STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

Penobscot McCrum, LLC **Aroostook County** **Washburn, Maine** **A-465-71-J-R/A**	**Departmental** **Findings of Fact and Order** **Air Emission License** **Renewal with Amendment**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

Penobscot McCrum, LLC (McCrum) has applied to renew and amend their Air Emission License for the operation of emission sources associated with their potato processing facility.

The equipment addressed in this license is located at 2326 Parsons Road, Washburn, Maine.

McCrum has requested to amend their license with the addition of a new boiler designated as Boiler #2**.**

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers and Air Handling Units

Equipment	Max. Capacity (MMBtu/hr)	Fuel Type	Maximum Firing Rate	Date of Manuf.	Date of Install.
Boiler #1	42.0	Natural Gas	40,777 scf/hr	2019	2020
		Propane	459.0 gal/hr		
Boiler #2	3.1	Propane	33.8 gal/hr	2022	2022
		Digester Gas, 1,100 ppm H_2S	4,769 scf/hr		
AHU-02	3.8	Natural Gas	3,689 scf/hr	2019	2020
		Propane	41.5 gal/hr		
AHU-04	1.0	Natural Gas	971 scf/hr	2019	2020
		Propane	10.9 gal/hr		

Equipment	Max. Capacity (MMBtu/hr)	Fuel Type	Maximum Firing Rate	Date of Manuf.	Date of Install.
MAU-10	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.4 gal/hr		
MAU-11	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.4 gal/hr		
MAU-12	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.4 gal/hr		
MAU-13	2.92	Natural Gas	2,835 scf/hr	2019	2020
		Propane	31.9 gal/hr		
MAU-14	4.67	Natural Gas	4,536 scf/hr	2019	2020
		Propane	51.1 gal/hr		
DOAS-01	1.31	Natural Gas	1,274 scf/hr	2019	2020
		Propane	14.3 gal/hr		
Flare	3.90	Digester Gas, 1,100 ppm H_2S	6,000 scf/hr	2019	2019

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.
Fire Pump #1	5.8	distillate fuel, 0.0015 %	42	2019	2019

McCrum may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the link below.
http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf

Additionally, McCrum may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

Process Equipment

Equipment	Finished Product Production Rate	Pollution Control Equipment	Stack Height (ft)
Steam Peeler #1	28,060 lb/hr	Condenser	45
Dryer	23,947 lb/hr	--	45
Fryer	18,515 lb/hr	Venturi Scrubber	45

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) 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.

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 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 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Previous License (tpy)	Future License (tpy)	Net Change (tpy)	Significant Emission Levels
PM	14.3	14.3	0.0	100
PM_{10}	14.3	14.3	0.0	100
SO_2	5.1	5.5	0.4	100
NO_x	19	20.2	1.2	100
CO	16.6	17.8	1.2	100
VOC	4.7	4.9	0.2	100

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

E. Facility Classification

With the annual fuel limit on the Air Heaters and Boilers, and the operating hours restriction on the fire pump, the facility is licensed as follows:

- As a synthetic minor source of air emissions for NO_x, because McCrum is subject to license restrictions that 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 new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

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. Process Description

McCrum is a potato processing facility which produces prepared and frozen potato products for retail and service markets. Raw potatoes are delivered into the facility by truck. Before processing, the potatoes are sent through rock traps to remove any rocks and other large foreign materials and through brushes to wash and remove soil. The washed potatoes are then steam peeled, scrubbed, and conveyed by water to a trim room for removal of undesirable portions for rejection. Prior to moving to the cutter deck, the potatoes are pre-heated to minimize shattering during the cutting process.

Following cutting, the potatoes are fed through automatic defect removers and then move through the Reyco DynaVac System to remove moisture from the potatoes, then onto the

Dryer which will remove excess moisture and set the starches prior to the potatoes being fried in vegetable oil in the Fryer. Following frying, the potatoes are frozen and packaged.

McCrum operates a wastewater treatment facility which includes an anaerobic digester designed to anaerobically digest process wastewater from the potato processing facility. The digester produces stabilized digestate which is aerated and stored to be used for irrigation and/or snowmaking. The Digester generates biogas (a.k.a., digester gas) which is sent to an open flare or Boiler #2 for combustion.

C. Annual Fuel Limit

To maintain the facility as a minor source of criteria pollutants, McCrum shall be limited to an annual facility wide heat input limit of 273,000 MMBtu for propane and natural gas, combined. This facility-wide limit does not include the digester gas used in the Flare and Boiler #2, and it does not include the distillate fuel used in Fire Pump #1.

Heat values of 0.00103 MMBtu/scf for natural gas and 0.0915 MMBtu/gal for propane shall be used for calculating the total heat input.

