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

B617550743

FACILITY: Coding Products, A Division of Illinois Tool Works		**SRN / ID:** B6175
LOCATION: 111 W. Park Dr., KALKASKA		**DISTRICT:** Gaylord
CITY: KALKASKA		**COUNTY:** KALKASKA
CONTACT: Ian Rittof , Facility Manager		**ACTIVITY DATE:** 06/24/2019
STAFF: Becky Radulski	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: scheduled inspection and records review		
RESOLVED COMPLAINTS:		

B6175 Coding Products, Incorporated was inspected as a FY19 scheduled inspection to determine compliance with MI-ROP-B6175-2013. Becky Radulski (AQD Gaylord), Sharon LeBlanc (AQD Gaylord), Jodi Lindgren (AQD Cadillac), Ian Rittof (Facility Manager, 231-564-3019, ian.rittof@itwsf.com) and Lisa Surowitz (Production Manager, 231-564-1741, lisa.surowitz@itwsf.com) were present for the ROP review and inspection. Michael Kyro (Operations Manager) sat in for part of the meeting.

Coding Products, Incorporated is located in an industrial park at 111 West Park Drive, Kalkaska, Michigan. This facility applies solvent-based coatings to rolls of polyester film (web). There are six web-coating lines used for this purpose. The codings are used for a variety of applications including medical bags, credit cards, piping and corks.

EUCOATER1, EUCOATER2, and EUCOATER3 utilize the Hot Stamp process with the Mayer Rod Coating Technology. The process uses a roll of web that travels continuously through the coating header where excess coating is applied and is then removed by the Mayer Rod. The web then proceeds to the oven for drying where the solvents (VOC) are flashed. VOC emissions from EUCOATER1 and EUCOATER2 are sent to the regenerative thermal oxidizer (RTO). VOC emissions from EUCOATER3 are sent to the solvent vapor recovery system to condense the VOC vapors and recover the VOC for reuse.

EUCOATER4, EUCOATER5, and EUCOATER6 utilize the Thermal Transfer process with the Gravure Technology. The process uses the same polyester web which also travels through the coating header where coatings are applied. The difference between the Mayer Rod Coating Technology and the Gravure Technology processes is, the Gravure Technology uses a smaller amount of coating that conforms to the amount of coating needed to produce the required markings on the product. Similarly, the web then proceeds to the ovens for drying where the VOC are flashed. VOC emissions from EUCOATER4, EUCOATER5, and EUCOATER6 are sent to the RTO for destruction.

Once dried, the web is rolled and can be sent to the customer in a roll or can be cut into various sizes to meet the needs of the customer.

REGULATORY DISCUSSION

The facility is subject to MI-ORP-B6175-2013, which was issued December 9, 2013. The facility has the potential to emit over 100 tons per year of volatile organic compounds (VOCs) and more than 10 tons per year and/or combined hazardous air pollutants (HAPs) over 25 tons per year.

The facility is major for HAPs.

The facility has emission units subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64:

EUCOATER1, EUCOATER2, EUCOATER4, EUCOATER5, and EUCOATER6 - The emission units have a RTO control device and potential pre-control emissions of VOC greater than the major source threshold level. The monitoring for the RTO is a Data Acquisition System (DAS) and process monitoring system. The process operations are linked to the compliance parameters, which are set in the computer to assure compliance with applicable permit limits.

EUCOATER 3 - This emission unit has a solvent vapor recovery system to condense the VOC vapors and recover the VOC for reuse and the system is used as a control device and potential pre-control emissions of VOC are greater than the major source threshold level. The monitoring for the solvent vapor recovery system is a Data Acquisition System (DAS) and process monitoring system. The process operations are linked to the compliance parameters, which are set in the computer to assure compliance with applicable permit limits.

EUCOATER1, EUCOATER2, EUCOATER3 EUCOATER4, EUCOATER5, and EUCOATER6at the stationary source are subject to the Maximum Achievable Control Technology Standards for National Emissions Standards for hazardous Air Pollutants: Paper and Other Web Coating promulgated in 40 CFR, Part 63, Subparts A and JJJJ.

