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

B579440247

FACILITY: JO MAR ENTERPRISES INC		SRN / ID: B5794
LOCATION: 7489 DAVISON EAST, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Joseph Joye ,		ACTIVITY DATE: 06/08/2017
STAFF: Todd Zynda	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

PURPOSE OF INSPECTION: Targeted
 INSPECTED BY: Todd Zynda (AQD), Jerry Krawiec (AQD)
 PERSONNEL PRESENT: Joseph Joye, Jr., Jennifer Bigelow
 FACILITY PHONE NUMBER: (313) 365-9200

FACILITY BACKGROUND

Jo-Mar Enterprises (Jo-Mar) located at 7489 East Davison, Detroit, Michigan, is a hard chrome plating facility that services the automotive and medical industries. The facility has five employees and operates 7:00 AM to 5:30 PM, five days a week. The facility operates equipment under Wayne County Installation Permits C-9979 and C-11172/11173 and is subject to 40 Code of Federal Regulations (CFR) Part 63, Subpart N – National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

The facility operates two hexavalent chrome plating tanks (1,200 gallon [C-9979] and 700 gallon [C-11172]). Emissions are controlled by vertical mist eliminator and horizontal packed bed scrubber (C-11173).

COMPLAINT/COMPLIANCE HISTORY

There are no records of complaints for this facility on file.

During inspection of September 18, 2015, the facility was determined to be in compliance, although records demonstrating compliance were not available. During the inspection of August 20, 2013 the compliance status is listed as "unknown".

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VNs

None

INSPECTION NARRATIVE

On June 8, 2017 the MDEQ Air Quality Division (AQD) inspectors Mr. Todd Zynda and Mr. Jerry Krawiec conducted an inspection of Jo-Mar located at 7489 East Davison, Detroit, Michigan. During the inspection Mr. Joseph Joye, Jr. and Ms. Jennifer Bigelow, provided information and tour of facility operations. Mr. Joye, Jr. and Ms. Bigelow are both children of Mr. Joseph Joye, Sr. who owns and started the company. On May 19, 2017, prior to inspection, the facility was notified of the upcoming inspection and was provided with a copy of the letter of conditions to Permit No. C-11172/11173 and Subpart N via email (see attached correspondence).

The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, and Wayne County Installation Permits C-9979 and C-11172/11173, R336.1941, and 40 CFR Part 63, Subpart N. Jo-Mar operates two chrome plating tanks (1,200 gallons and 700 gallons), one cold cleaner, an enclosed sand blaster glove box unit, and two natural gas boilers (262,000 Btu/hour each). During the inspection, no visible emissions were observed.

During the inspection, the records request was discussed with Mr. Joye, Jr. and Ms. Bigelow. According to Mr. Joye, Jr., Jo-Mar did not receive AQD's email on May 19, 2017 with letter of conditions to Wayne County Installation Permit C-11172/11173 and Subpart N. The facility did not have a copy of the letter of conditions to Wayne County Installation Permit C-11172/11173 and a copy was made during the inspection. Subpart N was provided to the facility via email on June 13, 2017. According to Mr. Joye, Jr. and Ms. Bigelow, Jo-Mar is currently not maintaining any records in regards to letter of conditions to Wayne County Installation Permit C-11172/11173 or Subpart N.

Additionally, during the meeting with Mr. Joye, Jr. and Ms. Bigelow, Wayne County Installation Permits C-9979 and 9980 were discussed. The letter of conditions to Permit C-11172/11173 states that the conditions of C-11172/11173 supersedes the previous letter of conditions dated December 1, 1992 for Installation Permits C-9979 and 9980. Following the inspection it was determined that while the letter of conditions for C-9979 and 9980 have been superseded, it appears that C-9979 (1,200 gallon tank) is still active with conditions for that tank now incorporated into the letter of conditions for C-11172/11173. AQD files indicate that C-9980 (Duall scrubber control) was cancelled on February 26, 1997.

The inspection of the facility began with observation of the chrome plating tanks. Mr. Joye, Jr. provided example of work done on worn out shafts that are hard chrome plated to rebuild worn out areas on the shafts. The areas that are not plated are covered in tape to protect from plating. Areas on parts that need to be "built back up" are placed in the chrome bath. Approximately 5/10 of inch is plated per hour.

The facility has two hexavalent chrome plating tanks (1,200 gallons and 700 gallons). According to Mr. Joye, Jr. the 700 gallon has not been in use since 2010, but could be brought online as needed. The ampere hours estimated between 4,000 and 5,000 per day, per tank. The chrome bath is 32 ounces per gallon chromic acid. Approximately 2400 cubic centimeters sulfuric acid is also added to the 1,200 gallon bath. The chrome bath is maintained at 130 degrees Fahrenheit. The process does not include an activation bath; only a chromium bath followed by a rinse.

Emissions from chrome tanks are vented through an individual vertical mist eliminator (one for each tank). Emissions from both tank mist eliminators are then combined and vented to a horizontal packed bed scrubber located at roof level. During the inspection the pressure drop across the vertical mist eliminator read 1 inch water. The pressure drop gauge for the packed bed scrubber was not operational. According to Mr. Joye, Jr., the tubes for the pressure drop gauges broke during the recent winter. During the inspection it was observed that the pitot tubes were pulled out of the gauge.

Prior to chrome plating, the materials to be plated are sand blasted as needed in an enclosed sand blast glove box unit, and also cleaned in a cold cleaner (metal bucket with lid) using methyl ethyl ketone (MEK). During the inspection, the cold cleaner lid was closed. Instructions were not posted and MDEQ cold cleaner operational instructions sticker was provided to Mr. Joye, Jr.

