

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

P075843649

FACILITY: UNIFIRST CORPORATION		SRN / ID: P0758
LOCATION: 1300 AUBURN RD, PONTIAC		DISTRICT: Southeast Michigan
CITY: PONTIAC		COUNTY: OAKLAND
CONTACT: Kevin Smith , General Manager		ACTIVITY DATE: 01/22/2018
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	
SUBJECT: On-site inspection		SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:		

On January 22, 2018, I (Kerry Kelly, MDEQ-AQD), conducted a targeted inspection at UniFirst Corporation located at 1300 Auburn Road, Pontiac, Michigan. MDEQ-AQD permit engineers Paul Schleusener, Chukuemeka Oje, and Nicholas Carlson accompanied me during the inspection. The purpose of the inspection was to verify facility's compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994 and Permit to Install (PTI) number 166-16A and to substantiate bottle-neck information provided in UniFirst's most recent PTI application (166-16B).

We arrived at UniFirst at about 10:00 AM. At the facility we met Mr. Kevin Smith, General Manager and Mr. Mike Maples, Plant Engineer. We introduced ourselves to Mr. Smith and Mr. Maples, stated the purpose of the inspection, and showed them our credentials. Mr. Smith and Mr. Maples answered questions, provided records, and escorted us during the facility walk through. Mr. Peter Anderson, Sea Rivers Consulting, and Mr. Timothy Cosgrave, UniFirst, provided additional supporting documents following the inspection.

**FACILITY REGULATORY HISTORY**

The UniFirst facility in Pontiac is an industrial laundering facility located in eastern Oakland County. UniFirst has been operating at this address since 2001. The properties immediately surrounding the facility are commercial/industrial. There is a residential subdivision approximately two-tenths of a mile south-southeast of UniFirst. Spring Lake and the Clinton River are approximately one-tenth of a mile from the UniFirst facility. At the UniFirst facility, washing machines and natural gas-fired dryers are used to launder various apparel, mats, mops, and shop towels. A 10.5 MMBtu boiler, installed in the year 2000, is used to produce steam for a laundry steam tunnel and steam and hot water for washing machines. The washing equipment and methods used at UniFirst are designed for water-based laundering. Though only water-based laundering products and equipment are used at this facility, hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) are emitted when dirty shop towels, soiled with VOCs, are laundered.

On October 12, 2016 a Permit to Install (PTI) application (PTI application number 166-16) from UniFirst Corporation was received by MDEQ-AQD. PTI application 166-16 was prepared by Sea Rivers Consulting. The Regulatory Applicability Review section of PTI application 166-16 states; "Because the plant is presently considered to be a major source of HAP emissions based on theoretical potential to emit levels, the boiler is subject to maximum achievable control technology (MACT) requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subpart DDDDD." HAP emission factors, based on UniFirst's Portland, Maine Test Report dated February 15, 2013, were also included in PTI application 166-16. AQD permit staff calculated facility-wide individual and aggregate HAP potential to emit using the emission factors and equipment capacity provided in PTI application 166-16. The AQD calculations confirmed UniFirst, in Pontiac, Michigan, is a major source of HAPs. As a major source of HAPs that has a boiler, UniFirst Pontiac became subject to 40 CFR 63 Subpart DDDDD, including Title V permitting, on the compliance date for existing boilers (January 31, 2016) per the Once In Always In Policy (OIAI).

A violation notice was issued to UniFirst Corporation on February 14, 2017 for failure to obtain synthetic minor opt out permit or submit an ROP application prior to the compliance date of 40 CFR 63 Subpart DDDDD and notification requirements in 40 CFR 63 Subpart DDDDD. AQD does not currently have enforcement delegation for 40 CFR 63 Subpart DDDDD. The violations were forwarded to the USEPA.

AQD received an initial ROP application (201700058) from UniFirst Corporation on March 14, 2017. Records required in 40 CFR 63 Subpart DDDDD were received March 27, 2017.

While I was working on the working draft ROP, UniFirst discovered a bottle-neck in the process and that the potential to emit (PTE) calculations provided in the application for PTI 166-16 were over-estimated. The new calculations indicate that the source is actually a true minor source of HAPs. UniFirst submitted a PTI application in December 2017 with the new PTE calculations.

In addition, a memorandum from EPA Assistant Administrator William L. Wehrum, dated January 25, 2018, states "EPA has now determined that a major source which takes an enforceable limit on its PTE and takes measures to

bring its HAP emissions below the applicable threshold becomes an area source, no matter when the source may choose to take measures to limit its PTE." The memorandum also states "The guidance presented here supersedes that which was contained in the May 1995 Seitz Memorandum. The OIAI policy stated in the May 1995 Seitz Memorandum is withdrawn, effective immediately."