D. Boilers

McCrum operates Boiler #1 for steam and heat. The boiler is rated at 42.0 MMBtu/hr and fires natural gas or propane. The boiler was installed in 2020 and exhausts through its own stack.

Boiler #2 is a new unit that will be installed in 2022 and is rated at 3.1 MMBtu/hr firing both propane and digester gas and will be used for producing hot water. Boiler #2 also exhausts through its own stack.

1. BPT Findings (Boiler #1)

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

Natural Gas

PM/PM_{10}	–	0.01 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BPT

Propane

PM/PM_{10}	–	0.01 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.0005 lb/MMBtu based on vendor data
NO_x	–	0.049 lb/MMBtu (~ 35 ppm) based on vendor data
CO	–	7.5 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
VOC	–	1 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
Visible Emissions	–	06-096 C.M.R. ch. 115, BPT

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

Unit	Pollutant	lb/MMBtu
Boiler #1 Natural Gas	PM	0.01
Boiler #1 Propane	PM	0.01

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1 Natural Gas	0.42	0.42	0.02	1.51	3.43	0.22
Boiler #1 Propane	0.42	0.42	0.02	2.06	3.44	0.46

2. BACT Findings (Boiler #2)

Following is a BACT analysis for control of emissions from Boiler #2.

a. Particulate Matter (PM, PM_{10})
McCrum has proposed to burn only low-ash content fuels (propane and digester gas) in the boiler and to ensure proper combustion by following maintenance practices recommended by the manufacturer. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM_{10} emissions from Boiler #2 is the use of propane and digester gas, proper operation and maintenance, and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
McCrum has proposed to fire only propane and digester gas. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible.

BACT for SO_2 emissions from Boiler #2 is the use of propane and digester gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

McCrum considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, flue gas recirculation (FGR), the use of high efficiency boilers to reduce fuel usage, and use of a modulating burner system.

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x. However, they have a negative environmental impact of emissions of unreacted ammonia. In addition, due to the initial capital cost and the annual operating costs, these systems are typically only considered cost effective for units larger than Boiler #2.

Water/steam injection and FGR have similar NO_x reduction efficiencies. However, water/steam injection results in reduced boiler efficiency of approximately 5%.

A modulating burner system varies the fuel and air admittance rates into the burner to optimize the air-to-fuel ratio. The use of a high efficiency multi-pass heat exchanger in the boiler design will reduce the total amount of fuel used, thus reducing the total fuel burned and emissions produced. The use of a modulating burner and a high efficiency heat exchanger system on Boiler #2 has been determined to be feasible and has been selected as part of the BACT strategy.

BACT for NO_x emissions from Boiler #2 is firing propane and digester gas, the use a modulating burner and a high efficiency heat exchanger system, and the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

McCrum considered several control strategies for the control of CO and VOC including oxidation catalysts, thermal oxidizers, and use of a modulating burner system.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the boiler in question. These controls were determined to not be economically feasible.

A modulating burner system varies the fuel and air admittance rates into the burner to optimize the air-to-fuel ratio. The use of a modulating burner system has been determined to be feasible and has been selected as part of the BACT strategy for Boiler #2.

BACT for CO and VOC emissions from Boiler #2 is firing propane and digester gas, the use of a modulating burner system, and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Boiler #2 were based on the following:

Digester Gas

PM/PM_{10}	–	0.01 lb/MMBtu, 06-096 C.M.R. ch. 115, BACT
SO_2	–	based on firing digester gas with a maximum H_2S content of 1,100 ppm
NO_x	–	0.154 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	0.129 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	0.008 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

Propane

PM/PM_{10}	–	0.01 lb/MMBtu, 06-096 C.M.R. ch. 115, BACT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boiler #2 are the following:

Unit	Pollutant	lb/MMBtu
Boiler #2 Digester Gas	PM	0.01
Boiler #2 Propane	PM	0.01

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #2 Digester Gas	0.03	0.03	0.98	0.48	0.40	0.03
Boiler #2 Propane	0.03	0.03	0.01	0.44	0.25	0.03

3. Visible Emissions

   Visible emissions from Boilers #1 and #2 shall each not exceed 10% opacity on a six-minute block average basis.

4. Periodic Monitoring

   Periodic monitoring for Boiler #1 and Boiler #2 shall include recordkeeping to document propane and natural gas use on a facility-wide monthly and calendar year total basis.

