

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

N521926491

FACILITY: DMI AUTOMOTIVE INC		SRN / ID: N5219
LOCATION: 1200 DURANT DR, HOWELL		DISTRICT: Lansing
CITY: HOWELL		COUNTY: LIVINGSTON
CONTACT: John Stevens , Quality & Environmental Manager		ACTIVITY DATE: 08/19/2014
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection.		
RESOLVED COMPLAINTS:		

On 8/19/2014, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), conducted a scheduled inspection of DMI Automotive Inc.

Environmental contact:

John Stevens, Quality & Environmental Manager; 734-341-3657; jas48169@yahoo.com

Facility description:

DMI Automotive chrome plates automotive dies for use in metal stamping plants. The dies are used to make auto parts, such as hoods and side panels.

Emission Units:

Emission unit ID	Description	Permit to Install No.	Federal regulation	Compliance status
EUCHROME1	Hard chromium electroplating tank A with Composite Mesh Pad scrubber system	161-94B	40 CFR Part 63, Subpart N	Compliance
EUCHROME2	Hard chromium electroplating tank B with Composite Mesh Pad scrubber system	161-94B	40 CFR Part 63, Subpart N	Compliance

Regulatory background:

This facility is classified as a minor source for Hazardous Air Pollutants (HAPs), because it does not have the Potential to Emit 10 tons per year (TPY) or more of a single HAP, nor 25 TPY or more of aggregate HAPs. It has Permit to Install (PTI) No. 161-94B is for two hard chrome plating tanks controlled by a Composite Mesh Pad (CMP) scrubber.

The facility is subject to 40 CFR Part 63, Subpart N, the National Emissions Standards for Hazardous Air Pollutants for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome NESHAP). On 9/19/2014, tighter emission limits and other compliance parameters in the NESHAP are implemented. This was discussed during the pre-inspection meeting on 8/19. DMI is classified under the NESHAP as a "small" facility with enclosed hard chromium electroplating tanks, based on amp-hours.

They have determined that they are not subject to 40 CFR Part 63, Subpart XXXXXX, which is the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Nine Metal Fabrication and Finishing Source Categories at Area Sources. This will be discussed later in this inspection report.

They have determined that they are also not subject to 40 CFR Part 63, Subpart WWWWWW, Area Source Standards for Plating and Polishing Operations, which will be discussed later in this report.

They are subject to 40 CFR Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart J - Tank Systems, which is enforced by the DEQ's Office of Waste Management & Radiological Protection (OWMRP).

Location:

The facility is located on the east side of an industrial park, just north of I-96. There are industrial buildings 150 feet to the west, 250 feet to the north, and 500 feet to the south of DMI. The closest residential area is an apartment complex approximately 800-900 feet to the southeast.

Recent history:

DMI has increased their workforce from 6 to 8 people. They are also able to bring back some formerly full time employees as needed, for busy periods of production.

Most recent stack test:

On 4/14/2005, they conducted their most recent stack testing of their chrome plating tanks and CMP scrubber. Their emission limit under the both the NESHAP and PTI 161-94B is 0.015 mg/dscm, and their emissions were below the limit, at 0.0051 mg/dscm. Their lbs/hour limit under the PTI is 0.0011 lbs/hour, and their emissions were below the limit, at 0.0006 lbs/hour.

Arrival:

I arrived at 9:30 AM. There were no odors or visible emissions detectable from the facility. The west exhaust stack is the only one currently in use. Weather conditions were partly cloudy, humid, and about 65 degrees F, with winds 5-10 miles per hour, out of the south southwest.

Mr. John Stevens is the Quality & Environmental Manager for DMI, and is also the Lead Auditor for Stevens Quality Consulting, Inc. Since he frequently travels out of the state, and out of the country, on business, we arranged the date and time for this inspection, in advance. I met with Mr. Stevens and with Mr. Mike Arnold, Plant Manager. They already have a copy of the DEQ's "Environmental Inspections: Rights and Responsibilities" brochure, so the copy I brought was not needed.

