



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

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COMMISSIONER

**The University of Maine System
Franklin County
Farmington, Maine
A-603-71-J-A (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the air emissions 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 Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

The University of Maine System's Farmington campus (UMF) was issued Air Emission License A-603-71-I-R/A on January 31, 2013 permitting the operation of emission sources associated with their educational facility.

UMF has requested an amendment to their license in order to make the following changes:

1. Add a new wood-fired boiler (Boiler #1);
2. Address the removal of several boilers that will be decommissioned once Boiler #1 comes online;
3. Add two existing small distillate/propane-fired boilers not included in their current license; and
4. Add an existing emergency generator not included in their current license.

The equipment addressed in this license is located at 224 Main Street, Farmington, Maine.

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 04769
(207) 764-0477 FAX: (207) 760-3143

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equip ID</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type, % sulfur</u>	<u>Install. Date</u>	<u>Stack #</u>
Boiler #1	20.9	2.03 ton/hr 231 gal/hr	wood (40% moisture), negligible propane, negligible	2015	1
H754	4.55	32.5 gal/hr	distillate fuel, 0.5%	1940	10MRL
H2270	2.1	15.0 gal/hr	distillate fuel, 0.5%	1963	11AT
H2599	3.29	23.5 gal/hr	distillate fuel, 0.5%	1966	43OL
H2876	2.60	18.6 gal/hr	distillate fuel, 0.5%	1968	6LKWD
H7841	1.70	12.1 gal/hr	distillate fuel, 0.5%	2000	38PS
H9255	3.80	27.1 gal/hr	distillate fuel, 0.5%	2002	23RLC
H9351	2.1	15.0 gal/hr	distillate fuel, 0.5%	2004	11AT
H011573	1.2	8.6 gal/hr	distillate fuel, 0.5%	2010	24DAK
H011574	1.2	8.6 gal/hr	distillate fuel, 0.5%	2010	24DAK
H011584	1.2	8.6 gal/hr	distillate fuel, 0.5%	2011	1STN
H011585	1.2	8.6 gal/hr	distillate fuel, 0.5%	2011	1STN
H12874	2.3	16.5 gal/hr 25.4 gal/hr	distillate fuel, 0.5% propane, negligible	2013	10MRL
H12875	2.3	16.5 gal/hr 25.4 gal/hr	distillate fuel, 0.5% propane, negligible	2013	10MRL

UMF will remove or physically disable the following boilers once Boiler #1 comes online and has requested that they be deleted from their license at that time: H1895, H1897, H1980, H2271, H2593, H2598, H2875, H7056, H7057, H7058, and H8183.

UMF has added boilers H12874 and H12875 since their last licensing action. These boilers are therefore considered new equipment.

Generators

<u>Equipment</u>	<u>Power Output kW</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>
Generator #1	100	7.2	distillate fuel, 0.0015%	1999

Generator #1 is new to this air emission license.

UMF also operates portable generators used for general maintenance around campus. The engines associated with this equipment do not need to be included in the license provided they continue to meet the definition of “portable non-road engine” as described in this license.

C. Definitions

Distillate Fuel means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396, diesel fuel oil numbers 1 or 2, as defined in ASTM D975, kerosene, as defined in ASTM D3699, biodiesel as defined in ASTM D6751, or biodiesel blends as defined in ASTM D7467.

Portable Non-Road Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

D. Application Classification

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emission” levels as defined in the Department’s *Definitions Regulation*, 06-096 CMR 100 (as amended). The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Significant Emission Levels</u>
PM	3.4	6.1	+2.7	100
PM ₁₀	3.4	6.1	+2.7	100
SO ₂	21.2	21.8	+0.6	100
NO _x	12.6	14.6	+2.0	100
CO	1.5	17.4	+15.9	100
VOC	0.1	0.8	+0.7	50

This modification is determined to be a minor modification and has been processed as such.

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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

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.

B. Boiler #1

UMF is proposing to install and operate Boiler #1 for facility heating needs. The proposed system is manufactured by Messersmith and has a maximum heat input capacity of 20.9 MMBtu/hr. Boiler #1 is designed to fire wood chips and use propane as a back-up fuel. UMF plans to fire wood chips with an average moisture content of 40% and heating value of 10.32 MMBtu/ton.

