

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

P069472330

FACILITY: Cintas Corporation	SRN / ID: P0694
LOCATION: 31850 Sherman Drive, MADISON HTS	DISTRICT: Warren
CITY: MADISON HTS	COUNTY: OAKLAND
CONTACT: Kevin Yoder , Plant Manager	ACTIVITY DATE: 06/10/2024
STAFF: Jillian Cellini	COMPLIANCE STATUS: Compliance
	SOURCE CLASS: SM OPT OUT
SUBJECT: Determine 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 84-18.	
RESOLVED COMPLAINTS:	

On June 10, 2024, I (Jillian Cellini, EGLE-AQD), and Kerry Kelly (EGLE-AQD) conducted an inspection of Cintas Corporation located at 31850 Sherman, Madison Heights, Michigan. The purpose of the inspection was to determine the facility's compliance status with the requirements of the federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 Public Act 451, as amended (Act 451), the AQD administrative rules, and Permit to Install (PTI) number 84-18.

We arrived at Cintas at about 8:00 AM. At the facility, we met with Kevin Vliet (General Manager) and Julius Bierkamp (Maintenance Technician II). We introduced ourselves and stated the purpose of the inspection. Kevin and Julius answered some of our initial questions before the facility walk-through. Julius then began showing us around the facility, where we met with Corey Young (1st shift production supervisor) for the initial part of the walk-through. When Corey left the walk through, Kevin Yoder (plant manager) joined us for the rest of the walk-through.

Kevin Yoder and Stephen Fischer sent the requested records to determine compliance via email following the inspection. The digital records are in the AQD Warren shared drive at: <S:\Air Quality Division\STAFF\Jillian Cellini\Inspection Documents\Cintas 2024>.

Cintas is a national chain that provides uniforms, work apparel and mats; flame resistant clothing and fire extinguishers, cleaning and restroom supplies, first aid and safety supplies, and safety courses to various businesses. The Cintas facility located in Madison Heights opened in 1983 and is primarily an industrial laundering facility. The facility operates five days a week, Monday through Friday, from 5:00 AM until 9:00 PM. This Cintas location employs 120 people that operate on two shifts, 5:00 AM – 1:00 PM and 1:00 PM – 9:00 PM. It is in a commercial/industrial park and is immediately surrounded by other commercial/industrial facilities. The closest residences are located just over a quarter mile to the southwest of the Cintas facility. Red Oaks Waterpark and Red Oaks Dog Park are located between a quarter and half mile to the southeast of the facility, The Red Run Drain, which is part of the Clinton River watershed, is located about a half mile to the east of the facility.

This facility uses washing machines and natural gas fired dryers to launder materials including (but not limited to) uniforms, floor mats, mop heads, bar towels, restaurant linens, butcher coats, aprons, and shop towels. These materials can emit VOCs and HAPs when laundered. Kevin Vliet and Julius explained that many of their clients are restaurant and food service businesses as well as some industrial/manufacturing clients. Kevin Vliet explained that they do not accept any ink towels or any soiled textiles over a certain threshold of heavy metals (particularly Cd, Cr, and Pb) at this location as it adds extra steps to their usual laundering process. Other Cintas facilities do accept these textiles. Detergents

used at this facility also release VOCs during the laundering process. A steam tunnel is also used to press clothing at the client's request. Kevin Vliet stated that this facility does approximately 260,000 lbs of laundry a week. All textiles that are washed are also dried at this facility.

Soiled Textile Delivery and Storage

Before the textiles are laundered, they are transported to the Cintas facility via truck. We observed during the inspection that textiles are stored in plastic bags during the transportation process until they are unloaded at the Cintas facility. According to Corey and Julius, drivers that pick up the textiles are trained to recognize shop towels that are too saturated with solvents or other materials and are instructed to not bring those textiles back to the Cintas facility for laundering until the materials are dried out. If a textile that is too saturated does make it back to the facility, it is left out to dry before it is laundered.

