



DEPARTMENT ORDER

**City of Bath Landfill  
Sagadahoc County  
Bath, Maine  
A-980-71-D-R**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal**

**FINDINGS OF FACT**

After review of the air emission license renewal 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

City of Bath Landfill (BLF) has applied to renew its Air Emission License for the operation of emission sources associated with their municipal solid waste landfill.

The equipment addressed in this license is located at 11 Detritus Drive, Bath, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

**Emissions Equipment**

<b>Equipment</b>	<b>Unit Capacity</b>
Solid Waste Landfill	1.0 million megagrams
Flare #1	12.0 MMBtu/hr

C. Definitions

*Continuously* means equally spaced data points with at least one valid data point in each successive 15-minute period. A minimum of three valid 15-minute periods constitutes a valid hour. This definition is used with respect to operation of parameter monitors required by this license.

*Records* or *Logs* mean either hardcopy or electronic records.

D. Application Classification

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

The application for BLF does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

E. Facility Classification

The facility is licensed as follows:

- As a natural minor source of criteria pollutants, because no license restrictions are necessary to keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

**II. BEST PRACTICAL TREATMENT (BPT)**

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.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Solid Waste Landfill

BLF operates and maintains a municipal solid waste landfill with a maximum permitted design capacity of approximately 1.0 million megagrams.

1. New Source Performance Standards (NSPS)

BLF underwent an expansion in 2017 that increased the size of the landfill to approximately 1.0 million megagrams. This expansion is considered a modification of the regulated source. Therefore, BLF is subject to *Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014*, 40 C.F.R. Part 60, Subpart XXX.

Because BLF has a design capacity less than 2.5 million megagrams, the only applicable requirements of this rule are the submission of an initial design capacity report and submission of an amended design capacity report within 90 days of any increase in design capacity that exceeds 2.5 million megagrams.  
[40 C.F.R. §§ 60.762(a) and 60.767(a)(3)]

2. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

BLF is not subject to *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills*, 40 C.F.R. 63, Subpart AAAA.

This regulation applies to municipal solid waste landfills which are a major source of HAP, are collocated with a major source of HAP, have a design capacity greater than 2.5 million megagrams (Mg) with uncontrolled nonmethane organic compounds (NMOC) emissions greater than 50 Mg/year, or includes a bioreactor. BLF is not a major source of HAP or collocated with a major HAP source; it does not have a design capacity greater than 2.5 million megagrams; and it does not operate a bioreactor.

3. Control Equipment

a. Flare #1

Potential emissions of VOC from the landfill are estimated to be less than 8.0 tpy. BLF voluntarily operates a collection and control system consisting of a landfill gas (LFG) collection system and flare (Flare #1). The flare has a maximum heat value of 12.0 MMBtu/hr and is designed to achieve 98% overall destruction of total hydrocarbons including NMOC. Flare #1 also uses a small amount of propane as a pilot light.

BPT Findings

The BPT emission limits for Flare #1 were based on the following:

PM/PM <sub>10</sub> /PM <sub>2.5</sub>	–	17 lb/MMscf of methane based on AP-42 Table 2.4-5 dated 11/98
SO <sub>2</sub>	–	1,000 ppmv of TRS, 06-096 C.M.R. ch. 115, BPT
NO <sub>x</sub>	–	0.068 lb/MMBtu based on AP-42 Table 13.5-1* dated 2/18

- CO – 0.31 lb/MMBtu based on AP-42 Table 13.5-2\* dated 2/18
- VOC – 98% destruction efficiency based on vendor-supplied data
- Visible Emissions – 06-096 C.M.R. ch. 115, BPT

\* AP-42 Section 13.5 emission factors for industrial flares were used in place of Section 2.4-5 for solid waste flares due to the data being more current and having a better rating for representativeness.

The BPT emission limits for Flare #1 are the following:

Unit	Pollutant	lb/MMBtu
Flare #1	PM	0.017

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)
Flare #1	0.20	0.20	0.20	4.05	0.82	3.72

Compliance shall be based on limiting the amount of LFG sent to the flare to no more than 400 scfm at 50% methane and determining the concentration of total reduced sulfur (TRS) compounds in the LFG at least once per calendar year with at least four months between sampling dates.

