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

N734566574

FACILITY: RAINBOW COATINGS OF MICHIGAN		**SRN / ID:** N7345
LOCATION: 2716 LIPPINCOTT BOULEVARD, FLINT		**DISTRICT:** Lansing
CITY: FLINT		**COUNTY:** GENESEE
CONTACT: Jeff Benit , Plant Manager		**ACTIVITY DATE:** 03/08/2023
STAFF: Daniel McGeen	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Unannounced inspection of a facility last inspected in 2016, with a subsequent return to the site on 3/27/2023, to examine the pyrolysis oven.		
RESOLVED COMPLAINTS:		

On 3/8/2023, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), conducted an unannounced inspection of Rainbow Coatings of Michigan.

Environmental contacts:

- Jeff Benit, Plant Manager; 810-877-7131; jeffbenit@rainbowcoatingsmi.com
- Fred Leek, Owner; 810-877-7131; fredleek@rainbowcoatingsmi.com (not present today)
- Wendy Leek, President; 810-877-7131 (not present today)

EGLE AQD contacts:

- Dan McGeen, inspector; 517-648-7547; mcgeend@michigan.gov
- David Rauch, inspector; 517-216-0423; rauchd2@michigan.gov

Facility description:

Rainbow Coatings of Michigan (Rainbow Coatings) is a coater of metal parts, doing business primarily in the architectural field.

Emission units:

Emission Units*	Flexible Group (From Updated General Permit Conditions)	General Permit To Install (PTI) Number:	Compliance Status
EU-PAINTLINE1	FG-COATING AND FG-SOURCE	98-04	Compliance
EU-PAINTLINE2	FG-COATING AND FG-SOURCE	98-04	Compliance
EU-POWDERCOAT	FG-COATING AND FG-SOURCE	98-04	Compliance

***An *emission unit* is any part of a stationary source which emits or has the potential to emit an air contaminant.**

Flexible groups:

Flexible Group* ID	Description
FG-COATING	One or more coating lines and all associated purge and clean-up operations, where each coating line is a single series in a coating process and is comprised of one or more coating applicators, any associated flash-off areas, drying areas, and ovens where one or more surface coatings are applied and subsequently dried or cured.
FG-SOURCE	All coating lines and all associated purge and clean-up operations at the stationary source.

***A flexible group is used in a permit to install (PTI) or Renewable Operating Permit (ROP) to combine two or more emission units that have common or identical requirements.**

Regulatory overview:

Rainbow Coatings has a General Permit to Install (PTI) for a coating line No. 98-04, issued on 4/12/2004. The conditions of the General Permit were updated in December 2010. The "Background" document for this general permit had minor administrative updates made in June 2017, but this did not change the conditions of the permit itself.

This facility is considered to be a true minor source, rather than a major source of air emissions. A *major source* has the potential to emit (PTE) of 100 tons per year (TPY) or more, of one of the criteria pollutants. *Criteria pollutants* are those for which a national Ambient Air Quality Standard exists, and include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VOCs), lead, particulate matter smaller than 10 microns, and particulate matter smaller than 2.5 microns.

This facility is also considered a minor or area source for Hazardous Air Pollutants (HAPs), because it does not have a PTE of 10 TPY or more for a single HAP, nor does it have a PTE of 25 TPY or more for combined HAPs.

In 2016, AQD was informed by Owner Fred Leek that they have no boiler onsite, just a water heater, residential in size. This facility therefore does not appear subject to the area source boiler regulation, 40 CFR Part 63, Subpart JJJJJJ.

The facility is not considered subject to 40 CFR Part 63, Subpart HHHHHH - *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, because they have indicated they do not have any coatings which contain cobalt, nickel, or manganese.

Fee status:

This facility is not considered fee-subject, as it is not known to be a major source for criteria air pollutants, or for HAPs, nor is it subject to a federal New Source Performance Standard or a Maximum Achievable Control technology standard.

The facility is required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS).