When the trucks are unloaded, the laundry is weighed into a large fabric laundry bag by both a floor scale and load cell scale. Each bag contains one load of laundry for the washing machines. Every type of textile has its own weight limit on how much can be laundered in a load. The scale is set with the kind of textile, and an alarm will sound if too much laundry is loaded into a bag. Any textiles that are not able to be laundered when they are received are kept in plastic bags and stored in a 40 ft storage trailer located outside the facility at the end of the second shift. The storage trailer is equipped with 10 extinguishing balls, which activate in the case of fire. The door of the storage trailer is closed and locked every night.

Washing Machines

After the laundry is weighed, it is transported to 1 of 8 washers at this facility. Five washers have a nameplate capacity of 500 lbs, 2 washers have a nameplate capacity of 450 lbs, and one "pony" washer has a nameplate capacity of 150 lbs. Two of the 5 washers with a nameplate capacity of 500 lbs were acquired about 2 years ago as replacements for two older washers that were starting to fail according to Corey. The cleaning agents and wash cycle settings that are used are customized for each type of textile being laundered. According to Julius, to use the correct combination of cleaning products and wash cycle, a number corresponding to the textile type is entered into the washing machine. The laundering products are then automatically drawn out of their containers in the correct proportions and the correct wash cycle is run for that textile.

The cleaning products that we observed during this inspection were: hypochlorite, 12.5% (bleach), Express, Conserve, Motion, Pinnacle Liquid Antichlor, and Secure Sour. The Secure Sour and bleach are always stored away from each other and used separately, as they make poisonous mustard gas if they are combined. Cintas submitted SDS sheets for all cleaning products used at this facility. All cleaning products were observed to be properly stored in barrels with closed lids. Julius and Corey explained that when they run out of a product, Cintas employees wear full PPE to change out the empty barrel with a full one. The new empty barrel is washed out thoroughly with water, set out by the dumpster, and picked up by a waste management company to be disposed of properly. The washing machines themselves are cleaned with water only. Julius explained that they are wiped down with a cloth and water regularly and usually power washed monthly or sooner if needed.

Rule 291 potential to emit (PTE) calculations for the 8 washing machines were provided by Cintas (Cintas_EmissionCalcs_Madison Heights_03_19_2019.xlsx). 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:

	Limit (tpy)	Potential Emissions (tpy)
VOC (as defined in R336.1122)	5	0.69
291 (2)(a) Screening Level \geq 0.04 ug/m³ and $<$ 2.0 ug/m³	0.12	0.02
291 (2)(b) Screening Level \geq 0.005 ug/m³ and $<$ 0.04 ug/m³	0.06	-
291 (2)(c) Screening Level $<$ 0.005 ug/m³	0.006	-
Total toxic air contaminants not listed in Table 23 (Rule 291) with any screening level	5	0.02
Total toxic air contaminants not listed in Table 23 (Rule 291) that are non-carcinogenic and do not have a screening level	6	-

Dryers and Clean Textile Storage

After being washed, the textiles are transferred to 1 of 4 dryers. Similar to the washers, groups of textiles have certain drying procedures that have been pre-programmed into the dryer interface for operator ease. Kevin Yoder explained that during the summer since the air is warmer, drying times are adjusted accordingly. Three dryers had a rated capacity of 210 kg (463 lbs) with a maximum drying temperature of 356 F. These dryers are listed as having a 563 lb capacity on this facility's most recent emission report. These dryers are gas fired and have a maximum heat input rating of 1.4 MMBTU/hr. These dryers are also equipped with intake and exhaust stacks that intake and vent air through the roof of the building. The fourth dryer at this facility is a much smaller "pony" dryer that is only used for loads that come out of the "pony" washer. This is also a gas fired dryer with a maximum heat input rating of 55,500 BTU/hr. This dryer did not have a visible nameplate capacity, but Kevin Yoder explained that the motor is not powerful enough to spin anything over 150 lbs.

