



DEPARTMENT ORDER

**Waste Management Disposal  
Services of Maine, Inc.  
d/b/a Crossroads Landfill  
Somerset County  
Norridgewock, Maine  
A-816-70-J-A**

**Departmental  
Findings of Fact and Order  
Part 70 Air Emission License  
Amendment #2**

**FINDINGS OF FACT**

After review of the Part 70 License amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

FACILITY	Waste Management Disposal Services of Maine, Inc. (WMDSM) d/b/a Crossroads Landfill
LICENSE TYPE	Part 70 Significant Modification
NAICS CODES	562212
NATURE OF BUSINESS	Solid Waste Landfill
FACILITY LOCATION	357 Mercer Road, Norridgewock, Maine

Waste Management Disposal Services of Maine, Inc. (WMDSM) d/b/a Crossroads Landfill is a municipal solid waste landfill.

New Source Review (NSR) license A-816-77-8-A (NSR #8), issued 3/20/2024, addressed the replacement of Flare #3 with Flare #4 and updated the particulate matter emission limits for Flare #1. WMDSM has requested that the provisions of this NSR license be incorporated into their Part 70 license. The Department will also address any additional applicable requirements associated with this project.

## B. Emission Equipment

The following emission units are addressed by this Part 70 License:

### Flares

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Maximum Flow Rate (scfm)
Flare #1	60.0	2,000
Flare #3*	75.0	2,500
Flare #4	75.0	2,500

\* Flare #3 is being removed as part of this licensing action.

## C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

WMDSM has requested incorporation into the Part 70 Air License the relevant terms and conditions of New Source Review (NSR) license amendment A-816-77-8-A issued 3/20/2024, pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115. Therefore, this license application was considered a Part 70 Significant License Modification and processed under *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

## D. Project Description

In NSR #8, WMDSM proposed the installation of a new flare (Flare #4). Flare #4 has the same capacity as Flare #3. It will be placed adjacent to the Phase 14 landfill, and Flare #3 will be permanently disabled or removed from the site within 90 days after initial startup of Flare #4. The purpose of this project is to replace and move the flare to a more convenient location to reduce the amount of pipe required to convey the gas to a control device.

## II. BEST PRACTICAL TREATMENT (BPT) AND EMISSION STANDARDS

### A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories

exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications is based on the demonstration contained in the underlying NSR license that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts. BACT for the Flare #3 replacement project was addressed in A-816-77-8-A (3/20/2024) and explained further below.

#### B. Flare #4

Flare #4 replaced Flare #3 and is located adjacent to the Phase 14 landfill. Flare #4 is part of WMDSM's collection and control system for the landfill, specifically for gases generated within the landfill (landfill gas). It is a control device designed to achieve 98% overall destruction of volatile organic compounds (VOC) and non-methane organic compounds (NMOCs) in the landfill gas. A small amount of propane is used as a pilot light.

The facility's landfill gas-to-energy plant (LFGTE plant) is the primary combustion device in the control system, and the facility's flares are the backup or auxiliary combustion devices. These control devices may operate individually or simultaneously to combust the collected landfill gas.

Emissions of SO<sub>2</sub> are caused by combustion of total reduced sulfur (TRS) compounds in the landfill gas. WMDSM controls emissions of SO<sub>2</sub> by managing the acceptance of material to limit TRS concentrations within the landfill gas to less than 1,500 ppmv at 50% methane on average. This limit is comparable to concentrations at other landfill facilities in Maine. Compliance is demonstrated by regular testing of the landfill gas pursuant to WMDSM's current air emission license.

The emission limits for Flare #4 were based on the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	– 17 lb/MMscf of CH <sub>4</sub> based on AP-42 Table 2.4-5 dated 11/98
SO <sub>2</sub>	– based on combusting landfill gas with a maximum sulfur content of 1,500 ppm by weight
NO <sub>x</sub>	– 0.068 lb/MMBtu based on AP-42 Table 13.5-1 dated 2/18
CO	– 0.37 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
VOC	– based on 98% control
Visible Emissions	– 06-096 C.M.R. ch. 115, BACT

BACT for the landfill continues to be operation and maintenance of a collection and control system designed to meet the criteria in 40 C.F.R. Part 60, Subpart XXX. Flare #4 shall be operated within the equipment boundaries of 40 C.F.R. § 60.18 and the emission limits listed in the tables below.

Unit	Pollutant	lb/MMBtu
Flare #4	PM	0.017

The Department has determined that the BACT particulate matter limit above is more stringent than the applicable limit in *Fuel Burning Equipment Particulate Emission Standard*, 06-096 C.M.R. ch. 103. Therefore, the particulate matter limit for Flare #4 has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the Order section of this air emission license.

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare #4	1.28	1.28	1.28	36.77	5.10	27.75	0.39

Visible emissions from Flare #4 shall not exceed 20% opacity on a six-minute block average basis.

The Department has determined that the BACT visible emission limit is more stringent than the applicable limit in *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for Flare #4 has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the Order section of this air emission license.

### C. Flare #1

Particulate matter emission limits for Flare #1 were originally established in A-816-71-C-A (issued 5/1/2002) and were subsequently repeated in other NSR licenses. At the time, emissions were based on an emission factor of 0.085 lb/MMBtu. However, a lower emission factor of 17 pounds per million scf of methane from AP-42 Table 2.4-5 has traditionally been used to calculate particulate matter emissions from both this landfill and others throughout the state. Therefore, the emission limits for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> for Flare #1 shall be updated from 5.10 lb/hr to 1.02 lb/hr to reflect use of the more appropriate emission factor. This is an administrative change and is not the result of any physical or operational change.

