source of HAP. EU-HouseGenerator, per 40 CFR 63.6590(c)(6), must comply with 40 CFR Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII because EU-HouseGenerator is a new emergency RICE with a site rating less than 500 HP located at a major source HAP.

EU-HWBoiler1 and EU-HWBoiler2 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

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."

The 80 milligrams per dry standard cubic meter PM emission limitation at the stationary source with the underlying applicable requirement(s) of R 336.1972 and 40 CFR 60.5165, from EU-Incinerator is exempt from the federal Compliance Assurance Monitoring (CAM) regulation pursuant to 40 CFR 64.2(b)(1)(i) because the Standards of Performance, Emission Guidelines and Compliance Times for Existing

Sewage Sludge Incineration Units promulgated in 40 CFR Part 60, Subparts A and Mmmm meets the CAM exemption for NSPS or MACT proposed after November 15, 1990.

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? *
EU-Incinerator	0.2 lbs PM/ 1,000 lbs exhaust gases	R 336.1331	VenturiPak Scrubber	Scrubber differential pressure. Monitoring range= Minimum 24" WC or established during most recent acceptable performance test.	EU-Incinerator	No

*Presumptively Acceptable Monitoring (PAM)

Particulate Matter (PM) Limit (0.2 pounds per 1,000 pounds of exhaust air, corrected to 50% excess air) for EU-Incinerator at the stationary source is subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64. This emission unit has a control device (Venturi Pak Wet Scrubber) to control particulate matter emissions and the potential pre-control emissions of particulate matter are greater than the major source threshold level. To comply with PM limits, the permittee proposes to determine minimum required differential pressure (dp) across the newly installed VenturiPak scrubber. The pressure drop between the upstream and downstream of the scrubber is continuously monitored. The indicator range was established during the performance testing conducted on June 14, 2016, required in accordance with 40 CFR Part 60, Subpart Mmmm. The minimum dp to ensure compliance was determined to be 24 inches of W.C. (water column).

The scrubber differential pressure was selected as the indicator of control device performance because the differential pressure is proportional to the water flow and air flow through the scrubber and is an indicator of the energy across the scrubber and proper operation of the scrubber within the established conditions. Pressure drop is indicator of the water level in the scrubber. Maintaining an adequate water flow ensures adequate particulate removal. The feed rate to the multiple hearth incinerator is fairly steady with PM concentrations to the scrubber being relatively constant. It is expected that higher differential pressure will result in increased PM removal efficiency while a lower differential pressure will result in lower removal efficiency. Site specific emissions test data confirm these expectations.

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-B1792-2016 are identified in Appendix 6 of the ROP.

PTI Number			
71-96A	104-71A*	197-71	666-86

*All equipment permitted in PTI 104-71A is now included in PTI 23-21

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

There were no processes listed in the ROP Application as exempt devices under Rule 212(4). Exempt devices are not subject to any process-specific emission limits or standards in any applicable requirement.

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 Joyce Zhu, Warren 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.

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RENEWABLE OPERATING PERMIT
NOVEMBER 2, 2021 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-B1792-2021

Purpose

A Staff Report dated September 27, 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:	Brian Clor, Division Head, WWTP 586-264-2530
AQD Contact:	Kerry Kelly, Senior Environmental Quality Analyst 586-506-9817

Summary of Pertinent Comments

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

Changes to the September 27, 2021 Draft ROP

No changes were made to the draft ROP.