Julius and Kevin explained after every load of laundry is dried, the lint screens are cleaned out to prevent fire hazards. After the lint screens are cleaned, the lint is swept up and thrown away. Once a month, a deep clean is also performed where the lint screens are fully removed and the insides of the dryers are thoroughly vacuumed out to prevent lint build-up.

According to Corey, dried loads of laundry are placed into large baskets so they can cool and are monitored for temperature increases for fire prevention. The temperature of each basket is taken three times over the course of a couple of hours to make sure temperature is going down as the textiles sit. If the temperature of the textiles is observed to go up, the basket is moved outside of the facility.

Cintas submitted records indicating all four dryers are exempt from the requirement to obtain a PTI per Rule 290 (Emissions_Report_2023.xlsx). VOC emissions calculations, required by Rule 290, for the dryers were also provided by Cintas for May 2022 through May 2024 (June could not be calculated at the time of the inspection as the month was not yet over). These records indicate the dryer emissions are within the limits established in

Rule 290. The calculated emissions subject to Rule 290 and Rule 290 limits are summarized in the table below:

	Large Dryer Emissions (per dryer in lbs/mo)											
	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Soiled Shop Towel Total VOCs	38.55	38.25	31.21	37.56	33.97	34.88	33.66	32.44	36.11	29.99	37.94	33.05
"Other Textile" Total VOCs	114.9	118.5	104.8	114.5	104.3	105.7	117.9	121.4	119.6	101.1	119.8	115.1
Non-Carcinogenic Materials in 122(f)	0.056	0.056	0.046	0.055	0.050	0.051	0.049	0.047	0.053	0.044	0.056	0.048
ITSL >=0.04 ug/m3 <2.0 ug/m3 (Limit: 20 lbs/mo)	0.171	0.169	0.138	0.166	0.150	0.154	0.149	0.144	0.160	0.133	0.168	0.146
IRSL >0.04 ug/m3 (Limit: 20 lbs/mo)	0.854	0.848	0.692	0.832	0.753	0.773	0.746	0.719	0.800	0.665	0.841	0.732
Total (Limit: 1,000 lbs/mo)	154.5	157.9	136.9	153.1	139.2	141.5	152.5	154.8	156.7	132.0	158.8	149.1

	Large Dryer Emissions (per dryer in lbs/mo)												
	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024
Soiled Shop Towel Total VOCs	35.19	35.80	30.29	36.72	31.82	35.50	31.21	30.29	34.58	34.88	33.97	36.72	34.88
"Other Textile" Total VOCs	126.5	119.8	108.3	128.3	115.6	121.8	113.7	108.6	118.5	115.3	119.8	124.6	118.5
Non-Carcinogenic Materials in 122(f)	0.052	0.052	0.044	0.054	0.047	0.052	0.046	0.044	0.051	0.051	0.050	0.054	0.051
ITSL >=0.04 ug/m3 <2.0 ug/m3 (Limit: 20 lbs/mo)	0.156	0.158	0.134	0.163	0.141	0.157	0.138	0.134	0.153	0.154	0.150	0.163	0.154
IRSL >0.04 ug/m3 (Limit: 20 lbs/mo)	0.780	0.793	0.671	0.814	0.705	0.787	0.692	0.671	0.766	0.773	0.753	0.814	0.773
Total (Limit: 1,000 lbs/mo)	162.7	156.6	139.5	166.1	148.3	158.3	145.8	139.7	154.1	151.2	154.8	162.4	154.4