UMF has stated that Boiler #1 will be equipped with an oxygen trim system that maintains an optimum air-to-fuel ratio within the boiler.

Emissions of particulate matter (PM) will be controlled by the use of an electrostatic precipitator (ESP). The ESP will be a BETH Model No. 300/1F-4x3-8 with an expected collection efficiency of 91.5%. After exiting the ESP, emissions will exhaust through a 50-ft stack.

The ESP is required to meet the PM emission limit when firing wood. The ESP is not required to operate when only propane is being fired in Boiler #1. UMF shall keep records of all dates and times when the boiler is firing only propane.

1. Startup and Shutdown

During startup, the ESP turns on at a reduced voltage when the temperature inside the boiler reaches 100°C and increases to full power once the boiler reaches 120°C. During shutdown, the ESP stays on at full power at least until the temperature inside the boiler falls below 120°C.

Therefore, for the purposes of this license, “startup” is defined as the period starting when fire is initially introduced into the boiler and ending once the boiler reaches 120°C. “Shutdown” is defined as the period starting when the boiler temperature falls below 120°C and ending when combustion is fully extinguished.

2. BACT Findings

The BACT emission limits for Boiler #1 were based on the following:

Wood

- PM/PM₁₀ – 0.070 lb/MMBtu based on 40 CFR Part 63, Subpart JJJJJ
- SO₂ – 0.025 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
- NO_x – 0.22 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
- CO – 0.60 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
- VOC – 0.017 lb/MMBtu based on AP-42 Table 1.6-3 dated 9/03
- Opacity – 06-096 CMR 101 and 115, BACT

Propane

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BACT
- SO₂ – 0.018 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- NO_x – 13 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- CO – 7.5 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- VOC – 1.0 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- Opacity – 06-096 CMR 101

The BACT emission limits for Boiler #1 are the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
Boiler #1 <i>wood</i>	PM	0.070
Boiler #1 <i>propane</i>	PM	0.05

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1 <i>wood</i>	1.46	1.46	0.52	4.60	12.54	0.36
Boiler #1 <i>propane</i>	1.05	1.05	neg	3.00	1.73	0.23

Visible emissions from Boiler #1 shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period except for periods of wood-fired startup and shutdown.

During periods of wood-fired startup or shutdown, visible emissions from Boiler #1 shall not exceed 30% on a (6) minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period.

UMF shall be limited to firing 4,500 ton/year of wood. It is assumed that the wood fired in Boiler #1 has an average moisture content of 40%.

UMF shall be limited to 500,000 gal/year of propane for all boilers combined.

3. 40 CFR Part 60, Subpart Dc

Boiler #1 is subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989. However, Subpart Dc contains only limited requirements for new boilers which fire only wood and natural gas. (Propane is included in the definition of "natural gas" in Subpart Dc.)

UMF shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up of Boiler #1. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 CFR Part 60.48c(a)]

UMF shall keep records of the amount of each fuel combusted in Boiler #1 during each calendar month. [40 CFR Part 60.48c(g)(2)]

4. 40 CFR Part 63, Subpart JJJJJ

Boiler #1 is subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The unit is considered a new biomass-fired boiler rated greater than 10 MMBtu/hr.

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. The rule may contain additional requirements and/or clarifications not outlined below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however UMF is still subject to all applicable requirements contained in the rule. Notification forms and additional rule information can be found on the following website: <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Emission Limits and Work Practice Requirements

i. Boiler #1 is subject to the following requirements:

	Operating Limitations
New biomass-fired boilers with heat input capacity between 10 and 30 MMBtu/hr (Boiler #1)	<ul style="list-style-type: none"> - Limit emissions of PM (filterable) to less than or equal to 0.070 lb/MMBtu except for periods of startup and shutdown (40 CFR Part 63, Subpart JJJJJ, Table 1); - Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. (40 CFR Part 63, Subpart JJJJJ, Table 2); - Maintain the 30-day rolling average total secondary electric power of the ESP at or above the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the ESP measured during the most recent performance stack test demonstrating compliance with the PM limit; (40 CFR Part 63, Subpart JJJJJ, Table 3); - Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test. (40 CFR Part 63, Subpart JJJJJ, Table 3)

ii. Boiler Tune-Up Program

- (a) A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup. [40 CFR Part 63.11223]
- (b) Tune-ups for Boiler #1 shall be conducted every five years with no more than 61 months between tune-ups. [40 CFR Part 63.11223(c) and 40 CFR Part 63, Subpart JJJJJ, Table 2]
- (c) The boiler tune-up program shall be performed as specified below:
 - 1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 CFR Part 63.11223(b)(1) & (c)]
 - 2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 - 3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the

inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection.