Pre-inspection meeting:

We discussed how 40 CFR Part 63, Subpart N, the chromium NESHAP implements tighter emission limits and other compliance parameters for certain categories of chrome platers. Mr. Stevens went online, to the e-CFR website, and reviewed the NESHAP while we talked. For their class, a large, hard chromium electroplater with enclosed tanks, there is no reduction in the chromium emission limit. Their limit is still 0.015 mg/dscm. DMI does not use surfactants as their control option under the NESHAP, using their scrubber instead. The NESHAP requires quarterly inspections of the ductwork, but they do this daily.

For 40 CFR 264 Subpart J, which requires inspecting of tank systems quarterly (under 40 CFR 265.195 Rule 306), they do this daily, I was informed. There is a requirement to do an annual inspection of the tanks (per 40 CFR 264 Rule 615), but Mr Stevens does these himself, every two months, he explained. Although this is not an air regulation, it is documented here to note that DMI staff appear to be going above and beyond the minimal frequency of environmental inspections for their facility.

Inspection:

There are five tanks set into the floor at DMI. The first two are strip tanks, 1 and 2. The third is a rinse tanke. The fourth and fifth tanks are the chrome plating tanks A and B, respectively.

When dies from stamping plants arrive at DMI, they must be stripped. About 95% of the time, this is done chemically, with sodium hydroxide (NaOH). This is done in the two strip tanks, tanks 1 and 2. The remaining 5% of the time, sandblasting is done. Enclosure is used to contain fugitive dust from sandblasting.

Tank 3 is currently a rinse tank, where dies are rinsed to remove either sodium hydroxide, or chromic acid. On 2/12/2010, the company was issued PTI No. 4-10, which would allow for a small, enclosed tank to be placed in the lower concrete sump pit beneath tank 3. Rinse water would be stored in this tank,

and pumped into the original tank 3 to be evaporated by heating to a maximum temperature of 150 degrees F. Emissions would be controlled by an existing 22,000 cubic feet per minute (cfm) scrubber, which has not been used for a number of years. Their current volume of business does not make this project feasible, however. The third tank continues to serve as a rinse tank. The equipment was not installed within 18 months of the issuance date of the permit, and the permit was therefore voided, per AQD procedures and Rule 201(4). The company will be able to reapply for the permit, if conditions make the project viable in the future.

Hard chrome plating line, tanks A and B, with CMP scrubber, PTI No. 161-94B, and Chrome NESHAP:

Hard chrome plating tank A is identified in the PTI as EUCHROME1, and the newer tank B is identified as EUCHROME2. Each tank has a push-pull air circulation system, where air is ducted into each tank, above the level of the chromic acid plating solution, and that air is then drawn into an emission capture system. Control is provided by a 32,000 cfm CMP scrubber. To enhance the effectiveness of the emission capture system, DMI installed a movable hood, around 2007, which can be placed over whichever tank, A or B, is plating. There was still an opening left at the front of each tank, so DMI installed positionable metal plates, called deflector plates, to cover these openings. This was done in order to increase worker safety, by preventing employee exposures to chromic acid vapors. I could not smell any chromic acid vapors near the tanks.

Neither Tank A nor B was plating today. Mr. Stevens explained the tanks generally run on weekends and holidays, when stamping plants do not have any production, and so the dies can be removed. DMI receives the dies Friday evenings, and they send the freshly plated dies out by Monday morning.

They do a weekly quality check of the chromic acid solution.

The scrubber is labeled as a Spectra U-IV 32000. The pressure drop readings for the different stages of the unit read as follows:

Stage 1: 0.3" water column (w.c.)

Stage 2: 0.7" w.c.

Stage 3: 1.6" w.c.

Stage 4: 0.5" w.c.

Stage 5 (total): 3.2" w.c.

The total reading of 3.2" w.c. was within the acceptable range of 2.5" w.c., plus or minus 1", which was established based upon the most recent stack testing. On the scrubber pressure drop daily log sheets, the acceptable range is stated as 1.5-3.5" w.c., for clarity. Mr. Stevens provided photocopies of recent scrubber log forms, from 3/2/2014 through the present (attached for reference). The readings ranged from 2.9 to 3.2 inches w.c., within the allowable range. The pressure drop gauges were last calibrated on 8/14/2014, and were due next on 11/14; i.e. every three months.

There are four mesh pads, each a foot thick. There are five water jets on the side of the scrubber unit, and these are used to clean the pads, if the pressure drop starts to go up. Once per year, the mesh pads are placed in the strip tank, and any chromic acid buildup is removed. They reuse the pads, as they are very expensive.