	Pony Dryer Emissions (in lbs/mo)											
	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Soiled Shop Towel Total VOCs	12.96	12.85	10.49	12.62	11.41	11.72	11.30	10.90	12.13	10.07	12.75	11.10
"Other Textile" Total VOCs	38.60	39.83	35.23	38.46	35.05	35.50	39.61	40.79	40.18	33.98	40.26	38.68
Non-Carcinogenic Materials in 122(f)	0.019	0.019	0.015	0.018	0.017	0.017	0.017	0.016	0.018	0.015	0.019	0.016
ITSL >=0.04 ug/m3 <2.0 ug/m3 (Limit: 20 lbs/mo)	0.057	0.057	0.046	0.056	0.051	0.052	0.050	0.048	0.054	0.045	0.056	0.049
IRSL >0.04 ug/m3 (Limit: 20 lbs/mo)	0.287	0.285	0.232	0.280	0.253	0.260	0.251	0.241	0.269	0.223	0.282	0.246
Total (Limit: 1,000 lbs/mo)	51.9	53.0	46.0	51.4	46.8	47.6	51.2	52.0	52.6	44.3	53.4	50.1

	Pony Dryer Emissions (per dryer in lbs/mo)												
	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024
Soiled Shop Towel Total VOCs	11.82	12.03	10.18	12.34	10.69	11.93	10.49	10.18	11.62	11.72	11.41	12.34	11.72
"Other Textile" Total VOCs	42.52	40.25	36.40	43.12	38.83	40.91	38.20	36.48	39.82	38.74	40.27	41.86	39.82
Non-Carcinogenic Materials in 122(f)	0.017	0.018	0.015	0.018	0.016	0.017	0.015	0.015	0.017	0.017	0.017	0.018	0.017
ITSL >=0.04 ug/m3 <2.0 ug/m3 (Limit: 20 lbs/mo)	0.052	0.053	0.045	0.055	0.047	0.053	0.046	0.045	0.051	0.052	0.051	0.055	0.052
IRSL >0.04 ug/m3 (Limit: 20 lbs/mo)	0.262	0.267	0.226	0.273	0.237	0.264	0.232	0.226	0.257	0.260	0.253	0.273	0.260
Total (Limit: 1,000 lbs/mo)	54.7	52.6	46.9	55.8	49.8	53.2	49.0	46.9	51.8	50.8	52.0	54.5	51.9

Steam Tunnel

A natural gas fired steam tunnel is used to press clothes at the client's request. The nameplate maximum heat input rate is 1.5 MMBTU/hr. Kevin Yoder explained that the steam produced is always kept at a temperature of 300 F, the only thing that is controlled by the Cintas employees is how fast the clothes conveyor moves through the steamer. The slower the clothes move through the steamer, the more "pressed" they will be. This steam tunnel is exempt from acquiring a PTI per Rule 282(2)(b)(i) because it is natural gas fired and has a maximum heat input less than 50 MMBTU/hr. The Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Dc) do not apply to this steam tunnel because the maximum design capacity is less than 10 MM Btu/hour. Additionally, this steam tunnel is 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) because it is gas fired.

Wastewater Treatment

All wastewater from this facility is pumped through a system to remove the majority of the solids from the water. Kevin Yoder and Julius explained the water flows through a vibrating drum that removes the bulk of the solids (mostly lint). The water then flows through a series of pipes with ditches, which clears out most solids not previously removed by the vibrating drum. As the wastewater is hot, it is also used to bring the city water up to a higher temperature through heat exchange. From this process, the city water can be brought from an initial temperature of ~60 F to 78-80 F, which saves Cintas a little bit of energy as the hot water heater is set at a temperature of 150 F. Process water treatment equipment and wastewater treatment equipment is exempt from the requirement in Rule 201 to have a PTI per Rule 285(2)(m).

Boiler and Hot Water Heater

The boiler and the hot water heater are both located in the same room in this facility and are both natural gas fired. The boiler has a maximum heat input rate of 3.348 MMBTU/hr and is used to heat water and create steam for the facility. The hot water heater has a maximum heat input rate of 2.0 MMBTU/hr. These boilers are both exempt from acquiring a PTI per Rule 282(2)(b)(i) because they are natural gas fired and have a maximum heat input less than 50 MMBTU/hr. The Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Dc) do not apply for these boilers because the maximum design capacities are both less than than 10 MM Btu/hour. Additionally, these 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) because they are gas-fired boilers.

