

State Registration Number  
N5719

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-N5719-2023

**Orchard Hill Sanitary Landfill  
And  
Energy Developments Watervliet, LLC**

State Registration Number (SRN): N5719

Located at

3290 Hennessey Road, Watervliet, Berrien County, Michigan 49098

Permit Number: MI-ROP-N5719-2023

Staff Report Date: October 24, 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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**RENEWABLE OPERATING PERMIT**

**OCTOBER 24, 2022 STAFF REPORT**

ROP Number

MI-ROP-N5719-2023

**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:	Orchard Hill Sanitary Landfill 3290 Hennessey Road Watervliet, Michigan 49098
Source Registration Number (SRN):	N5719
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202100099
Responsible Official – Section 1:	Dan Batts, General Manager 269-463-5588
Responsible Official – Section 2:	Rocky Tondo, N.A. Head of Project Delivery and Technical Services 330-728-5266
AQD Contact:	Matt Deskins, Environmental Quality Analyst 269-303-8326
Date Application Received:	June 25, 2021
Date Application Was Administratively Complete:	June 25, 2021
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	October 24, 2022
Deadline for Public Comment:	November 23, 2022

## Source Description

Orchard Hill Sanitary Landfill (OHSL) is a Type II Municipal Solid Waste Landfill and is owned and operated by the Landfill Management Company. The OHSL is located near Watervliet, Berrien County, Michigan. The OHSL is bordered to the north by I-94 and by the communities of Coloma to the northwest and Watervliet to the northeast. The other areas surrounding the OHSL are mainly agricultural, with fruit trees and assorted vineyard operations. The OHSL serves as the final disposal point for general and household waste generated from the southwest area of Michigan. The OHSL is classified as a Type II facility and therefore does not receive any regulated quantities of hazardous waste that cannot be placed in a Type II facility. General waste consists of industrial and commercial non-hazardous waste along with general municipal waste. As the waste decomposes, it generates landfill gas that consists mainly of methane (CH<sub>4</sub>) and Carbon Dioxide (CO<sub>2</sub>). It is collected through a network of piping and extraction wells that are under vacuum. In 2012, Energy Developments Watervliet, LLC (EDW) constructed a facility on property adjacent to the east of the landfill which currently has three internal combustion engines with electric generators to combust the landfill gas generated by the landfill and provides power to the electric utility grid. The engines are now the main control device for the landfill gas, but both OHSL and EDW have open flares as backup control devices if needed. The ROP consists of two sections with Section 1 containing the requirements of OHSL and Section 2 containing the requirements of EDW.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2021**.

### **TOTAL STATIONARY SOURCE EMISSIONS**

<b>Pollutant</b>	<b>Tons per Year</b>
Carbon Monoxide (CO)	139.46
Nitrogen Oxides (NO <sub>x</sub> )	47.30
Particulate Matter (PM)	13.67
Sulfur Dioxide (SO <sub>2</sub> )	64.95
Volatile Organic Compounds (VOCs)	29.48
Non-Methane Organic Compound (NMOCs)	5.8

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.

Berrien 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 CO and SO<sub>2</sub> exceeds 100 tons per year, the potential to emit of any single hazardous air pollutant (HAP) regulated by the federal Clean Air Act, Section 112, 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, and the source is subject to 40 CFR Part 62, Subpart OOO which requires affected facilities with a design capacity equal to or greater than 2.5 million cubic meters and 2.5 million megagrams to obtain a Part 70 permit..

No emissions units at the stationary source are currently subject to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of criteria pollutant was less than 250 tons per year. However, Permits to Install (PTI) Nos. 35-22 and 36-22 were issued to each section of the ROP respectively to increase the Source-Wide SO<sub>2</sub> emission limit to 247.1 tons. Both permits went through Public Comment since the requested limit was greater than the 90% of the PSD threshold.

EUGENERATOR and FGICEENGINES at the stationary source are subject to the NSPS for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ.