**D. Facility Annual Emissions**

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility’s annual air license fee and establishing the facility’s potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations.

The totals listed are based on expected generation of gas from the landfill and do not reflect operation of all equipment at full capacity. Instead, they reflect maximum anticipated emissions associated with full operation of the engines with excess gas burned at the flares. WMDSM is restricted to the total emissions listed below based on a federally enforceable license condition. Maximum potential emissions were calculated based on the following assumptions:

- Operating the LFGTE engines 8,760 hr/year each;
- Combusting 577 scfm for 8,760 hr/year in Flare #1;
- Combusting 1,733 scfm for 8,760 hr/year in Flare #4;
- Operating the emergency generators for 100 hrs/yr each; and
- A facility-wide emission limit for VOC of 39.9 tpy.

These assumptions form the basis of the licensed facility-wide annual emissions limits.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**  
 (used to calculate the annual license fee)

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Flare #1	1.3	1.3	1.3	37.4	5.2	28.2	–
Flare #4	3.9	3.9	3.9	111.7	15.5	84.3	–
LFGTE Engines #1 & #2	7.5	7.5	7.5	76.7	25.9	181.1	–
Emerg. Gen. #1	–	–	–	–	0.2	–	–
Emerg. Gen. #2	–	–	–	–	0.2	–	–
Emerg. Gen. #3	–	–	–	–	0.2	0.4	–
Biosolids Processing Facility	–	–	–	–	–	–	–
Facility-Wide	–	–	–	–	–	–	39.9
<b>Total TPY</b>	<b>12.7</b>	<b>12.7</b>	<b>12.7</b>	<b>225.8</b>	<b>47.2</b>	<b>294.0</b>	<b>39.9</b>

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Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

### III. AMBIENT AIR QUALITY ANALYSIS

WMDSM previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-816-77-1-A issued on 7/11/08). An additional ambient air quality analysis is not required for this Part 70 license.

### ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this source:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards; and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License Amendment A-816-70-J-A pursuant to 06-096 C.M.R. 140 and the preconstruction permitting requirements of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 and subject to the conditions found in Air Emission License A-816-70-H-R, in amendment A-816-70-I-A, and the following conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

### SPECIFIC CONDITIONS

The following shall replace Conditions (14)(D) through G of Air Emission License A-816-70-H-R (5/2/2022).

(14) **Solid Waste Landfill**

D. WMDSM shall operate and maintain a landfill gas collection and control system except for periods of construction, maintenance, or malfunctions on the system. [06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]

E. WMDSM shall operate each flare within the equipment parameter boundaries established in 40 C.F.R. § 60.18. [06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]

F. Flare Emission Limits  
(Emission limits are on a 1-hour block average basis unless otherwise stated.)

1. Emissions from Flares #1, #3, and #4 shall each not exceed the following limit:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.017	06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)	Federally Enforceable

2. Emissions from Flares #1, #3, and #4 shall not exceed the following limits: [06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare #1	1.02	1.02	1.02	29.41	4.08	22.20	0.31
Flare #3	1.28	1.28	1.28	36.77	5.10	27.75	0.39
Flare #4	1.28	1.28	1.28	36.77	5.10	27.75	0.39

G. Visible emissions from each flare shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]

The following shall replace Condition (17)(A) of Air Emission License A-816-70-H-R (5/2/2022).

(17) Facility Wide Emission Limits

A. WMDSM shall not exceed the following emission limits on a 12-month rolling total basis [06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]:

Pollutant	Ton/year
PM	12.7
PM <sub>10</sub>	12.7
PM <sub>2.5</sub>	12.7
SO <sub>2</sub>	225.8
NO <sub>x</sub>	47.2
CO	294.0
VOC	39.9

Compliance shall be demonstrated by calculating actual emissions at least once annually as required by *Emission Statements*, 06-096 C.M.R. ch. 137. WMDSM shall also calculate annual emissions for any consecutive 12-month period upon request by the Department.

When calculating annual emissions from LFGTE Engines #1 and #2 to demonstrate compliance with the VOC tpy emission limit, WMDSM shall use one of the following emission rates:

1. The emission rate from the most recent compliance stack test;
2. The worst-case emission factor listed on the manufacturer's technical data sheet for the specific engine; or
3. 1.0 g/hp-hr.

[06-096 C.M.R. ch. 115, BACT (A-816-77-5-A, 12/9/2016)]



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The following are new conditions:

(29) **Replacement of Flare #3 with Flare #4**

A. WMDSM is licensed to install and operate Flare #4. Flare #3 shall cease operation and be permanently disabled or removed from the site within 90 days of the initial startup of Flare #4. WMDSM shall notify the Department of the date of initial startup of Flare #4 and date of shutdown of Flare #3.

[06-096 C.M.R. ch. 115, BACT (A-816-77-8-A, 3/20/2024)]

DONE AND DATED IN AUGUSTA, MAINE THIS 13<sup>th</sup> DAY OF MAY, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-816-70-H-R.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 12/22/2023

Date of application acceptance: 1/2/2024

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