[40 CFR Part 63.11223(b)(3) & (c)]

4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up.
[40 CFR Part 63.11223(b)(7)]

(d) Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:

1. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
2. A description of any corrective actions taken as part of the tune-up of the boiler; and
3. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 CFR §63.11223(b)(6)]

- b. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)
 - i. UMF shall install, operate, and maintain a CPMS for Boiler #1.
[40 CFR §63.11222(a)]
 - ii. UMF shall establish a site specific minimum total secondary electric power operating limit per 40 CFR Part 63, Subpart JJJJJ, Table 6.
 - iii. UMF shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) per 40 CFR Part 63, Subpart JJJJJ, Table 6.
 - iv. UMF shall continuously monitor the total secondary electric power and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the minimum total secondary electric power per 40 CFR Part 63, Subpart JJJJJ, Table 7.

- v. UMF shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load per 40 CFR Part 63, Subpart JJJJJ, Table 7.
- vi. UMF shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 CFR §63.11224(c).
- vii. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Boiler #1 is operating and firing wood except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. [40 CFR §63.11221(b)]
- viii. The CPMS shall complete a minimum of one cycle of operation every 15 minutes. UMF shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 CFR §63.11224(d)(1)]
- ix. UMF shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 CFR §63.11224(d)(2)]

c. Performance Tests

- i. UMF shall conduct an initial performance test in accordance with 40 CFR Part 63, Subpart JJJJJ, Table 4 within 180 days of startup of Boiler #1. [40 CFR §63.11210(a) & (d)]
- ii. UMF shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 CFR §63.11212(c)]
- iii. UMF shall conduct a minimum of three separate test runs for each performance stack test. [40 CFR §63.11212(d)]
- iv. If the results of the performance stack test demonstrate emissions equal to or less than half of the PM emission limit (i.e. ≤ 0.035 lb/MMBtu), no further performance stack tests are required. [40 CFR §63.11220(b)]
- v. If the results of the performance stack test demonstrate emissions greater than half of the PM emission limit (i.e. > 0.035 lb/MMBtu), UMF shall conduct triennial performance tests with no more than 37 months between tests. [40 CFR §63.11220(a)]

d. Notifications and Reports

UMF shall submit to EPA all reports required by 40 CFR Part 63, Subpart JJJJJ including, but not limited to, the following:

- i. An Initial Notification submittal to EPA is due within 120 days after the source becomes subject to the standard. [40 CFR Part 63.11225(a)(2)]
- ii. A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 CFR §63.11225(a)(3)] UMF shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.
- iii. Within 60 days after the date of completing each performance test, UMF shall submit the results of the performance test to EPA's WebFIRE database. [40 CFR §63.11225(e)(1)] UMF shall also submit results to the Department in accordance with Standard Condition (11)(C) of air emission license A-603-71-I-R/A.
- iv. A Notification of Compliance Status shall be submitted to EPA no later than 60 days following the completion of the performance stack test. [40 CFR Part 63.11225(a)(4)] EPA requires submission of Notification of Compliance Status reports for tune-ups through their electronic reporting system. [63.11225(a)(4)(vi)]
- v. Compliance Reports
A compliance report shall be prepared by March 1st of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then the report must be submitted to the Department and to the EPA by March 15th. The report must include the items contained in §63.11225(b)(1) through (4), including the following: [40 CFR §63.11225(b)]

- (a) Company name and address;
- (b) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (c) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (d) The following certifications, as applicable:
 1. "This facility complies with the requirements in 40 CFR §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 2. "No secondary materials that are solid waste were combusted in any affected unit."

