

State Registration Number
N6033

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N6033-2020a

Dafter Sanitary Landfill, Inc.

State Registration Number (SRN): N6033

Located at

3962 West 12 Mile Road, Dafter, Chippewa County, Michigan 49724

Permit Number: MI-ROP-N6033-2020a

Staff Report Date: April 13, 2020

Amended Date: June 6, 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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State Registration Number

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RENEWABLE OPERATING PERMIT

APRIL 13, 2020 - STAFF REPORT

ROP Number

MI-ROP-N6033-2020

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:	Dafter Sanitary Landfill, Inc. 3962 West 12 Mile Road Dafter, Michigan 49724
Source Registration Number (SRN):	N6033
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202000002
Responsible Official:	Tim Harrow, Site Manager 906-632-6186
AQD Contact:	Michael Conklin, Environmental Engineer 906-202-0013
Date Application Received:	January 8, 2020
Date Application Was Administratively Complete:	January 21, 2020
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	April 13, 2020
Deadline for Public Comment:	May 13, 2020

Source Description

Dafter Sanitary Landfill, Inc. (DSL) is a municipal solid waste landfill that is owned and operated by Waste Management, Inc. (WM). WM is a major waste and environmental services company, headquartered in Houston, Texas, that serves residential, commercial, and industrial customers through collection, disposal, recycling and other waste collection services. The company owns several landfill disposal sites throughout the United States, Canada, and Puerto Rico.

DSL is located at 3962 West 12 Mile Road, Dafter, Michigan, a rural area in Chippewa County that is currently in attainment for all criteria pollutants. The source is categorized as a Type II landfill and currently has a design capacity greater than 2.5 million cubic meters. DSL accepts asbestos, biosolids, demolition debris, industrial waste, municipal waste, and naturally occurring radioactive material. The source receives on average 40 to 55 tons of waste per year. As a Type II landfill, DSL does not accept hazardous waste. DSL has been accepting waste since 1981 and currently contains five landfill cells: A, B, C, D, and E. Cell A is closed and has 8 passive vents, while cells B, C, D, and E are active and have 23 passive vents. Of the 31 passive vents, 9 have self-igniting flares to control odors.

On February 12, 2004, EGLE's, Materials Management Division issued a new Construction Permit to DSL that increased the total permitted waste capacity from 1,322,000 cubic yards to 5,312,000 cubic yards. In accordance with Air Pollution Control Rule 211(1)(e), which requires that any municipal solid waste landfill that has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters must obtain and operate in compliance with a renewable operating permit (ROP), the facility submitted an application for an ROP and MI-ROP-N6033-2006 was issued on January 1, 2006. In addition, the source became subject to 40 CFR Part 60, Subpart WWW New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills that also requires subject sources to obtain a Part 70 permit.

A landfill consists of an area of land or an excavation in which wastes are placed for permanent disposal. The process begins with collected waste being transported to the landfill where it is dumped into an area (cell). A synthetic liner, such as high-density polyethylene, is used at the bottom to prevent contamination of leachate and landfill gas with ground water and soil. Heavy equipment then spreads the waste, compacts it, covers the waste with soil or alternate daily cover materials, and further compacts it on a daily basis. When a cell is full, it is covered permanently with a liner cap and compacted soil.

Landfill gas is generated through bacterial decomposition of organic materials contained in solid waste. Initially, decomposition is aerobic until the oxygen supply is exhausted. With the solid waste being insulated from the atmosphere, decomposition then occurs anaerobically producing most of the landfill gas. Landfill gas (LFG) consists of 50% methane, 50% carbon dioxide, and less than 1% non-methane organic compounds (NMOC). The NMOC fraction consists of various organic hazardous air pollutants (HAP), greenhouse gases, and volatile organic compounds (VOC).

