



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

**UniFirst Corporation  
Penobscot County  
Bangor, Maine  
A-644-71-G-M**

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

**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**

UniFirst Corporation (UniFirst) was issued Air Emission License A-644-71-E-R/A on October 1, 2012 permitting the operation of emission sources associated with their industrial laundry facility. The license was subsequently amended on June 19, 2013 (A-644-71-F-A).

UniFirst has requested a minor revision to their license in order to revise the HAP emission factor established in amendment A-644-71-F-A and to include a 1.5 MMBtu/hr natural gas fired steam tunnel.

The equipment addressed in this license is located at 70 Godsoe Road, Bangor, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Process Equipment**

<b><u>Equipment</u></b>	<b><u>Maximum Capacity (MMBtu/hr)</u></b>	<b><u>Maximum Firing Rate</u></b>	<b><u>Fuel Type</u></b>
Finishing Tunnel	1.5	1450 scf/hr	Natural Gas

C. Application Classification

This amendment will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined. Therefore, this modification is determined to be a minor revision 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 as well as for those sources located in designated non-attainment areas.

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

B. HAP Emissions

In air emission license A-644-71-F-A UniFirst performed a BPT analysis for the laundering of shop towels and established emission factors for VOC, single HAP, and total HAPs. BPT was determined to be annual throughput limit of 2,300,000 lbs of soiled towels based on a calendar year.

Recently, UniFirst has discovered that the emission factor for tetrachloroethylene (largest single HAP) was computed incorrectly. The value listed (0.00027 lb/lb of soiled towels) should have been 0.00080 lb/lb of soiled towels.

Applying the new emission factor increases the annual emissions of tetrachloroethylene from 0.3 tpy to 0.9 tpy. UniFirst has not requested an increase in the emission limits for either VOC or total HAP emissions.

C. Finishing Tunnel

UniFirst plans to install a new finishing tunnel. The Finishing Tunnel creates high velocity steam that surrounds the garments as a final step in the laundering process. The Finishing Tunnel has a 1.5 MMBtu/hr natural gas fired burner used for generating steam.

1. BACT Findings

The BACT emission limits for the Finishing Tunnel were based on the following:

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 CMR 115, BACT
- SO<sub>2</sub> – 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- NO<sub>x</sub> – 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
- Opacity – 06-096 CMR 115, BACT

The BACT emission limits for the Finishing Tunnel are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM<sub>10</sub></u> <u>(lb/hr)</u>	<u>SO<sub>2</sub></u> <u>(lb/hr)</u>	<u>NO<sub>x</sub></u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Finishing Tunnel	0.08	0.08	neg	0.15	0.12	0.01

Visible emissions from the Finishing Tunnel shall not exceed 10% opacity on a 6 minute block average.

D. Annual Emissions

1. Total Annual Emissions

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

- Combustion of 150,000 gallons of #2 fuel oil with a maximum sulfur content of 0.5% by weight.
- Natural gas combustion in each of the gas-fired units up to 8760 hr/yr.
- Processing of 2,300,000 lbs per year of soiled shop towels

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

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	HAP (Single/Total)
Boilers #1 & #2 (#2 fuel oil)	1.3	1.3	5.3	1.8	0.4	0.1	–
Boilers #1 & #2 (natural gas)	3.7	3.7	0.1	7.1	6.0	0.4	–
Dryers	2.0	2.0	neg	3.8	3.2	0.2	
Finishing Tunnel	0.1	0.1	neg	0.2	0.1	neg	–
Shop Towels	–	–	–	–	–	9.6	0.9 / 1.7
<b>Total TPY</b>	<b>7.1</b>	<b>7.1</b>	<b>5.4</b>	<b>12.9</b>	<b>9.7</b>	<b>10.3</b>	<b>0.9 / 1.7</b>

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 (CO<sub>2</sub>e).

Based on the facility’s fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, UniFirst is below the major source threshold of 100,000 tons of CO<sub>2</sub>e per year. Therefore, no additional licensing requirements are needed to address GHG emissions 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 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 facility licensed emissions 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-644-71-G-M subject to the conditions found in Air Emission License A-644-71-E-R/A, in amendment A-644-71-F-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 are New Conditions:

##### (22) Finishing Tunnel

- A. UniFirst is licensed to fire natural gas in the Finishing Tunnel.  
[06-096 CMR 115, BACT]
- B. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Finishing Tunnel	0.08	0.08	neg	0.15	0.12	0.01

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- C. Visible emissions from the Finishing Tunnel shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 21 DAY OF November, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Case for  
PATRICIA W. AHO, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-644-71-E-R/A.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 10/22/13

Date of application acceptance: 10/23/13

Date filed with the Board of Environmental Protection:

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