Location:

This facility is located on Lippincott Boulevard, slightly east of Dort Highway, in the former Coors Distribution Plant. The surrounding area is a mixture of commercial and light industrial businesses. The nearest residences are about 600 feet to the northwest, 900 feet to the south, 800 feet to the east, and 900 feet to the northeast.

Recent history:

Rainbow Coatings began operating here in 2005. It was inspected by AQD in 2005, 2006, 2008, 2014, and 2016. No violations were found. There are no air pollution complaints on file for this facility.

Operational schedule:

7:00-3:30, Monday-Friday, with occasional maintenance on Saturdays.

Odor evaluation:

AQD was represented by inspectors David Rauch and Dan McGeen.

At about 1:10 PM, AQD checked for odors on Ronn Drive, about 600 feet east of the plant. No odors were detected. Weather conditions were mostly sunny and 41 degrees F, with winds out of the northeast. There was no way to get downwind of the plant, unless one were to travel to a residential street about 900 feet to the south southwest of the plant.

Arrival:

This was an unannounced inspection. AQD arrived at 1:14 PM. No odors were detected in the plant parking lot, and no visible emissions could be seen from the exhaust stacks.

AQD staff met with Plant Manager Jeff Benit, provided credentials, and explained the purpose of the visit. He agreed to take staff through the plant, as Owner Fred Leek and President Wendy Leek were both out of town, at the time.

Inspection:

Rainbow Coatings primarily coats parts for the architectural field, which are exposed to the elements. They use a family of paint products called Kynar, J. Benit explained. These are solvent-based coatings made by several companies, who determine how Rainbow Coatings utilizes and applies them. The coatings are intended to avoid fading for up to 25-30 years, despite exposure to sun and

inclement weather conditions. Most of the parts they coat are said to be aluminum, although there may be an occasional steel part. Coating options at this facility include Kynar 500®, Hylar 5000®, and powder coat.

AQD inquired as to any recent changes. Equipment was said to be unchanged, except for a new air compressor, which would not be regulated by AQD. Production in 2023 was said to be down, compared with the previous year, so far, and they presently may only run 3 days/week, but there is a seasonal aspect to their work.

FG-COATING: General Permit to Install for a coating line No. 98-04

EU-PAINTLINE1, EU-PAINTLINE2, and EU-POWDERLINE are identified in the original permit application and the facility's annual MAERS emissions report. They are under the flexible group FG-COATING, in General PTI No. 98-04.

They have a 5-stage pretreatment process. It uses a series of baths and rinses, and applies a chemical conversion coating, to which an organic coating will adhere. This process is followed by Oven 1, which is fired by natural gas. The pre-treatment process and Oven 1 were included in the PTI application in 2004. This pretreatment process is shared by EU-PAINTLINE1 and EU-PAINTLINE2.

EU-PAINTLINE1 uses 6 spray booths, some of which apply primer, and some of which apply paint. These booths are identified as B-1 through B-6 in the original permit application. One of the booths was said to not be operating, due to a broken paint gun for the booth. EU-PAINTLINE2 is identified in the application as using booth B-7, and is a small booth for test samples, with a very small electric oven.

J. Benit said that they have ceased using Styrofoam filters in their booths, and switched to dry filters, to catch paint spray. One reason for this was that the solvents in the paint tended to degrade the styrofoam, to the point where they replaced the styrofoam filters a few times per day. The newer dry filters they use are compactible, we were told, reducing the volume of solid waste which must be removed from the site. AQD asked how frequently the filters are replaced, and was told they do depending on the level of production. It may be done daily, or once every 3 days.

D. Rauch noted that some of the square mat/panel filters in a spray booth were curled back at the corners, so that an occasional gap of up to an inch across was visible. This was also noted by AQD in another spray booth. This did not appear to be because the facility was using them improperly, but because of unique characteristics of the individual panels. J. Benit offered to use a long roll of filter mater to cover the entire bank of square panels and prevent particulates from passing through.

