

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

P105070114

FACILITY: Cintas Corporation		SRN / ID: P1050
LOCATION: 2408 S Canal Road, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: EATON
CONTACT: Shane Wright , Production Manager		ACTIVITY DATE: 12/13/2023
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Onsite compliance inspection to determine compliance with PTI 116-19 and Rules 290 and 291.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (AQD District Inspector, author) and Autumn Cole (AQD LDO)

Personnel Present: Thomas Boik, Branch Manager (boikt@cintas.com)

Nick Starke, Maintenance Supervisor (starken@cintas.com)

Shane Wright, Plant Manager (wrightk5@@cintas.com)

Purpose

Conduct an unannounced, onsite, partial compliance evaluation (PCE) inspection by determining compliance with Cintas Corporation’s (Cintas) Permit No. 116-19 to ensure that Cintas has not exceeded the FG FACILITY opt-out limits. This inspection was conducted as part of a full compliance evaluation (FCE).

Cintas was last inspected in March 2020.

Facility Background/Regulatory Overview

Cintas is an industrial laundry facility that launders uniforms, rugs, shop rags, and other textiles for various industries, including restaurants, dentist offices, mechanic shops, and schools. They manufacture 95% of the garments, etc, that are supplied to these industries. Their business also includes supplying paper products to businesses (toilet paper, hand towels, disinfection supplies, etc). They currently operate 1 shift of laundering, 6 a.m. – 2:30/3:00 p.m. and a 2nd shift from 2:30 – 11 p.m., 5 days per week.

Cintas is an opt-out facility. The entire opt-out permit consists only of FG FACILITY where VOC’s are limited to 84 tpy. Material Limits are also in place to limit VOC’s from soiled shop towels and “all textiles” to limit VOC’s from these processes.

Cintas began operating on February 17, 2020. Cintas noted they had a dip in production from March through September 2020 as the result of facility shut-downs during the COVID-19 pandemic.

Inspection

At approximately 8:55 a.m. on December 13, 2023, Autumn Cole and I arrived at Cintas and met with Tom Boik, Branch Manager; Nick Starke, Maintenance Supervisor; and Shane Wright, Plant Manager.

Table 1 contains a list of all equipment. T. Boik said they have no emergency generators or parts washers located onsite. A few of the pieces of equipment are exempt under Rules 290 and 291 and therefore, demonstrations for compliance with this Rule were evaluated in this report.

Table 1. Equipment List

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Equipment	Description	Permit Exemption
Cleaver Brooks Natural gas-fired Boiler	<p>Max heat input: 8,165,000 Btu/hr – used for hot water (heated to 140F-150F) and steam in their laundering processes, including the steam in the steam tunnel used for de-wrinkling clothing. Heat input is less than the 50 MMBtu/hr restriction in exemption Rule 282.</p> <p>Tuned twice per year to ensure efficient operation.</p> <p>Model # CBEX-E 700-200-150ST, Serial # T 7249-1-1</p>	Rule 282(2)(b)(i)
Heater Units for the Four (4) Natural gas- fired Dryer Units	<p>Dryers used to dry laundered textiles. 2.8 MMBtu/hr each.</p> <p>Each dryer has a stack. Units emit VOCs. Lint from these dryers is collected in the bottom of each unit and filtered, prior to emitting to ambient air through the stack.</p> <p>4 installed but room for a 5th unit as company expands</p>	<p>Rule 282(2)(b)(i)</p> <p>AND</p> <p>Rule 290</p>
“Pony” dryer, natural gas-fired	<p>Smaller dryer used for smaller, specialized laundering. Shop towels are not dried in this unit.</p> <p>Model # UT17ODN0RNC3W0000</p> <p>395,000 Btu heat input.</p> <p>Unit emits VOCs</p>	<p>Rule 282(2)(b)(i)</p> <p>AND Rule 290</p>
Seven (7) Washer units	<p>Cintas has 7 units with the floor space to install 2 additional washer units.</p> <p>Model 650 washers are capable of loading up to 800 lbs materials. Model 450 washers are capable of loading up to 600 lbs of materials.</p>	Rule 291
2 “Pony” washers	<p>2 smaller washers (130 lb and 65 lb capacities) used for smaller, specialized laundering (smaller bags of rags, garments, backup to rewash items). Shop towels are not laundered in these units.</p>	Rule 291
Clothes “Dryer”: 990,000 Btu/hr Natural gas-fired	<p>Used for drying clothes after they come out of the steam tunnel (to “iron” clothes). The steam is the dewrinkler and the heat is used to dry the clothes coming out of the dewrinkler.</p> <p>Lint from this drying unit is collected via filters and vented to the general in-plant environment.</p>	Rule 282(2)(b)(i)

FGFACILITY

FGFACILITY contains emission factors in Appendix A for calculating FGFACILITY emissions.

