

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

N005845785

FACILITY: B & L PLATING		SRN / ID: N0058
LOCATION: 21353 EDM, WARREN		DISTRICT: Southeast Michigan
CITY: WARREN		COUNTY: MACOMB
CONTACT: Victor Pirrami , Plant Manager		ACTIVITY DATE: 07/27/2018
STAFF: Adam Bogнар	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On Friday, July 27, 2018, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) staff, I, Adam Bogнар, and Joyce Zhu conducted an unannounced targeted inspection of B & L Plating, located at 21353 Edom, Warren, MI. The purpose of this inspection was to determine the facility's compliance status with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) rules; and the National Emission Standards for Chromium Emissions from Decorative Chromium Electroplating Tanks (Chrome NESHAP).

The facility currently operates without a permit. All process tanks appear to be exempt from Rule 201 requirements pursuant to Rule 285 (2)(r). Rule 285 (2)(r) exempts metal treatment processes such as cleaning, electroplating, and pickling from Rule 201 requirements if emissions from process tanks are released only into the general in plant environment. All emissions from process tanks at B&L plating are exhausted into the general in plant environment.

We arrived at the facility at around 9:15 am and met with Geno Pirrami, President. We identified ourselves, provided credentials, and stated the purpose of the inspection. Mr. Geno Pirrami stated that he was too busy to accommodate us for an inspection. He told us we needed to make an appointment. I explained that our rules state that our inspections should be unannounced. Mr. Geno Pirrami asked his son, Mr. Victor Pirrami, Plant Manager, to assist us with the inspection. Mr. Victor Pirrami assisted us for the rest of the inspection.

During the pre-inspection meeting we discussed facility operations and the requirements of the Chrome NESHAP. Mr. Victor Pirrami provided me with records at this time. I explained that the MDEQ-AQD is inspecting all chrome plating facilities this year in a state-wide effort to identify and eliminate the use of PFOS/PFOA based fume suppressants. After reviewing records, Mr. Victor Pirrami gave us a tour of the production area.

B & L Plating operates Monday through Friday from 8:30 am to 3:30 pm. There are four full time employees including Mr. Geno Pirrami and his son, Mr. Victor Pirrami. In the past B & L Plating plated parts at a production level, but now operates as an "off the street" plating facility at a much slower pace. Approximately 90% of the plating done is automotive related. Boats, household items, and other miscellaneous jobs make up the remainder of the work. Plating substrates include steel (90% of parts), Zinc, and Brass.

Plating Operations

Mr. Victor Pirrami stated that there have not been any process changes since the last MDEQ-AQD inspection in 2010. The chrome tank is 1000-gallon capacity. At the time of this inspection the amp hour meter on the chrome rectifier read 698968 amp-hours. Electric potential in the chrome tank ranges from 2-5 Volts. 240-amp hours is approximately 1 hour of plating.

Generally, all parts receive three layers of plating: copper → nickel → chrome. When parts first arrive at the shop they are sent through a series of tanks for cleaning in the following series of processes: Buffing/polishing → alkaline cleaning → 2x water rinse (remove cleaner) → 2-3% sulfuric acid (remove alkaline film) → water rinse (acid removal) → Copper Strike (sodium cyanide) → water rinse (cyanide is recovered) → water → 2-3% sulfuric acid → final water rinse.

The alkaline cleaning tank can also be electrified to strip chromium from parts. The water rinse tank after the cyanide tank is periodically pumped to an on-site chlorine treatment tank (to treat the cyanide) before being

discharged. After this cleaning process, the parts are sent to one of the plating lines. This same cleaning process is also used before the nickel plating.

After the initial cleaning, the parts are sent through the following process to receive the three-part plating: copper electroplating → buffing → cleaning process → nickel electroplating (bright or semi-bright) → chromium electroplating → wiping/buffing → end customer.

B&L plating uses a fume suppressant as a control technology to comply with the Chrome NESHAP. This fume suppressant formulation has changed since the last AQD inspection. The current fume suppressant used in the chrome tank is "Haviland Mist Eliminator PF Free" (SDS Attachment 1). Haviland Mist Eliminator PF Free not contain PFOS, PFOA, or PFOS. Previous inspections by the MDEQ-AQD identified the use of fluorinated fume suppressants in the chrome tank. Use of these fluorinated solvents appears to have stopped prior to September 21, 2015, when a change to the Chrome NESHAP began regulating their use. A more in depth history of fume suppressant use at B & L Plating is attached to this report (Attachment 2).

Mr. Victor Pirrami provided me with records of fume suppressant additions and surface tension measurements for the chrome tank. B & L Plating contracts Haviland Products to perform their surface tension measurements. Samples of the chrome tank bath solution are sent offsite to the Haviland lab for testing of multiple parameters. An example of the Haviland test results are attached to this report (Attachment 3). Haviland recommends the amount of fume suppressant that should be added based on their test results.