EUASBESTOS, FGLANDFILL-OOO, and FGLANDFILL-AAAA at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Asbestos promulgated in 40 CFR Part 61, Subparts A and M.

FGLANDFILL-OOO, FGACTIONECOLL-OOO, FGOPENFLARE-OOO-1, FGOPENFLARE-OOO-2, and FGTREATMENTSYS-OOO at the stationary source are subject to the Federal Plan Requirements for Municipal Solid Waste Landfills promulgated in 40 CFR Part 62, Subparts A and OOO.

FGICEENGINES and FGRICEMACT at the stationary source are subject the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ.

FGLANDFILL-AAAA, FGACTIONECOLL-AAAA, FGOPENFLARE-AAAA-1, FGOPENFLARE-AAAA-2, and FGTREATMENTSYS-AAAA at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Municipal Solid Waste Landfills as promulgated in 40 CFR Part 63, Subparts A and AAAA.

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."

The emission limitation(s) or standard(s) for FGLANDFILL-OOO, FGLANDFILL-AAAA, FGACTIONECOLL-OOO, FGACTIONECOLL-AAAA, EUOPENFLARE, EUOPENFLARE-GE, FGOPENFLARE-OOO-1, FGOPENFLARE-AAAA-1, FGOPENFLARE-OOO-2, FGOPENFLARE-AAAA-2, EUASBESTOS, EUGENERATOR, FGICEENGINES, EUICEENGINE3, FGTREATMENTSYS-OOO, and FGTREATMENTSYS-AAAA at the stationary source are exempt from the federal Compliance Assurance Monitoring regulation under 40 CFR Part 64, because they are addressed by either 40 CFR Part 60, Subparts A and JJJJ; 40 CFR Part 61, Subpart M; 40 CFR Part 62, Subpart OOO; and 40 CFR Part 63, Subparts A and AAAA or ZZZZ.

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-N5719-2016 are identified in Appendix 6 of the ROP.

PTI Number			
25-18A	25-18	98-12A	98-12

**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**

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
FGOPENFLARE- OOO-1 and FGOPENFLARE- AAAA-1	Condition V.3 of the Testing / Sampling	OHSL does not feel the requirement to perform testing on the open flare specified in condition FGOPENFLARE-OOO-1 V.3 and FGOPENFLARE-AAAA-1 V.3 is justified because there is no reasonable expectation that it could be out of compliance. The federal rules require testing one time, upon installation, to establish that the flare installed was sized properly and that the design was such that there would be no visible emission. Once these conditions are met, unless the flare is reconstructed/modified, there is no reasonable expectation that the flare would not meet the compliance requirements going forward.
FGOPENFLARE- OOO-2 and	Condition V.3 of the Testing / Sampling	EDL does not feel the requirement to perform testing on the open flare specified in condition FGOPENFLARE-OOO-2 V.3 and FGOPENFLARE-

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
FGOPENFLARE- AAAA-2		AAAA-2 V.3 is justified because there is no reasonable expectation that it could be out of compliance. The federal rules require testing one time, upon installation, to establish that the flare installed was sized properly and that the design was such that there would be no visible emission. Once these conditions are met, unless the flare is reconstructed/modified, there is no reasonable expectation that the flare would not meet the compliance requirements going forward.

The AQD's rationale for including the above condition(s) in the ROP was due to a decision being made that any emission unit at a facility that could be a "Significant Source of Emissions" demonstrate continuous and/or on-going compliance with all emission limits and/or other requirements applicable to it at least once every 5 years.