The gaps in the filter panels would not comply with the General PTI 98-04 FG-COATING Special Condition (SC) IV.2, which requires that the filters be installed, maintained, and operated in a satisfactory manner. It also would not comply with Michigan Air Pollution Control (MAPC) Rule 910, which requires that an air-cleaning device be installed, maintained, and operated in a satsfactory manner. However, AQD's current Enforcement Policy allows for a verbal warning to be given instead of a Violation Notice, for violation(s) that are non-recurrent, do not pose an immediate risk to human health or the environment, are administrative or operational in nature, and that can be immediately corrected by the regulated entity. J. Benit's willingness to immediately address the issue is acceptable for providing corrective action prompty, and a Violation Notice (VN) does not need to be sent.

The current process value, or PV, for Oven 2, the paint curing oven, read 453 degrees F.

The powder coating line, EU-POWDERLINE, is identified in the original permit application as using booths B-5 and B-6, which are also used by EU-PAINTLINE1. It seldom operates, AQD was told, and is used mainy for interior architectural parts. Powder coating uses an electrostatic charge to help paint powder adhere to a part. The part is then cured. Powder coating was not being conducted, at the time of the inspection.

Note: Although this powder coating booth is covered by the general PTI 98-04, powder coating booths may be considered exempt from the requirement of Michigan Air Pollution Control (MAPC) Rule 201 to obtain a permit to install, under MAPC Rule 287(d), which exempts:

(d) A powder coating booth and associated ovens, where the booth is equipped with fabric filter control. The fabric filter control shall be installed, maintained, and operated in accordance with the manufacturer's specifications or the owner or operator shall develop a plan that provides to the extent practicable for the maintenance and operation of the equipment in a manner consistent with good air pollution control practices for minimizing emissions.

Pyrolysis oven:

During the inspection briefly AQD saw the pyrolysis oven, at the time. D. McGeen subsequently focused on it after revisiting the facility's MAERS report for the 2022 operating year. The oven was reported to have been installed on 4/1/2005, like the paint spray booths and the powder coating booth, and was called EURAKEOVEN in MAERS.

The company listed the unit as a pyrolysis oven, and also called it a rack oven, in the original General PTI 98-04 application received on 4/5/2004, when they applied for their general coating line permit. The permit application was somewhat vague, and it was not clear to D. McGeen if the unit was being used as a thermal oxidizer to combust VOC emissions from curing paint, as a burn-off oven for cured paint, or both.

Note: Please see section of the report titled "Post-inspection follow up" and "Return to site on 3/27/2023," for additional information.

Compliance check with special conditions (SC) in the General PTI No. 98-04:

General PTI 98-04, FG-COATING compliance checklist:

Gen. PTI 98-04 SC #	Requirement summary	Comments	Complies?
I.1	VOC limit of 2,000 lbs/month for each coating line plus all associated purge and cleanup operations.	Coating use records received on 5/30/2023 showed that from 4/1/2022-4/30/2023, there were no months in which VOC emissions from a single coating line and its purge and cleanup operations exceeded 2,000 lbs.	Yes
I.2	VOC limit of 10 TPY for each coating line plus all associated purge and clean-up operations.	From 12-month period 4/1/2022-3/31/2023:	Yes

		• EU-PAINTLINE1: 6.17 tons • EU-PAINTLINE2: 2.75 tons	
II.	**N/A**	**N/A**	**N/A**
III.1	**The permittee is required to capture all purge/clean-up solvents and waste coatings, store them in closed containers and dispose of them in an acceptable.**	**In their paint room, waste paint and/or solvents were in 55 gallon drums, with lids closed, and labeled as hazardous waste.**	**Yes**
IV.1	**The permittee shall equip and maintain FG-COATING with high volume-low pressure (HVLP) spray applicators or comparable technology with equivalent transfer efficiency (e.g., electrostatic spray, etc.). For HVLP applicators, the permittee shall keep test caps available for pressure testing.**	**They are using electrostatic spray guns, and so test caps for pressure testing are not required.**	**Yes**
IV.2	**The particulate control (dry filters or a water curtain) must be installed, maintained and operated in a satisfactory manner.**	**Some of the square mat/panel filters in two spray booths were curled back at the corners. J. Benit offered to use a roll of filter material to cover the entire bank of square panels and prevent particulates from passing through.**	**Yes**
IV.3.a	**Only applicable for facilities with a thermal oxidizer.**	**N/A**	**N/A**
IV.3.b	**Only applicable for facilities with a catalytic oxidizer.**	**N/A**	**N/A**
IV.4	**Only applicable for facilities with a thermal oxidizer.**	**N/A**	**N/A**
IV.5	**Only applicable for facilities with a catalytic oxidizer.**	**N/A**	**N/A**
V..		**N/A, as AQD has not requested.**	**N/A**

