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

B617539646

FACILITY: Coding Products, A Division of Illinois Tool Works		**SRN / ID:** B6175
LOCATION: 111 W. Park Dr., KALKASKA		**DISTRICT:** Cadillac
CITY: KALKASKA		**COUNTY:** KALKASKA
CONTACT: Lisa Surowitz , Environmental Mgr.		**ACTIVITY DATE:** 04/18/2017
STAFF: Kurt Childs	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: 2017 FCE		
RESOLVED COMPLAINTS:		

2017 Full Compliance Evaluation; site inspection and records review.

The purpose of the FCE was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-B6175-2013. On April 18, 2017 I met with Ms. Lisa Surowitz of Coding Products to conduct an inspection of the facility and review recordkeeping as well as attend the Capture Efficiency and Destruction Efficiency testing of FGCOATING12456.

Coding Products applies solvent-based coatings to polyester film (web) which is used by Coding Products customers to transfer the coating to their own products for colorizing or labeling. These products include credit cards, plastic tubing, and intravenous bags. There are six separate coating lines, five of which share a regenerative thermal oxidizer to control HAP emissions. EUCOATER3 utilizes a separate nitrogen blanket solvent recovery system to control HAP emissions. A detailed description of the coating processes is included in previous Scheduled Inspection activity reports.

The MI-ROP-N1675-2013 renewal application listed the following equipment as exempt devices pursuant to Rules 281(h) and 284(i) and are not subject to any process-specific emission limit or standard: solvent distillation equipment, drum washer, cleaning solvent storage behind EUCOATER5 and HIR building, and cleaning solvent storage behind EUCOATER3. The facility also has two mixing rooms that would be exempt pursuant to Rule 336.1287(k) including dry component addition controlled by a dust collector.

The facility is subject to 40 CFR Part 63, Subpart JJJJ: Maximum Achievable Control Technology Standards for Hazardous Air Pollutants: Paper and Other Web Coating because the potential to emit a single HAP is equal to or greater than 10 tons per year and the potential to emit of all HAPs combined is equal to or greater than 25 tons per year. The Subpart JJJJ requirements are included in tables EUCOATER3 and FGCOATING12456 of the ROP. Both of these tables include Compliance Assurance Monitoring (CAM) requirements. Table FGCOATING-ALL contains requirements that originated in AQD Permits to Install 321-92C, 321-92D, 244-03 and the Air Pollution Control Rules.

SOURCEWIDE - There are no sourcewide conditions associated with this facility; therefore, this section is not applicable.

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 indicate organic HAP reduction was 96.4% in December 2016 as determined in accordance with Appendix 7F of the ROP.

2. Material Limits - There are no material limits associated with this emission unit; therefore, this section is not applicable.

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. AQD staff also observed a micro motion meter on the solvent recovery system which indicates the amount of volatile matter reclaimed during the batch run.

4. Design/Equipment Parameters - There are no design or equipment parameters associated with this emission unit; therefore, this section is not applicable.

5. Testing - The organic HAP mass fraction of each coating material is determined by using formulation data. The coatings are mixed on-site and AQD staff noted that the records are well documented and maintained. 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 with printed copies kept in a three ring binder. AQD staff determined the aforementioned records to be complete and in compliance with the ROP and 40 CFR 63 based upon their review on-site.

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 of the monthly HAP emissions for December 2016 were 1,602.47 lbs.

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%. At the time of the inspection the level was 28%. 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 - There are no stack or vent restrictions associated with this emission unit; therefore, this section is not applicable.

9. Other Requirements - AQD maintains a copy of the startup, shutdown, and malfunction abatement plan maintained at the facility. AQD facility file review demonstrates Ms. Surowitz has recently reviewed the plan and submitted documentation to the AQD indicating a revision was not necessary.

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 2012, but 5 year testing was taking place at the time of the inspection. Once final, the 2017 test results will be used to demonstrate compliance with the HAP reduction requirement. SC III.5 originated in a PTI and requires that the VOC destruction efficiency of the RTO be 98%, however, there is no VOC limit in this table, only in FGCOATING-ALL, but that table applies to all the coating lines. This issue should be reviewed upon renewal of the ROP as there is currently no compliance demonstration for this requirement.

2. Material Limits - There are no material limits associated with this flexible group; therefore, this section is not applicable.

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. Ms. Surowitz mentioned during the inspection that EUCOATER3 is the only line that used the release coat.

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 and was reading -3.5 inches W.G. during the inspection, which is currently used to indicate proper performance of the permanent total enclosures. Based on AQD review of the Subpart JJJJ and Method 204 requirements Coding Products has agreed to monitor the differential pressure at each enclosure near the web inlet Natural Draft Opening (NDO) on each coater. These pressures were established during the 2017 stack test and will provide a more accurate method of determining that each enclosure is meeting the PTE requirement.

During the inspection the RTO temperature reading was 1,603°F, which is in compliance with the minimum temperature requirement of 1,400°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 in 2012. Testing is required every five years and was performed on April 18, 2017. The results of this test are not yet available.

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. Records of the monitoring were made available to AQD staff upon request. AQD staff determined the records were adequate based upon review.

The HAP control efficiency was accounted for and documented in calculations performed by facility personnel.

SC VI.18 refers to a VOC limit and should also be corrected to "Organic HAP" upon renewal of the ROP.

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. The 12 month rolling time period emissions are recorded in accordance with Appendix 7E in December 2016 were 23.26 Tons.

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 - There are no material limits associated with this flexible group; therefore, this section is not applicable.

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 - There are no design or equipment parameters associated with this flexible group; therefore, this section is not applicable.

5. Testing/Sampling - The VOC emission rate, in pounds per hour, from the flexible group is required to be tested every five years. It appears this requirement is met by the RTO outlet NMOC concentration measurement resulting from testing required by FGCOATING12456. The most recent completed test was performed in 2012 and determined VOC emission rate from the RTO was 2.658 lbs/hr. Testing was also conducted on April 18, 2017 but results are not yet available. The results are well below the 47.8 lbs/hr. limit but do not include EUCOATER3 which is part of this flex group. EUCOATER3 does not have a stack/vent or other emission point that could be tested. EUCOATER3 emissions are estimated using material balance.

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 - There are no emission limits associated with this flexible group; therefore, this section is not applicable.

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 - There are no testing or sampling requirements associated with this flexible group; therefore, this section is not applicable.

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 - There are no stack or vent restrictions associated with this flexible group; therefore, this section is not applicable.

9. Other Requirements - There are no other requirements associated with this flexible group; therefore, this section is not applicable.

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 _____ DATE 5/4/17 SUPERVISOR SW