**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 Rex Lane, Kalamazoo 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

N5719

## RENEWABLE OPERATING PERMIT

**JANUARY 18, 2023 - STAFF REPORT ADDENDUM**

ROP Number

MI-ROP-N5719-2023

### Purpose

A Staff Report dated October 24, 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 – Section 1:	Dan Batts, General Manager 269-463-5588
Responsible Official – Section 2:	Rocky Tondo, N.A. Head of Project Delivery and Technical Services 330-728-5266
AQD Contact:	Matt Deskins, Environmental Quality Analyst 269-303-8326

### Summary of Pertinent Comments

Comments were received from USEPA, Orchard Hill Sanitary Landfill, and EDW which resulted in the following changes being made to the October 24, 2022, draft ROP:

#### **EPA COMMENTS**

##### EPA Comment 1:

Section 1, EUASBESTOS SC III.1(d) (draft ROP page 22/110) allows an alternative emission control method upon prior written approval from the appropriate AQD District Supervisor. However, the underlying requirement at 40 CFR 61.154(d) only allows the use of an alternative emission control method if it has received prior approval by the Administrator. Although implementation and enforcement authority of 40 CFR Part 61, Subpart M has been delegated to Michigan, 40 CFR 61.157(b)(5) states that the authority specified in 40 CFR 61.154(d) will not be delegated to States. I request that you either revise EUASBESTOS SC III.1(d) to specify that the Administrator is the approving authority for the alternative emissions control method or remove EUASBESTOS SC III.1(d) from the ROP if you determine that 40 CFR 61.154(d) is not applicable.

##### AQD Response:

EUASBESTOS SC III.1(d) has been removed from the ROP.

EPA Comment 2:

Section 1, EUASBESTOS SC VI.1(c) (draft ROP page 23/110) incorporates a portion of 40 CFR 61.154(e)(3). However, it appears that this condition does not completely incorporate 40 CFR 61.154(e)(3) since it is missing the portion of the rule that follows “[...] (identified in the waste shipment record)”. I request that you verify the incorporation of 40 CFR 61.154(e)(3) into the ROP and revise EUASBESTOS SC VI.1(c) as necessary to ensure that all applicable portions of 40 CFR 61.154(e)(3) are incorporated into the ROP.

AQD Response:

The remainder of the condition from 40 CFR 61.154(e)(3) has been added to this condition in the ROP.

EPA Comment 3:

Section 1, FGOPENFLARE-AAAA-1 SC VI.2(b) (page 54/110) requires the source to record the indication of bypass flow pursuant to 40 CFR 63.1961(c)(2)(ii), suggesting that flow can bypass the open flare. However, 40 CFR 63.1961(c)(2)(ii) also requires the source to secure bypass line valves in the closed position with a car-seal or a lock-and-key type configuration. It is not clear whether the source can bypass the flare, making it unclear whether bypass lines must be secured. I request that you evaluate whether the flare can be bypassed and whether a bypass line valve must be secured in accordance with 40 CFR 63.1961(c)(2)(ii). If this is an applicable requirement, then I also request that you also incorporate the monthly visual inspection requirement in FGOPENFLARE-AAAA-1 SC VI as a requirement separate from the already-included recordkeeping requirement.

AQD Response

This condition was revised to include the monthly visual inspection per 40 CFR 63.1961(c)(2)(ii).

**NOTE:** After this change was made to the condition in the ROP, information was provided by the permittee(s) that neither Orchard Hill Sanitary Landfill nor EDW have any type of bypass lines that would allow landfill gas to bypass any control device (i.e., open flare at the landfill and/or internal combustion engines and/or open flare at the gas-to-energy facility). However, the decision was made to keep the permit condition language as is and just note the situation in this Staff Report Addendum and ROP Technical Review Notes.

