

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

B300029059

FACILITY: HOWARD FINISHING, L.L.C.		SRN / ID: B3000
LOCATION: 15765 STURGEON, ROSEVILLE		DISTRICT: Southeast Michigan
CITY: ROSEVILLE		COUNTY: MACOMB
CONTACT: Popat Patel, Environmental Manager/Chemist		ACTIVITY DATE: 03/26/2015
STAFF: Samuel Liveson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of a Minor Source.		
RESOLVED COMPLAINTS:		

On March 26, 2015 I conducted an unannounced, scheduled, level 2 inspection of Howard Finishing, LLC (Howard Finishing), located at 15765 Sturgeon Street in Roseville, Michigan. The purpose of this inspection was to determine the facility's compliance with the federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, the conditions of Permit to Install (PTI) No. 186-91B, and 40 CFR Part 63 Subpart N – National Emissions Standard for Hazardous Air Pollutants: Area Source Standards for Chromic Acid Anodizing, Decorative Chromium Electroplating, Hard Chromium Electroplating (40 CFR Part 63 Subpart N).

I arrived on site around 9 am. I met with Mr. Popat Patel, Environmental Manager/Chemist, and with David Clarke, Facilities Manager. Mr. Patel provided records and a site walkthrough and Mr. Clarke explained equipment and operations. I provided Mr. Patel and Mr. Clarke with my contact information and a copy of the pamphlet "DEQ Environmental Inspections: Rights and Responsibilities."

Opening Meeting

Howard Finishing provides decorative chrome coatings onto metal parts, mainly for automotive assembly plants. Howard Finishing commonly provides a chrome finish to muffler clamps underneath vehicles. The company has approximately 100 employees, and operates 24 hours for 5 days a week. Saturdays, chemical maintenance operations are conducted. The facility is also subject to 40 CFR Part 63 Subpart WWWWWWW - National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations (40 CFR Part 63 Subpart WWWWWWW), which I discussed with the facility. However, the Air Quality Division (MDEQ-AQD) has not accepted delegation of this subpart for area sources.

Mr. Clarke outlined some of the differences between putting decorative chrome onto metal compared to plastic (Howard Finishing works only with metal parts). Generally, metal parts require fewer tanks than plastic parts. Metal parts require electrolytic nickel to bond to the metal parts, whereas plastic parts require electroless nickel. At Howard Finishing, some parts are given a zinc plating for corrosion protection.

Facility Walk-Through

Chromium Line I / Control A

This line was not operating during my inspection. According to Mr. Patel, the last date that chrome plating was conducted on the line was June 13, 2013. The chromium tank was drained on January 21, 2014. The chromium tank is empty, and there is only cleaner in the other tank. There are no plans to restart chromium line 1 or alter the line's use.

Nickel – Chrome Plating Line IV / Control D

The nickel-chrome plating line was operating during the inspection. The line consists of a soak tank, clean tank, spray wash, electrolytic clean, acid dip (10% sulfuric acid and 30% hydrochloric (HCl) acid), and nickel strike, followed by four nickel tanks (tanks 16, 17A, 17B, and 17C) and two chrome tanks (tanks 4A and 4B). The nickel strike tank is the first with a hood. After metal is clean, this nickel strike tank adds the initial layer of nickel to the metal part for initial bonding. Parts will stay in this tank for between one and two minutes to establish a thin layer (5-10 microns) of nickel on top of steel or stainless steel.

Nickel is corrosion-resistant, but it is microporous. Nickel helps prevent major rust breakouts along metal, but

rust can occur in the pores. The spotted dots of rust you see along old cars can often be attributed to the micropores in nickel.

Next there are two chrome tanks along the line, tanks 4A and 4B, of 1200 and 1900 cubic feet. Hoods on each chrome tank draw air from these tanks at 29,000 cubic feet per minute (cfm).

Special Condition (SC) 21 of PTI No. 186-91B states that the applicant shall not operate nickel-chrome plating line IV unless Control D is installed and operating properly. Control D was a wet scrubber at the time of issuance of PTI No. 186-91B, but the scrubber was replaced by a composite mesh pad system (CMP) in 2000. This new CMP system appears to be exempt from permitting requirements per R285(d).

According to Howard Finishing's Operation and Maintenance Plan (OMP), updated 7/27/2012, static pressure drops through the CMP should be between 0.5 and 1.5" in the pre-controller; between 1.25 and 3.0" in stage one; and between 0.25 and 0.75 in stage two. Overall static pressure should be below 5.25". Readings of the CMP control panel show static pressure drops of 1.8" in the pre-controller, 1.0" in stage one, and 0.4" in stage two. Overall static pressure was 4.4". Howard Finishing is planning to powerwash the pre-controller screen this weekend, because generally higher static pressure is caused by a buildup of dirty water and foam from the wetting agent. Because static pressure is below 5.25" overall, I used discretion to avoid issuing a violation notice for the high static pressure in the CMP pre-controller. Records from December of 2014 through February of 2015 show that static pressure drop is measured daily and is within the desired ranges noted above.

The dry mesh pad is washed down throughout the day based on manufacturer's recommendations. This wash down schedule is controlled by a programmable logic control system for the pre-controller and stage one; stage two is cleaned manually as needed.

