

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

N556935527

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: 07/13/2016
STAFF: Steve Lachance	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-site Inspection Activities for FY'016 FCE. See CA N556935527. (SLachance, 7/14/16)		
RESOLVED COMPLAINTS:		

SLachance (SL) and CRobinson (CR) of this office conducted a scheduled inspection of Haworth, Inc. - Big Rapids Components in Big Rapids, Michigan. SL had contacted Mr. Jim Kozminski, Corporate Environmental Manager for Haworth the previous day in order to facilitate his presence and the availability of Ms. Brandy Wright (BW), on-site facility engineer, for the inspection. (SL had developed some questions for Mr. Kozminski during MAERS review, and was generally unfamiliar with this source.) The purpose of this inspection was to determine compliance with ROP No. MI-ROP-N5569-2014 and applicable State and Federal Air Quality rules and regulations.

Prior to arrival on-site at about 9:30 AM, SL and CR observed the main facility and surrounding area for odors and visible emissions; none were noted. Weather conditions were clear, about 75 degrees F, with southerly winds.

Note, in addition to the on-site activities discussed in this report, the compliance determination is based on review of all required reports and site activities in the last year. The FCE Summary Report accompanying this report includes details on other activities and reviews.

Primary Facility Contact = Brandy Wright (on-site); 231-629-0160; brandy.wright@haworth.com
Corporate Contact = Jim Kozminski; 616-393-1533 ; jim.kozminski@haworth.com

SOURCE DESCRIPTION

Haworth, Inc. - Big Rapids Components Steel & Wood manufactures metal and wood office furniture and is located just to the east of the city of Big Rapids in Mecosta County. The facility is located in an industrial park area with a few residents within a mile. The actual site is composed of two buildings with the wood furniture and coating building to the north and the newer 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. Though the site is made up of two structures, there is only one responsible official for both buildings and therefore only one Section to the ROP. 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 controlled by thermal oxidizers.

The stationary source is located in Mecosta County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

At the time Permit to Install No. 301-95 for EUECOAT was evaluated, all toxic pollutants emitted met the applicable toxic screening levels in Rule 224/225.

FGNSPSEE at the stationary source is subject to the Standards of Performance for Surface Coating of Metal Furniture promulgated in 40 CFR, Part 60, Subparts A and EE.

FGEMERGENCYGEN is subject to the National Emissions Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines promulgated in 40 CFR, Part 63, Subparts A and ZZZZ. (the area source RICE MACT). The ROP contains special conditions for the applicable requirements in 40 CFR, Part 63,

Subparts A and ZZZZ that were provided by Haworth, Inc. – Big Rapids Components Steel & Wood. The AQD is not delegated regulatory authority for this area source MACT; therefore the special conditions for the MACT contained in FGEMERGENCYGEN were not reviewed by the AQD.

FGDUSTCOLLECTORS at the stationary source is subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64. This emission unit has control devices and potential pre-control emissions of particulate greater than the major source threshold level. The monitoring for the control device is a broken bag detector alarm system, installed on all three dust collectors, to continuously monitor the operation of each baghouse.

FGNESHAPJJ at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Wood Furniture Manufacturing promulgated in 40 CFR, Part 63, Subparts A and JJ.

The coating limit of 2.75 pounds per gallon minus water as applied is below the 3.0 pounds per gallon minus water as applied limit from Rule 610 and is considered the Best Available Control Technology under Rule 702 (a). The dip tank application method is considered 100% transfer efficiency and therefore BACT. No additional control equipment is required.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, PSD of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of was less than 250 tons per year.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the facility is subject to National Emission Standard for Hazardous Air Pollutants for Wood Furniture Manufacturing promulgated in 40 CFR, Part 63, Subparts A and JJ. Title 40 CFR, Part 63, Subpart A requires that once a source is subject they are always subject to 40 CFR, Part 63, Subparts A and JJ and 40 CFR, Part 70. The stationary source is considered to be a "synthetic minor" source of HAP emissions because the stationary source accepted a legally enforceable permit condition limiting the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year.

The on-site inspection began with an entrance interview with all parties; SL shared the "Environmental Inspections: Rights and Responsibilities" brochure. The following items were discussed:

***There were no known operational issues at the site at this time that would interfere with or prevent air compliance determinations.

***SL had reviewed the EI2015 MAERS and had "passed" the audit with no changes to reported emissions, but he did want to verify the source of various emission factors used:

- 0.005 lb PM/1000 exhaust gas for dust collector emissions; from an old PTI/Stack Test
- E-Coating %VOC values are from Valspar Certified Data Sheets for the paste and resin used (see discussion, below); and
- Wood Finishing Average coating densities and %VOC content are weighted averages of the materials used. See further discussion, below.