There are three exhaust stacks on the DMI roofline. The westernmost stack is the only one currently in use. It serves the CMP scrubber for the hard chrome plating line. The easternmost stack once served a strip tank, and the middle stack once served a sludge dryer or evaporator that was disconnected in 1999. From outside the plant, it could be seen that there were no visible emissions from the exhaust stack. It was free of any stains or leaks. Additionally, Mr. Stevens pointed out that the cables to the stack were in good shape, and explained they are tightened, if they ever get slack.

Chromic acid can periodically create small leaks on PVC plastic ductwork, in the chrome plating industry. DMI has identified a new method to repair these tiny leaks, when they occur. They use a chemical-resistant epoxy to seal leaks. There was a minute, dried stain of chromic acid on one piece of vertical ductwork, right above the left (east) side of Tank A. It was not there yesterday, Mr. Stevens noted, as they check each day. They were out of the epoxy material today, but more was expected to arrive on 8/21, two days from now.

DMI staff provided examples of the log forms on which they track total daily amp hours (attached for reference). Strike amps take place during the first 3-6 minutes of plating. The regular plating amps are generally about half of what the strike amps are.

They keep an ongoing chrome plating compliance status report, electronically. They are not required to submit it. I asked for and received a copy last year (please see plant file), but did not ask for one this year.

40 CFR Part 63, Subpart XXXXXX:

They have determined that DMI is not subject to the NESHAP for Nine Metal Fabrication and Finishing Source Categories. Mr. Stevens provided documentation to this effect (Attachment D), on an EPA Initial Notification form for XXXXXX, which they first filled out on 8/9/2011 and continue to fill out, each year. They are not subject to this regulation, because they use wet polishing, rather than dry polishing, on die surfaces, and their in-plant particulate emissions were reported to be below the cut off point where they would become subject. The polishing is done to "true up" the dies, to remove any imperfections, right before the plating process.

40 CFR Part 63, Subpart WWWWWW:

This is the Area Source Standards for Plating and Polishing Operations. DMI has determined they are not subject, because they do not conduct plating other than chromium electroplating, and because they do not perform dry mechanical polishing of finished surfaces after plating.

40 CFR Part 264, Subpart J:

They are subject to 40 CFR Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart J - Tank Systems. This regulation applies to their secondary containment system, which is the large concrete pit underneath their five metal tanks, Mr. Stevens explained. The concrete is sealed with resin, and then with Elasti-Liner, which is a coating designed for containment tanks. Within the containment area is a lower pit, which has two sump pumps, and three alarms in place to alert operators of the presence of liquids. Plus, there is a moisture detector, with an alarm. He provided a photocopy of their most recent daily alarm inspection sheet (attached for reference).

The concrete pit is kept empty and dry. The volume of this pit is such that if every one of their 5 tanks suddenly lost their entire volume of liquids, the pit would still only be half full. The liner on the concrete may occasionally develop a pinhole-sized opening. The consulting firm SME is trained and licensed to find and repair these pinholes. This is done by grinding out the pinhole, and apply a patch covering not just the pinhole location, but 4-6 inches beyond. Before the end of the inspection, Mr. Stevens e-mailed me a copy of the most recent liner inspection report (attached for reference).

Mr. Stevens showed me that there are catch trays sitting in the secondary containment, made of chemically resistant plastic (CPVC). Their purpose, he explained, is to catch occasional drips of chromic acid from the corners of the metal fabricated push-pull air handling system. This prevents the chromic acid from contacting the sealed and protected concrete floor of the tank. Collected chromic acid liquid is reclaimed by putting it back into the chrome plating tanks. The steel of the push-pull system is most likely to develop leaks at corner joints, and they patch the occasional leaks with the same epoxy resin they now use on PVC plastic ducts.

Conclusion:

I did not observe any instances of noncompliance. DMI Automotive appeared to be in compliance with PTI No. 161-94B, with the Air Pollution Control Rules, and the NESHAP for hard chromium electroplating. Facility staff were very knowledgeable and professional. I left the site at 2:10 PM.

NAME 

DATE 9/19/2014

SUPERVISOR 