   To document compliance with the facility-wide annual heat input limit, McCrum shall calculate the monthly heat input as follows:

$$monthly\ heat\ input = propane \frac{gallons}{month} * 0.0915 \frac{MMBtu}{gallon} + natural\ gas \frac{scf}{month} * 0.00103 \frac{MMbtu}{scf}$$

5. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

   Due to the size and year of manufacture, Boiler #1 is subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

   Due to its size, Boiler #2 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

   McCrum shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boiler #1 including, but not limited to, the following:

   a. Notifications
      McCrum 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 C.F.R. § 60.48c(a)]

   b. Reporting and Recordkeeping

      (1) McCrum shall maintain records of the amounts of each fuel combusted in Boiler #1 with monthly records and fuel certifications. [40 C.F.R. § 60.48c(g) and 40 C.F.R. § 60.42c(h)]

(2) Fuel certifications shall include the following:

(a) Name of the supplier of the fuel;
(b) The potential sulfur emissions rate; and
(c) The method used to determine the potential sulfur emissions rate of the fuel.

[40 C.F.R. § 60.48c(f)(4)]

(3) The following address for EPA shall be used for any reports or notifications required to be copied to them:

U.S. Environmental Protection Agency, Region I
5 Post Office Square, Suite 100 (OES04-2)
Boston, MA 02109-3912
Attn: Air Compliance Clerk

6. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

Boilers #1 and #2 are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ. Because the units fire exclusively gaseous fuels, they are considered new, gas fired boilers and are therefore exempt from the requirements of Subpart JJJJJJ. [40 C.F.R. § 63.11195 and § 63.11237]

E. Make-up Air and Air Handling Units

McCrum has installed Air Handling Units (AHU) for chilling and cooling; Make-Up Air Units (MAU), which are hot-coil heat exchanger air handlers; and a Dedicated Outside Air Unit (DOAU), which filters and heats ventilation air. The term "Air Units" will be used to reference the AHU, MAU, and DOAU as a group.

The Air Units addressed in this license are as follows:

Equipment	Max. Capacity (MMBtu/hr)	Fuel Type	Maximum Firing Rate	Date of Manuf.	Date of Install.
AHU-02	3.8	Natural Gas	3,689 scf/hr	2019	2020
		Propane	41.5 gal/hr		
AHU-04	1.0	Natural Gas	971 scf/hr	2019	2020
		Propane	10.9 gal/hr		
MAU-10	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.3 gal/hr		
MAU-11	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.3 gal/hr		

Equipment	Max. Capacity (MMBtu/hr)	Fuel Type	Maximum Firing Rate	Date of Manuf.	Date of Install.
MAU-12	4.24	Natural Gas	4,118 scf/hr	2019	2020
		Propane	46.3 gal/hr		
MAU-13	2.92	Natural Gas	2,835 scf/hr	2019	2020
		Propane	31.9 gal/hr		
MAU-14	4.67	Natural Gas	4,536 scf/hr	2019	2020
		Propane	51.0 gal/hr		
DOAS-01	1.31	Natural Gas	1,274 scf/hr	2019	2020
		Propane	14.3 gal/hr		

1. BPT Findings

The BPT emission limits for the Air Units are based on the following:

Natural Gas

PM/PM_{10}	–	0.01 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 115, BPT

Propane

PM/PM_{10}	–	0.01 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.054 lb/1000 gal based on AP-42
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 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
Visible Emissions	–	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for the Air Units are the following when firing either natural gas or propane:

Unit	Pollutant	lb/MMBtu
AHU-02	PM	0.01
MAU-10	PM	0.01
MAU-11	PM	0.01
MAU-12	PM	0.01
MAU-14	PM	0.01

The BPT emission limits for the Air Units firing natural gas are as follows:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
AHU-02	0.04	0.04	0.01	0.37	0.31	0.04
AHU-04	0.01	0.01	0.01	0.10	0.08	0.01
MAU-10	0.04	0.04	0.01	0.41	0.35	0.02
MAU-11	0.04	0.04	0.01	0.41	0.35	0.02
MAU-12	0.04	0.04	0.01	0.41	0.35	0.02
MAU-13	0.03	0.03	0.01	0.28	0.24	0.02
MAU-14	0.05	0.05	0.01	0.45	0.38	0.02
DOAS-01	0.01	0.01	0.01	0.13	0.11	0.01

The BPT emission limits for the Air Units firing propane are as follows:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
AHU-02	0.04	0.04	0.01	0.54	0.31	0.04
AHU-04	0.01	0.01	0.01	0.14	0.08	0.01
MAU-10	0.04	0.04	0.01	0.60	0.35	0.05
MAU-11	0.04	0.04	0.01	0.60	0.35	0.05
MAU-12	0.04	0.04	0.01	0.60	0.35	0.05
MAU-13	0.03	0.03	0.01	0.41	0.24	0.03
MAU-14	0.05	0.05	0.01	0.66	0.38	0.05
DOAS-01	0.01	0.01	0.01	0.19	0.11	0.01

2. Visible emissions from each of the Air Units shall not exceed 10% opacity on a six-minute block average basis.

3. Periodic Monitoring

   Periodic monitoring for the Air Units shall include recordkeeping to document propane and natural gas use on a facility-wide monthly and calendar year total basis.

