



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

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COMMISSIONER

**City of Augusta – Hatch Hill Landfill
Kennebec County
Augusta, Maine
A-1060-71-A-N**

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

After review of the air emissions license application, staff investigation reports and other documents in the applicant’s file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

The City of Augusta – Hatch Hill Landfill (Hatch Hill) has applied for a new Air Emission License permitting the operation of emission sources associated with their landfill facility. A flare will be utilized as part of the Landfill Gas Collection and Control System (LGCCS) to be installed in the Expansion II area upon completion of construction, and may serve the active landfill phase, Expansion III, as waste filling proceeds.

The equipment addressed in this license is located at Hatch Hill Road, Augusta.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Process Equipment

<u>Equipment</u>	<u>Design Capacity</u>	<u>Production Rate</u>	<u>Stack #</u>
Landfill Gas Flare	7.5 MMBtu/hr	300 scfm	1

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04679-2094
(207) 764-0477 FAX: (207) 760-3143

C. Application Classification

The new source is considered a major source based on whether or not expected emissions exceed the “Significant Emission Levels” as defined in the Department’s regulations. The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

<u>Pollutant</u>	<u>Max. Future License (TPY)</u>	<u>Sig. Level (TPY)</u>
PM	0.48	100
PM ₁₀	0.48	100
SO ₂	0.55	100
NO _x	1.13	100
CO	21.08	100
VOC	3.66	50

The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended).

II. BEST PRACTICAL TREATMENT (BPT)

(1) 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 CMR 100 (as amended). 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 requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

(2) Process Description

The City of Augusta owns and operates Hatch Hill Landfill, a municipal solid waste (MSW) landfill on Hatch Hill Road. The original landfill was converted into a sanitary landfill in 1982. Expansion I was closed in 1995. Expansion II was constructed between 1991 and 1992, and a DEP Closure Order has been approved for this section of the landfill. Expansion III was constructed between 2000 and 2001 and currently provides waste handling and disposal services for Augusta and eight other local communities.

The engineering design for closure of Expansion II calls for an active landfill gas (LFG) management system to be constructed to serve Expansion II on completion of construction and possibly to serve Expansion III as filling proceeds. LFG collection and control is not proposed for Expansion I or the original landfill at this time.

The active LFG system is designed to control build-up of LFG beneath the cover system designed for closure, and to prevent fugitive emissions of pollutants by extracting LFG from the landfill and combusting it at an open flare station. Landfill gas will be collected from 12 landfill gas extraction wells, each of which is connected to a wellhead containing a control valve and sampling ports. Either a multi-stage centrifugal blower or centrifugal fan will be utilized to transport gas from the well field to the flare by applying a vacuum to the collection system to draw the landfill gas out of the extraction wells, through the collection system and to the flare station. The blower or fan will be sized to handle gas flows from both Expansion II and III, with the anticipated maximum flow rate being 300 standard cubic feet per minute, and the minimum being 30 SCFM. The blower or fan speed will be controlled by a variable frequency drive controlled by a gas flow meter set by an operator.

Meters will measure the concentration of methane, carbon dioxide and oxygen which will be used to monitor the quality of the landfill gas stream, adjust the flow rate at the flare and assist in well field tuning. A programmable logic controller will control flare operations including the sequence of actions during start-up and shutdown of the flare station and recording of operational data.

A flare arrestor will be located directly prior to the flare unit to prevent a flash back from igniting land fill gas in other treatment and collection system components. Propane will be used as the start-up fuel in the pilot. An automatic block valve will remain closed during start-up and will open automatically once a flame has been established. A valve on the pilot fuel line will then close and the flame will be maintained by the landfill gas. Several thermocouples located on the flare system will detect the presence of the main flame, the pilot flame and a flashback in the flame arrestor, and will signal the various valves to open or close during start-up, normal operation and malfunction conditions.

The open flare is designed to operate from 300 SCFM to 30 SCFM allowing the gas flow rate to be adjusted as gas production decreases over time. The minimum flow rate through the system will be limited by the blower turn down. The flare will be capable of operating continuously with a minimum methane content of 30 to 40 percent (dependant upon the manufacturer). Once the landfill gas generation rate has decreased to where there is not sufficient methane in the gas stream to operate the flare continuously, the flare may be operated on a part-time basis to provide landfill gas migration control.

(3) BACT for the Landfill Gas Flare System

The LFG flare unit has a capacity of 7.5 MMBtu per hour, and is fed by a blower with a design capacity of 300 SCFM, drawing gas from extraction wells from Expansion II and possibly Expansion III. The flare will utilize propane only in the start-up sequence to ignite the pilot which ignites the LFG. The regulated pollutants emitted from the LFG oxidation unit are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC) and hazardous air pollutants (HAP).

BACT for control of PM and PM₁₀ shall be good combustion practices and operating the unit in accordance with the manufacturer's specifications. Visible emissions from oxidation shall not exceed five (5) percent opacity for 5 minutes in any two (2) hour period. Compliance shall be determined by an aggregate of the individual fifteen (15) second observations which exceed 5% in any two (2) hour period. PM emissions will be limited to 0.11 pounds per hour.

BACT for SO₂, CO and NO_x shall be operating the unit in accordance with the manufacturer's specifications. Emissions limits shall be 0.26 pound NO_x per hour, 0.12 pound of SO₂ per hour, and 4.84 pound of CO per hour.

BACT for VOC and HAP shall be use of an LFG flare operating with 98% destruction efficiency. Emission limits shall be 0.84 pound VOC per hour and 0.87 pound HAP per hour.

BACT for the LFG flare shall also include operating the unit in accordance with the manufacturer's specifications and include monitoring the continuous presence of a flame with a flame detector. In addition, BACT shall include monitoring the LFG flow rate with a mass flow meter equipped with a digital totalizer and continuous digital recording.