Emission Limits

Emission limits are described in PTI 84-18, which was issued to Cintas Corporation October 19, 2018. This permit contains facility-wide VOC and HAP opt-out emission limits for FG-FACILITY. FG-FACILITY is defined in PTI 84-18 as "all process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment." Processes and equipment included in FG-FACILITY at Cintas are: 8 washing machines, 4 dryers, waste-water treatment processes, a boiler, hot water heater, steam tunnel, three dryer burners, and several space heaters. The three dryer burners and all space heaters except for one in the boiler room were not observed during the inspection (it was located too high to see the name plate). According to documentation provided by

Cintas, all dryer burners and space heaters are gas fired and have maximum heat inputs between 0.7 and 2.88 MMBTU/hr. These dryer burners and space heaters are therefore exempt from acquiring a PTI per Rule 282(2)(b)(i) because they are natural gas fired and have a maximum heat input less than 50 MMBTU/hr.

The following emission limits are described in PTI 84-18 for FGFACILITY:

Pollutant	Limit (tpy)	Time Period/Operating Scenario
VOCs	Less than 89.9	12-month rolling time period as determined at the end of each calendar month
Individual HAP	Less than 8.9	12-month rolling time period as determined at the end of each calendar month
Aggregate HAPs	Less than 22.4	12-month rolling time period as determined at the end of each calendar month

Cintas provided records of the emissions for FG-FACILITY from May 2019 through May 2024 (Emissions_Report_2023.xlsx). Emission factors used for the processes at this facility are located in Appendix A of PTI 84-18. The fuel burned in all the equipment in FG-FACILITY is natural gas. The highest reported rolling 12-month sum of VOC emissions was 3.08 tpy which occurred in February and March 2020 and April 2024. The highest reported rolling 12-month total of individual HAP emissions was 0.07 tpy which occurred in May 2019 through June 2020, August 2021 through November 2023, and February and May 2024. The highest reported rolling 12-month total of aggregate HAP emissions was 0.20 tpy which occurred in May 2019 through March 2020. The emissions of VOCs, individual HAP, and aggregate HAPs are all under the emission limits set forth in PTI 84-18, therefore, Cintas is in compliance with the emission limits in PTI 84-18.

Material Limits

Material limits for FG-FACILITY along with record keeping requirements for these material limits are explained in PTI 84-18.

The following material limits are included in PTI 84-18 for FGFACILITY:

Material	Limit (lbs/yr)	Time Period/Operating Scenario
Soiled Shop towels laundered	22,000,000	12 -month rolling time period as determined at the end of each calendar month
All textiles laundered	73,000,000	12-month rolling time period as determined at the end of each calendar month

As stated previously, soiled products are weighed as they come off the trucks as they enter the facility. The type of textile and the weight of each soiled textile is recorded. Kevin Yoder provided records of the pounds of soiled shop towels and all other textiles laundered for May 2019 through May 2024 (Emissions_Report_2023.xlsx). The highest reported rolling 12-month sum of shop towels laundered was 340,898 lbs which occurred in December 2022. The highest reported rolling 12-month sum of all textiles laundered was 13,335,450 lbs which occurred in December 2023. Both weights are under the material limits set forth in PTI 84-18, therefore, Cintas is in compliance with the material limits in PTI 84-18.

2023 Emission Report

This facility submitted their annual emissions report form on time to MiEnviro for the 2023 calendar year. Reported emissions of VOCs for 2023 are consistent with records provided during this inspection.

Conclusion

Observations made during the inspection and record review indicate that Cintas in Madison Heights, MI is operating in compliance with all requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules, and PTI 84-18.

NAME *Jillian Cellino*

DATE 6/25/2024

SUPERVISOR *K. Kelly*