The VOC emission factor for soiled shop towels includes the washing, drying and wastewater treatment of these items. This was confirmed by C. Oje, permit engineer for this PTI. Table 2, below, provided by Cintas during the previous inspection, shows the breakdown of emissions per type of process for soiled shop towels, which shows how the 6.79 lb/1000 lb emission factor in Appendix A was determined. The shop towel emission factors are based on April 19, 2012 stack test results from Cintas' Cumberland, Rhode Island Facility.

Table 2. Emissions per type of process for soiled shop towels.

Emission Source	Emission Factor (lb per 1000 lbs)
Washer(s)	0.42
Dryers	4.59
WWT room	1.78
Total	6.79

Cintas confirmed that the detergents for the "other textiles" would be the only source of VOC's and that they are emitted only during the drying process; therefore, the VOC emission factor for "other textiles" in the PTI Appendix A only includes drying of these textiles. The emission factor for "other textiles" of 0.19 lb/1000 lb textiles laundered was reviewed by C. Oje. He explained that this emission factor is overly conservative as it includes drying of not only "other textiles" but also soiled shop towels.

Based on the Permit to Install application for PTI 116-19, the following VOC contents apply. Cintas verified that the Motion detergent and Pinnacle G softeners are the only two laundering products for "other textiles" that contain VOC. Motion detergent has a VOC content of 4 wt% (from dipropyl methyl glycol ether) and the Pinnacle G softener has a wt% content of 2% ethanol and 15% isopropyl alcohol. Cintas verified that they are currently not using Pinnacle G softener in any of their laundering processes.

If, at any time the detergents used for "other textiles" has a change their VOC content to anything other than what is listed in their PTI application, as outlined above, the 0.19 lb/ 1000 lb textiles laundered will need to be modified, and submitted for Lansing District Supervisor approval.

Emission Limits, Material Limits & Monitoring/Recordkeeping

Soiled shop towels laundered are limited to 23,000,000 lbs per 12-month rolling period, and all textiles laundered are limited to 73,000,000 lbs per 12-month rolling period. Cintas is required to keep monthly records of the weight in pounds for all soiled shop towels and all textiles laundered. Cintas said, during the previous inspection, that soiled shop towels are those shop towels that are contaminated with chemicals that have a flashpoint greater than 140F. Cintas requires that all companies provide the SDS for the products they want laundered in order to demonstrate that the chemicals on the shop towels meet their flashpoint restrictions. "All textiles" refers to all items that Cintas launders (garments, mops, terry towels, etc).

During the inspection T. Boik showed us how they weigh the items to be laundered. Textiles are loaded by type into large laundry bags that can hold no more than 250 lbs. A scale is used to weight the bag on the ground, prior

to the bag being hoisted on various cranes to deliver the bag to the appropriate washer. While the weight is being taken, it is also recorded electronically by type, which T. Boik said he can access to calculate pounds laundered. N. Starke said the scales are calibrated on a quarterly basis.

I requested monthly and 12-month rolling records for the quantity of shop towels and all textiles laundered from February 2020 – October 2023. An electronic spreadsheet was provided showing pounds of soiled shop towels and pounds of all textiles laundered. See attached. From February 2020 – October 2023, the highest 12-month rolling total lbs of soiled shop towels laundered was 679,275 lbs and of all textiles was 13,222,526 lbs, meeting the 12-month rolling permit limits for each type of material laundered.

Cintas is limited to 84 tpy VOC per 12-month rolling time period as determined at the end of each calendar month.

Included in the electronic spreadsheet, attached, are the VOC emission calculations on a monthly and 12-month rolling basis (February 2020 – October 2023). I reviewed Cintas’ calculations, and it appears that they are using these emission factors found in Appenix A of the PTI correctly to calculate VOC emissions from the laundered products. The highest FG FACILITY VOC emissions from February 2020 – October 2023, which includes soiled shop rags, and other textiles, and combustion of natural gas was 2.78 tons. Cintas appears to be meeting the 12-month rolling VOC emission limit at this time.

There are currently no Process/Operational Restrictions, Design/Equipment Parameters, Testing/Sampling, Reporting, or Stack/Vent Restrictions.

Rule 290: Emissions from 4 Large Dryers and 1 Pony Dryer

Cintas has installed all 4 large dryers and the 1 pony dryer under exemption Rule 290. Electronic spreadsheets were provided and attached for reference to show Rule 290 calculations for January 2020 – October 2023. Cintas said that Toxic Air Contaminant (TAC) emissions under Rule 290 were evaluated using the emission factors created by EPA based on data collected during the Cintas Cumberland, Rhode Island stack test. Attached are the pertinent stack test results. These emission factors were based on laundering of soiled shop towels; they do not take into account soiled mechanics uniforms or other uniforms used in industries where TAC-containing chemicals have the potential to soil uniforms. These types of textiles are considered “other textiles” in the permit.