   To document compliance with the facility-wide annual heat input limit, McCrum shall calculate the monthly heat input as follows:

$$monthly\ heat\ input = propane \frac{gallons}{month} * 0.0915 \frac{MMBtu}{gallon} + natural\ gas \frac{scf}{month} * 0.00103 \frac{MMbtu}{scf}$$

4. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

   Due to their size and the fact that they do not generate steam, the Air Units are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional*

Steam Generating Units 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

5. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

   The Air Units are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ. Because the units do not heat water, they are not considered boilers. [40 C.F.R. § 63.11193]

F. Fire Pump #1

McCrum operates a fire pump, Fire Pump #1. Fire Pump #1 has an engine rated at 5.8 MMBtu/hr which fires distillate fuel. The fire pump was manufactured in 2019.

1. BPT Findings

The BPT emission limits for Fire Pump #1 are based on the following:

PM/PM_{10}	- 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
SO_2	- combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO_x	- 3.2 lb/MMBtu from AP-42 dated 10/96
CO	- 0.85 lb/MMBtu from AP-42 dated 10/96
VOC	- 0.09 lb/MMBtu from AP-42 dated 10/96
Visible Emissions	- 06-096 C.M.R. ch. 115, BPT

The BPT emission limits for Fire Pump #1 are the following:

Unit	Pollutant	lb/MMBtu
Fire Pump #1	PM	0.12

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #1	0.70	0.70	0.01	18.56	4.93	0.52

Visible emissions from Fire Pump #1 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time McCrum may comply with the following work practice standards in lieu of the numerical visible emissions standard.

a. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.

b. Operate the engine in accordance with the manufacturer's emission-related operating instructions.

c. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.

d. Operate the engine, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

2. Chapter 169

Fire Pump #1 was licensed prior to the effective date of *Stationary Generators*, 06-096 C.M.R. ch. 169 and is therefore exempt from this rule pursuant to section 3(B).

3. New Source Performance Standards

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Fire Pump #1 since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart IIII, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart

IIII, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

b. 40 C.F.R. Part 60, Subpart IIII Requirements

(1) Manufacturer Certification Requirement
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)]

(2) Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. McCrum may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(5) Annual Time Limit for Maintenance and Testing
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

(6) Initial Notification Requirement
No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for emergency engines. [40 C.F.R. § 60.4214(b)]

(7) Recordkeeping
McCrum shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

G. Process Equipment

McCrum's process line consists of a Kiremko Strata Steam Peeler (Steam Peeler #1), a Reyco DynaVac System, a Dryer, and a Kiremko two-stage fryer (Fryer).

1. Steam Peeler #1

Steam Peeler #1 is designed to provide optimum peel removal performance with minimum use of steam. The vessel is fitted with a steam dividing and condensate removal system. The condensate collection tank is mounted on the outside of the vessel. The steam condenser condenses the steam by spraying cooler water on the exhaust, changing the steam to hot water which can be re-used in other parts of the fry line. The condenser lowers the moisture in the exhaust by 80-90% and, in turn, reduces entrained PM.

McCrum shall operate the condenser on the steam peeler whenever the steam peeler is in operation and maintain it in accordance with manufacturer's recommendations.

2. Reyco DynaVac System

Following the steam peeler and the scrubbing, trimming, preheating, and cutting processes is a Reyco DynaVac System which consists of a blower that draws a vacuum through multiple suction plenums. The Reyco DynaVac System removes moisture from the product, in this case the fries or wedges. By removing this surface water from product, there will be less water to be evaporated in the Dryer. Moisture in the exhaust of the Reyco DynaVac System is condensed and reused. The Reyco DynaVac System does not exhaust outside the building; thus, it has no emission limits. A description of this system is included here for completeness purposes only.

3. Dryer

The Dryer removes excess moisture and sets the starches prior to the potatoes being fried in vegetable oil in the Fryer.

A dryer emission factor of 0.246 lb PM/ton of finished product was developed based on a series of 4 stack tests conducted at dryers at potato processing facilities from 1994-1997. Based on this emission factor, the PM emission limit from the Dryer is 2.95 lb/hr at a production rate of 23,947 lb of finished product per hour.