	Within 60 days of notification by AQD, verification of VOC emissions and VOC content (in lbs/gal) be done of any coating, reducer or purge/clean-up solvent, as applied or received, using federal Reference Test Method 25A, Method 24, or other EPA approved method.		
VI.1	**Only applicable for facilities with a thermal oxidizer.**	**N/A**	**N/A**
VI.2	**Only applicable for facilities with a catalytic oxidizer.**	**N/A**	**N/A**
VI.3.a	**Purchase orders and invoices for all coatings, reducers, and purge/clean-up solvents.**	**Said to be kept electronically, in the company's office.**	**Yes**
VI.3.b	**VOC content in lbs/gallon of each coating, reducer, and purge/clean -up solvent used.**	**J. Benit explained he would send these upon receiving technical assistance to access the records in the company's database. The records, received on 5/30/2023 for the 13-month period of 4/1/2022-4/30/23 showed VOC lbs/gallon for paint, primer, and methyl ethyl ketone (MEK).**	**Yes**
VI.3.c	**Gallons of each coating, reducer and purge/clean-up solvent used and reclaimed.**	**AQD was shown that these are kept electronically. Records of these were also received in hardcopy by AQD, on 5/30/2023.**	**Yes**
VI.3.d	**VOC mass emission calculations determining the monthly emission rate for each coating line, in tons per calendar month, using the method specified in Appendix B.**	**J. Benit explained he would send these upon receiving technical assistance to access the records in the company's database. The records, received on 5/30/2023 for the 13-month period of 4/1/2022-4/30/23 showed monthly emission rate for each coating line in lbs, which AQD converted to tons by dividing by**	**Yes**

		2000. See table in narrative of inspection report for 12 and 13-month totals.	
VI.3.e	**VOC mass emission calculations determining the annual emission rate for each coating line, in tons per 12-month rolling time period, using the method in Appendix B.**	**J. Benit explained he would send these upon receiving technical assistance to access the records in the company's database. The records, received on 5/30/2023 for the 13-month period of 4/1/2022-4/30/23 showed monthly emission rate for each coating line in lbs, which AQD converted to tons by dividing by 2000. See table in narrative of inspection report for 12 and 13-month totals.** **Note: The MAERS report for 2022 also shows annual calculations are being done.**	**Yes**
VI.4	**Keep a current listing from the manufacturer of the chemical composition of each coating, including the weight percent of each component. This may include Safety Data Sheets (SDS), manufacturer's formulation data, or both.**	**They have hardcopy and digital SDS, D. McGeen was told.**	**Yes**
VI.5	**Only applicable for facilities with a thermal or catalytic oxidizer.**	**N/A**	**N/A**
VI.6	**Only applicable for facilities with a thermal oxidizer.**	**N/A**	**N/A**
VI.7	**Only applicable for facilities with a catalytic oxidizer.**	**N/A**	**N/A**
VII.	**N/A**	**N/A**	**N/A**
VIII.	**Exhaust gases from FG-COATING must be discharged unobstructed vertically upwards to the ambient air at an exit point not less than 1.5 times the building height**	**Based on visual observation, this is being met.**	**Yes**