EPA Comment 4:

Section 2, FGTREATMENTSYS-AAAA SC IV.2 (page 97/110) incorporates 40 CFR 63.1961(g) which requires the source to secure the bypass line valve in the closed position. Monthly recordkeeping requirements are included in the permit at SC VI.1(b). SC VI.1(b) cites 40 CFR 63.1983(c)(2) instead of 40 CFR 63.1983(g)(2), but both (c)(2) and (g)(2) have largely similar requirements. As part of the requirement at 40 CFR 63.1983(c)(2) and (g)(2), the owner or operator must conduct a visual inspection of the seal or closure mechanism on a monthly basis. However, the draft ROP does not specifically require the source to conduct a monthly visual inspection. Instead, the draft ROP only requires the source to maintain records of the monthly inspections. For permit clarity and to ensure the implementation of the monthly visual inspections, I request that you incorporate into FGTREATMENTSYS-AAAA SC VI a requirement to conduct monthly visual inspections.

## AQD Response

The remainder of this condition from 40 CFR 63.1964(g) has been added to the ROP. "A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line."

**NOTE:** After this change was made to the condition in the ROP, information was provided by the permittee(s) that neither Orchard Hill Sanitary Landfill nor EDW have any type of bypass lines that would allow landfill gas to bypass any control device (i.e., open flare at the landfill and/or internal combustion engines and/or open flare at the gas-to-energy facility). However, the decision was made to keep the permit condition language as is and just note the situation in the Staff Report Addendum and ROP Technical Review Notes.

## EPA Comment 5:

As part of my review, I've noted the following minor typographical errors in Appendix 7-1.

- a. The last sentence of the first paragraph of page 63/110 states "[...] and amount of the non-degradable material is documented as provided in 40 CFR 62.16728(a)(3)(iii)". However, I believe that the text should instead refer to 40 CFR 62.16728(a)(3)(i) while noting that the applicable requirement can be found at 40 CFR 62.16728(a)(3)(iii).
- b. The equation for "K" on page 65/110 of the draft ROP should have an equal sign following the word "Constant" and should define "n" as the number of sample components. See 40 CFR 63.11(b)(6)(ii).
- c. Page 65/110 and 110/110 includes a section for the calculation for Vmax steam-assisted and non-assisted flares. Both sections of the permit refer to 40 CFR 63.18(b)(7)(iii), but it appears that both should instead refer to 40 CFR 63.11(b)(7)(iii).

## AQD Response

The typographical errors in Appendix 7-1 have been corrected to reflect the comments above.

## **Orchard Hill Sanitary Landfill Comments**

### Orchard Hill Sanitary Landfill Comment 1:

Correct the City Location on the 1<sup>st</sup> Page to Reflect "Watervliet"

## AQD Response

The correct City Location was added.

## **EDW Comments**

### EDW Comment 1:

Correct the City Location on the 1<sup>st</sup> Page to Reflect "Watervliet"

## AQD Response

The correct City Location was added.

EDW Comment 2:

Under the Emission Unit Summary Table, update the emission unit description language to include reference to the ability to replace the engines as allowed in the Emission Unit Description column for engine emission units EUICEENGINE1, EUICEENGINE2, and EUICEENGINE3. Also, Update the engine make and model identifier in the Emission Unit Description column for engine emission unit EUICEENGINE3 to match the engine specifications.

AQD Response

The emission unit descriptions were updated to reflect the above comment.

EDW Comment 3:

Under the Emission Unit Table description for EUICEENGINE3, update the engine make and model identifier to match the engine specifications.

AQD Response

The emission unit description was updated to reflect the above comment.

EDW Comment 4:

Under the Flexible Group Table description for FGICEENGINES, include the reference for the ability to replace the engines as allowed for under Rule 336.1285(a)(vi).

AQD Response

The emission unit description was updated to reflect the above comment.

EDW Comment 5:

Under the Flexible Group Table description for FGRICEMACT, include the reference for the ability to replace the engines as allowed for under Rule 336.1285(a)(vi).

AQD Response

The emission unit description was updated to reflect the above comment.

**Changes to the October 24, 2022 Draft ROP**

Any changes proposed by the USEPA, Orchard Hill Landfill, and EDW in the 30-day public comment period are addressed by the AQD responses above and have been incorporated into the draft ROP where applicable.