

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

B601074146

FACILITY: ELECTROPLATING INDUSTRIES, INC		SRN / ID: B6010
LOCATION: 21410 CARLO DRIVE, CLINTON TWP		DISTRICT: Warren
CITY: CLINTON TWP		COUNTY: MACOMB
CONTACT: Colleen Klein , General Manager		ACTIVITY DATE: 10/14/2024
STAFF: Owen Pierce	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 25 Compliance Inspection		
RESOLVED COMPLAINTS:		

On October 14, 2024, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of Electroplating Industries, Inc. (EPI) located at 21410 Carlo Drive, Clinton Township, Michigan. Diana Serban, EGLE-AQD Inspector, joined me on the inspection. The purpose of the inspection was to determine the facility's compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 Public Act 451, as amended (Act 451); the AQD Administrative Rules, and the conditions of Permit-To-Install (PTI) No. 718-86B. Upon arrival, we met with Pete Ferrante, Plant Manager, and conducted a pre-inspection meeting where we introduced ourselves, presented our credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Pete explained the facility's processes and equipment. EPI conducts a variety of electroplating services for automotive and military applications. According to Pete, electroplating is the process of coating an object with a thin layer of metal through a process of controlled electrolysis. This process is used to improve the physical, mechanical, and chemical properties of the coated object, such as abrasion and corrosion resistance, strength, or heat conductivity. EPI has approximately 8-10 employees, and operates from 5:00 am to 2:30 pm, Monday through Friday. EPI is permitted to operate six electroplating lines (3 zinc, 1 aluminum, 1 zinc phosphate, and 1 copper line) and is a synthetic minor or "opt-out" source for hazardous air pollutants (HAPs).

According to Pete, there have been no recent process or equipment changes since the previous inspection, and there are two natural gas fired boilers, with no cold cleaners and no emergency generators at the facility. Following the pre-inspection meeting, Pete lead us on an inspection of the facility.

Facility Walk-through Observations

First, Pete took us to the facility's testing lab where all chemicals used in the plating process are tested to ensure the right concentrations of each chemical are being applied to the plating lines. Next, Pete showed us the six electroplating lines: 3 zinc, 1 aluminum, 1 zinc phosphate, and 1 copper line. Pete explained that the use of each coating line depends on the type of metal part being coated and the desired metal coating for each part. All six lines are structured in a similar general layout. First, the parts are dipped in an alkaline cleaner, rinsed, and then dipped in an electro tank with another alkaline cleaner. The parts are then rinsed again, before dipped in hydrochloric acid, rinsed, and then finally dipped in the plating tank. Some of the tanks are rack lines, where larger parts are placed on racks and then moved through the lines, while some are barrel lines, where smaller parts can be loaded into a barrel that then moves through the plating tanks. All metal parts are spin dried and experience natural curing, with no heat involved.

I observed several vent hoods positioned over some of the tanks in each plating line, and all vent hoods were connected to one stack positioned atop the roof. Pete explained that the vent hoods do not work and have not been in operation for several years. Pete took us to the power box for the ventilation system, and I observed that the system was not on but it appeared to still have power.

Next, Pete showed us the on-site wastewater treatment area. According to Pete, all process water from the plating lines is treated on site for metals and to correct the pH of the wastewater before being discharged to the City's sanitary sewer system.

Natural-Gas Baking Oven

I observed that the facility has one Despatch natural gas fired oven located in the shipping area of the facility. According to Pete, this oven is used to heat treat some parts to remove absorbed hydrogen and prevent hydrogen embrittlement. The nameplate was worn and hard to read, and the facility was unable to look up the BTUs for the bake oven due too it being an older model. During the inspection, the oven was observed as having floor length double doors and was approximately six feet in height. According to Colleen Klein, General Manager, the oven temperature is typically operated at 375⁰F to 400⁰F. After some research, I found a comparable older Despatch oven model, Model number PWC 3-21, on the internet. The PWC 3-21 Despatch oven is rated at a max heat input of 300,000 BTU/hour. Using the max heat input from the comparable Despatch oven, the oven at the facility is exempt from obtaining a PTI pursuant to Rule 282(2)(a)(i) because it is a natural gas fired furnace used for heat treating metal parts at a maximum total heat input rate of not more than 10,000,000 BTU/hour.

HCL Storage Tank

Adjacent to the natural gas oven is a 1,200 gallon hydrochloric acid storage tank used to store HCL for use in the plating lines. According to the HCL SDS sheet, the HCL concentration is 30-34% yet the vapor pressure is reported as 0.90 to 0.93 psia. The HCL storage tank is exempt from obtaining a PTI pursuant to Rule 284(2)(i) because the capacity of the tank is not more than 40,000 gallons where the contents have a true vapor pressure of not more than 1.5 psia at the actual storage conditions.

Boilers

I observed that the facility has two Lochinvar natural gas fired boilers. Both boilers have a max heat input of 0.985 MMBTU per hour and are exempt from Rule 336.1201 (Permit-to-Install) pursuant to rules 336.1282(2)(b)(i) (<< 50 MMBTU per hour heat input, natural gas only), and are not subject to New Source Performance Standards (NSPS) Subpart Dc (<< 10 MMBTU per hour heat input, natural gas only).