As a result of the developments described in the previous two paragraphs, UniFirst Corporation's consultant, Mr. Anderson, stated UniFirst will be requesting MDEQ withdraw their ROP application (201700058). On February 22, 2018, the AQD Southeast Michigan District Office received a letter from UniFirst Corporation requesting their ROP application be voided. On March 5, 2018 AQD Southeast Michigan District Office Supervisor, Joyce Zhu, approved UniFirst's request to void their ROP application. The UniFirst Pontiac facility now appears to be a synthetic minor source of HAPs.

**COMPLIANCE EVALUATION**

PTI 166-16A was issued to UniFirst Corporation June 23, 2017. This permit includes facility-wide HAP opt-out limits, conditions for the laundering process equipment (FGLAUNDRY), and 40 CFR 63 Subpart DDDDD conditions (FGMACT-DDDDDD) for the 10.5 MMBtu/hour boiler.

The inspection indicated the following with respect to the facility's compliance with PTI 166-16A:

**FGLAUNDRY**

FGLAUNDRY consists of ten (10) industrial washers, five (5) natural gas-fired industrial dryers, one (1) natural gas-fired wrinkle-removing steam tunnel, one (1) on-site wastewater treatment system and one (1) natural gas-fired process boiler. The equipment in FGLAUNDRY is used to wash and dry various textiles including uniforms, floor mats, mops and shop towels.

Emission Limits

The following emission limits are set forth in PTI 166-16A for FGLAUNDRY:

Pollutant	Limit	Time Period/ Operating Scenario
1. PM	0.10 lbs per 1,000 lbs of gas <sup>a</sup>	Hourly
2. PM10	0.0019 lbs per lb of textiles processed (soiled weight)	Hourly
3. PM2.5	0.0011 lbs per lb of textiles processed (soiled weight)	Hourly

According to PTI 166-16A, compliance with the emission limit is demonstrated through any testing requested by the AQD. At this time, the AQD has not requested testing to demonstrate compliance with the emission limits.

Material Limits

PTI 166-16A establishes the following limits on the amount of soiled shop towels processed in FGLAUNDRY:

- No more than 4,000 pounds of soiled shop towels per hour
- No more than 10,000 pounds of soiled shop towels per day
- No more than 191,666 pounds of soiled shop towels per calendar month
- No more than 14,925,000 pounds (soiled weight) of textiles (uniforms, mops, shop towels, etc.) in the dryers (EUD01, EUD02, EUD03, EUD04, & EUD05) portion of FGLAUNDRY per year, based on a 12-month rolling time period as determined at the end of each calendar month

Records of the amount of soiled shop towels processed per hour, per day, and per month for FGLAUNDRY and per 12-month rolling for EUD01, EUD02, EUD03, EUD04, & EUD05, required in Special Conditions VI. 2 through VI. 5, are used to demonstrate compliance with the material limits. Mr. Smith provided hourly, daily, monthly, and yearly records of the total amount of soiled shop towels that were processed between January 2017 through January 2018 (attachment 1). According to Mr. Cosgrave, UniFirst does not track the drying process, but did state that drying shop towels takes about 30 minutes.

The hourly emission rate in PTI 166-16A, according to the permit evaluation, was established when evaluating the toxic air contaminant (TAC) emission rates, risk screening levels, and the allowable emission rate (AER). The permit evaluation states "since the AER algorithm uses hourly, daily and monthly emission rates to demonstrate compliance with the applicable screening levels, these throughput limits are included in the

proposed PTI." The emission rates for each TAC evaluated, based on information in the permit evaluation, assumed the emissions from washing, wastewater treatment, steam generation from the boiler, and drying were occurring simultaneously. In reality, washing and drying are consecutive and the time it takes to complete laundering process (washing and drying combined) is about 1 hour 50 minutes.

The hourly records, provided by Mr. Smith, divide the day up into one hour blocks starting at 12:00 AM. The soiled shop towel weight recorded in each hour represents the combined soiled weight of shop towels being processed in any part of FGLAUNDRY for any duration during that hour. The greatest weight of shop towels being processed, as recorded in the hourly records, was 4,183 pounds between 1:00 PM and 2:00 PM on June 26, 2017. As the data is presented it appears this is an exceedance of the 4,000 lb hourly limit. Detailed records of actual wash start times and estimates of dry times were provided by Mr. Cosgrave. The detailed records show the 4,183 lbs is the combined weight of four different loads of soiled shop towels placed in different washers at different times over a 1 hour and 40 minute period. When evaluating this data based on one-hour blocks starting when the first load was placed in the washer, the records indicate that 4,183 lbs were being processed for only twenty minutes (between 1:52 PM and 2:12 PM) during one, one-hour block of time on June 26, 2017. Because the 4,183 lbs was only being processed for twenty minutes during the hour and the entire laundry process was not completed in that twenty minutes, it does not appear the 4,000 lb/hour soiled shop towel processing limit was exceeded.

