

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection**

P069669490

<b>FACILITY:</b> Cintas Corporation		<b>SRN / ID:</b> P0696
<b>LOCATION:</b> 51518 Quadrate Drive, MACOMB		<b>DISTRICT:</b> Warren
<b>CITY:</b> MACOMB		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Chris Stopczynski , Plant Manager		<b>ACTIVITY DATE:</b> 10/11/2023
<b>STAFF:</b> Kerry Kelly	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY 2024 Targeted Inspection		
<b>RESOLVED COMPLAINTS:</b>		

On October 11, 2023, I (Kerry Kelly, EGLE-AQD), conducted a targeted inspection at Cintas Corporation located at 51518 Quadrate Drive, Macomb, Michigan. The purpose of the inspection was to verify the facility's compliance with requirements of the Federal Clean Air Act; Article II, Air Pollution Control, Part 55 of Act 451 of 1994; and Permit to Install (PTI) number 80-18.

I entered the lobby at Cintas at about 9:50 AM. At the facility, I met Chris Stopczynski, Production Manager. I introduced myself to Chris, stated the purpose of the inspection, and showed him my credentials. Chris answered questions, provided records, and showed me around the facility.

### **FACILITY INFORMATION**

The Cintas facility in the city of Macomb is an industrial laundering facility located in central Macomb County. The properties immediately surrounding the facility are commercial/industrial and residential. The closest residential subdivision is approximately two-tenths of a mile north of Cintas. According to Chris, the facility typically operates Monday - Friday 4 AM to 8 PM and, on rare occasions, they operate on Saturday.

At Cintas, washing machines and natural gas-fired dryers are used to launder textiles including uniforms, floor mats, mops, bar towels, and shop towels. Shop towels are re-usable cloth towels used to clean mechanical equipment, parts, and devices. Soiled shop towels can contain VOC solvents. Though 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 are laundered. In addition, two of the detergents/softeners used at Cintas, Motion and Pinnacle Softener G, contain VOCs. The VOCs in Motion and Pinnacle Softener G include dipropylene glycol monomethyl ether, isopropyl alcohol, and ethanol. A 6.123 MMBtu boiler, manufactured in 2012, is used to produce steam for a laundry steam tunnel, pressing, and hot water for washing machines.

During the inspection I saw bins filled with dirty shop towels, aprons, floor mats, and microfiber towels. The shop towels I saw appeared to be dry and I did not detect any solvent odors from the shop towels. Chris said that dirty shop towels that weren't washed by the end of the day are stored in closed containers outside overnight. Chris also stated that they do not wash print towels nor furniture towels at the Macomb facility. I did not see any evidence of furniture towels or print towels during the inspection.

According to Chris, there are no parts washers nor emergency generators at the facility. I did not see any parts washers or emergency generators during the facility walk through.

### **COMPLIANCE EVALUATION**

The requirement of Rule 201(1) to obtain a permit to install does not apply to washers, dryers, boiler, and wastewater treatment equipment/processes at Cintas. Cintas submitted actual emission calculations and potential to emit calculations to demonstrate the washers, dryers, boiler, and wastewater treatment equipment/processes were not excluded from exemption as stated in Rule 278. The significance levels and the facility-wide potential emissions submitted for the Macomb facility can be found in the tables below:

Air Contaminate	Significance Level	Macomb Actual Emissions
Carbon Monoxide (CO)	100	6.8

Nitrogen Oxides (NOx)	40	8
Sulfur Dioxide (SO2)	40	0.05
Particulate Matter (PM)	25	9.6
PM-10	15	2.3
PM-2.5	10	1.8
VOCs	40	5.27
Lead	0.6	<0.01
Fluorides	3	n/a
Sulfuric Acid Mist	7	n/a
Hydrogen Sulfide	10	n/a

Air Contaminate	Major Source Threshold	Potential Emissions Macomb
Carbon Monoxide (CO)	100	6.7
Nitrogen Oxides (NOx)	100	8.0
Sulfur Dioxide (SO2)	100	0.05
Particulate Matter (PM)	100	21.1
PM-10	100	14.4
PM-2.5	100	13.0
VOCs	100	89.7
Total HAP	25	16.4
Maximum Individual HAP	10	6.6

Based on the calculations provided by Cintas, the washers, dryers, boiler, and wastewater treatment equipment/processes are not excluded from exemption as stated in Rule 278. The exemptions and other regulatory information for the washers, dryers, boiler, and wastewater treatment is discussed below.

