

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

N556951602

FACILITY: Haworth, Inc. - Big Rapids Components-steel & wood		SRN / ID: N5569
LOCATION: 300 N Bronson, BIG RAPIDS		DISTRICT: Grand Rapids
CITY: BIG RAPIDS		COUNTY: MECOSTA
CONTACT: Brandy Wright, Mfg. Quality Engineer		ACTIVITY DATE: 12/04/2019
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY '20 on-site inspection to determine the facility's compliance status with respect to PTI No. 99-19 and any other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

A scheduled unannounced inspection of Haworth Inc. – Big Rapids Components-steel and wood (Haworth) (SRN N5569) was completed by AQD staff Scott Evans (SE) and Chris Robinson (CR) on December 4, 2019. The perimeter of the wood furniture/coating building and the metal manufacturing building located at 300 North Bronson in Big Rapids, Mecosta County Michigan was surveyed for odors and visible emissions. None were observed. AQD staff met with Ms. Brandy Wright, Manufacturing Engineering Manager. The Intent of this inspection, which was relayed to Ms. Wright, was to determine compliance with Permit to Install (PTI) No. 99-19 and any other applicable air quality rules and regulations.

Per discussions with Ms. Wright there have been no changes to the facility's equipment since the previous inspection.

1) Facility Description

Haworth manufactures metal and wood office furniture and is composed of two buildings with the wood furniture and coating building to the north and the metal furniture manufacturing building to the south. The two buildings are connected by a vacant parcel of land which is also owned by Haworth, Inc. and used for underground cables. The wood furniture building includes woodworking and manufacturing equipment, and an ultraviolet wood furniture coating line. The metal furniture building includes metal stamping, welding, cleaning, assembly operations, an E-coat dip tank and associated ovens, a powder coat line and associated cure oven, and two rack burn-off ovens with afterburner control.

2) Regulatory Evaluation

Emission Unit EUECOAT at the stationary source is subject to the Standards of Performance for Surface Coating of Metal Furniture promulgated in Title 40 of the Code of Federal Regulations (CFR), Part 60, Subparts A and EE.

FGEMERGENCYGEN is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) for Reciprocating Internal Combustion Engines promulgated in 40 CFR, Part 63, Subparts A and ZZZZ (Area Source RICE MACT).

With the withdrawal of the Title V "Once in Always in" policy and the acceptance of federally enforceable Hazardous Air Pollutant (HAP) and Particulate Matter (PM) emission limits established in PTI 99-09, Haworth is now considered an Area source for HAPs and PM, therefore no longer subject to the Wood Furniture Manufacturing NESHAP promulgated in 40 CFR, Part 63, Subparts A and JJ nor are the dust collectors subject to the federal Compliance Assurance Monitoring rule under 40 CFR, Part 64.

3) Compliance Evaluation

A)PTI No. 99-19

FGFACILITY CONDITIONS

Haworth is subject to source-wide Hazardous Air Pollutant (HAP) emission limits of 8.9 tpy individual and 22.4 tpy aggregate per a 12-month rolling time period. Per discussions with Ms. Wright, records are maintained for a minimum of five (5) years. Records were provided and are attached. Based on these records, for the time period of January 1, 2019 through November 30, 2019, the total annual aggregate HAPs (MIBK and Methanol) emissions were 280.31 pounds (0.14 tons) which is well below the individual and aggregate limits.

FGDUSTCOLLS

Haworth operates three (3) 50,000 CFM pulse-jet pneumatic baghouses for collecting particulate from the woodworking operations at the wood furniture building. The baghouses are externally vented for only part of the

year. They are subject to a PM emission limit of 0.01 pound per 1,000 pounds of exhaust gases. This limit assumes proper operation of the baghouses. The facility conducts weekly non-certified visible emissions observations as required in Special Condition (SC) FGDUSTCOLLS VI.1 and has installed and maintains a device to continuously monitor the pressure drop for each dust collector as required in SC FGDUSTCOLLS IV.1. Daily readings are recorded, which were provided and are attached. As required in FGDUSTCOLLS SC III.1 the facility does not operate the woodworking equipment without proper control. Both the woodworking equipment and baghouses were operating during this inspection.

The following baghouse readings were collected:

Baghouse ID	Delta P ("w.c.)	Broken Bag Detector (%)
DC-1	5	--
DC-2	7	2
DC-3	1.9	1

The facility maintains records of malfunctions/repairs as required by FGDUSTCOLLS SC VI.2. Flexible Group FGDUSTCOLLS SC V.1 allows the AQD to request PM testing. Testing is not being requested at this time.

As required by FGDUSTCOLLS SC IX.1, Haworth is required to implement and maintain an acceptable Preventative Maintenance Plan (PMP) and Malfunction Abatement Procedures (MAP). These Plans, are maintained in Haworth's computer system.

**B) Rule 201 Permit to Install Exemptions
EUECOAT**

Haworth is now operating Emission Unit EUECOAT under Rule 290 exemption. This emission Unit consists of a metal furniture e-coat painting process which includes a dip tank, rinse tank, and a 3.0 MMBtu/hr natural gas fired only bake oven. Although, there are no permit conditions for this emission unit EUECOAT is subject to the NSPS for Surface Coating of Metal Furniture promulgated in Title 40 of the Code of Federal Regulations (CFR), Part 60, Subparts A and EE.

Haworth provided the following records, which are attached:

- Monthly hours of operation for the paint process
- Amount of each coating used
- VOC content of each coating used
- VOC emission calculations

Based on these records, the maximum calculated VOC emissions for January 1, 2019 through November 30, 2019 were 339.20 lbs. (June) which is approximately 34% of the 1,000 pound per month limit allowed by Rule 290.

