



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

DEPARTMENT ORDER

**Penobscot McCrum, LLC**  
**Waldo County**  
**Belfast, Maine**  
**A-830-71-F-A**

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

**FINDINGS OF FACT**

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

**I. REGISTRATION**

**A. Introduction**

Penobscot McCrum, LLC (McCrum) has applied for an Air Emission License amendment for the operation of emission sources associated with their potato process facility.

McCrum has requested an amendment to their license in order to do the following:

- Remove distillate fuel as a licensed fuel for Boiler #1.
- Remove the Solvent Degreaser/Parts Washer.
- Add an Electric Fryer that was not previously licensed.
- Update of Visible Emissions language for Boiler #1.

The equipment addressed in this license amendment is located at 28 Pierce Street, Belfast, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license amendment:

**Process Equipment**

| <b><u>Equipment</u></b> | <b><u>Production Rate</u></b> | <b><u>Pollution Control Equipment</u></b> | <b><u>Stack #</u></b> |
|-------------------------|-------------------------------|---|-----------------------|
| Sandvick Electric Fryer | 5,500 lbs/hr                  | Mesh Pad<br>Mist Eliminator               | 4                     |

**Boilers**

| <u>Equipment</u> | <u>Max. Capacity<br/>(MMBtu/hr)</u> | <u>Maximum<br/>Firing Rate</u> | <u>Fuel Type,<br/>% sulfur</u> | <u>Date of<br/>Install.</u> | <u>Stack #</u> |
|------------------|-------------------------------------|--------------------------------|--------------------------------|-----------------------------|----------------|
| Boiler #1        | 4.2                                 | 30 gal/hr                      | Distillate Fuel, 0.5%          | 2012                        | 1              |
|                  |                                     | 4,064 scf/hr                   | Natural Gas                    | 2012                        |                |

**C. Application Classification**

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

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:

| <u>Pollutant</u> | <u>Current License<br/>(TPY)</u> | <u>Future License<br/>(TPY)</u> | <u>Net Change<br/>(TPY)</u> | <u>Significant<br/>Emission Levels</u> |
|------------------|----------------------------------|---------------------------------|-----------------------------|--|
| PM               | 2.9                              | 14.1                            | 11.2                        | 100                                    |
| PM <sub>10</sub> | 2.9                              | 14.1                            | 11.2                        | 100                                    |
| SO <sub>2</sub>  | 9.3                              | 0.1                             | -9.2                        | 100                                    |
| NO <sub>x</sub>  | 5.4                              | 5.4                             | 0                           | 100                                    |
| CO               | 3.8                              | 3.8                             | 0                           | 100                                    |
| VOC              | 0.4                              | 0.4                             | 0                           | 50                                     |
| CO <sub>2e</sub> | <100,000                         | <100,000                        | <100,000                    | 100,000                                |

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

**D. Facility Classification**

The facility is licensed as follows:

- As a natural minor source of air emissions, because facility emissions cannot exceed 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. Electric Fryer

McCrum operates an Electric Fryer for frying potato products such as potato wedges, fries, potato skins, etc. with a maximum throughput capacity of 5,500 lb/hr. The potato product is automatically moved through an Electric Fryer, containing vegetable oil, on a mesh belt. Upon exiting the fryer, the product is conveyed to a spiral freezer where it is cooled to between 10° - 27° Fahrenheit and prepared for packaging.

#### 1. VOC

Although VOCs are produced in deep fat frying, they are not a significant percentage of the total emissions resulting from frying because of the low vapor pressure of the vegetable oils used. This is based on EPA policy memorandums and tests conducted by both EPA and Frito-Lay, determining that condensable organic particulate emissions are released during frying, not VOCs. Therefore, VOC emissions from the fryer are considered to be negligible.

#### 2. PM

Emissions from the Electric Fryer are condensable organic and filterable particulate matter and are controlled using a mesh pad mist eliminator by trapping oil droplets from the electric fryer.

Vapors from the Electric Fryer are collected using a Greenheck CUBE-240XP-20 centrifugal roof exhaust variable speed fan equipped with a 1200 cfm blower. The fan is adjusted manually based on the amount of gas being collected from the fryer. The vapors collected are passed through the mesh pad mist eliminator which is approximately 8 inches thick and 14 x 14 inches square.

For calculating the annual air licensing fee, emission factors from AP-42, Table 9.13-3-2, were used to calculate PM emissions from the unit. Emissions are estimated to be approximately 0.98 lb of PM per ton of potato product which equates to 11.8 tons of PM per year.

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

### **3. Periodic Monitoring**

McCrum shall operate and maintain the exhaust fan on the electric fryer in good working order and in accordance with the manufacturer's specifications. In addition, the mesh pad mist eliminator shall be cleaned at the end of each day the fryer is in operation. Fan speed shall be adjusted to maintain an adequate vacuum above the Electric Fryer. When the fan speed is not adequate, emissions from the Electric Fryer stay in the building affecting working and operating conditions.