3. "This facility complies with the requirement in 40 CFR §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 CFR §63.11223(b)."
- (e) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
- (f) The total fuel use by each affected boiler subject to an emission limit for each calendar month within the reporting period.

e. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]:

- i. Copies of notifications and reports with supporting compliance documentation;
- ii. Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- iii. Records of monthly fuel use including the type(s) of fuel and amount(s) used;
- iv. Records of the occurrence and duration of each malfunction of each applicable boiler; and
- v. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.
- vi. Records shall be in a form suitable and readily available for expeditious review.

C. H12874 & H12875

UMF operates several small boilers throughout the campus for facility heating and hot water needs. In 2013 UMF added two small boilers, H12874 and H12875 which are each rated at 2.3 MMBtu/hr and are able to fire both propane and distillate fuel. The boilers exhaust through a combined stack.

1. BACT Findings

The BACT emission limits for H12874 and H12875 were based on the following:

Distillate Fuel

- | | |
|---------------------|---|
| PM/PM ₁₀ | – 0.08 lb/MMBtu based on 06-096 CMR 115, BACT |
| SO ₂ | – based on firing distillate fuel with a maximum sulfur content of 0.5% by weight |
| NO _x | – 20 lb/1000 gal based on AP-42 Table 1.3-1, dated 5/10 |
| CO | – 5 lb/1000 gal based on AP-42 Table 1.3-1, dated 5/10 |
| VOC | – 0.34 lb/1000 gal based on AP-42 Table 1.3-3, dated 5/10 |

Opacity – 06-096 CMR 115, BACT

Propane

PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BACT
 SO₂ – 0.018 lb/1000 gal based on AP-42 Table 1.5-1 dated 10/96
 NO_x – 13 lb/1000 gal based on AP-42 Table 1.5-1 dated 10/96
 CO – 7.5 lb/1000 gal based on AP-42 Table 1.5-1 dated 10/96
 VOC – 1.0 lb/1000 gal based on AP-42 Table 1.5-1 dated 10/96
 Opacity – 06-096 CMR 115, BACT

The BACT emission limits for the boilers are the following:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
H12874 <i>distillate fuel</i>	0.18	0.18	1.16	0.33	0.08	0.01
H12874 <i>propane</i>	0.12	0.12	neg	0.33	0.19	0.03
H12875 <i>distillate fuel</i>	0.18	0.18	1.16	0.33	0.08	0.01
H12875 <i>propane</i>	0.12	0.12	neg	0.33	0.19	0.03

When either boiler is firing distillate fuel, visible emissions from the combined stack for H12874 and H12875 shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

When only propane is being fired, visible emissions from the combined stack for H12874 and H12875 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

UMF shall be limited to 600,000 gallons/yr of distillate fuel for all boilers combined.

UMF shall be limited to 500,000 gal/year of propane for all boilers combined, including Boiler #1.

Prior to July 1, 2016, or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.5% by weight. Per 38 MRSA §603-A(2)(A)(3), beginning July 1, 2016, or on the date specified in the statute, the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018, or on the date specified in the statute, the facility shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this

license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

2. Periodic Monitoring

Periodic monitoring for the boiler shall include recordkeeping to document fuel use both on a monthly and 12 month rolling total basis. Documentation shall include the type of fuel used and sulfur content of the distillate fuel fired.

3. 40 CFR Part 60, Subpart Dc

Due to their size, H12874 and H12875 are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

4. 40 CFR Part 63, Subpart JJJJJ

H12874 and H12875 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). These units are considered new oil-fired boilers.

Gas-fired boilers are exempt from 40 CFR Part 63, Subpart JJJJJ. However, boilers which fire distillate fuel are not. A "gas-fired boiler" is defined as any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.[40 CFR Part 63.11237]

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however UMF is still subject to the requirements. Notification forms and additional rule information can be found on the following website:
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to EPA was due within 120 days of startup of the boilers. [40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

- (a) A boiler tune-up program shall be implemented. [40 CFR Part 63.11223]
- (b) Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New oil-fired boilers with a heat input capacity of <5 MMBtu/hr	Every 5 years

[40 CFR Part 63.11223(a) and 40 CFR Part 63, Subpart JJJJJ, Table 2]