***E-coating of metal furniture is the facility's source of HAPs. 2015 HAP emissions were estimated on the MAERS documentation as about 328 pounds, total (0.16 tons.)

***E-coating records are adjusted for a "minus water" basis; no other exempt solvents are used that would affect these records.

***E-coating is a dip tank operation with virtually 100% transfer efficiency to coated parts.

SOURCE-WIDE CONDITIONS

The facility has accepted Hazardous Air Pollutant (HAP) limitations of 9 tpy for each individual HAP; and 22 tpy for combined HAPs. These limits are per 12-month rolling time period, and the compliance demonstration is appropriate monitoring and recordkeeping. These conditions establish the combined facility as an Area Source of HAPs.

Per discussion during the entrance interview, all HAP emissions are from the e-coat operation.

MAERS documentation indicated 0.16 tpy combined HAPs for 2015; and readily available current monthly records for 2016 indicate 0.06 tons HAP to date. Therefore 12-month rolling average emissions are well below these limits.

ON-SITE OBSERVATIONS

Mr. Kozminski escorted SL and CR during the on-site tour portion of the inspection. This began in the metal furniture building which includes metal stamping, welding, cleaning and assembly operations, a cathodic E-coat dip tank and associated ovens, a powder coat line and associated oven, a cold cleaner, and two rack burn-off ovens controlled by individual thermal oxidizers that use a Rule 290 exemption.

The inspection continued to the wood furniture building which includes wood machining and manufacturing equipment, and a wood coating line including water borne stain and ultraviolet (UV) top coat. In the past two years they have added a fifth stain booth to the line, a trim stain and UV coating line and an additional water borne stain and oven out on the floor next to the sanding operation. All coatings in the wood building are water borne stains and UV top coats. This facility also has three baghouses and two cold cleaners.

METAL PLANT

E-COAT; EU-ECOAT and FGNSPSEE

These same records mentioned above demonstrate compliance with EUECOAT VOC Emission Limits of 52.6 tpy (12-month rolling period) and 16.8 pph. The most recent values are 1.54 tpy and <1 pph.

The two materials used in the e-coating (resin and paste) are restricted to 2.75 ppg VOC (minus water and as applied) per State review/T-BACT. No thinners other than water are used. Required testing results of these coatings (attached) shows that both materials are well below this limit;

	RESIN	PASTE
Density ppg	8.9	7.9
%H2O	57	76
%Solids	38	18
%VOC	5.0	6.1

RESIN

$0.05 * 8.9 * (1/1 - 0.57) = 1.03$ pounds VOC/gallon (minus water)

PASTE

$0.061 * 7.9 * (1/1 - 0.76) = 2.01$ pounds VOC/gallon (minus water)

Required records were current, complete and readily available.

This Material Limit (with lack of thinning) assures compliance with the State RACT requirement of 3.0 ppg VOC (minus water, as applied). The facility does not coat fabric or paper. The federal NSPS for metal furniture coating establishes a limit of 7.5 pounds VOC per gallon of coating solids applied; the aforementioned monthly records and test records demonstrate compliance with this.

RESIN

$0.05 * 8.9 * (1/1 - 0.38) = 0.72$ pounds VOC/gallon of coating solids

PASTE

$0.061 * 7.9 * (1/1 - 0.18) = 0.59$ 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.

FGRULE290

The use of Rule 290, with a recognized physical limit on batches processed, has been utilized for the two on-site Burn-off Ovens. Records and calculations indicate that Rule 290 limitations are not challenged at less than 120 batches per week; and physical restrictions/actual use is no more than about 1/3 this rate for the two ovens, combined.

One oven was observed to be in use at this time, and the afterburner temperature was above 1400 F. Rose charts are maintained, these indicated afterburner operations between 1400 and 1700 degrees. The thermocouple on both units had been calibrated by an outside service company on Jun 14, 2016.

FGEMERGENCYGEN

This small, natural gas-fired emergency generator set is located at the second level of the Tool Crib. It is physically tiny (45 kW, max, per generator name plate) and exempt from permitting per Rule 285(g). As an emergency RICE at an Area Source of HAPs, it is subject to the operation and maintenance requirements listed in the ROP. SL confirmed the presence of the hour meter (per records, installed in 2014), operating log (indicating use only for testing) and discussed the ongoing engine maintenance requirements.

(Note; the Powder Coat line was not in use at the time of the inspection; booths were being cleaned. Parts washing/prep and the coating booths themselves are exempt from permitting requirements per Rules 281(e) and 287(d).)