McCrum shall monitor and record the following for the Electric Fryer and mesh pad mist eliminator:

1. Date, time, duration, and reason when the mesh pad mist eliminator is taken out of service when the Electric Fryer is in operation.
2. Records of monthly production (tons of finished product) for the fryer line.
3. Records of monthly hours of operation of the fryer line.

McCrum shall disconnect the system supplying distillate fuel to Boiler #1 and shall document the system's removal.

C. Annual Emissions

1. Total Annual Emissions

McCrum shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on the boilers, oven, and the Electric Fryer being in operation 8760 hr/yr:

**Total Licensed Annual Emissions for the Facility**

**Tons/year**

(used to calculate the annual license fee)

|                  | <b>PM</b>   | <b>PM<sub>10</sub></b> | <b>SO<sub>2</sub></b> | <b>NO<sub>x</sub></b> | <b>CO</b>  | <b>VOC</b> |
|------------------|-------------|------------------------|-----------------------|-----------------------|------------|------------|
| Boilers          | 0.9         | 0.1                    | 0.01                  | 2.6                   | 1.5        | 0.2        |
| Oven             | 1.4         | 1.4                    | 0.1                   | 2.8                   | 2.3        | 0.2        |
| Electric Fryer   | 11.8        | 11.8                   | --                    | --                    | --         | --         |
| <b>Total TPY</b> | <b>14.1</b> | <b>14.1</b>            | <b>0.11</b>           | <b>5.4</b>            | <b>3.8</b> | <b>0.4</b> |

| <b>Pollutant</b> | <b>Tons/year</b> |
|------------------|------------------|
| Single HAP       | 9.9              |
| Total HAP        | 24.9             |

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 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, 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 (CO<sub>2</sub>e).

The quantity of CO<sub>2</sub>e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. 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 is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

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

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

### **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 Amendment A-830-71-F-A subject to the conditions found in Air Emission License A-830-71-D-R/M and A-830-71-E-M and the following conditions.

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

## SPECIFIC CONDITIONS

The following replaces Specific Condition (16) in license A-830-71-D-R/M (2/27/2013) and amendment A-830-71-E-M (5/20/2013).

### (16) Boiler #1

#### A. Fuel

1. Boiler #1 is licensed to fire natural gas and propane. [06-096 C.M.R. 115, BPT]
2. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of the fuel delivered. Records of annual fuel use shall be kept on a monthly and calendar year basis.  
[06-096 C.M.R. 115, BPT]

#### B. Emissions shall not exceed the following [06-096 C.M.R. 115, BACT]:

| Emission Unit           | Pollutant | lb/MMBtu | Origin and Authority    |
|-------------------------|-----------|----------|-------------------------|
| Boiler #1 – natural gas | PM        | 0.05     | 06-096 C.M.R. 115, BACT |
| Boiler #1 - propane     | PM        | 0.05     | 06-96 C.M.R. 115, BACT  |

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

| Emission Unit           | PM<br>(lb/hr) | PM <sub>10</sub><br>(lb/hr) | SO <sub>2</sub><br>(lb/hr) | NO <sub>x</sub><br>(lb/hr) | CO<br>(lb/hr) | VOC<br>(lb/hr) |
|-------------------------|---------------|-----------------------------|----------------------------|----------------------------|---------------|----------------|
| Boiler #1 – natural gas | 0.21          | 0.21                        | 0.01                       | 0.41                       | 0.34          | 0.02           |
| Boiler #1 - propane     | 0.21          | 0.21                        | 0.01                       | 0.60                       | 0.35          | 0.05           |

#### D. Visible emissions from Boiler #1 when firing natural gas or propane shall not exceed 10% opacity on a six-minute block average. [06-096 C.M.R. 115, BPT]

Specific Condition (18) in license A-830-71-D-R/M (2/27/2017) is hereby removed.

The following is a new Condition:

### (22) Electric Fryer

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

B. McCrum shall operate and maintain the Greenheck exhaust system and the exhaust manifold containing the mesh pad mist eliminator in good working order and in accordance with the manufacturer's specifications. The Greenheck exhaust system and mesh pad mist eliminator shall be operated at all times the fryer is in use.  
[06-096 C.M.R. ch. 115, BPT]

C. The mesh pad mist eliminator shall be cleaned at the end of each day the fryer is in operation. McCrum shall document this maintenance. [06-096 C.M.R. ch. 115, BPT]

D. Periodic Monitoring

McCrum shall monitor and record the following for the Electric Fryer and mesh pad mist eliminator:

1. Date, time, duration, and reason when the mesh pad mist eliminator is taken out of service when the Electric Fryer is in operation.
2. Records of monthly production (tons of finished product) for the fryer line.
3. Records of monthly hours of operation of the fryer line.

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

DONE AND DATED IN AUGUSTA, MAINE THIS 7 DAY OF September, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Corne for  
PAUL MERCER, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-830-71-D-R/M.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/4/2018

Date of application acceptance: 6/11/2018

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

