

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

A231865883

FACILITY: GRAND RAPIDS LABEL		SRN / ID: A2318
LOCATION: 2351 OAK INDUSTRIAL DR, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: John Crosby , Vice President-Operations		ACTIVITY DATE: 11/29/2022
STAFF: Michael Cox	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Unannounced Inspection		
RESOLVED COMPLAINTS:		

At 9:30 A.M. on November 29, 2022, Air Quality Division staff, Michael Cox (MTC) conducted an unannounced scheduled inspection of Grand Rapids Label located at 2351 Oak Industrial Drive, Grand Rapids, Michigan. The purpose of the inspection was to determine compliance with State and Federal air quality regulations and Permit to Install (PTI) No.1077-84. Prior to the inspection, MTC drove by the area. No visible emissions were noted. Various odors were present in the area but could not be definitively attributed to Grand Rapids Label. Accompanying AQD staff was John Crosby, Vice President of Operations, who also provided records requested during the inspection.

Facility Description

The facility manufactures pressure sensitive labels and does some adhesive coating and laminating. They currently have 10 flexographic presses and 2 digital presses. PTI No. 1077-84 was issued to construct and operate an adhesive coating line with a catalytic incinerator for control. The facility is considered a minor source of VOC emissions.

Compliance Evaluation

Flexographic Plate Preparation:

This area consists of a nylon Xpress Thermal Processor unit and a solvent-based plate wash unit.

A nyloflex Xpress Thermal Processor was installed in 2018 to replace the solvent-based plate wash unit. The nyloflex Xpress Thermal Processor uses flexo-printing plates specifically developed for thermal processing. In the processor, the thermal printing plate is first heated to a defined temperature inside the processor, and then the unexposed polymer is pulled out of the plate by a developer roll. After that, the plate only needs to be light finished. This unit has negligible emissions that are emitted to the internal environment. This unit can be considered exempt from permitting under Rule 286(2)(d).

In addition, there is a small plate washer unit that utilizes Indigo imaging oil. The imaging oil is recycled within the unit at a rate of 90%. According to records, HP Imaging Oil for use in the HP Indigo Digital Press has a VOC content of 6.34 pounds per gallon. This material contains petroleum hydrocarbons (CAS No. 90622-58-5) which are not considered hazardous air pollutants (HAPs). The company uses less than 200 gallons per year of this material and therefore emissions are well below the 1,000 pound per month VOC limit in permit exemption Rule 290. The company will need to continue to maintain appropriate records.

Flexographic Printing:

There are 10 flexographic printing machines used to apply water-based inks to a substrate through a web. In addition to water-based inks, five of the units can apply solvent-based coatings (primarily a solvent-based primer called (Sun Prokote Primer) and six units can apply ultraviolet inks. The flexographic print lines were originally permitted under PTI Nos. 126-84 and 126-84A, but were voided by AQD in September 1994 because it was determined that the units could be considered exempt under Rule 290.

Based on company records for 2021, the company had total combined VOC emissions of 5,223.75 pounds from all ten flexographic coating lines for the 2021 calendar year. It was noted that lacquer thinner and n-propyl alcohol are used on these lines as cleanup and reducing solvent. VOC emissions from the clean-up solvents are included in the above number. Based on the information provided, each line is well under the 1,000 pounds per month limit of Rule 290.

Adhesive Coating Line:

The adhesive coating line permitted under PTI No. 1077-84 is used to apply pressure sensitive adhesive coatings to a substrate. This line is controlled by a catalytic oxidizer. The oxidizer is only used when solvent-based adhesives are being used on the adhesive line.

AQD staff went on the roof to inspect the control equipment and ductwork. Exhaust gases from the catalytic incinerator were discharged unobstructed vertically through a cylindrical, stainless-steel stack which appeared to be consistent with the dimensions listed in PTI No. 1077-84 with a maximum diameter of 30 inches and exit point at least 35 feet above ground level. It is noted that prior to the exhaust stack, hot exhaust gas from the incinerator is used to heat makeup air through a heat exchanger and the heated makeup air is then returned to the plant. AQD staff observed a square, goose neck stack between the oxidizer and the stainless stack. According to company maintenance personnel, the square stack is used to bypass the heat exchanger when certain loads to the incinerator creates too much heat to be returned to the plant. No visible emissions were

observed. Mr. Crosby stated that emissions are based on the destruction efficiency of 88% for the catalytic incinerator. As a result, maintenance records and a copy of the most recent destruction efficiency test were requested and provided. The most recent destruction efficiency test was conducted on October 22, 2020, and resulted in an average destruction efficiency of 88%, which is consistent with the emissions records provided. The catalytic incinerator is on an in-house preventative maintenance schedule. From the preventative maintenance records, it appears that Grand Rapids Label is properly maintaining the catalytic incinerator for emission control purposes.

The adhesive line has a limit of VOC emissions of 1.8 pound per hour nor 5.6 tons per year. Based on company records for 2021, total VOC emissions from the adhesive line were noted to be 7,955.53 pounds (3.98 tons) which is below the 5.6 tons per year limit in the permit. The VOC pounds per hour emission rate from the adhesive line has not been tested for verification. Emissions from the coating line include controlled emissions using a control efficiency of 88% which includes toluene, ethyl acetate, heptane, and isopropyl alcohol for cleanup and thinning.

Conclusion:

Based on the facility walkthrough and a review of the records submitted, Grand Rapids Label appears be in compliance with PTI No. 1077-84 and all other applicable state and federal air pollution regulations.

NAME Michael T. Cox

DATE 12/29/2022

SUPERVISOR HH