RECORDS REVIEW

EUCOATER3 - This emission unit applies a continuous layer of coating material across a portion of a web substrate using the Hot Stamp process with the Mayer Rod Coating Technology. Pollution control equipment consists of a nitrogen blanket solvent recovery system. This table in the ROP primarily contains the requirements of 40 CFR 63, Subpart JJJJ that apply to this emission unit as well as some requirements that originated in a Permit to Install (PTI) that are specific to this emission unit. In this process the coating is applied to the web substrate which then immediately enters a drying oven through a curtained opening. The oven contains a nitrogen atmosphere that is controlled to limit the oxygen concentration. The coating solvents evaporate into the nitrogen atmosphere which is vented to the solvent recovery skid. A series of heat exchangers (condensers) remove volatile organic compounds from the nitrogen gas and the "clean" nitrogen is recycled back to the oven. This is a closed loop system, the oven does not vent to the atmosphere, volatile emission can only occur prior to and following drying in the oven. A liquid to liquid balance system is used to calculate the volatile organic compound recovery and thus organic HAP emissions. The volatile content and amount of coatings is recorded as is the amount of solvent recovered by the reclamation system for each batch.

1. Emission Limits - Organic HAP emissions are limited to no more than 5% of the organic HAP applied for each month. In other words, organic HAP emissions must be reduced by at least 95%. Records maintained by the facility demonstrate compliance.

2. Material Limits – None.

3. Process/Operational Restrictions - EUCOATER 3 is not allowed to operate and purge operations are not to occur unless the solvent recovery system is installed and operating. AQD staff observed the solvent recovery system operating during the inspection.

4. Design/Equipment Parameters – None.

5. Testing - The organic HAP mass fraction of each coating material is determined by using formulation data. The coatings are mixed on-site. Recordkeeping material usage and emission calculations are based on the product ID and color. Information regarding the required coating, HAP content, % solids, is tied to this ID and tracked by computer once the product ID is entered. The coater operators log the amount of coating usage which is also entered into the computer system.

6. Monitoring/Recordkeeping - Per the requirements of the ROP and 40 CFR 63 Subpart JJJJ, the facility is required to maintain monthly records of: Organic HAP content data; Material usage; Organic HAP usage; Volatile matter usage; Coating solids usage; Liquid-liquid material balances. Daily records are maintained. AQD staff determined the aforementioned records to be complete and in compliance with the ROP and 40 CFR 63. Liquid-liquid material balances are performed on a monthly basis pursuant to the ROP and 40 CFR 63 Subpart JJJJ. All other records required pursuant to the ROP and 40 CFR 63 Subpart JJJJ were maintained and determined adequate. Monthly organic HAP emissions were maintained for EUCOATER3 In accordance with Appendices 7E and 7F of the ROP. Records demonstrate compliance. The P2 fan and liquid level of the HE-4 heat exchanger on the solvent recovery system is required to be monitored. The P2 fan moves the nitrogen gas from the oven through the reclamation system and back. Coding Products monitors the fan amperage which was 31.3 amps at the time of the inspection. The liquid level range of the HE-4 heat exchanger is monitored to ensure it stays between 26 and 51 percent. The system will shut down if it falls below 25% or exceeds 80%. AQD review of previously submitted reports indicate there were no excursions or monitor downtime.

7. Reporting - Semiannual deviation reports, annual certifications of compliance, and semiannual compliance assurance monitoring reports were previously submitted and reviewed by AQD staff.

8. Stack/Vent Restrictions – None.

9. Other Requirements - AQD maintains a copy of the startup, shutdown, and malfunction abatement plan maintained at the facility.

FGCOATING12456 - The 5 emission units contained in this flexible group utilize a permanent total enclosure (PTE) to capture 100 % of the organic HAP emissions from coating application and direct the emissions to a regenerative thermal oxidizer (RTO). This table in the ROP contains the requirements of 40 CFR 63, Subpart JJJJ that apply to this Flexible Group as well as some requirements that originated in a PTI that are specific to this Flexible Group.

1. Emission Limits - Similar to EUCOATER3, organic HAPs are limited to no more than 5 percent of the HAP applied (95% reduction) for each month. Records maintained demonstrate that organic HAP emissions are reduced by at least 99%. The reduction is based on stack testing performed in 2017.

2. Material Limits - None

3. Process/Operational Restrictions - Release coat big mixing coating X-43 is not allowed on any coating line listed in the flexible group. This limitation is to ensure the facility is able to

meet the VOC limit contained in FGCOATING-ALL.

At the time of the inspection, each of the coating lines were equipped with permanent total enclosures and collected volatile organic compounds were routed to the RTO for destruction. The draft induced by the RTO fan on the enclosures is set at -3.5 and was reading -3.5 inches W.G. during the inspection, which is currently used to indicate proper performance of the permanent total enclosures. During the inspection the RTO temperature reading was 1,691°F, which is in compliance with the minimum temperature requirement of 1,400°F, and the temperature established during testing of 1600°F.