During the inspection, I did not observe any emergency generators or cold cleaners at the facility.

PTI No. 718-86B Compliance Evaluation

The facility was issued PTI No. 718-86B for six electroplating lines and a facility wide HAP opt-out limit. Recordkeeping requirements from January 2023 to December 2023 were submitted to me via email by Colleen Klein. Colleen explained that recordkeeping is based on quarterly inventory and emission factors previously established by EPI's consultant. Although the permit requires monthly record keeping, the AQD has recognized during prior inspections that yearly/quarterly records from this facility have shown compliance with the emission limits established in the permit. Colleen submitted quarterly/annual chemical purchase records and usage records for 2022 and 2023, and approximate monthly and 12-month rolling emissions were calculated based on these records. I explained to Colleen that although monthly recordkeeping was not required by AQD staff in the past, going forward, EPI will need to begin keeping monthly and 12-month rolling records. Records can be located internally at the following link: S:\Air Quality Division\STAFF\Owen Pierce\FY 25\ElectroplatingIndustries.

Special Condition (SC) 13 states that the VOC emission rate shall not exceed 2.7 pounds per hour nor 6 tons per year based on a 12-month rolling time period as determined at the end of each month. According to the records submitted, from January 2023 to December 2023, EPI is in compliance with the 6 tons per year emission requirement as the highest 12-month rolling emission recorded was approximately 0.19 tons/year as determined at the end of January 2023 and February of 2023. Hourly VOC emissions rates are verified by testing at owner's expense, in accordance with Department requirements, if required by the AQD, according to SC 16. At this time the AQD has not required testing at this facility and therefore compliance was not assessed for this hourly emission limit.

SC 14 sets the hourly and annual toxic air contaminants (TACs) emission limits, based on a 12-month rolling time period, for hydrochloric acid, sodium hydroxide, sodium cyanide, phosphoric acid, nitric acid, sulfuric acid, and all other non-VOC TACs. Emission limits are as follows:

- hydrochloric acid - 0.21 pounds per hour, 0.9 tons per year
- sodium hydroxide - 0.35 pounds per hour, 1.5 tons per year
- sodium cyanide - 0.09 pounds per hour, 0.4 tons per year
- phosphoric acid - 0.01 pounds per hour, 0.04 tons per year
- nitric acid - 0.04 pounds per hour, 0.2 tons per year
- sulfuric acid - 0.01 pounds per hour, 0.04 tons per year
- all other non VOC TACs - 1.0 tons per year

According to the records submitted from January 2023 to December 2023, EPI is in compliance with the annual emission limits for each of the TACs listed above as the highest 12-month rolling emissions recorded for each of the listed TACs above is as follows:

- hydrochloric acid = approximately 0.031 tons per year as determined at the end of February 2023 and June 2023
- sodium hydroxide = approximately 0.048 tons per year as determined at the end of January 2023 and April 2023
- sodium cyanide = approximately 0.017 tons per year as determined at the end of April 2023 and July 2023
- phosphoric acid = approximately 0.0038 tons per year as determined at the end of March 2023 and November 2023
- nitric acid = approximately 0.008 tons per year as determined at the end of December 2023
- sulfuric acid = approximately 0.017 tons per year as determined at the end of April 2023 and July 2023
- all other non VOC TACs = approximately 0.253 tons per year as determined at the end of July 2023

Hourly TAC emission rates are verified by testing at owner's expense, in accordance with Department requirements, if required by the AQD, according to SC 16. At this time the AQD has not required testing at this facility and therefore compliance was not assessed for these hourly emission limits.

SC 15 states that hazardous air pollutant (HAP) emissions shall be less than 9.0 tons per year for any individual HAP and less than 22.5 tons per year for any combination of HAPs at this stationary source. The annual limits shall be based on a 12-month rolling time period. Individual HAPs identified at this stationary source are hydrochloric acid and sodium cyanide, chromium compounds and cobalt compounds. According to the records submitted, from January 2023 to December 2023, EPI is in compliance with the 9.0 tons per year individual HAP emissions requirement as the highest 12-month rolling individual HAP emissions came from hydrochloric acid and was approximately 0.031 tons per year as determined at the end of February 2023 and June 2023. EPI is also in compliance with the 22.5 tons per year aggregate HAP emission limit as the highest 12-month rolling aggregate HAP emissions from January 2023 to December 2023 was 0.051 tons per year as determined at the end of June 2023.

SC 17 states that the facility shall keep a separate monthly record of the usage rate of each coating used for surface coating in the process. During the inspection no surface coating processes were observed.

Conclusion

This facility is non-compliant with PTI No. 718-86B (SC 13, 14, & 15) as they failed to provide 12-month rolling data to determine compliance with the VOC, TAC, and HAP emissions limits. Since AQD staff used quarterly/yearly records from the facility to determine compliance during prior inspections, and the facility provided quarterly/yearly purchase and usage records that were used to calculate approximate monthly and 12-month rolling emissions during this inspection, a VN will not be issued at AQD discretion.

Observations made during the inspection and record review indicate that Electroplating Industries is operating in compliance with all other 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 AQD Administrative Rules, and PTI No. 718-86B.

NAME Owen Pierce

DATE 12/3/2024

SUPERVISOR K. Kelly