The highest reported amount of soiled shop towels processed in one day was 6,407 lbs processed on 6/26/2017, which is below the daily limit of 10,000 lbs. The highest reported amount of soiled shop towels processed in one calendar month between January 2017 and January 2018 was 62,952 lbs processed in May 2017. This is less than the calendar month limit of 191,666 lbs. The 12-month rolling records provided indicate the highest amount of soiled shop towels processed per year was 573,265 lbs, which is below the yearly limit of 14,925,000 lbs.

PTI 166-16A prohibits the use of solvent-containing detergents in FGLAUNDRY. The term solvent is not defined in the Air Pollution Control Rules, however, the permit evaluation refers to VOCs when discussing "non-solvent" detergents. Mr. Smith provided Safety Data Sheets (SDS), required in SC VI. 7, for the detergents used at UniFirst. The SDSs do not list the VOC content of the detergents though some of the constituents in the detergents are compounds of carbon (attachment 2). Mr. Anderson provided the vapor pressure for organic ingredients (attachment 3) as a means to determine the volatility of the carbon-containing compounds. In the past the definition of VOC used by the EPA included compounds of carbon with a vapor pressure greater than 0.1 mmHg. In addition, the current AQD exemption for washers (R 336.1281(2)(e)) prohibits the use of VOCs with a vapor pressure greater than 0.1 mmHg. There were two compounds in the EMax detergent that either had a vapor pressure greater than 0.1 mmHg or did not have vapor pressure data. The maximum weight percent of these two compounds combined is 15 percent. UniFirst uses 4 ounces of this detergent per 135 gallons of water, making the potential VOC percent about 0.04. This percentage is much less than the up to 5 percent allowed to be considered aqueous based parts washer per the definition of "aqueous based parts washer" in R 336.1101. It appears the detergents used at UniFirst Pontiac would not be considered solvent containing.

The processing of soiled towels used in the printing industry (print towels) and/or woodworking and wood finishing industry (furniture towels) is prohibited per PTI 166-16A. According to Mr. Smith, print towels and furniture towels are not processed at the UniFirst Pontiac facility. Mr. Smith also stated that customers purchase disposable print towels. During the inspection, I did not see or smell any soiled materials that resembled print or furniture towels.

#### Process/Operational Restrictions

The heat input capacity for the dryers and boiler are limited in PTI 166-16A. I inspected the nameplates of the dryers and boiler during the inspection and noted that the rated heat input listed on the dryers and boiler nameplates match the limit in PTI 166-16A. A photo of one of the dryer nameplates and the boiler are attached (attachment 4).

PTI 166-16A requires employees confirm that the screen in the lint collector has been cleaned off to start the day, the access door is closed, and the ductwork/hose to the lint collection drum/receptacle is secured. The lint screen should be checked periodically during the day to ensure that lint captured by the screen is being properly dislodged/blown down and accumulating in the collection drum/receptacle. Empty the drum/receptacle if needed. According to Mr. Maples, he checks the lint collection drum at least once daily to ensure lint is being collected from lint screen and empties the collection drum daily. If there is no lint in the collection drum there is

a problem and it will be repaired, according to Mr. Maples. Mr. Maples also stated the lint screens are replaced approximately every 6 months. In addition, as a safety feature, if the lint is too thick on the lint screen the dryer will heat up because air flow is restricted, an alarm will sound, and the dryer will shut off. Mr. Maples stated that if/when the dryer shuts down, the operator will notify someone to trouble-shoot and repair the dryer before restarting. Based on statements from Mr. Maples, it appears the Operation and Maintenance procedures required are being followed, though the checklist was not being kept. After being made aware of the lint collector check-list, Mr. Maples provided the records of the operation and maintenance performed on the lint collectors for February 28, 2018 through March 3, 2018 (attachment 5) and stated the operators are continuing to keep records of the operation and maintenance procedures followed for the lint collectors.

#### Testing/Sampling

Testing to show compliance with the PM emission limit in SC I.1 for FGLAUNDRY, the PM10 emission limit in SC I.2 for FGLAUNDRY, and the PM2.5 emission limit in SC I.3 for FGLAUNDRY, may be required by the AQD. To date, the AQD has not requested UniFirst conduct testing to verify the aforementioned pollutants.