**WASHING MACHINES**

While inspecting Cintas in Macomb, I observed eight washers with a nameplate capacity of 450 - 463 lbs and two with a capacity of 130 lbs. According to Chris, one of the washers (#3) was replaced with a new washer with the same capacity. The detergents/cleaning products I observed at the facility were Structure, Express, Motion, Secure, Pinnacle, Enlite, and Hypochlorite (bleach). Detergent/cleaning product is dosed using a software program that also tracks usage. Detergent/cleaning products are pumped from closed drums/tanks to washers using a automated system. Structure, Motion, and Express are more frequently used according to Chris. Structure is dispensed from a 1500 gallon tank, Express from a 2400 gallon tank, Motion from a 2500-3000 gallon tank, and the rest from 55 gallon drums. All the tanks and drums I observed during the inspection were covered. The safety data sheets (SDS) for these products were provided by Cintas. The first two pages which include the composition/information on ingredients are attached (Attachment 1).

A copy of the Cintas submitted records indicating all ten washing machines are exempt from the requirement to obtain a permit to install per Rule 291. Rule 291 potential to emit (PTE) calculations for the washing machines were also provided by Cintas (Attachment 2). These records state Cintas is using the VOC emission factors from USEPA approved stack testing conducted at a similar facility in Rhode Island. The potential emissions for each washing machine were calculated based on the highest capacity washing machine (450 lbs dry weight, 563 lbs soiled shop towel weight) and 8760 hours per year. Based on the information in the records, each washer meets the potential to emit limits in Rule 291. The calculated potential emissions and Rule 291 limits are summarized in the table below:

	<b>Limit (tpy)</b>	
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		Macomb Potential Emissions (tpy)
VOC TPY (as defined in R336.1122)	5	0.69
291 (2)(a) Screening Level $\geq 0.04 < 2$ ug/m <sup>3</sup>	0.12	0.02
291 (2)(b) Screening Level $\geq 0.005$	0.06	--
291 (2)(c) Screening Level $< 0.005$ ug/m <sup>3</sup>	0.006	--
Total Toxic Air Contaminants not Listed in Table 23 with any Screening Level	5	0.02
Total Air Contaminants not Listed in Table 23 that are Non-Carcinogenic and do not have a Screening Level	6	--

**DRYERS**

I observed six dryers, labeled 1 - 6, at Cintas Macomb. The nameplates on dryers 1-4 each listed natural gas as the fuel and a maximum load capacity of 462 lbs and maximum heat input capacity as 1.4 MMBtu/hour. The nameplate on dryer 6 listed natural gas as the fuel and a heat input capacity of 350,000 btu/hour, no load size was noted. I did not see a nameplate on dryer 5, but observed it appeared to be the same size as dryer 6 and fueled by natural gas. Cintas submitted records indicating all six dryers are exempt from the requirement to obtain a permit to install per Rule 290. VOC emissions calculations, required by Rule 290, for the dryers were also provided by Cintas for January 2022 through August 2023 (Attachment 3). These records indicate there are 7 dryer vents, however, I only saw 6 dryers during the inspection. Whether calculating the emissions for each dryer using 7 dryers or 6 dryers, the dryer emissions are within the limits established in Rule 290. The calculated VOC emissions and Rule 290 limits are summarized in the table below:

	HIGHEST DRYER EMISSIONS (per dryer) (LBS/MO)		
	Emissions 6 dryers (lb/month)	Emissions 7 dryers (lb/month)	Month Reported
<b>Non-Carcinogenic Materials in 122(f)</b>	0.860	0.737	May 2023
<b>ITSL <math>\geq 0.04</math> ug/m<sup>3</sup> <math>&lt; 2.0</math> ug/m<sup>3</sup> (Limit: 20 lbs/mo)</b>	0.213	0.182	May 2023
<b>IRSL <math>&gt; 0.04</math> ug/m<sup>3</sup> (Limit: 20 lbs/mo)</b>	1.064	0.912	May 2023
<b>Total (Limit: 1,000 lbs/mo)</b>	105.6	90.5	May 2023

**BOILER and STEAM TUNNEL**

I observed the nameplate on the Cleaver Brooks boiler at the facility. The nameplate listed the fuel as natural gas and the maximum heat input capacity as 6.123 MMBtu/hour. The boiler is used to heat water and provide steam for equipment at the facility. I did not see a nameplate on the steam tunnel, but noted the fuel used in the steam tunnel is natural gas. Fuel burning equipment with a rated heat input capacity of not more than 50 MMBtu/hour that burns sweet natural gas and is used for space heating, service water heating, or indirect heating is exempt from the requirement in Rule 201 to be permitted per Rule 282(2)(b)(i). Steam generating units with a maximum design capacity less than 10 MMBtu/hour are not subject to The Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Dc). In addition, gas-fired boilers are not subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR 63 Subpart JJJJJJ) per 40 CFR 63.11195(e).

**WATER WATER TREATMENT**

I observed the wastewater treatment system at Cintas. Chris showed a meter used to track the amount of waste water processed. Wastewater treatment equipment is exempt from the requirement in Rule 201 to have a PTI per Rule 285(2)(m).

