

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

N679159685

FACILITY: Grand Rapids Chair Company		SRN / ID: N6791
LOCATION: 1250 84Th St SW, BYRON CENTER		DISTRICT: Grand Rapids
CITY: BYRON CENTER		COUNTY: KENT
CONTACT: Geoff Miller , Owner		ACTIVITY DATE: 08/19/2021
STAFF: April Lazzaro	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection. No odors or visible emissions were noted. I met with Geoff Miller, Owner who escorted me during the inspection. I worked extensively with George Mason, Vice President of Operations during the recordkeeping review.

FACILITY DESCRIPTION

Grand Rapids Chair Company (Grand Rapids Chair) SRN: N6791 is a furniture manufacturing facility that specializes in manufacturing restaurant furniture. The purpose of the inspection was to determine the facility's compliance with the 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); the Air Pollution Control Rules; and PTI No. 112-13.

COMPLIANCE EVALUATION

The facility has emission units identified as EU-Chair and EU-Table, which are regulated by PTI No. 112-13 in the flexible group identified as FG-Chair&Table. The associated coating operations are permitted by PTI No. 112-13.

The wood chair line starts at the shipping and receiving area. The facility receives partially completed wooden chairs. The chairs are brought to the work station where they are finished being built and sanded. The cutting and sanding all appeared to be exhausted internally. Once the wood working is complete, the chairs are loaded on racks and moved to the coating area. The internally vented woodworking operations are exempt from permitting pursuant to Rule 285(2)(I)(vi)(B).

The chair coating area consists of four booths. These include a stain booth, sealer, topcoat one and topcoat two. The area was in use at the time of the inspection. I observed the coating containers and they all appeared to be properly sealed. I visually inspected the booth filters and did not observe evidence of significant filter penetration or gaps. One filter did have a sag, which I discussed with Mr. Miller. These booths are equipped with a series of two filters. One is across the front which is a disposable mat filter, and the second series are recessed into a frame within the booths. We discussed filter change out and learned that each operator is responsible for filter replacement as needed. The first filter is likely replaced each day. After the chairs are coated, they pass through a curing oven and are staged at the end of the room. If the chair requires a seat cushion it is sent to the seating area. The seat cushion area includes a fabric cutting station and an assembly area. The fabric cutting equipment is vented internally.

The wood table line is similar in layout to the wood chair line. The rough materials come in from shipping area and are cut and sanded in the wood working area. Some of the tables are laminated and others are not. The laminated tables receive a spray on adhesive. I observed the adhesive application area and inspected the booth filter system. We met with the operator who changes the mat filter daily and uses the booth pressure drop gauge to assist with when to change the secondary filters.

The metal chair line includes metal working and powder coating. The metal is cut to size on site. Each piece of metal goes through various cutting, bending, drilling and welding stations until the desired shaped is accomplished. The facility processes steel, stainless steel and aluminium. The cutting, grinding and welding processes were vented internally through a dust collector. These activities are exempt from permitting pursuant to Rule 285(2)(l)(vi)(B). Once completed the chairs are place on a rack and conveyed to the powder coating area. The powder application area is internally vented and exempt from permitting pursuant to Rule 287(2)(d). Once coated, the chairs are then assembled. As mentioned previously, the metal chairs can have either a wooden seat or a metal seat added.

The facility also has an active permit (PTI No. 75-00) for a zinc plating line. I discussed the line with Mr. Miller and learned that the equipment was removed prior to Grand Rapids Chair purchasing the facility. A request to void the permit has been sent to Lansing.

PTI No. 112-13

The permit combines the wood chair line and metal chair line into one emission unit referred to as EU-Chair. The permit refers to the emission activities of the table line as EU-Table. The emissions associated with EU-Chair as well as EU-Table are limited by the permit as one flexible group referred to as FG-Chair&Table. The flexible group establishes conditions for all three lines. The permit also limits emissions of hazardous air pollutants (HAPs) from the entire facility under the flexible group FG-Facility. FG-Facility includes all process equipment source-wide including any exempt equipment.

FG-Chair&Table

Emissions of volatile organic compounds (VOCs) are limited to 32.1 tpy of VOCS per 13 four-week rolling time period as determined at the end of each four-week period.