4. Design/Equipment Parameters - The RTO was equipped with an operating continuous combustion temperature monitor. Values recorded from the monitor are used by the facility to demonstrate the RTO is operating properly. A RTO retention time of 0.5 seconds or greater is factored into the design and AQD staff do not have the ability to determine compliance with the condition.

5. Testing/Sampling - Testing of the permanent total enclosures and the RTO pursuant to 40 CFR 63 Subpart JJJJ was performed on April 18, 2017.

6. Monitoring/Recordkeeping - Monitoring and recording of the RTO and Permanent Total Enclosures parameters was performed as required by the ROP and 40 CFR 63 Subpart JJJJ.

7. Reporting - Semiannual deviation reports, annual certifications of compliance, and semiannual compliance assurance monitoring reports were previously submitted and reviewed by AQD staff.

8. Stack/Vent Restrictions - The RTO stack appeared to be constructed in accordance with the parameters listed in the ROP.

9. Other Requirements - A capture system/permanent total enclosure monitoring plan and startup, shutdown, and malfunction abatement plan were previously submitted and approved by AQD staff. The facility has submitted annual plan reviews indicating updates were not necessary at that time. The capture system/permanent total enclosure monitoring plan will need to be updated this year to include the new differential pressure monitors on each coating line.

FGCOATING-ALL - All coating lines within the facility, consisting of: EUCOATER1, EUCOATER2, EUCOATER3, EUCOATER4, EUCOATER5, and EUCOATER6. Pollution control equipment consists of a solvent recovery system for EUCOATER3 and the remaining coating lines are controlled by a RTO. This table in the ROP contains the requirements from AQD Permits to Install, and the Air Pollution Control Rules that apply to this emission unit.

1. Emission Limits - VOC emissions from the flexible group are limited to 47.8 pounds per hour, 171.9 tons per 12 month rolling time period, and 4.79 pound per gallon of solids applied (based upon a 24 hour averaging period). Records reviewed by AQD indicate compliance with the pound per hour limit. Pound per hour emissions are recorded weekly in accordance with Appendix 7D of the ROP. VOC emissions from each emission unit are limited to 4.79 pounds per gallon of solids applied (based upon a 24 hour averaging period) in accordance with Appendix 7B of the ROP. However, emission averaging over all six coating lines is allowed if the average VOC emissions are less than 4.31 pounds per gallon of solids

applied. Records maintained by the facility demonstrate that, when using emission averaging, VOC emissions are less than 2.04 pounds per gallon of solids applied.

2. Material Limits – None.

3. Process/Operational Restrictions - Waste coatings and solvents are required to be disposed of in a manner that minimizes the introduction of air contaminants to the outer air. Coding Products reclaims solvents using the solvent recovery system. AQD staff observed coating and solvent containers not in use were closed during the inspection.

4. Design/Equipment Parameters – None.

5. Testing/Sampling - The VOC emission rate, in pounds per hour, from the flexible group is required to be tested every five years. Testing was also conducted on April 18, 2017.

6. Monitoring/Recordkeeping - Records of VOC emissions and material usage were available for AQD staff review during the inspection. The records were maintained in accordance with Appendix 7 of the ROP.

7. Reporting - All reports submitted pursuant to the ROP were previously reviewed and documented.

8. Stack/Vent Restrictions - The stack associated with the RTO appeared to be constructed within the parameters listed in the ROP.

9. Other Requirements - Each web coating line was labeled in accordance with the requirements of the ROP.

FG-COLDCLEANERS - Three cold cleaners that are exempt from the requirements to obtain a Permit to Install pursuant to Rules 281(h) or 285(r)(iv).

1. Emission Limits – None.

2. Material Limits - Solvents used in the cold cleaners are limited to no more than 5%, by weight, of certain halogenated compounds. The facility is in compliance with the limit since methyl ethyl ketone and toluene are used as the cleaning solvents.

3. Process/Operational Restrictions - Cleaned parts are drained for no less than 15 seconds as required by the ROP.

4. Design/Equipment Parameters - The air/vapor interface of each cold cleaner is less than 10 square feet and covers were in place and closed at the time of the inspection.

5. Testing/Sampling – None.

6. Monitoring/Recordkeeping - Cold cleaner specific information including the air/vapor interface and unique identifier were available to AQD staff upon request.

7. Reporting - All reports submitted pursuant to requirements of the ROP were previously reviewed and documented.

8. Stack/Vent Restrictions – None.

9. Other Requirements – None.

CONCLUSION - Based upon the on-site inspection and review of records, AQD staff considers the facility in compliance with ROP No. MI-ROP-B6175-2013 and 40 CFR 63 Subpart JJJJ.

NAME Becky Radzicki DATE 9/07/19 SUPERVISOR