To stay below the $PM_{2.5}$ modeling threshold level of 15 tons per year, the annual Dryer production rate has been limited to 89,650 tons of finished product per year. This is based on operation at maximum production for 24 hours per day and 6 days per week.

The following was determined to be BACT for the Dryer in Air Emission License A-465-71-H-A (August 15, 2019):

a. McCrum shall be limited to a PM emission rate of 2.95 lb/hr from the Dryer.
b. McCrum shall maintain records of monthly production (tons of finished product) for the Dryer.
c. McCrum shall be limited to 89,650 tons of finished product per year from the Dryer. This will be recorded on a monthly and calendar year basis.
d. Visible emissions from the Dryer stack shall not exceed 20% opacity on a six-minute block average basis.

4. Fryer

Potatoes leaving the Dryer are then fried in the 2-stage Kiremko Fryer. Emissions from the Fryer consist of particulate matter, condensable organic particulate matter, and filterable particulate matter. Volatile organic compounds are also emitted from the Fryer.

McCrum controls particulate matter from the Fryer with a venturi scrubber providing over 90% a removal efficiency for PM. The scrubber has a removal efficiency of 98% for $PM_{2.5}$ and over 99% a removal efficiency for PM_{10} and larger. A 98% a removal efficiency was used for PM emission calculations from this unit. The EPA AP-42 emission factor for uncontrolled PM from this process is 2 lb PM/ton of finished product. At 98% a removal efficiency, this results in an estimated emission rate of 0.37 lb PM/hr exiting the scrubber.

EPA's AP-42 provides a VOC emission factor of 0.02 lb/ton for deep fat fryers. A finished product rate of 18,515 lb/hr out of the Fryer results in 0.185 lb/hr of VOC emissions.

The use of a venturi scrubber was determined to be BACT for PM emissions from the Fryer in Air Emission License A-465-71-H-A (August 15, 2019). Emissions from the Fryer shall not exceed 0.37 lb PM/hr and 0.185 lb VOC/hr.

Periodic Monitoring

a. McCrum shall operate and maintain the venturi scrubber on the Fryer in good working order and in accordance with manufacturer's specifications. The venturi scrubber shall be operated at all times the Fryer is in use and shall be operated at a 12" water gauge pressure drop or greater to provide a 98% PM removal efficiency. Scrubber pressure drop readings shall be recorded once per shift.
b. McCrum shall record the date, time, duration, and the reason for all venturi scrubber downtime when the Fryer is in operation.
c. McCrum shall maintain a written or electronic log detailing all maintenance and any malfunctions on the venturi scrubber.
d. McCrum shall maintain record of monthly production (tons of finished product) for the Fryer line.

e. McCrum shall record the hours of operation for the Fryer line on a monthly basis. [06-096 C.M.R. ch.115, BPT]

H. Digester and Flare

McCrum operates a Digester for wastewater treatment at their facility The process has a design rate of 225,000 gallons per day. Screened, temperature-adjusted wastewater is pumped from an influent equalization tank to the ADI-BVF® reactor, an anerobic digester system.

The Digester uses a low-rate, up-flow, aerobic sludge blanket process. The wastewater enters the sludge bed, where anaerobic micro-organisms digest the biodegradable organics, converting the majority of the influent load to biogas (referred to in this license as digester gas) and producing a minimal amount of biological sludge. The Digester effluent is discharged for treatment into two lined, aerated lagoons in series and then moved to a storage lagoon sized to accommodate two months of flow. Effluent from the storage lagoon will be utilized for irrigation and snow making.

The digester gas generated from the anaerobic digestion process is collected underneath the floating, insulated geomembrane cover, which allows the reactor to operate under a slight vacuum and provides temperature and odor control. The digester gas blower will convey the digester gas from the system to an open flare or to Boiler #2 for combustion.

The anaerobic digestion process includes the creation of digester gas that will be burned in a flare or Boiler #2. The maximum heat input capacity of the Flare is 3.9 MMBtu/hr, based on the maximum flare blower output of 100 scfm.

The regulated pollutants emitted from the Digester and Flare are PM, PM_{10}, SO_2, NO_x, CO, VOC, and HAP.