Emissions of acetone, ethyl benzyne and xylene are further limited as described below. I met with George Mason following the physical inspection and he showed me that the records were up-to-date. I also requested recordkeeping be submitted to me via email, including VOC, Acetone, Ethyl Benzene and Xylene for the four-week rolling time period as determined at the end of each four-week period.

I also requested the usage and emissions totals that the company's paint suppliers provide to them annually. The facility has contracted with Jim Seufert, Consultant, to assist them in preparing and maintaining records.

Emission Limits

A review of the information submitted was conducted. The reported total VOC emissions for the four-week period ending August 1, 2021 are 3.44 tons. The reported total acetone emissions for the four-week period ending August 1, 2021 are

0.27 tons which is below the 8.0 ton limit. The reported total ethyl benzene emissions for the four-week period ending August 1, 2021 are 0.02 tons which is below the 2.5 ton limit. The reported total xylene emissions for the four-week period ending August 1, 2021 are 19.79 pounds which is below the 90.2 pound per day limit. The records indicate compliance with the emission limits.

Material Limits

Different materials are subject to separate instantaneous VOC limitations depending on whether it is a topcoat (6.1 lb/gal), a stain (6.1 lb/gal) or a sealer (5.0 lb/gal), all on a minus water basis.

A review of the materials used was conducted based on the supplier provided product usage records. In the initial records submittal, there were more than a dozen products with VOC contents over 6.1 lb/gal. I requested additional information from the company to identify which coating category these products fit into and to confirm the VOC contents of the materials. The company provided documentation from the coating supplier that they had made errors in the VOC contents. The revised documentation indicates compliance with the material limits in the permit.

Additionally, the company provided the as applied VOC content for a topcoat and sealer blended with other lower VOC content materials, and the as applied values are below the limits. Documentation was provided to demonstrate this.

The AQD recommends that Grand Rapids Chair conduct Method 24 analysis on high use stains to confirm that the changes made to the VOC content by the supplier are correct, and the materials that they are using are compliant.

The permit requires the facility to operate in a manner that prevents fugitive emissions. This includes capturing all waste topcoat, sealer, stain, purge and cleanup solvents (materials) and storing them in closed containers. I observed each area and observed containers to be adequately covered and contained. The permit also requires the permittee to handle the materials in a manner to minimize the generation of fugitive emissions. I did not observe strong solvent odors in the work area, and it appeared that materials were being handled appropriately.

The equipment associated with FG-Chair&Table is required to be equipped with exhaust filters that are installed, maintained and operated in a satisfactory manner. During my inspection I looked in the booths to see the filters which appeared satisfactory.

The permittee is required to maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component. This requirement was satisfied by the supplier usage records.

The records must include the following information on a four-week basis for FG-Chair&Table:

- a) Gallons (with water) of each VOC containing material used.
- b) VOC content (minus water and with water) of each material as applied.
- c) VOC mass emission calculations determining the monthly emission rate in tons per four-week period.

d) VOC mass emission calculations determining the annual emission rate in tons per 13 - four-week rolling time period as determined at the end of each four-week period.

Grand Rapids Chair was not maintaining records on a with water and without water basis. I was provided supplier annual records, and a spreadsheet with VOC (with water) emissions, as well as acetone, ethyl benzene and xylene emissions. Recordkeeping needs improvement to more adequately demonstrate compliance, however emissions are low and compliance with the limits was demonstrated.

The permit has a separate facility wide flexible group that covers all equipment located at the facility and is identified as FGFACILITY. This flexible group limits the emissions of hazardous air pollutants (HAPS) from all process at the facility. The facility is limited to less than 9.0 tons per year (tpy) of any individual HAP and 22.5 tpy aggregate HAPs. Based on records provided, the annual aggregate HAP emissions for 2020 were 0.60 tons. The highest individual HAP emission is reported to be glycol ethers at 946.95 pounds or 0.47 tons. Per a 2018 response to a Violation Notice, the company stated that they do not intend to maintain records of 12-month rolling individual HAP emissions since they are below the limits. The AQD inspector at the time found that response to be acceptable.

It is recommended that Grand Rapids Chair improve upon the HAP records to more clearly demonstrate compliance with the limits established by the permit.

SUMMARY

Grand Rapids Chair appeared to be in compliance at the time of the inspection.

NAME April Lazzaro

DATE 09/24/2021

SUPERVISOR HH