- (c) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
 - 1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [40 CFR Part 63.11223(b)(1)]
 - 2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 - 3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [40 CFR Part 63.11223(b)(3)]
 - 4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 - 5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 - 6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

(d) Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:

1. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
2. A description of any corrective actions taken as part of the tune-up of the boiler; and
3. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 CFR §63.11223(b)(6)]

iii. Compliance Report:

A compliance report shall be prepared by March 1st every five years which covers the previous five calendar years. The report shall be maintained by the source and submitted to the Department and to the EPA upon request. The report must include the items contained in §63.11225(b)(1) and (2), including the following: [40 CFR §63.11225(b)]

- (a) Company name and address;
- (b) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (c) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (d) The following certifications, as applicable:
 1. "This facility complies with the requirements in 40 CFR §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 2. "No secondary materials that are solid waste were combusted in any affected unit."
 3. "This facility complies with the requirement in 40 CFR §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 CFR §63.11223(b)."

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]:

- i. Copies of notifications and reports with supporting compliance documentation;

- ii. Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
 - iii. Records of the occurrence and duration of each malfunction of each applicable boiler; and
 - iv. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.
- Records shall be in a form suitable and readily available for expeditious review.

D. Generator #1

UMF operates one stationary emergency back-up generator (Generator #1) required to be licensed. Generator #1 is a generator set which consists of an engine and an electrical generator. It has an engine rated at 1.0 MMBtu/hr which fires distillate fuel. Generator #1 was manufactured in 1999.

1. BACT Findings

The BACT emission limits for Generator #1 are based on the following:

- PM/PM₁₀ - 0.12 lb/MMBtu from 06-096 CMR 115, BACT
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42 dated 10/96
- Opacity - 06-096 CMR 101

The BACT emission limits for Generator #1 are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Generator #1	0.12	0.12	neg	4.32	0.93	0.34

Visible emissions from Generator #1 shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. Generator #1 shall be equipped with a non-resettable hour-meter to record operating time. To demonstrate compliance with the operating hours limit, UMF shall keep records of the total hours of operation and the hours of emergency operation for each unit.

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity.

2. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is not applicable to Generator #1 since it was manufactured prior to April 1, 2006.

3. 40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is not applicable to Generator #1. This unit is considered an existing, emergency stationary reciprocating internal combustion engine at an area HAP source. However, it is considered exempt from the requirements of Subpart ZZZZ since it is categorized as an institutional emergency engine and it does not operate or is not contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii).

Operation of an emergency engine such that it exceeds 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), would cause Generator #1 to be subject to 40 CFR Part 63, Subpart ZZZZ, and require compliance with all applicable requirements.

E. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, 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.

F. Annual Emissions

1. Total Annual Emissions

UMF shall be restricted to the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on the following:

- Firing 4,500 ton/year of wood with a heating value of 5,160 Btu/lb at 40% moisture;
- Firing 600,000 gal/year of distillate fuel in the facility's boilers;
- Firing 500,000 gal/year of propane in the facility's boilers;
- Operating Generator #1 for 100 hr/year.

Total Licensed Annual Emissions for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Wood	1.6	1.6	0.6	5.1	13.9	0.4
Distillate Fuel	3.4	3.4	21.2	6.0	1.5	0.1
Propane	1.1	1.1	–	3.3	1.9	0.3
Generator #1	–	–	–	0.2	0.1	–
Total TPY	6.1	6.1	21.8	14.6	17.4	0.8

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 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:

<u>Pollutant</u>	<u>Tons/Year</u>
PM ₁₀	25
SO ₂	50
NO _x	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.

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-603-71-J-A subject to the conditions found in Air Emission License A-603-71-I-R/A and in 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.