Visible emissions from Flare #1 shall not exceed 10% opacity on a six-minute block average basis.

b. Sulfur Dioxide

SO<sub>2</sub> is emitted as a result of combustion of TRS compounds in the LFG. BLF tests samples of the landfill gas for TRS once per year. Maximum potential emissions of SO<sub>2</sub> were based on operation of Flare #1 at its maximum licensed capacity (i.e., 400 scfm at 50% methane) and a TRS concentration of 1,000 ppmv, which is the historical maximum TRS concentration, measured in 2008. This results in potential emissions of SO<sub>2</sub> from Flare #1 of 17.8 tpy. However, TRS concentrations have been decreasing over time with levels in 2022 being near the non-detect level of 0.1 ppmv.

Some landfills use biological scrubbers to remove TRS from the landfill gas before combustion. However, when the amount of SO<sub>2</sub> reduced by the scrubber is less than 23.0 tpy, the cost to operate these systems has been found to exceed \$10,000/ton and is considered to not be economically justified. With actual emissions of SO<sub>2</sub> from Flare #1 being significantly less than 23.0 tpy, additional add-on control for SO<sub>2</sub> emissions is determined not to be economically feasible.

4. Facility-Wide Emission Limits

The facility-wide emission limits for criteria pollutants are based on the following assumptions:

- Operation of Flare #1 at its maximum licensed capacity (i.e., 400 scfm at 50% methane);
- A TRS concentration of 1,000 ppmv; and
- 75% of LFG generated is collected by Flare #1 and the other 25% is emitted fugitively.

The annual limit for total hazardous air pollutants is included to demonstrate that the facility is an area source of HAP.

<b>Pollutant</b>	<b>Proposed Licensed Emissions (ton/year)</b>
PM	0.9
PM <sub>10</sub>	0.9
PM <sub>2.5</sub>	0.9
SO <sub>2</sub>	17.8
NO <sub>x</sub>	3.6
CO	16.3
VOC	2.0
Total HAP	5.0

The Department finds the annual limits listed above to represent BPT for emissions from the landfill.

Compliance with the facility-wide annual emission limits shall be demonstrated by calculating actual emissions at least once annually. Calculations of annual emissions shall be completed no later than February 15<sup>th</sup> of the following calendar year.

Emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, and CO shall be calculated based on the amount of LFG sent to Flare #1 and the licensed emission factor for the flare.

Emissions of SO<sub>2</sub> shall be calculated based on the amount of LFG sent to Flare #1 and the actual concentration of TRS in the LFG based on the most recent annual test results.

Compliance with the VOC and HAP annual limits shall be based on a combination of emissions from Flare #1 and fugitive emissions. Emissions of VOC and HAP from Flare #1 shall be calculated based on the amount of LFG sent to the flare and concentration data based on EPA's Compilation of Emission Factors (AP-42), Section 2.4, *Municipal Solid Waste Landfills*. Fugitive VOC emissions from the landfill shall also be calculated in accordance with AP-42, Section 2.4.

**C. Fugitive Emissions**

BLF shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility’s continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

BLF shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

**D. 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. Maximum potential emissions were calculated based on the following assumptions:

- Operating Flare #1 at 400 scfm at 50% methane for 8,760 hours/year;
- Combustion of LFG with a TRS concentration of 1,000 ppmv; and
- 75% of the LFG is collected and routed to Flare #1 and 25% of the LFG is emitted fugitively.

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)**

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Flare #1	0.9	0.9	0.9	17.8	3.6	16.3	0.2
Fugitive	–	–	–	–	–	–	1.8
<b>Total TPY</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>	<b>17.8</b>	<b>3.6</b>	<b>16.3</b>	<b>2.0</b>

<b>Pollutant</b>	<b>Tons/year</b>
Total HAP	5.0

### **III. AMBIENT AIR QUALITY ANALYSIS**

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

<b>Pollutant</b>	<b>Tons/Year</b>
PM <sub>10</sub>	25
PM <sub>2.5</sub>	15
SO <sub>2</sub>	50
NO <sub>x</sub>	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

This determination is based on information provided by the applicant regarding licensed emissions. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require BLF to submit additional information and may require an ambient air quality impact analysis at that time.