LFG can be collected through one of two methods: active and passive gas collection systems. DSL utilizes a passive system that relies on the pressure gradient created by the high pressure in the cells from the generation of LFG. Pipes in the cells collect the gas and move it from an area of high pressure to low pressure where it is emitted to the atmosphere through vents. There is no purification of LFG at this source. DSL is not required to have an active gas collection system since the annual NMOC emission rate is less than 50 Mg/year, established through Tier II testing.

DSL also utilizes a 300,000-gallon leachate storage tank to store leachate prior to recirculation into the landfill or transport to a municipal wastewater treatment plant.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year 2018.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	1.2
Particulate Matter (PM)	<1
Non-Methane Organic Compounds (NMOC)	<1
Volatile Organic Compounds (VOCs)	<1

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2018 by using Dafter Sanitary Landfill model inputs:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
Total Hazardous Air Pollutants (HAPs)	NA

**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.

The stationary source is in Chippewa County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because EULANDFILL<50 is subject to 40 CFR Part 60, Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. DSL is subject to 40 CFR Part 60, Subpart WWW because the landfill’s design capacity exceeds 2.5 million megagrams and 2.5 million cubic meters. A landfill that is subject to this subpart is also subject to Part 70 permitting requirements.

The stationary source is a minor source of HAP emissions because the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

No emission 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 each criteria pollutant was less than 250 tons per year.

EULANDFILL<50 at the stationary source is subject to the Standards of Performance for Municipal Solid Waste Landfills promulgated in 40 CFR Part 60, Subparts A and WWW.

EUASBESTOS at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Asbestos promulgated in 40 CFR Part 61, Subparts A and M. The source has been accepting both friable and non-friable asbestos materials.

EULANDFILL<50 at the stationary source is not subject to the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63, Subparts A and AAAA. The 2019 Tier II testing established a site-specific NMOC concentration of 6.3 parts per million by volume (ppmv) as hexane, with an emission rate of 0.29 Mg/year. The projected annual NMOC emission rate was

calculated as 0.29 Mg/year for the year 2025, assuming an annual average waste acceptance rate remains relatively constant. With DSL having an annual NMOC emission rate of less than 50 Mg/year, the source is not subject to this subpart and is not required to install a landfill gas collection/control system. The NMOC emission rate for the source was calculated using the equation from 40 CFR 60.754(a)(1)(ii).

$$M_{NMOC} = 2L_oR(e^{-kc} - e^{-kt})C_{NMOC}(3.6 \times 10^{-9})$$

Where:

- MNMOC = mass emission rate of NMOC, megagrams per year
- Lo = methane generation potential, cubic meters per megagram solid waste
- R = average annual acceptance rate, megagrams per year
- k = methane generation rate constant, per year
- t = age of landfill, years
- CNMOC = concentration of NMOC, parts per million by volume as hexane
- c = time since closure, years; for active landfill c = 0 and e^{-kc} = 1
- 3.6 × 10⁻⁹ = conversion factor

NMOC Equation Values:

- k = 0.05 per year (per 40 CFR 60.754(a)(1))
- Lo = 170 m³/Mg solid waste (per 40 CFR 60.754(a)(1))
- R = 43,500 Mg/year
- CNMOC = 6.3 ppmv as hexane NMOC concentration (2019 sampling data)
- c = 0
- t = 38 years

Total NMOC emission rate from the Dafter Landfill:

$$M_{NMOC} = 2(170 \frac{m^3}{Mg})(43,500 \frac{Mg}{yr})(1 - e^{-(0.05)(28)})(6.3ppmv)(3.6 \times 10^{-9})$$

$$M_{NMOC} = 0.25 \frac{Mg}{yr}$$

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-N6033-2015 are identified in Appendix 6 of the ROP.

PTI Number			
N/A			

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 Ed Lancaster, Marquette 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
N6033

RENEWABLE OPERATING PERMIT
MAY 21, 2020 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-N6033-2020

Purpose

A Staff Report dated April 13, 2020, 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:	Tim Harrow, Site Manager 906-632-6186
AQD Contact:	Michael Conklin, Environmental Engineer 906-202-0013

Summary of Pertinent Comments

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

Changes to the April 13, 2020 Draft ROP

No changes were made to the draft ROP.