The following shall replace Condition (16) of Air Emission License A-603-71-I-R/A:

(16) **Small Boilers**

A. The following boilers shall be removed from the facility or permanently disabled within 90 days of startup of Boiler #1: H1895, H1897, H1980, H2271, H2593, H2598, H2875, H7056, H7057, H7058, H8183. [06-096 CMR 115, BACT]

B. **Fuel**

1. Facility-wide use of distillate fuel shall not exceed 600,000 gal/year based on a 12 month rolling total basis. [06-096 CMR 115, BPT/BACT]
2. Facility-wide use of propane shall not exceed 500,000 gal/year based on a 12 month rolling total basis. [06-096 CMR 115, BPT/BACT]
3. Prior to July 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired in the boilers shall have a maximum sulfur content of 0.5% by weight. [06-096 CMR 115, BPT]
4. Beginning July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Beginning January 1, 2018 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
6. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. [06-096 CMR 115, BPT/BACT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
H754	PM	0.08	06-096 CMR 115, BPT
H2599	PM	0.08	06-096 CMR 115, BPT
H9255	PM	0.08	06-096 CMR 115, BPT

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

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
H754	0.36	0.36	2.29	0.65	0.16	0.01
H2270	0.17	0.17	1.06	0.30	0.08	0.01
H2599	0.26	0.26	1.66	0.47	0.12	0.01
H2876	0.21	0.21	1.31	0.37	0.09	0.01
H7841	0.14	0.14	0.86	0.24	0.06	neg
H9255	0.30	0.30	1.91	0.54	0.14	0.01
H9351	0.17	0.17	1.06	0.30	0.08	0.01
H011573	0.10	0.10	0.60	0.17	0.04	neg
H011574	0.10	0.10	0.60	0.17	0.04	neg
H011584	0.10	0.10	0.60	0.17	0.04	neg
H011585	0.10	0.10	0.60	0.17	0.04	neg
H12874 <i>distillate fuel</i>	0.18	0.18	1.16	0.33	0.08	0.01
H12874 <i>propane</i>	0.12	0.12	neg	0.33	0.19	0.03
H12875 <i>distillate fuel</i>	0.18	0.18	1.16	0.33	0.08	0.01
H12875 <i>propane</i>	0.12	0.12	neg	0.33	0.19	0.03

E. Visible Emissions

1. Visible emissions from each stack connected to a distillate fuel-fired boiler shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 115, BPT/BACT]
2. Visible emissions from each stack associated only with propane-fired boilers shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 115, BACT]

F. Boiler MACT (40 CFR Part 63, Subpart JJJJJ) Requirements for Small Boilers Addressed in this Condition [incorporated under 06-096 CMR 115, BPT/BACT]

1. An Initial Notification submittal to EPA was due within 120 days after the source becomes subject to the standard. [40 CFR Part 63.11225(a)(2)]

2. The facility shall implement a boiler tune-up program. [40 CFR Part 63.11223]

- (a) Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New or Existing Oil fired boilers with a heat input capacity of <5 MMBtu/hr	Every 5 years

[40 CFR Part 63.11223(a) and 40 CFR Part 63, Subpart JJJJJ, Table 2]

- (b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
- (1) As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [40 CFR Part 63.11223(b)(1)]
 - (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 - (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [40 CFR Part 63.11223(b)(3)]
 - (4) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 - (5) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 - (6) If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

(c) Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:

- (1) The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
- (2) A description of any corrective actions taken as part of the tune-up of the boiler; and
- (3) The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 CFR §63.11223(b)(6)]

(d) Existing oil-fired boilers are required to submit a Notification of Compliance Status to EPA after the initial tune-up. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]

3. Compliance Report:

A compliance report shall be prepared by March 1st every five years which covers the previous five calendar years. The report shall be maintained by the source and submitted to the Department and to the EPA upon request. The report must include the items contained in §63.11225(b)(1) and (2), including the following:
[40 CFR §63.11225(b)]

- (a) Company name and address;
- (b) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (c) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (d) The following certifications, as applicable:
 - (1) "This facility complies with the requirements in 40 CFR §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 - (2) "No secondary materials that are solid waste were combusted in any affected unit."
 - (3) "This facility complies with the requirement in 40 CFR §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 CFR §63.11223(b)."

4. Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]:

- (a) Copies of notifications and reports with supporting compliance documentation;

- (b) Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- (c) Records of the occurrence and duration of each malfunction of each applicable boiler; and
- (d) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.