1. BPT Findings

a. BPT Emission Limits

The BPT emission limits for the Digester and Flare are based on the following:

PM/PM_{10}	- 0.017 lb/MMBtu based on vendor data
SO_2	- 1.15 lb/hr based on H_2S concentration on 1,100 ppm
NO_x	- 0.068 lb/MMBtu from AP-42 Table 13.5-1 dated 2/18
CO	- 0.31 lb/MMBtu from AP-42 Table 13.5-1 dated 2/18
VOC	- 0.14 lb/MMBtu from AP-42 Table 13.5-1 dated 2/18
Visible Emissions	- 06-096 C.M.R. ch. 115, BPT

Emissions from the Flare shall not exceed the following limits:

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare	0.07	0.07	1.15	0.27	1.21	0.55

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

2. Operational Requirements

a. The Flare shall combust Digester gas whenever the Digester is in operation and producing gases and when Boiler #2 is not consuming the entirety of the digester gas that is produced by the Digester.
b. McCrum shall properly install, operate, and maintain a device to continuously monitor the Flare pilot light when the Flare is operational. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with manufacturer's recommendations, instructions, and operating manuals.
c. McCrum shall monitor for the continuous presence of flame. McCrum shall maintain records of all periods of operation during which the flame of the Flare was absent. Documentation shall include specifics of calibrations and audits.
d. McCrum shall monitor gas flow rate to the Flare or Boiler #2 and record a gas flow with a standard cubic feet per minute digital totalizer and a paper or electronic recording device. The gas flow rate to the Flare shall be measured and recorded at least every 15 minutes.
e. McCrum is limited to an annual total of flaring and/or combusting 52.6 million cubic feet of digester gas.
f. McCrum shall maintain records indicating all routine and non-routine maintenance on the Flare.
g. McCrum shall test the Flare inlet gas for H_2S, using a Draeger Tube or other method approved by the Department, on an annual basis. If H_2S is greater than 1,100 ppmv, the reading shall be reported to the Department within 2 working days of testing; otherwise, McCrum shall maintain records in accordance with Standard Condition (8).

3. Periodic Monitoring

McCrum shall monitor and record the following periodic monitors for the Flare:
a. Date, time, and duration of any downtime for the Flare. Flare downtime shall be totaled on a monthly basis.
b. Standard cubic feet of digester gas flared on a monthly and calendar year total basis.

c. Presence of flame at the Flare measured continuously. Any faults or alarms indicating pilot failure shall be recorded in a log including the date, time, reason, and action taken.

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

I. Parts Washer

McCrum uses a parts washer containing VOC-exempt solvent cleaners. McCrum uses solvent cleaners QSOL 220 and QSOL 300 which are formulated with parachlorobenzotrifluoride (PCBTF) or decamethylcyclopentasiloxane, respectively. Both are VOC-exempt solvents as defined in 06-096 C.M.R. 100, *Definitions Regulation,* thus not subject to 06-096 C.M.R. ch. 130, *Solvent Cleaners.*

J. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.

K. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis.

L. 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:

- A facility-wide heat input limit of 273,000 MMBtu/yr based on heat content values of 0.00103 MMBtu/scf for natural gas and 0.0915 MMBtu/gal for propane.
- The worst-case emissions scenario for Boiler #1 and the Air Units is based on the licensed Air Units in operation 8,760 hours/year while firing propane.
- Operating Fire Pump #1 for 100 hrs/yr;
- Annual Dryer production limit of 89,650 tons of finished product per year; and
- Flare and Boiler #2 inlet gas H_2S concentration of 1,100 ppmv and 100 scfm gas flow.

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

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

	PM	PM_{10}	SO_2	NO_x	CO	VOC
Boilers and Air Heaters	1.37	1.37	0.08	17.46	11.19	1.64
Fire Pump #1	0.01	0.01	0.00	0.39	0.10	0.01
Digester Gas Usage in Boiler #2 and Flare	0.20	0.20	5.34	2.33	6.41	2.39
Dryer	11.04	11.04	--	--	--	--
Fryer	1.62	1.62	--	--	--	0.81
Total TPY	**14.3**	**14.3**	**5.5**	**20.2**	**17.8**	**4.9**

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

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:

Pollutant	Tons/Year
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.

This determination is based on information provided by the applicant regarding the expected construction and operation of the proposed emission units. 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 McCrum 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-465-71-J-R/A 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 commencing 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) **Fuel**

A. The facility-wide heat input shall not exceed 273,000 MMBtu/yr based on the firing of propane and natural gas in Boiler #1, Boiler #2, and the licensed Air Units. (A heat value of 0.00103 MMBtu/scf for natural gas and 0.0915 MMBtu/gal for propane shall be used for calculating the total heat input).
[006-096 C.M.R. ch. 115, BPT]

B. Compliance shall be demonstrated by fuel records showing the quantity of fuel purchased or used. Records of fuel use shall be kept on a monthly and calendar year total basis. [06-096 C.M.R. ch. 115, BPT]

C. Monthly heat input shall be calculated as follows:

$$monthly\ heat\ input = propane \frac{gallons}{month} * 0.0915 \frac{MMBtu}{gallon} + natural\ gas \frac{scf}{month} * 0.00103 \frac{MMbtu}{scf}$$