WOOD PLANT

Upon arrival at the Wood Plant, SL observed some fleeting visible emissions. The emissions were not constant, but they were observed multiple times. These were tan/brown colored and so at first SL thought they were related to woodworking and the regulated dust collectors; but further review and observations indicated the probable source was on the "right hand" portion of the facility, from a stack about mid-way to the back of the facility. Inside the plant, the Main Stain booth was in use, and the coloration of the stain matched the color of visible emissions observed; as did the location and diameter of the stack serving this booth.

SL spoke with operator "Jess" and she indicated knowledge of booth capture and the need for/scheduled maintenance of overspray filters.

FGNESHAPJJ

These requirements pertain to surface coating of wood furniture; Volatile HAP (VHAP) limits are placed on each type of coating utilized. SL requested Certified Data Product Sheets for the most commonly used coatings (attached.) These both indicate 0%VHAP; per discussion, no HAPs are emitted from Wood coating operations. Requested records were readily available; other than overspray filters, no control equipment is necessary for these coating operations.

FGDUSTCOLLS

Woodworking operations at the Wood Plant are controlled by three 50,000 cfm baghouses. These were in operation at the time of the inspection. No visible emissions were observed from this equipment. Required records of weekly visible emissions assessments were readily available and these all indicate no visible emissions.

SL observed the following "baseline" operating conditions for these baghouses. Again, no visible emissions from this equipment were noted at this time.

	DC-1	DC-2	DC-3
"Delta P"	2.2"	0.6"	2.0"
Motor Amps	180	150	200
"Broken Bag" Detector (%)	6%	NA	2%

DC-2 appeared to be functioning acceptably in that no visible emissions were noted from the exhaust stack, but these values do indicate behavior somewhat different than the other two (identical) baghouses. This baseline data can be used for future comparisons of baghouse behavior/performance.

FGDUSTCOLLSCAMPLAN

These dust collectors are subject to Compliance Assurance Monitoring (CAM); 40 CFR Part 64. Each baghouse uses a "broken bag detector alarm" to detect particulate emissions/possible baghouse malfunction, supplemented by weekly observations for the presence/absence of visible emissions from the baghouses. Special Conditions VI. 1 and 5 of this table requires continuous operation of the broken bag detector systems. Requested records (attached) indicate that, while no visible emissions have been noted, with the exception of two readings the detector system for DC-2 has not operated properly since the start of 2016. SL considers this to be a violation of SCs. VI. 1 and 5 of the CAM Plan for this equipment.

FGCOLDCLEANERS

Several such machines are located in the facility, but none were physically observed during the walk-through/on-site inspection activities. These do not use a VOC-based solvent, but rather use citrus-based Renegade Cleaner per the attached MSDS. The machines and solvent are maintained by an off-site contractor (Crystal Clean.)

EXIT INTERVIEW

An exit interview was conducted at about 12:30 PM; the facility was represented by Mr. Kozminski, Ms. Wright, and Mr. Steve Simms, Plant Manager and Responsible Official. SL stated that all was apparently in order with the exception of two items:

- Ephemeral visible emissions that appeared to be emanating from the Main Stain Booth at the Wood Plant. The tan/brown coloration of the observed visible emissions and physical location, as well as this booth being in operation at the time of observations support the likelihood that this was the source of observed visible emissions. The booth is designed for good air flow capture, and negative pressure within the enclosure can be assessed by the fluttering/direction of a tape flag on the edge of the enclosure, but unless filters are in good repair and properly installed, overspray may not be fully captured. It was not practical to observe filter condition or placement while staining operations were ongoing. While the filters are routinely replaced, if they are not properly positioned, discharge of overspray can occur. SL requested a facility review of these filters in particular and assessment of booth operation and maintenance practices in general to assure that overspray is satisfactorily captured.
- CAM has not been adequately implemented for DC-2 in 2016. Continuous leak detection is required by this Plan; and the leak detection system for this unit has not operated properly for most of 2016. SL considers this to be a violation of SCs VI. 1 and 5 of this CAM Plan, and anticipates issuance of a Violation Notice for this monitoring deficiency.

CONCLUSION

The facility is currently in non-compliance with the condition(s) cited above; SL recommends issuance of a Violation Notice.



Attachments

- A. Monthly E-Coat Records, 2015 through June 2016
- B. E-Coat Resin and Paste Analyses
- C. Certified Product Data Sheets for High-Volume Wood-Coating Materials
- D. FGDUCTCOLL CAM Plan Monitoring Records
- E. Renegade Cold Cleaner MSDS

NAME 

DATE 7/15/16

SUPERVISOR 