Records shall be in a form suitable and readily available for expeditious review. EPA requires submission of Notification of Compliance Status reports for tune-ups and energy assessments through their electronic reporting system. [63.1125(a)(4)(vi)]

The following are New Conditions:

(19) **Boiler #1**

A. Fuel

- 1. The total amount of wood fired in Boiler #1 shall not exceed 4,500 ton/year (at 40% moisture) on a 12 month rolling total basis. [06-096 CMR 115, BACT]
- 2. The propane fired in Boiler #1 shall be counted toward the facility-wide propane fuel limit in Condition (16)(B)(2). [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1 <i>wood</i>	PM	0.070	40 CFR Part 63, Subpart JJJJJ, Table 1
Boiler #1 <i>propane</i>	PM	0.05	06-096 CMR 115, BACT

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

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1 <i>wood</i>	1.46	1.46	0.52	4.60	12.54	0.36
Boiler #1 <i>propane</i>	1.05	1.05	neg	3.00	1.73	0.23

- D. Visible emissions from Boiler #1 shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period except for periods of wood-fired startup and shutdown. [06-096 CMR 115, BACT]

- E. During periods of wood-fired startup or shutdown, visible emissions from Boiler #1 shall not exceed 30% on a (6) minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [06-096 CMR 115, BACT]
- F. UMF shall use an ESP to control PM emissions from Boiler #1 when firing wood except for periods of startup and shutdown. The ESP is not required to be operated during periods of operation when only propane is being fired in the boiler. UMF shall keep records of all dates and times when Boiler #1 is operated firing only propane. [06-096 CMR 115, BACT]
- G. NSPS (40 CFR Part 60, Subpart Dc) Requirements for Boiler #1

UMF shall comply with all requirements of 40 CFR Part 60, Subpart Dc applicable to Boiler #1 including, but not limited to, the following:

- 1. UMF shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 CFR §60.48c(a)]
- 2. UMF shall keep records of the amount of each fuel combusted in Boiler #1 during each calendar month. [40 CFR §60.48c(g)(2)]

H. Boiler MACT (40 CFR Part 63, Subpart JJJJJ) Requirements for Boiler #1 [incorporated under 06-096 CMR 115, BACT]

1. Emission Limits and Work Practice Standards

(a) Boiler #1 is subject to the following requirements:

	Operating Limitations
New biomass-fired boilers with heat input capacity between 10 and 30 MMBtu/hr (Boiler #1)	<ul style="list-style-type: none"> - Limit emissions of PM (filterable) to less than or equal to 0.070 lb/MMBtu except for periods of startup and shutdown (40 CFR Part 63, Subpart JJJJJ, Table 1); - Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. (40 CFR Part 63, Subpart JJJJJ, Table 2); - Maintain the 30-day rolling average total secondary electric power of the ESP at or above the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the ESP measured during the most recent performance stack test demonstrating compliance with the PM limit; (40 CFR Part 63, Subpart JJJJJ, Table 3);

	<p>- Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test. (40 CFR Part 63, Subpart JJJJJ, Table 3)</p>
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(b) Boiler Tune-Up Program

1. A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup. [40 CFR Part 63.11223]
2. Tune-ups for Boiler #1 shall be conducted every five years with no more than 61 months between tune-ups. [40 CFR Part 63.11223(c) and 40 CFR Part 63, Subpart JJJJJ, Table 2]
3. The boiler tune-up program shall be performed as specified below:
 - i. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 CFR Part 63.11223(b)(1) & (c)]
 - ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 - iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 CFR Part 63.11223(b)(3) & (c)]
 - iv. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 - v. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 - vi. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

4. Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:
 - i. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
 - ii. A description of any corrective actions taken as part of the tune-up of the boiler; and
 - iii. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.
[40 CFR §63.11223(b)(6)]

2. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)
 - i. UMF shall install, operate, and maintain a CPMS for Boiler #1.
[40 CFR §63.11222(a)]
 - ii. UMF shall establish a site specific minimum total secondary electric power operating limit per 40 CFR Part 63, Subpart JJJJJJ, Table 6.
 - iii. UMF shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) per 40 CFR Part 63, Subpart JJJJJJ, Table 6.
 - iv. UMF shall continuously monitor the total secondary electric power and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the minimum total secondary electric power per 40 CFR Part 63, Subpart JJJJJJ, Table 7.
 - v. UMF shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load per 40 CFR Part 63, Subpart JJJJJJ, Table 7.
 - vi. UMF shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 CFR §63.11224(c).
 - vii. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Boiler #1 is operating and firing wood except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. [40 CFR §63.11221(b)]
 - viii. The CPMS shall complete a minimum of one cycle of operation every 15 minutes. UMF shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour,

or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 CFR §63.11224(d)(1)]