[006-096 C.M.R. ch. 115, BPT]

(18) **Boilers**

A. Fuel

1. Boiler #1 is licensed to fire natural gas and propane. [06-096 C.M.R. ch. 115, BPT]

2. Boiler #2 is licensed to fire propane and digester gas. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1 Natural Gas	PM	0.01	06-096 C.M.R. ch. 115, BPT
Boiler #1 Propane	PM	0.01	06-096 C.M.R. ch. 115, BPT
Boiler #2 Digester Gas	PM	0.01	06-096 C.M.R. ch. 115, BACT
Boiler #2 Propane	PM	0.01	06-096 C.M.R. ch. 115, BACT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT/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 Natural Gas	0.42	0.42	0.02	1.51	3.43	0.22
Boiler #1 Propane	0.42	0.42	0.02	2.06	3.44	0.46
Boiler #2 Digester Gas	0.03	0.03	0.98	0.48	0.40	0.03
Boiler #2 Propane	0.03	0.03	0.01	0.44	0.25	0.03

D. Visible emissions from Boilers #1 and #2 shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT/BACT]

E. McCrum shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boiler #1 including, but not limited to, the following:

1. Notification

   McCrum 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 C.F.R. § 60.48c(a)]

2. Reporting and Recordkeeping

   McCrum shall maintain records of the amounts of each fuel combusted during each day or, if applicable, monthly records with fuel certifications.
   [40 C.F.R. § 60.48c(g)]

(19) **Make-up Air and Air Handling Units**

A. The Air Units are licensed to fire natural gas and propane.
[06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following when firing natural gas or propane: [06-096 C.M.R. ch. 115, BPT]

Unit	Pollutant	lb/MMBtu
AHU-02	PM	0.01
MAU-10	PM	0.01
MAU-11	PM	0.01
MAU-12	PM	0.01
MAU-14	PM	0.01

C. Emissions shall not exceed the following when firing natural gas: [06-096 C.M.R. ch. 115, BPT]

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
AHU-02	0.04	0.04	0.01	0.37	0.31	0.04
AHU-04	0.01	0.01	0.01	0.10	0.08	0.01
MAU-10	0.04	0.04	0.01	0.41	0.35	0.02
MAU-11	0.04	0.04	0.01	0.41	0.35	0.02
MAU-12	0.04	0.04	0.01	0.41	0.35	0.02
MAU-13	0.03	0.03	0.01	0.28	0.24	0.02
MAU-14	0.05	0.05	0.01	0.45	0.38	0.02
DOAS-01	0.01	0.01	0.01	0.13	0.11	0.01

D. Emissions shall not exceed the following when firing propane: [06-096 C.M.R. ch. 115, BPT]

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
AHU-02	0.04	0.04	0.01	0.54	0.31	0.04
AHU-04	0.01	0.01	0.01	0.14	0.08	0.01
MAU-10	0.04	0.04	0.01	0.60	0.35	0.05
MAU-11	0.04	0.04	0.01	0.60	0.35	0.05
MAU-12	0.04	0.04	0.01	0.60	0.35	0.05
MAU-13	0.03	0.03	0.01	0.41	0.24	0.03
MAU-14	0.05	0.05	0.01	0.66	0.38	0.05
DOAS-01	0.01	0.01	0.01	0.19	0.11	0.01

E. Visible emissions from each of the Air Units when firing either propane or natural gas shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(20) **Fire Pump #1**

A. Fire Pump #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BPT/BACT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Fire Pump #1	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT/BACT]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #1	0.70	0.70	0.01	18.56	4.93	0.52

D. Visible Emissions

Visible emissions from Fire Pump #1 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time McCrum may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101, § 3(A)(4)]

1. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.

2. Operate Fire Pump #1 in accordance with the manufacturer's emission-related operating instructions.

3. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.

4. Operate Fire Pump #1, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

E. Fire Pump #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following: [incorporated under 06-096 C.M.R. ch. 115, BPT]

1. Manufacturer Certification
   The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in § 60.4202.
   [40 C.F.R. § 60.4205(b)]

2. Ultra-Low Sulfur Fuel
   The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired.
   [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115, BPT]

3. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

4. Annual Time Limit for Maintenance and Testing
   a. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours.
      [40 C.F.R. § 60.4211(f) and 06-096 C.M.R. ch. 115, BPT]

   b. McCrum shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance
   The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. McCrum may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(21) **Process Equipment**

A. Steam Peeler #1

1. McCrum shall operate the condenser on the steam peeler whenever the steam peeler is in operation and maintain it in accordance with manufacturer's recommendations.