The federal NSPS for metal furniture coating establishes a limit of 0.9 kg/liter (7.5 pounds VOC/gallon) of coating solids applied and requires testing. Method 24 VOC content testing was last conducted in December 2012. The facility now uses Certificates of Analysis which are attached, for both the paste and resin. The results are summarized below and demonstrate that both materials are well below the limit. The facility does not coat fabric or paper and no thinners other than water are used.

Analysis	Resin	Paste
Density ppg	8.81	10.09
%Solids	36.8	59.3
solvent ppg	0.09	0.16

PPG of VOC = (%VOC * Density ppg) * (1 / (1 - %Solids))

RESIN -> 0.09 * 8.81 * (1 / (1 - 0.368)) = 0.50 pounds VOC/gallon of coating

PASTE -> 0.16 * 10.09 * (1 / (1 - 0.593)) = 0.66 pounds VOC/gallon of coating solids

Daily records are kept in the Control Room for the e-coat line. Levels in the resin and paste totes feeding the line are marked daily, and the linear difference between consecutive hash marks is converted to gallons based on the geometry of the tank. Exhaust gases from EUECOAT equipment appeared to be vented unobstructed vertically to ambient air.

EUWOODCTG

The Wood coating operations (EUWOODCTG) includes the UV wood coating line which is comprised of one UV-topcoat application unit, one UV-light cure zone, one pre-heat chamber, five manual spray booths and two cure ovens. This emission unit is no longer subject to the NESHAP 40 CFR, Part 63, Subpart JJ for "Wood Furniture Manufacturing Operations" and is now being operated under Rule 290. Records were provided for January – November 2019, which are attached. Based on these records the highest calculated monthly VOC's was 754 pounds in March. This equates to approximately 75% of the 1,000-pound per month limit allowed by Rule 290.

Rack Burn-off Ovens

Haworth utilizes two (2) rack burn-off ovens (EURACKBURN1 & 2) that appear, at this time, to be exempt from Rule 201 permitting requirements under Rule 290. The burn-off ovens are used for incinerating excess coating off metal part racks used on the powder coat line process. They are rated at 780,000 Btu/hr and emissions are controlled by an afterburner. Oven B01 was operating with an afterburner temperature of 1,432°F and a main chamber temperature of 175°F. Based on a January 2003 Rule 290 demonstration provided by Haworth, the ovens can meet the monthly emission limit specified in Rule 290 of 500 lbs of VOC's per oven as long as the facility does not exceed 115 batches per month and maintains a destruction efficiency of 95% which requires an afterburner temperature of at least 1,400°F. Per Ms. Wright, based on operations, the plant cannot process more than 80 batches per month. Thermocouples are calibrated annually. Circle charts were reviewed onsite. As noted in the July 31, 2018 inspection report, the afterburner pen still appears to be out of alignment. CR identified this issue to Ms. Wright who will discuss with the calibration company. Unit B01 is due for a calibration in January 2020. Unit B02 was not operating during this inspection.

At this time, based on observation made during the inspection, CR feels that the ovens are operating properly. Based on their Rule 290 determination discussed above, afterburner temperatures of 1,400°F MUST be maintained while combustion is occurring in the main oven. CR notified Mr. Kozminski and Ms. Wright that Chart recorder issues will need to be addressed if Haworth continues to use them as a way of demonstrating compliance.

Cold Cleaners

Haworth has three (3) Renegade brand cold cleaners that use a non-VOC citrus-based cleaner. Lids are kept closed and instructions posted. These units are maintained by Crystal Clean and there have been no changes to the solvent since the previous inspection conducted on July 31, 2018. An MSDS for the solvent is on file. The air/vapor interface of these units is less than ten square feet. These units appear to be exempt from Rule 201 permitting requirements under Rule 281(2)(h).

Emergency Generator

Haworth operates one (1) existing Stationary Engine <500 HP installed in 1996 and subject to NESHAP 40 CFR, Part 63, Subpart ZZZZ for *Stationary Reciprocating Internal Combustion Engines*. An hour meter is installed and the facility records hours of operation for both maintenance/testing and emergency use. Based on records, the emergency generator operated for approximately 2.17 hours from January 2019 through December 3, 2019. Inspections and oil changes are conducted annually by an outside vendor. Calculated Heat rating based on a 500HP engine is approximately 1,200,000 Btu/hr. Therefore, this emission unit appears to be exempt from Rule 201 permitting requirements per Rule 285(2)(g) for internal combustion engines with a maximum heat rating of less than 10,000,000 Btu/hour.

C) MAERS

The facility's 2018 MAERS emissions data was not selected for audit during the 2019 reporting season and the 2019 emissions data is not yet available for review. The facility submitted their 2018 data on time with no issues reported. The reported information is consistent with the information submitted in the past. A copy of the 2018 MAERS report is attached. The following emissions were noted:


Emission Unit	Particulate Matter (lb.)	VOC (lb.)
EU WOODWORK	2,840	--
EU-ECOAT	--	3,126
EU-WOODCTG	--	2,328

4) Compliance Determination

Based on the observations made at the time of this inspection and a subsequent records review, Haworth appears to be in compliance with applicable air quality rules and regulations including the requirements specified in PTI No. 99-19.

Attachments

- Emission Records
- Generator Run Time Log
- Dust Collector Emission Observation Logs
- 2018 MAERS Report
- Certificate of Analysis

NAME 

DATE 12/20/2019

SUPERVISOR 