### **ORDER**

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

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

The Department hereby grants Air Emission License A-980-71-D-R subject to the following conditions.

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

**STANDARD CONDITIONS**

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to beginning actual construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 C.M.R. ch. 115]



- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.  
[06-096 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:
- A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
    - 2. Pursuant to any other requirement of this license to perform stack testing.
  - B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
  - C. Submit a written report to the Department within thirty (30) days from date of test completion.  
[06-096 C.M.R. ch. 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and
  - B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

- C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.  
[06-096 C.M.R. ch. 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.  
[06-096 C.M.R. ch. 115]
- (16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

## **SPECIFIC CONDITIONS**

### **(17) Solid Waste Landfill**

- A. BLF shall keep readily accessible, on-site records of the following. Records may be maintained off-site if they are retrievable within 4 hours.
1. The design capacity report which demonstrated that the landfill has a design capacity less than 2.5 million megagrams and 2.5 million cubic meters.
  2. The current amount of solid waste in place.  
[06-096 C.M.R. ch. 115, BPT and 40 C.F.R. § 60.768(f)]
- B. BLF shall submit an amended design capacity report within 90 days of any increase in design capacity that exceeds 2.5 million megagrams. [40 C.F.R. § 60.767(a)(3)]

- C. BLF shall test the landfill gas at the flare for TRS concentration once per calendar year with no less than four months between tests. [06-096 C.M.R. ch. 115, BPT]
- D. The amount of LFG sent to Flare #1 shall not exceed 400 scfm at 50% methane. Compliance shall be demonstrated through continuous monitoring of the LFG flow rate. BLF shall maintain records of this monitoring data. [06-096 C.M.R. ch. 115, BPT]
- E. Emissions from Flare #1 shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Flare #1	PM	0.017	06-096 C.M.R. ch. 115, BPT

- F. Emissions from Flare #1 shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Emission 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)
Flare #1	0.20	0.20	0.20	4.05	0.82	3.72

- G. Visible emissions from Flare #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- H. Facility-Wide Emission Limits

- 1. BLF shall not exceed the following emission limits on a calendar year total basis:

Pollutant	Proposed Licensed Emissions (ton/year)
PM	0.9
PM <sub>10</sub>	0.9
PM <sub>2.5</sub>	0.9
SO <sub>2</sub>	17.8
NO <sub>x</sub>	3.6
CO	16.3
VOC	2.0
Total HAP	5.0

- 2. Compliance with the facility-wide annual emission limits shall be demonstrated by calculating actual emissions at least once annually. Calculations of annual emissions shall be completed no later than February 15<sup>th</sup> of the following calendar year.

3. Emissions shall be calculated in accordance with the following or other methods as approved by the Department.
  - a. Emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, and CO shall be calculated based on the amount of LFG sent to Flare #1 and the licensed emission factor for the flare.
  - b. Emissions of SO<sub>2</sub> shall be calculated based on the amount of LFG sent to Flare #1 and the actual concentration of TRS in the LFG based on the most recent annual test results.
  - c. Emissions of VOC and HAP from Flare #1 shall be calculated based on the amount of LFG sent to the flare and concentration data based on EPA's Compilation of Emission Factors (AP-42), Section 2.4, *Municipal Solid Waste Landfills*. Fugitive VOC emissions from the landfill shall also be calculated in accordance with AP-42, Section 2.4

[06-096 C.M.R. ch. 115, BPT]

(18) **Fugitive Emissions**

- A. BLF shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.
- B. BLF shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

[06-096 C.M.R. ch. 101, § 4(C)]

- (19) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, BLF may be required to submit additional information. Upon written request from the Department, BLF shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.  
[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 2<sup>nd</sup> DAY OF APRIL, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, COMMISSIONER

**The term of this license shall be ten (10) years from the signature date above.**

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 3/6/2023

Date of application acceptance: 3/6/2023

Date filed with the Board of Environmental Protection:

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

**FILED**  
APR 02, 2024  
State of Maine  
Board of Environmental Protection