BACT for the landfill gas emissions shall be the use of a Landfill Gas Flare unit operated in accordance with the manufacturer's specifications.

Hatch Hill shall conduct a Method 9 performance test within 30 days of startup to establish equipment operating parameters for the LFG flare.

(4) New Source Performance Standards

40 CFR Part 60 Subpart Cc does not apply because Hatch Hill, while a designated facility, has a design capacity less than 2.5 million Mg and has a NMOC emission rate less than 50 Mg per year.

40 CFR Part 60 Subpart WWW – *Standards of Performance for Solid Waste Landfills* – Expansion II and III are subject to this section, however, because both have a design capacity less than 2.5 million Mg, only reporting and recordkeeping requirements apply.

(5) National Emission Standards for Hazardous Air Pollutants

40 CFR Part 63 Subpart AAAA – *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills* – Hatch Hill is not subject to this subpart as it is not a major source, not collocated with a major source, nor is it an area source with a design capacity greater than 2.5 million Mg that has estimated uncontrolled emissions of NMOC equal to or greater than 50 Mg per year. Hatch Hill is an area source with a design capacity of less than 2.5 million Mg.

(6) Landfill Gas Testing

Upon start up, Hatch Hill shall measure the total sulfur content of the landfill gas once a month. Upon receipt of six (6) consistently low sample results, Hatch Hill may request a reduction in landfill gas sampling frequency, to once per year, from the Department. Hatch Hill may also elect to sample twice per month, at least two weeks apart, for three months to obtain the six (6) samples needed for the request in reduction in sample frequency.

(7) Fugitive Emissions

Visible emissions from a fugitive emission source, including unpaved roadways and stockpiles, shall not exceed 20% opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

(8) Annual Emissions

Hatch Hill shall be restricted to the following annual emissions from the LFG flare serving Expansion II:

Total Licensed Annual Emissions for the Facility
Tons per year
(Used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
LFG Flare	0.48	0.48	0.55	1.13	21.08	3.66
Total TPY	0.5	0.5	0.6	1.1	21.1	3.7

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

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,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-1060-71-A-N subject to the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 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 CMR 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 CMR 115]

- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 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 CMR 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 CMR 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 CMR 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 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR 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 CFR 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 CMR 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 such test results, 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 CFR 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 CMR 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 Part 70 license requirement. [06-096 CMR 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 emission 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 CMR 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 CMR 115]

SPECIFIC CONDITIONS

(16) Landfill Gas Flare

- A. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
LFG Flare	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

- B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
LFG Flare	0.26	0.26	0.11	0.12	0.84	0.84

- C. Visible emissions from the LFG Flare shall not exceed 5% opacity for five (5) minutes in a two (2) hour period. Compliance shall be determined by an aggregate of the individual fifteen (15) second observations which exceed 5% in any two (2) hour period. [BACT]
- D. The LFG Flare shall be operated with a flame present at all times. Hatch Hill shall operate the unit in accordance with the manufacturer's specifications and shall monitor the continuous presence of a flame with a flame detector.
- E. Hatch Hill shall operate the LFG Flare unit within the equipment parameter boundaries established during the initial Method 9 performance test.

(17) Record Keeping and Compliance Assurance

- A. Hatch Hill shall maintain records of the most current six year period for all equipment parameter monitoring and recording required by the license.
- B. Hatch Hill shall maintain a complete set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.
- C. Hatch Hill shall maintain records of the LFG Flare unit vendor specifications until the removal of the LFG Flare unit.
- D. Hatch Hill shall monitor for the continuous presence of a flame at the LFG Flare unit's main flame with a thermocouple. Hatch Hill shall maintain records of all periods of operation during which the flame of the LFG Flare was absent. Documentation shall include specifics of calibration and audits.
- E. Hatch Hill shall monitor landfill gas flow rate to the LFG Flare unit with a thermal mass flow meter and shall record gas flow with a standard cubic feet per minute digital totalizer and a continuous paper strip chart recorder. The gas flow rate to the LFG Flare shall be measured and recorded at least every 15 minutes.
- F. Hatch Hill shall maintain records indicating all routine and non-routine maintenance on the LFG Flare unit.
- G. Hatch Hill shall maintain purchase records for the auxiliary propane fuel indicating the quantity of fuel purchased and the heat content of the fuel.

(18) Landfill Gas Testing

Upon start up, Hatch Hill shall measure the total sulfur content of the landfill gas once a month. Upon receipt of six (6) consistently low sample results, Hatch Hill may request a reduction in landfill gas sampling frequency, to once per year, from the Department. Hatch Hill may also elect to sample twice per month, at least two weeks apart, for three months to obtain the six (6) samples need for the request in reduction in sample frequency.

If landfill gas testing demonstrates an emission rate for any pollutant in excess of the emission rates provided for in the application associated with this license, Hatch Hill shall submit an amendment application to correct this license within ninety (90) days of the test date.

(19) Fugitive PM Emission Sources

Visible emissions from a fugitive emission source, including unpaved roadways and stockpiles, shall not exceed 20% opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

(20) New Source Performance Standards

Hatch Hill shall comply with the reporting and recordkeeping requirements of 40 CFR Part 60 Subpart WWW – *Standards of Performance for Solid Waste Landfills*.

(21) Hatch Hill 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.A. §605).

(22) If at any time the design capacity of the Hatch Hill Landfill exceeds 2.5 million Mg, Hatch Hill shall comply with the provisions of 40 CFR 60.752(b).

DONE AND DATED IN AUGUSTA, MAINE THIS 5th DAY OF October, 2011.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:



PATRICIA W. ANDROS, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 06/21/2011

Date of application acceptance: 06/27/2011

Date filed with the Board of Environmental Protection:

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.