#### Monitoring/Recordkeeping

In addition to the records noted under the "Material Limits" section above, the permittee is required to record the amount of natural gas processed through EUBOILER01 monthly. Mr. Smith provided records of the monthly natural gas usage for EUBOILER01 from January 2017 through January 2018 (attachment 9)

#### Stack/Vent Restrictions

Stack/vent height and diameter restrictions for the washers, dryers, fans, and wastewater treatment are set forth in PTI 166-16A. I was unable to see the stacks/vents during the inspection and was, therefore, unable to determine compliance with these conditions.

#### Other Requirements

SC IX.1 and 2 requires UniFirst comply with all applicable requirements in 40 CFR 60 Subpart Dc and 40 CFR 63 Subpart DDDDD for EUBOILER01. Applicable conditions in 40 CFR 60 Subpart Dc were included and evaluated in FGLAUNDRY. The applicable requirements in 40 CFR 63 Subpart DDDDD are specified and compliance will be evaluated in FGMACTDDDDDD.

#### **FGMACT-DDDDDD**

FGMACTDDDDDD consists of EUBOILER01. EUBOILER01 is an existing, natural gas only-fired, 10.5 MMBtu/hour boiler.

An initial performance tune-up is required no later than January 31, 2016 for FGMACTDDDDDD according to 40 CFR 63.7540(a)(11). Subsequent annual tune-ups must be conducted no more than 13 months after the previous tune-up. On March 27, 2017 and May 18, 2017, AQD received an Initial Notification of Compliance Status from UniFirst Corporation for the EUBOILER01, including statement that an initial tune-up was conducted, as required by 40 CFR 63 Subpart DDDDD. Mr. Smith provided a copy of the annual tune-up report conducted March 8, 2017 (attachment 6). Failure to submit the Notification of Compliance Status on time was noted in the violation notice set on February 14, 2017 and the violation was resolved with the submittal of the Notification of Compliance Status on March 27, 2017 and May 18, 2017.

A one-time energy assessment is required no later than January 31, 2016 for all Emission Units in FGMACTDDDDDD. On March 27, 2017 and May 18, 2017, AQD received an Initial Notification of Compliance Status from UniFirst for the boiler, including a statement a one-time energy assessment was conducted, as required by 40 CFR 63 Subpart DDDDD. In addition, Mr. Cosgrave provided a copy of the one-time energy assessment report dated October 6, 2016 (attachment 7). Failure to conduct the one-time energy assessment before January 31, 2016 was addressed in the violation notice dated February 14, 2017 and was resolved with the completion of the one-time energy assessment in October 2016.

A copy of each notification and report submitted to comply with 40 CFR, Part 63, Subpart DDDDD including all documentation supporting any Initial Notification or Notification of Compliance Status or Semiannual Compliance report that was submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv) and any records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii) must be maintained according to PTI 166-16A. Mr. Smith provided an electronic copy of the records of maintenance and repairs done on the boiler in 2017 (attachment 6 and 8).

The requirement in PTI 166-16A to submit the annual and semi-annual compliance reports stated in 40 CFR 63

Subpart DDDDD appears to no longer be applicable as UniFirst Pontiac is now considered a synthetic minor for HAPs, and as a result not subject to 40 CFR 63 Subpart DDDDD, because the OIAI policy was rescinded and the AQD approved voided UniFirst's ROP application.

**FGFACILITY**

This flexible group applies to all equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

Emission Limits

The following emission limits are set forth in PTI 166-16A for FGFACILITY:

Pollutant	Limit	Time Period/ Operating Scenario
1. Each Individual HAP	8.9 tpy	12-month rolling time period as determined at the end of each calendar month
2. Aggregate HAPs	22.4 tpy	12-month rolling time period as determined at the end of each calendar month

According to PTI 166-16A, compliance with the emission limits is demonstrated by SC VI.3 which requires monthly records for FGFACILITY of individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month and in tons per 12-month rolling time period as determined at the end of each calendar month. For shop towel laundering, HAP emission factors in Appendix A may be used, or an alternate emission factor approved by the AQD District Supervisor. Mr. Smith and Mr. Anderson provided monthly and 12-month rolling records (attachment 9) and spreadsheets of the HAP emissions from the HAP emitting processes at the facility. I verified the emission factors used in the spreadsheet are the emission factors stated in PTI 166-16A, Appendix A. The highest twelve-month rolling individual HAP emissions reported for January 2017 through January 2018 was 0.23 tons of tetrachloroethylene in May 2017 and January 2018. The greatest 12-month rolling aggregate HAP emissions reported for January 2017 through January 2018 was 0.45 tons.

**CONCLUSION**

Based on the field inspection and the records provided, UniFirst Corporation appears to be in compliance with the conditions of PTI 166-16A and all other applicable air regulations evaluated.

NAME Benny Kelly      DATE 3/15/18      SUPERVISOR Joyce