IX.	Prohibits replacing or modifying any portion of FG-COATING, including control equipment or coatings, nor install additional coating lines, unless all of the following conditions are met:	N/A	N/A
IX a	The permittee shall update the general permit.	N/A	N/A
IX.b	The permittee shall continue to meet all general PTI applicability criteria after replacement, modification, or installation of new equipment.	N/A	N/A
IX.c	The permittee shall keep records of the date and description of the replacement or modification, installation, or coating change.	N/A	N/A

PTI 98-04, FG-SOURCE compliance checklist:

Gen. PTI 98-04 SC #	Requirement summary	Comments	Complies?
I.1	VOC limit of 30 TPY for all coating lines and purge and clean-up operations.	The MAERS report for 2022 shows plantwide VOC emissions were 15.00 tons (33 lbs of that were from the pyrolysis oven).	Yes
II.	N/A	N/A	N/A
III.	N/A	N/A	N/A
IV.	N/A	N/A	N/A

V.	N/A	N/A	N/A
VI.1	Keep mass emission calculations on a monthly basis for FG_SOURCE, of the annual emission rate in tons per 12-month rolling time period, for all coating lines and associated purge and clean-up operations at the source.	J. Benit explained he would send these upon receiving technical assistance to access the records in the company's database. The records, received on 5/30/2023 for the 13-month period of 4/1/2022-4/30/23 showed monthly emission rate for each coating line in lbs, which AQD converted to tons by dividing by 2000. See table in narrative of inspection report for 12 and 13-month totals.	Yes
VII.	N/A	N/A	N/A
VIII.	N/A	N/A	N/A
IX.	N/A	N/A	N/A

(End of compliance check with permit conditions.)

Post-inspection follow up:

Upon revisiting the company's MAERS report for the 2022 operating year, which D. McGeen had audited on 3/7/2023, he noted that a pyrolysis oven or rack oven, EURAKEOVEN, was listed. A review of the 2004 permit application for General coating line PTI No. 98-04 showed the pyrolysis oven, but it was not completely clear if the unit was used as a burn-off oven, as is typical for a pyrolysis oven, or if it was being used as a thermal oxidizer, to control VOC emissions from curing paint, or both. He called J. Benit, who indicated AQD staff would be welcome to visit the plant, to examine the pyrolysis oven. D. McGeen advised him that on 3/27/2023, D. Rauch and I would be in Flint with two permit engineers for other field work, and would try to meet with him at Rainbow Coatings of Michign, afterwards.

Return to site on 3/27/2023:

On 3/27/2023, D. Rauch and D. McGeen returned to the site, along with AQD permit engineers Chuku Oje and Andrew Banitt. Upon arrival at 2:00 PM, no odors or visible emissions were noted in the facility parking lot. Weather conditions were mostly sunny and around 45-50 degrees F, with winds out of the north at 5-10 miles per hour.

AQD met with J. Benit. During onsite discussion, C. Oje determined that the facility is not considered subject to 40 CFR Part 63, Subpart HHHHHH - *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources* because they do not have any coatings which contain cobalt, nickel, or manganese.

AQD was shown the pyrolysis oven. J. Benit explained that it does not function as a thermal oxidizer to combust VOC emissions from curing paint, but is used only for removing cured paint from part hangers. He indicated that it is not used for incineration of any improper materials, like trash. He showed AQD examples of a cleaned part hanger, and one which had recently gone back into service and was starting to accumulate paint again.

The pyrolysis oven was not running, at the moment. It was located in the same room as paint booth B -7. B-7 is covered by the general coating line PTI 98-04. The pyrolysis oven was also in the application 98-04, but the coating line general permit can only cover coating lines, like the booth. The pyrolysis oven therefore must obtain a burn-off oven PTI for its operations.

AQD discussed permitting options with J. Benit. A permit application is available for a general PTI for burn-off ovens, as a streamlined alternative to sumitting a site-specific permit application. However, certain criteria must be met in order to use the general PTI for burn-off ovens, like having a temperature chart recorder. At present, the pyrolysis oven has two digital displays, one for the primary chamber and one for the secondary chamber or afterburner, but no way to record that data. If a recorder is installed, that would address that particular criteria of the general PTI. Circular paper chart recorders are commonly used by industry to record temperature.