Surface tension is measured using a tensiometer. The Chrome NESHAP states that surface tension shall not exceed 33 dynes/cm² when measured with a tensiometer. The records that B&L Plating provided between the dates of March 3, 2011 and May 14, 2018 show that this 33 dynes/cm² limit was exceeded on several occasions. B&L Plating was under the impression that the limit was 45 dynes/cm²; however, this limit has since been changed and reduced to 33 dynes/cm² when measured with a tensiometer.

Mr. Victor Pirrami agreed to begin complying with the new limit. I requested that he send monthly samples to Haviland for a period of six months. I informed him that I will request to see these records periodically during this six-month period to make sure this limit is being adhered to. Since this is a relatively new standard MDEQ-AQD will use enforcement discretion and not send a violation notice for this Chrome NESHAP violation.

According to the Chrome NESHAP, these tests must be taken at least once for every forty hours of plating time. Mr. Victor Pirrami stated that B&L does so little plating that it would take over a year for this limit to be exceeded. Samples are sent to Haviland more frequently than once every forty hours of plating time so that he can monitor other important parameters of the tank chemistry.

An operation and maintenance (O&M) plan is maintained at the facility in accordance with the Chrome NESHAP. I requested that Mr. Victor Pirrami change the surface tension limit on the O&M plan from 45 dynes/cm² to 33 dynes/cm² measured with a tensiometer.

The Chrome NESHAP requires that an ongoing compliance status report be completed annually and maintained on site. These reports have been submitted to the AQD in the past, but it appears that they have not been completed in recent years. I provided Mr. Victor Pirrami with a template form so that he can begin filling out these forms. I requested that he complete a form at the end of December, 2018 that will show the compliance status for all of 2018. I informed him that I will request this form in early 2019. MDEQ-AQD will use enforcement discretion and not send a violation notice for this violation of the Chrome NESHAP.

Boiler

There is one 1.6MM BTU/hr natural gas fired boiler present used for indirect heating of process tanks. This boiler appears to be exempt from Rule 201 requirements pursuant to Rule 282 (2)(b)(i).

Buffing & Polishing

Buffing and polishing operations are exhausted to a Cyclone located outside of the facility. This cyclone was

installed in 1996. The cyclone is exhausted outdoors. Permit exemption Rule 285 (2)(l)(vi) for buffing/polishing operations requires a fabric filter be installed with a mechanical pre-cleaner. The cyclone can only be considered a mechanical pre-cleaner.

B & L plating is a relatively small volume plating facility. Mr. Victor Pirrami estimates that approximately 25 parts per week are plated, with each part weighing about 1-2 pounds. The absolute worst-case scenario is that the parts are buffed/polished until the part is completely emitted as 2.5 micrometer diameter particulate matter (PM 2.5). In this unlikely scenario, the potential annual PM 2.5 emissions would be (25 parts) x (2 lbs) x (52 weeks) = 2,600 lbs or 1.3 Tons of PM 2.5.

It is likely that much less than this will be emitted. Parts are generally buffed/polished to remove small imperfections and improve finish quality, not for reshaping or removing large sections of metal. Some of the particulate matter emissions will likely be larger diameter particles that will be captured by the cyclone.

Buffing and polishing operations appear to be exempt from Rule 201 requirements pursuant to Rule 291 (2)(f). This rule states, in part, that emissions from a PM 2.5 emitting process can be considered "de minimis" if they do not have a potential to emit greater than 3 tons per year. B&L plating will probably not exceed this 3-ton potential to emit even if throughput doubles. If production does increase substantially from where it is now, then B&L plating may need to provide more detailed calculations or install a fabric filtration system.

Other Plating Operations

B&L Plating operates two nickel electroplating tanks and one copper electroplating tank. These tanks appear to be exempt from Rule 201 requirements pursuant to Rule 285 (2)(r). These tanks are vented to the general in-plant environment. A wetting agent is periodically added to the nickel tanks. The MSDS indicates that the wetting agent does not contain PFAS (Attachment 4). I informed Mr. Victor Pirrami that he needs to maintain an annual compliance certification report in accordance with 40 CFR Part 63 Subpart W (6W) National Emission Standards for Hazardous Air Pollutants – Area Source Standards for Plating and Polishing Operations. The AQD has not taken delegation of 40 CFR Part 63 Subpart W (6W). We left the facility at around 11 am.

Compliance Determination

B&L Plating is not operating in compliance with the 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); Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) Administrative Rules; and the Chrome NESHAP.

I discussed B&L plating's compliance issues with district supervisor Joyce Zhu. MDEQ-AQD will use its discretion and not send a violation notice for the identified Chrome NESHAP violations. Instead, this facility will be closely monitored until continuous compliance with the Chrome NESHAP is verified. If these issues are not resolved in a future inspection or record review, then a violation notice will be sent to B&L plating.

NAME



DATE

8/29/2018

SUPERVISOR