2. McCrum shall maintain a written or electronic log detailing all maintenance and any malfunctions on the Steam Peeler #1 condenser.

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

B. Dryer

1. McCrum shall be limited to 89,650 tons of finished product per year from the Dryer.

2. McCrum shall maintain records of monthly and annual production (tons of finished product) for the Dryer. [06-096 C.M.R. ch. 115, BPT]

3. PM emissions from the Dryer shall not exceed the following:

Pollutant	Emission Rate (lb/hr)
PM	2.95

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

4. Visible emissions from the Dryer shall not exceed 20% opacity based on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

C. Fryer

1. Emissions from the Fryer shall not exceed the following:

Pollutant	Emission Rate (lb/hr)
PM	0.37
VOC	0.185

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

2. McCrum shall operate and maintain, in good working order and in accordance with manufacturer's specifications, the venturi scrubber on the Fryer. The venturi scrubber shall be operated at all times the Fryer is in use and shall be operated at a 12" water gauge pressure drop or greater to provide a 98% PM removal efficiency. Scrubber pressure drop readings shall be recorded once per shift.
[06-096 C.M.R. ch. 115, BPT]

3. Periodic Monitoring

   a. McCrum shall record the date, time, duration, and the reason for all venturi scrubber downtime when the Fryer is in operation.
   b. McCrum shall maintain a written or electronic log detailing all maintenance and any malfunctions on the venturi scrubber.
   c. McCrum shall maintain record of monthly production (tons of finished product) for the Fryer line.

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

(22) **Flare**

A. McCrum is licensed to operate a digester gas flare (Flare) with a heat input capacity of 3.9 MMBtu/hr. [06-096 C.M.R. ch. 115, BPT]

B. McCrum is licensed to burn natural gas and propane as a continuous pilot light for the Flare. [06-096 C.M.R. ch. 115, BPT]

C. McCrum is limited to an annual total of flaring and/or combusting 52.6 million cubic feet of digester gas. [06-096 C.M.R. ch. 115, BPT]

D. Flare Emission Limits

1. Emissions from the Flare shall not exceed the following limits:

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare	0.07	0.07	1.15	0.27	1.21	0.55

Visible emissions from the Flare shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

2. Operational Requirements

   a. The Flare shall combust digester gas whenever the Digester is producing gases and Boiler #2 is not consuming the entirety of the digester gas.
   b. McCrum shall properly install, operate, and maintain a device to continuously monitor the Flare pilot light when the Flare is operational. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained

in accordance with manufacturer's recommendations, instructions, and operating manuals.

c. McCrum shall monitor for the continuous presence of flame. McCrum shall maintain records of all periods of operation during which the flame of the Flare was absent. Documentation shall include specifics of calibrations and audits.
d. McCrum shall monitor gas flow rate to the Flare and Boiler #2 and record a gas flow with a standard cubic feet per minute digital totalizer and a paper or electronic recording device. The gas flow rate to the Flare shall be measured and recorded at least every 15 minutes.
e. McCrum shall maintain records indicating all routine and non-routine maintenance on the Flare.
f. McCrum shall test the Flare inlet gas for H_2S, using a Draeger Tube or other method approved by the Department, on an annual basis. If H_2S is greater than 1,100 ppmv, the reading shall be reported to the Department within 2 working days of testing, otherwise, McCrum shall maintain records in accordance with Standard Condition (8).

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

3. McCrum shall monitor and record the following periodic monitors for the Flare:
   a. Date, time, and duration of any downtime for the Flare. Flare downtime shall be calculated on a monthly basis.
   b. Standard cubic feet of digester gas flared on a monthly and calendar year total basis.
   c. Presence of flame at the Flare measured continuously. Any faults or alarms indicating pilot failure shall be recorded in a log including the date, time, reason, and action taken.

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

(23) **Parts Washers**

McCrum shall keep records including Safety Data Sheets to demonstrate use of VOC-exempt solvents in its parts washers. If McCrum stops using VOC-exempt solvents, McCrum shall determine if the new solvents are subject to 06-096 C.M.R. ch. 130, and if the solvents are subject, McCrum shall meet the requirements of 06-096 C.M.R. ch. 130.

(24) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.
[06-096 C.M.R. ch. 115, BPT]

(25) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(26) If the Department determines that any parameter value pertaining to construction and operation of the proposed 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, McCrum may be required to submit additional information. Upon written request from the Department, McCrum shall provide information necessary to demonstrate ambient air quality standards (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 2nd DAY OF DECEMBER, 2022.

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: 8/17/22
Date of application acceptance: 8/24/22

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

FILED

DEC 02, 2022

State of Maine
Board of Environmental Protection