In addition to the composite mesh scrubber control, Howard Finishing also uses a liquid wetting agent on chromium and nickel tanks. 40 CFR Part 63 Subpart N only requires the use of a wetting agent on chromium tanks. 40 CFR Part 63 Subpart WWWWWWW requires the use of a wetting agent on HAPs like nickel. The surface tensions of the two chrome tanks and four nickel tanks are checked daily. During the AQD inspection I witnessed Lab Technician Greg Boae measure the surface tension of Chrome Tank 4A on this line. To perform this measurement, 2.5 milliliters (mL) of liquid from the tank is titrated from a stalagmometer, and the number of drops formed during this titration is counted. From the number of drops, surface tension of the tank is calculated based on an equation from Attachment A of the OMP. During the inspection Mr. Boae counted 56 drops which equated to a surface tension of 30.9 dynes per centimeter. 40 CFR Part 63 Subpart N requires tanks to have a surface tension below 40 dynes per centimeter. Records from December of 2014 through February of 2015 show that the company has maintained the surface tension of chromium tanks 4A and 4B under 40 dynes per centimeter as required per SC 26.

New & Existing Zinc Lines / Control B

Zinc plating provides corrosion protection to parts. Both new and old zinc lines were operating during the inspection. Both zinc lines are located in the same room at Howard Finishing. Line 3 is the "old" zinc line, in which tanks are set up in a straight line. Line 5 is the "new" zinc line in which tanks are set up in a U shape. Both zinc lines have the same basic tank setup. Parts run through a cleaning section, then through an acid tank (about 5 gallons HCl per 1000 gallons water), followed by the zinc tank, then through a rinse section and finally a drying area.

One hood on each line leads to control B (a wet scrubber), which controls emissions from the acid tank on each line. Per SC 22, the new and old zinc lines shall not be operated unless control B is installed and operating properly. According to Howard Finishing's OMP, to operate the scrubber properly, the facility must have at least 30 gallons per hour (gph) of water flow pumping through the wet scrubber. The liquid flow gauge showed 35 gph during the inspection. Daily flow records from December of 2014 through February of 2015 show that flow is maintained at or above 30 gallons per hour for Control B.

Nitric Strip Tank / Control C

The nitric acid strip area consists of two tanks: the nitric acid strip tank and a rinse tank of water. The nitric acid strip tank is controlled by control "C" which is a packed bed wet scrubber and composite mesh pad. The water flow through the packed bed scrubber was running at about 40 gph, above the 30 gph specified in Howard Finishing's OMP. The scrubber showed a static pressure drop of 1.0", which is within the mesh pad's specified range of 0.8" to 3.4". Records from December of 2014 through February of 2015 show that flow along the

packed bed wet scrubber is kept above 30 gph, and static pressure drop is generally around 1.0". These parameter values appear to show that control C is operating properly per SC 23.

40 CFR Part 63 Subpart N Requirements

Howard Finishing is subject to 40 CFR Part 63 Subpart N, as specified in PTI No. 186-91B SC 27. Most requirements applicable to Howard Finishing are reflected in PTI No. 186-91B. Howard Finishing measures the surface tension of electroplating and anodizing tanks each day of operation. The most-recent federal standard requires the surface tension of electroplating and anodizing tanks to be below 40 dynes per centimeter per §63.342(d)(3), which is more stringent than the 45 dynes per centimeter specified in PTI No. 186-91B SC 26. Records from December of 2014 to February of 2015 show that the company has maintained surface tension of chromium tanks 4A and 4B on Nickel – Chrome Plating Line IV under 40 dynes per centimeter. On April 2, AQD received an OMP from Howard Finishing that is updated to reflect the surface tension limit of 40 dynes per centimeter. Howard Finishing also maintains surface tension daily on its tanks containing nickel, but this does not appear to be required under 40 CFR Part 63 Subpart N.

§63.342(d)(4) requires that facilities use a non-PFOS (perfluorooctane sulfonate) wetting agent by September 21, 2015. Howard Finishing plans to change its wetting agent from Macuplex STR, a PFOS, to a non-PFOS system. This change appears to be exempt from permitting requirements per R 285(d).

§63.347(h)(1) requires that area sources complete ongoing compliance status reports annually, assuming no exceedances. Howard Finishing completes reports semi-annually, and provided their report for July 1, 2014 through December 31, 2014. This report certified compliance with work practices identified in §63.342(f). Howard Finishing appears to conduct operation and maintenance practices once per quarter as required for fiber-bed mist eliminators and CMP systems per §63.342(g). Howard Finishing provided quarterly operation and maintenance records from July and October of 2014, and January of 2015.

Miscellaneous Equipment

There are no boilers, cold cleaners, or emergency generators on-site. According to Mr. Patel, process tanks are heated electronically. A natural gas-fired boiler was used previously, but was moved off site in July of 2014.

There is one buffing stand on site. This equipment appears to be exempt from permitting requirements per R 285 (l)(vi)(B).

Compliance

Based on the AQD inspection and records review, it appears that Howard Finishing is in compliance with the federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, the conditions of PTI No. 186-91B, and 40 CFR Part 63 Subparts A and N.

NAME Adam [Signature] DATE 4/7/15 SUPERVISOR CJE