The pyrolysis oven exhausts through a stack which appeared to be 1.5 times the building height, also one of the general permit criteria, but it had a kind of rain cap. C. Oje explained that the general PTI or any PTI issued by AQD would require the exhaust gases to pass unobstructed vertically upward, without a rain cap, to the outer air. An acceptable alternative to a rain cap would be a rain sleeve or "no loss" stack design.

J. Benit indicated that, in contrast, the paint booth exhaust stacks do not have rain caps, but they have flaps which open when the booths are exhausting, and close when the booths are not running. Therefore, the coating line stacks appear to satisfy the general coating line permit requirement to exhaust unobstructed vertically upwards.

The AQD Lansing District forwarded to the company links to the general PTI application for burn-off ovens, as well as information on applying for a site-specific burn-off oven permit, in the event the general permit is not a viable option. The District also forwarded a scanned copy of their original General PTI application 98-04, for their records.

During the writing of this inspectuon report, J. Benit advised D. McGeen that the pyrolysis oven permit application should be sent out in the mail on Friday, 6/2/2023, or Monday, 6/6. The company had in good faith included this burn off oven in their 2004 general coating line permit application, and AQD had failed to identify it at the time. The current permit application submittal time frame is acceptable to AQD and a Violation Notice for not having a permit does not appear to be warranted.

<u>MAERS audit of 3/7/2023:</u>

The emissions changes between 2022 and the previous year were consistent with the changes in raw material throughput in that time period. The powder coating booth had zero throughput and zero emissions in 2022. The report successfully passed the MAERS audit.

<u>Review of facility coating use records:</u>

Due to technical issues relating to computer access at the site, coating use records were not immediately reviewable on 3/8 or 3/27/2023, but J. Benit was able to show me that they existed. On 5/30/2023, AQD received a hardcopy in the mail. AFter converting from lbs to tons, the VOC emissions are summarized, below:

Tons by month (13 in all)	EU-PAINTLINE1	EU-PAINTLINE2	Total for both lines
April 2022	0.65	0.33	0.99
May 2022	0.44	0.24	0.68
June 2022	0.67	0.33	0.99
July 2022	0.50	0.22	0.72
August 2022	0.33	0.13	0.46
September 2022	0.78	0.44	1.22
October 2022	0.42	0.19	0.60
November 2022	0.36	0.15	0.51
December 2022	0.46	0.17	0.63
January 2023	0.69	0.38	1.08
February 2023	0.50	0.17	0.67
March 2023	0.37	0.00	0.37
April 2023	0.39	0.04	0.43
Total tons for the 13-month period	6.56	2.79	9.37
Total tons for the 12-month period of 4/1/2022-3/31/2023	6.17	2.75	8.93

Results of facility indoor air quality testing:

On 5/29/2023, J. Benit emailed to D. McGeen the result sof 4/17/2023 indoor air quality testing which Rainbow Coatings had conducted voluntarily. These results showed that the plant is below occupational exposure limits for dust as well as dimethyl phthalate, 2-butoxyethanol, ethyl benzene, MEK, MIBK, toluene, total trimethylbenzenes, and xylene.

Conclusion:

No instances of noncompliance were identified during the 3/8/2023 inspection, or the 3/27 return visit. Some gaps were present where square filter panels in booths occasionally curled back at the corners. J. Benit immediately offered to use a large roll of filtration material to overlap these panel filters, and prevent emissions from escaping. This avoided the issue from being identified as a violation. The pyrolysis oven, listed in the 2004 general PTI application 98-04, needs a burn-off oven PTI, and the company estimates a date of 6/2 or 6/5/2023 for the permit application to be submitted in the mail, which is an acceptable resolution.

NAME _____ DATE 6/1/2023 SUPERVISOR RB