**PTI 80-18**

PTI 80-18 was issued to Cintas Corporation October 18, 2018. This permit contains facility-wide VOC and HAP opt-out emission limits.

The inspection indicated the following with respect to the facility's compliance with PTI 80-18:

#### FGFACILITY

This flexible group applies to all equipment source-wide that emit HAPs and/or VOCs including equipment covered by other permits, grand-fathered equipment, and exempt equipment. VOC and HAP emitting equipment/processes at Cintas includes eight washing machines, four dryers, waste-water treatment, one boiler, and several space heaters.

#### Emission Limits

The following emission limits are set forth in PTI 80-18 for FGFACILITY:

Pollutant	Limit	Time Period / Operating Scenario
1. VOC	Less than 89.9 tpy	12-month rolling time period as determined at the end of each calendar month
2. Individual HAP	Less than 8.9 tpy	12-month rolling time period as determined at the end of each calendar month
3. Aggregate HAPs	Less than 22.4 tpy	12-month rolling time period as determined at the end of each calendar month

According to PTI 80-18, compliance with the emission limits is demonstrated through records of individual HAP, aggregate HAP, and VOC emission calculations in tons per calendar month and in tons per 12-month rolling time period as determined at the end of each calendar month.

HAP and VOC emissions from combustion sources (dryers, boiler, etc) should be calculated using AP-42 or an alternative method acceptable to the AQD District Supervisor per PTI 80-18.

For shop towel laundering, HAP and VOC emission factors in Appendix A of PTI 80-18 may be used, or an alternate emission factor approved by the AQD District Supervisor. The emission factors in Appendix A were established through stack testing conducted by Cintas at a similar facility in the U.S. and are based on the weight of soiled shop towels laundered.

During the inspection, the textiles in the receiving area were sorted and stored in individual containers (slings or bags). I observed a scale which Chris explained is used to weigh soiled products prior to washing. The weight and material type of the products entering the facility for laundering is input into a computer system. The target weight for each sling, according to Chris, is about 245-255 lbs and a load consists of two bags (approximately 490 lbs - 510 lbs).

Chris provided monthly and 12-month rolling records (Attachment 4) and spreadsheets of the HAP and VOC emissions from all processes at the facility that emit HAPs and VOCs for August 2019 through August 2023. I verified the emission factors used in the spreadsheet are the emission factors stated in PTI 80-18, Appendix A, and AP-42. Cintas began calculating HAP and VOC emissions in November 2018, the first full month after PTI 80-18 was approved. The first period with 12 months of data was the 12-month period ending October 2019. The highest rolling total of individual HAP emissions reported for October 2019 through August 2023 was 0.17 tons of tetracholorethylene in October 2019. The highest rolling aggregate HAP emissions reported for October 2019 through August 2023 was 0.45 tons reported in the period ending October 2019. The highest 12-month rolling VOC emissions reported for October 2019 through August 2023 was 4.38 tons reported in the period ending October 2019.

**Material Limits**

The following material limits are set forth in PTI 80-18 for FGFACILITY:

Material	Limit	Time Period / Operating Scenario
Soiled shop towels laundered	24,500,000 pounds per year	12-month rolling time period as determined at the end of each calendar month
All textiles laundered	74,500,000 pounds per year	12-month rolling time period as determined at the end of each calendar month

As stated previously, soiled products are weighed as they enter the receiving area of the facility and the soiled weight and material type is input into a computer system. Chris provided records of the pounds of soiled shop towels and all other textiles laundered for August 2019 through August 2023 (Attachment 4). Cintas began calculating material throughput in November 2018, the first full month after PTI 80-18 was approved. The first period with 12 months of data was the 12-month period ending October 2019. The highest reported rolling amount of shop towels laundered was 692,250 pounds reported for the period ending October 2019. The highest reported rolling amount of all textiles laundered was 19,040,222 pounds reported for the period ending October 2019.

I left the facility at approximately 10:45 AM.

**MICHIGAN AIR EMISSIONS REPORTING SYSTEM (MAERS) REPORTING**

The 2022 criteria pollutant emissions and throughput from emissions sources at Cintas were submitted to MAERS on time. The Source-wide VOC emissions reported to MAERS for RY 2022 was about 5813.94 lbs and the 12-month rolling noted in the records provided for this inspection for the period ending December 2022 was 2.94 tons (5880 lbs). VOC emissions reported to MAERS for RY 2022 are consistent with the information in the records submitted for this inspection.

**CONCLUSION**

Based on information gathered during this inspection, Cintas Corporation appears to be in compliance with the conditions of PTI 80-18 and all other applicable air regulations evaluated.

NAME K. Kelly

DATE 10/12/2023

SUPERVISOR Joyce