I spoke to Permit Engineer, Chuku Oje, who provided a summary of how the permit section has viewed “other textiles” for other Cintas facilities in Michigan. They determined that there is no emission factor for hazardous air pollutants (HAPs) for “other textiles.” L. Autrey (former Cintas personnel) explained that Cintas qualitatively evaluated soiled shop towel emissions versus “other textiles”: “It’s a qualitative observation based on the type of textile used and its use. Uniforms are not designed to be absorbent like shop towels are as their use is for a person to wear, not cleaning like shop towel. Therefore uniforms do not get saturated like a shop towel does nor do they see the solvents and other soils that the shop towel does.”

This appears to be an appropriate method to determine TAC emissions under Rule 290 at this time. Records were reviewed for both the large dryers and the small pony dryer. Records indicate compliance with the Rule 290 Emission Limits, as shown in Tables 2 and 3.

Table 2. Rule 290 Large Dryer emissions (reported per emission unit/dryer) per highest month per year

Emission Types	<u>Soiled Shop Towel and “Other Textile” VOCs (lbs)</u>	<u>Non-carcinogenic VOCs (lbs)</u>	<u>TACs</u> <u>ITSL 0.04 ug/m3</u>	<u>TACs</u> <u>IRSL >0.04 ug/m3 (lbs)</u>	<u>Combined Total for all Rule 290 “bins” (lbs)</u>
Rule 290 Limits	1,000 lbs uncontrolled per month	1,000 lbs uncontrolled per month	20 lbs uncontrolled per month	20 lbs uncontrolled per month	1,000 lbs uncontrolled per month
Calendar year 2020	110 (December)	0.096 (November)	0.29 (November)	1.45 (November)	111.8 (December)

Calendar year 2021	112 (March)	0.095 (March)	0.29 (March)	1.44 (March)	113.6 (March)
Calendar year 2022	116 (June)	0.098 (March)	0.30 (March)	1.36 (June)	127 (March)
Calendar year 2023	138 (August)	0.117 (June & October)	0.37 (August)	1.86 (August)	140 (August)

Table 3. Rule 290 Pony Dryer emissions (reported per emission unit/dryer) per highest month per year

Emission Types	<u>Soiled Shop Towel and "Other Textile" VOCs (lbs)</u>	<u>Non-carcinogenic VOCs (lbs)</u>	<u>TACs</u> <u>ITSL 0.04 ug/m3</u>	<u>TACs</u> <u>IRSL >0.04 ug/m3 (lbs)</u>	<u>Combined Total for all Rule 290 "bins" (lbs)</u>
Rule 290 Limits	1,000 lbs Uncontrolled per month	1,000 lbs Uncontrolled per month	20 lbs Uncontrolled per month	20 lbs Uncontrolled per month	1,000 lbs Uncontrolled per month
Calendar year 2020	24 (November)	0.019 (November)	0.057 (November)	0.28 (November)	24.4 (November)
Calendar year 2021	21 (March)	0.018 (March)	0.055 (March)	0.28 (March)	20.3 (November)
Calendar year 2022	24 (March)	0.019 (March)	0.057 (March)	0.29 (March)	24.4 (March)
Calendar year 2023	26 (August)	0.024 (August)	0.072 (August)	0.36 (August)	26.9 (August)

Rule 291: Emissions from 7 Large Washers and 2 Pony Washers

Cintas has installed all 7 large washers and the 1 pony washer under exemption Rule 291. Electronic spreadsheets are provided and attached for reference to show Rule 291 calculations Toxic Air Contaminant (TAC) emissions under Rule 291 were evaluated using the emission factors created by EPA based on data collected during the Cintas Cumberland, Rhode Island stack test. These emission factors were based on laundering of soiled shop towels only. The Rule 291 calculations assume the maximum capacity load a washer can do to calculate the lbs per year. This appears to be an appropriate method to determine potential to emit from the washers at this time.

Table 3. Rule 291 Washer emissions (reported per washer)

Emission Types assuming maximum load per washer and 100% Shop Towels Rule 291 Limits PTE (tpy)

Total VOC	5 tpy	0.83
Rule 291(2)(a)	0.12 tpy	0.03
TACs		
ITSL 0.04 ug/m3		
Rule 291(2)(b)	0.006 tpy	NA
TACs		
ITSL <0.005 ug/m3		

Inspector's Safety and Health: Safety glasses

Compliance statement: Cintas appears to be in compliance with PTI 116-19 and exemption Rules 290 and 291 at this time.

NAME Michelle Lyel

DATE 2/2/24

SUPERVISOR RB