State Registration Number
N6033

RENEWABLE OPERATING PERMIT
JUNE 6, 2022 - STAFF REPORT FOR RULE 217(2)
REOPENING

ROP Number
MI-ROP-N6033-2020a

Purpose

On July 9, 2020, the Department of Environment, Great Lakes, and Energy, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-N6033-2020 to Dafter Sanitary Landfill, Inc. pursuant to Rule 214 of the Michigan Air Pollution Control Rules. Once issued, the AQD is required to reopen the ROP if the criteria described in Rule 217 are met. Only those conditions to be added or changed in the ROP are to be considered during this public comment period. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 217.

General Information

Responsible Official:	Tim Harrow, Site Manager 906-632-6186
AQD Contact:	Lauren Luce, Environmental Quality Analyst 906-202-0943
Date Public Comment Begins:	June 6, 2022
Deadline for Public Comment:	July 6, 2022

Regulatory Analysis

The AQD has determined that the ROP must be reopened in order to remove obsolete requirements related to 40 CFR Part 60, Subpart WWW and to add new applicable requirements associated with 40 CFR Part 62, Subpart OOO.

Dafter Sanitary Landfill, Inc. had an NMOC emissions of 0.29 megagrams per year on November 13, 2019.

The ROP previously contained requirements to ensure compliance with 40 CFR Part 60, Subpart WWW NSPS for Municipal Solid Waste landfills with NMOC emissions less than 50 megagrams per year and required installation of a gas collection and control system once NMOC emissions reach 50 megagrams per year.

Similarly, the requirements of 40 CFR Part 62, Subpart OOO "Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014 and Have Not Been modified or Reconstructed Since July 17, 2014" requires an active gas collection and control system, but once NMOC emissions reach 34 megagrams per year instead of 50 megagrams per year.

Description of Changes to the ROP

Removal of all obsolete requirements associated with 40 CFR Part 60, Subpart WWW and insertion of applicable requirements of 40 CFR Part 62, Subpart OOO requirements. The emission unit table EULANDFILL <50 which included requirements from 40 CFR Part 60, Subpart WWW has been replaced with the EULANDFILL <34 which includes the requirements from 40 CFR Part 62, Subpart OOO. Additionally, Appendices 5 and 7 of the ROP have been updated with 40 CFR Part 62, Subpart OOO requirements.

Removal of all obsolete requirements associated with 40 CFR Part 60, Subpart WWW and insertion of applicable requirements of 40 CFR Part 62, Subpart OOO requirements in EUASBESTOS emission unit table.

Action Taken by the Department

The AQD proposes to approve this change to ROP No. MI-ROP-N6033-2020, which was reopened by the AQD to incorporate 40 CFR Part 62, Subpart OOO. A final decision on the approval of the revised ROP will not be made until the public and any affected states have had an opportunity to comment on the proposed changes to the ROP and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is Michael Conklin, Acting Marquette District Supervisor. The final determination for approval of the revised ROP will be based on a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the public, any affected states or the USEPA.

State Registration Number
N6033

RENEWABLE OPERATING PERMIT
JULY 8, 2022 - STAFF REPORT ADDENDUM FOR
RULE 217(2) REOPENING

ROP Number
MI-ROP-N6033-2020a

Purpose

A Staff Report dated June 6, 2022, was developed to set forth the applicable requirements and factual basis for the draft reopening to Renewable Operating Permit's (ROP) terms and conditions as required by Rule 214(3) 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 reopening during the 30-day public and affected state(s) comment period as described in Rule 214(3) and (4). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	Tim Harrow, Site Manager 906-632-6186
AQD Contact:	Lauren Luce, Environmental Quality Analyst 906-202-0943

Summary of Pertinent Comments

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

Changes to the June 6, 2022 Draft ROP Reopening

No changes were made to the draft ROP reopening.