

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

N676044096

FACILITY: D & B Metal Finishing		SRN / ID: N6760
LOCATION: 22803 Patmore St, CLINTON TWP		DISTRICT: Southeast Michigan
CITY: CLINTON TWP		COUNTY: MACOMB
CONTACT: Bruce Ulman , Owner		ACTIVITY DATE: 02/01/2018
STAFF: Joe Forth	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Onsite Inspection		
RESOLVED COMPLAINTS:		

On February 1, 2018, I, Joseph Forth, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) Staff, conducted a scheduled inspection of D&B Metal Finishing located at 22803 Patmore St, Clinton Twp., Michigan. I was accompanied by AQD inspectors Adam Bognar and Robert Elmouchi. The purpose of the 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 administrative rules, Permit to Install (PTI) No. 8-00A, and 40 CFR Part 63 Subpart N (Chrome NESHAP).

Facility Inspection

We arrived at the site at 9:45 am and entered the site. We introduced ourselves, provided our credentials, and stated the purpose of the inspection to Mr. Bruce Ulman, Owner, and Jackie Ulman, main record keeper for the facility. Mr. Ulman took us on a tour of the facility.

The company currently has one Air Use Permit No. 8-00A. This is an Opt-out permit for HAPs to operate three small TCE and MEK cold cleaners. The source is a new Hard Chromium electroplater subject to the Chromium MACT (40 CFR 63, subpart N). The primary production activities are hard chrome plating, decorative chrome plating and nickel plating. Additional activities include a solvent (trichloroethylene) batch cold cleaning process to remove wax from parts, metal bluing and metal blackening. The metal bluing and metal blackening processes appear to be exempt from R201 per R285(2)(r)(i).

D&B currently has 8 chrome tanks, while only 6 are being used currently. Tanks #1 and #3 are the tanks currently not being used. Additionally, the facility has 1 nickel tank (This process appears to be exempt from R201 per R285(2)(r)(vii)). Mr. Ulman explained that he runs his tanks at a lower voltage and temperature relative to other plating facilities. He says this helps to cut down on the amount of fumes that the tanks create. D&B also utilizes a catalyst which replaces sulfuric acid in the bath. The facility has 6 employees, 4 full-time and 2 part-time. D&B runs shifts Monday through Friday, 8 am to 4 pm. The facility does not have any backup generators or boilers.

Mr. Ulman showed me fire resistant materials that he used to replace the epoxy coated wood plating tank covers. Some years ago, he made the switch after another plating facility experienced a fire. Mr. Ullman also showed me a nickel plating tank secondary containment liner that was in the process of being proactively rebuilt to prevent a potential plating solution spill. Mr. Ulman also stated that the floor of the plating area is diked to act as a tertiary containment system, which has approximately 300% capacity of all plating tanks combined.

D&B started up in January 2000. The facility is in a light industrial mail style building and appears to occupy three adjacent units. The east unit has a small office and bathroom in front

with the production area in back. The production area occupies approximately 80 percent of this unit's floor space. The two additional units have offices and a bathroom / lab in the front while the rear area is used for storage and a trial small scale operation of metal bluing and metal blackening.

Mr. Ulman designed this plating process to minimize chemical use, water consumption, energy consumption, as well as health, safety and environmental hazards. To some extent, the permittee has developed their own control technology. This facility has no exhaust stacks associated with any of the plating processes. All process emissions are fugitive and all process emissions are released in-plant. Relative to other facilities, they operate with lowered the bath levels, reduced temperatures and attached hinged lids to each tank to reduce evaporation of their baths. Electroplating is conducted with lids closed. The chrome tanks appear to be exempt from NSR per R285(2)(r). Mr. Ulman stated that they currently use TOP SHUT XO fume suppressant, which does not contain PFOS.

The Michigan Occupational Safety and Health Administration (MIOSHA) and the Michigan Department of Consumer and Industrial Services both have visited the facility to analyze the in-plant air. A report from the Michigan Department of Consumer and Industrial Services, dated April 13, 2000, indicates that the employee exposure to chromic acid does not exceed the limit and the analysis of total dust showed exposure levels well below MIOSHA Air Contaminants Standard limits.

Compliance:

PTI No. 8-00A

EUCOLDCLEANER Special Conditions (SC):

SC 1.1: A limit of 3.30 tpy of Trichloroethylene emissions (12-month rolling time period). By following the monitoring methods in SC 1.10 the facility, which the facility appears to be doing so satisfactorily, is compliant with the 3.30 tpy emission limit. The facility was under this limit for 2017 (January through December), emitting only 1520.7025 pounds (.76 tons) of TCE. (See Attachment A)

SC 1.2: A limit of 542 gallons of Trichloroethylene (TCE) per year based on a 12-month rolling period. The amount of solvent used "net usage" shall be defined as the amount of solvent added to EUCOLDCLEANER to reach starting levels less any removed as waste. For 2017, the facility was under the limit using only 124.75 gallons of TCE. (See Attachment A)

SC 1.3: Facility shall not operate EUCOLDCLEANER except when employing a tightly fitting lid that shall be closed at all times except when putting in or removing parts, a water layer of at least 1.0 inch or a freeboard ratio of 0.75. The cold cleaner was fit with a tight-fitting lid and had a wax/water layer several inches thick and filled to satisfy the .75 freeboard ratio.

SC 1.4: Facility shall not operate EUCOLDCLEANER except in compliance with 40 CFR 63 Subpart T(c)(1) through (c)(8). The facility is compliant with all rules aside from (c)(2) and (c)(6) which do not apply as they do not use a hose or flushing device, nor is there a pump agitated bath.