- ix. UMF shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 CFR §63.11224(d)(2)]

3. Performance Tests

- (a) UMF shall conduct an initial performance test in accordance with 40 CFR Part 63, Subpart JJJJJ, Table 4 within 180 days of startup of Boiler #1. [40 CFR §63.11210(a) & (d)]
- (b) UMF shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 CFR §63.11212(c)]
- (c) UMF shall conduct a minimum of three separate test runs for each performance stack test. [40 CFR §63.11212(d)]
- (d) If the results of the performance stack test demonstrate emissions equal to or less than half of the PM emission limit (i.e. ≤ 0.035 lb/MMBtu), no further performance stack tests are required. [40 CFR §63.11220(b)]
- (e) If the results of the performance stack test demonstrate emissions greater than half of the PM emission limit (i.e. > 0.035 lb/MMBtu), UMF shall conduct triennial performance tests with no more than 37 months between tests. [40 CFR §63.11220(a)]

4. Notifications and Reports

UMF shall submit to EPA all reports required by 40 CFR Part 63, Subpart JJJJJ including, but not limited to, the following:

- (a) An Initial Notification submittal to EPA is due within 120 days after the source becomes subject to the standard. [40 CFR Part 63.11225(a)(2)]
- (b) A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 CFR §63.11225(a)(3)] UMF shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.
- (c) Within 60 days after the date of completing each performance test, UMF shall submit the results of the performance test to EPA's WebFIRE database. [40 CFR §63.11225(e)(1)] UMF shall also submit results to the Department in accordance with Standard Condition (11)(C) of air emission license A-603-71-I-R/A.
- (d) A Notification of Compliance Status shall be submitted to EPA no later than 60 days following the completion of the performance stack test. [40 CFR Part 63.11225(a)(4)] EPA requires submission of Notification of Compliance

Status reports for tune-ups through their electronic reporting system.
[63.11225(a)(4)(vi)]

(e) Compliance Reports

A compliance report shall be prepared by March 1st of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then the report must be submitted to the Department and to the EPA by March 15th. The report must include the items contained in §63.11225(b)(1) through (4), including the following: [40 CFR §63.11225(b)]

1. Company name and address;
2. A statement of whether the source has complied with all the relevant requirements of this Subpart;
3. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
4. The following certifications, as applicable:
 - i. "This facility complies with the requirements in 40 CFR §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 - ii. "No secondary materials that are solid waste were combusted in any affected unit."
 - iii. "This facility complies with the requirement in 40 CFR §§63.11214(d) to conduct a tune-up of each applicable boiler according to 40 CFR §63.11223(b)."
5. If the sources experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
6. The total fuel use by each affected boiler subject to an emission limit for each calendar month within the reporting period.

5. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]:

- (a) Copies of notifications and reports with supporting compliance documentation;
- (b) Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- (c) Records of monthly fuel use including the type(s) of fuel and amount(s) used;
- (d) Records of the occurrence and duration of each malfunction of each applicable boiler; and

- (e) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.
- (f) Records shall be in a form suitable and readily available for expeditious review.

(20) **Generator #1**

- A. Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115, BACT]
- B. UMF shall keep records that include maintenance conducted on Generator #1 and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. [06-096 CMR 115, BACT]
- C. If Generator #1 is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity, UMF shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [06-096 CMR 115, BACT]
- D. The fuel sulfur content for Generator #1 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BACT]
- E. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Generator #1	0.12	0.12	neg	4.32	0.93	0.34

- F. Visible emissions from Generator #1 shall not exceed 20% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [06-096 CMR 101]

G. Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity. [06-096 CMR 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 18 DAY OF May, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Patricia W. Aho
PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-603-71-I-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 3/23/15

Date of application acceptance: 3/23/15

Date filed with the Board of Environmental Protection:

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