SC 1.5: Facility shall comply with all provisions of 40 CFR Part 63 Subparts A and T as they apply to EUCOLDCLEANER. The facility appears to be operating EUCOLDCLEANER satisfactorily according to the applicable provisions.

SC 1.6: Facility shall not operate EUCOLDCLEANER except in compliance with the

monitoring requirements of 40 CFR 63.466. The facility appears to be in compliance with the applicable monitoring requirement 40 CFR 63.466(b)(1). D&B has developed their own maintenance and monitoring method for their cold cleaners, which they inspect daily. Cold cleaner lids are closed when not in use. (See Attachments B and C)

SC 1.7: Facility must keep monthly and 12-month rolling time period records of solvent usage. The facility maintains proper records of solvent usage. (See Attachment A, B)

SC 1.8: Facility shall keep records for EUCOLDCLEANER as specified in 40 CFR 63.467. The facility maintains the proper records for EUCOLDCLEANER. (See Attachments A,B,C)

SC 1.9: The facility shall submit reports to the AQD as specified in 40 CFR 63.468. Reporting is not required per §63.468 because they use the halogenated solvent as a batch contact solution and do not use a batch vapor or in-line solvent cleaning process as defined in Subpart T.

SC 1.10: Facility shall keep monthly records of the following:

- a. Gallons of solvent used/added per month. (See Attachment B).
- b. Gallons of solvent sent for reclamation each month. The facility does not reclaim any solvent. But periodically sends away waste wax/TCE mixture for waste treatment. (See Attachment D)
- c. Solvent mass emission calculations determining the monthly emission rate in pounds per calendar month. (See Attachment A)
- d. Solvent mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. (See attachment A).

FGFACILITY Special Conditions: (Only HAP used in Cold Cleaner is TCE)

SC 2.1a: An emission limit of less than 9.0 tpy of each individual HAP in a 12-month rolling time period as determined at the end of each calendar month. By following the monitoring requirements in SC 2.4, the facility exhibits compliance for this condition. Facility only used 1520.7 pounds of TCE (See Attachment A). Based on stack tests performed in June 2000, the average chromium emission rate was determined to be 0.93 mg/hr. This would lead to a max yearly emission of less than a kilogram. Therefore, chromium emissions are less than 9 tpy.

SC 2.1b: An emission limit of less than 22.5 tpy of Aggregate HAPs in a 12-month rolling time period as determined at the end of each calendar month. By following the monitoring requirements in SC 2.4, the facility exhibits compliance for this condition. Facility only used 1520.7 pounds of TCE (See Attachment A). Based on stack tests performed in June 2000, the average chromium emission rate was determined to be 0.93 mg/hr. This would lead to a max yearly emission of less than a kilogram.

SC 2.2: The HAP content of any material shall be determined using manufacturer's formulation data. Upon request of the AQD district supervisor, the manufacturer's HAP formulation shall be verified using EPA Test Method 311. HAP content for the cleaning liquid is 100% TCE.

SC 2.3: All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. The facility appears to be in compliance with this condition. (See Attachments A,B)

SC 2.4: Monthly records of the following shall be kept for at least 5 years:

- a) Gallons or pounds of each HAP containing material used. (See Attachment A)
- b) Gallons or pounds of each HAP containing material reclaimed. Facility does not reclaim any HAP containing material. The facility does periodically send away their waste wax, which contains some TCE, for waste treatment. (See Attachment D)
- c) HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used. HAP content of the cleaning liquid is 100% TCE.
- d) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month. (See Attachments A,B)
- e) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period (See Attachments A,B)

Chrome NESHAP (40 CFR Part 63 Subpart N)

Chromium emissions testing was required according to the NESHAP (conducted on 6/25/2000), since they conduct hard chrome electroplating. D&B is a small hard chrome plater with a potential rectifier capacity of 30,000,000 amp-hours/year. There are no exhaust stacks or general plant exhaust fans. A temporary stack was constructed to meet the testing requirements because there is no stack designed into the process. Per the stack test results, it appears that the company is in compliance with the required standard emission limitation of 0.015 mg/dscm. The Company's stack test results report indicates an average chromium emission rate of 0.0006 mg/dscm. Plating bath vapor pressures are kept low by reducing the operating temperature and covering the baths on a continual basis.

In order to maintain continuous compliance with the NESHAP, a surfactant/wetting agent is also used to limit emissions from the plating tanks. The facility maintains records of the surface tension of its chrome baths. The facility records the surface tension using an stalagmometer, thus the surface tension limit specified by the NESHAP is 40 dynes/cm. The facility appears to be in compliance with this requirement (See Attachment E for 1 month for each tank, and Attachment F for 1 year for one tank, tank #4). Records of additions of the fume suppressant were also provided (See Attachments E,F). The fume suppressant used by D&B is Top Shut XO by Okuna Chemical Industries. This fume suppressant does not contain PFOS (See Attachments G,H).

Records of all maintenance, malfunction and malfunction remedies can be found in Attachments I, J, K, and L.

Process water is treated and reused for the wash tanks. With both the chrome and nickel plating processes, the first rinse bath is used to replenish the plating tank. Even though the plating chemicals are diluted in the first rinse bath, no treatment is required to concentrate the plating chemicals in the first rinse water before it is added to the plating tank because, at 113 degrees F, the excess water evaporates from the solution in the plating tank.

Conclusion

The facility appears to be operating in compliance with permits 8-00A, the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451, 40 CFR 63, Subpart N- National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

NAME John M. Finn

DATE 4-30-18

SUPERVISOR SK