During the inspection the two facility boilers were observed. Both natural gas boilers are rated at approximately 262,000 Btu/hour.

APPLICABLE RULES/PERMIT CONDITIONS

Wayne County Installation Permits C-9979 and C-11172/11173 – Letter of Conditions dated August 1, 1996

SC 17. **UNKNOWN.** Total chromium emissions from the hard chrome plating line, herein after "process", with mist eliminators and three stage scrubber (RHH-43) shall not exceed 0.00023 pounds per hour nor 0.0001 ton per year. It is assumed that "process" includes both chrome tanks: 1,200 gallons (C-9979) and 700 gallons (C-11172). The AQD does not have information to evaluate compliance with this condition. At this time testing has not been requested.

SC 18 and SC 25. **UNKNOWN.** The total chromium emission from the process shall not exceed 0.0009 milligram per dry standard cubic meter exhaust air, corrected to 70°F and 22.92 inches mercury. Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm. It is unknown if emissions have continued to be in compliance with the emission limit as monitoring and inspection records are not maintained. As described above, the pitot tubes to monitor pressure drop were disconnected during the inspection.

SC 19. **COMPLIANCE.** Visible emissions from the process shall not exceed zero percent opacity. During the inspection there were no visible emissions.

SC 20. **UNKNOWN.** Shall not operate the process unless the controls are installed and operating properly.

During the inspection it was observed that the pressure drop gauge for the packed bed scrubber is non-operational with pitot tubes not hooked up properly. According to Mr. Joye, Jr., the tubes for the pressure drop gage were damaged during the recent winter.

SC 21. **NOT IN COMPLIANCE.** Shall equip and maintain the controls with pressure drop indicators to measure pressure drop across the controls. See SC 20 above.

SC 22. **COMPLIANCE.** Exhaust air shall be discharged unobstructed vertically upwards with maximum diameter of 24 inches and not less than 31 feet above ground level. During the inspection the stack appeared to meet these requirements. Measurements were not collected.

SC 23. **NOT IN COMPLIANCE.** Shall submit an operation and maintenance plan including start-up, shut-down, and malfunction plan of controls. The plan shall include a list a standardized checklist to document the operation and maintenance of the controls which addresses a systematic procedure for identifying malfunctions, reporting process to the supervisors and other actions to be followed to ensure that the controls or process malfunctions due to poor maintenance or other preventable conditions do not occur.

The facility did not have record of an operation and maintenance plan during the inspection. However, during review of AQD facility files the plan for the packed bed scrubber was identified titled "Operations and Maintenance Plan for Hexmaster Chrome Scrubber". The facility was provided with a copy of the plan. The plan currently does not have standardized checklist to document the operation and maintenance of equipment.

SC 24 and 26. **NOT IN COMPLIANCE.** Shall perform inspections as follows. i. inspection of mesh pads quarterly; ii. Wash down mesh pads in accordance with manufacturer recommendations. This includes wash down for the multiple section of the scrubber during hours of plating operation as follows.

- a. Stage one: 15 second wash down conducted once per hour.
- b. Stage two: 15 second wash down conducted once every three hours
- c. Stage three: 5 second wash down conducted once every three hours.

iii. if pressure drop across the air pollution control device varies by more than ± 1 inch of water gauge, from the pressure drop determined during the initial testing, the variation shall be documented, and the operating and maintenance procedures shall be reviewed.

On a quarterly basis, the operator shall visually inspect the control device to ensure proper drainage to ensure to chromic acid build up on the mesh pads and that the structural integrity is sound.

During the inspection, Mr. Joye, Jr. stated that Jo-Mar does not maintain any of the above listed records. The testing conducted on December 19, 1996 indicates the following pressure drops: Stage 1 - N/A, Stage 2 - 0.5 inches, and Stage 3 - 0.1 inches.

SC 27. **NOT IN COMPLIANCE.** Shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR §63.342(f). Records shall identify the device inspected, the date, approximate time of inspection, and a brief description of the working condition of the device during the inspection.

During the inspection, Mr. Joye, Jr. stated that Jo-Mar does not maintain any records.

SC 28. **NOT IN COMPLIANCE.** Monitoring and recording of emissions, operating and maintenance information is required to comply with 40 CFR Part 63, Subparts A and N. Records to be kept on file for at least 5 years.

During the inspection, Mr. Joye, Jr. stated that Jo-Mar does not maintain any records in regards to Subpart N.

Federal Requirements

40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial, Commercial, Institutional Steam Generating Units

The boilers at the facility are not subject to Subpart Dc per §60.40c(a). The facility boilers have a heat input capacity less than 10 MMBtu/hour.

40 CFR Part 63, Subpart N – National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks

R336.1942 states that the provisions of Subpart N are adopted by reference in R336.1902.

The facility is defined as a "small hard chromium electroplating facility as the maximum cumulative potential rectifier capacity is less than 60 million amp-hr/year. The facility reports the approximate capacity as 5,000 amp-hr per day for each tank, or approximately 3.65 million amp-hr/year.

As described above, the emissions from chrome tanks are vented through an individual vertical mist eliminator (one for each tank). Emissions from both tank mist eliminators are then combined and vented to a horizontal packed bed scrubber located at roof level. Based on descriptions it appears that the following Subpart N definitions apply to the control equipment:

Composite mesh-pad system (facility vertical mist eliminators) – an add-on air pollution control device typically consisting of several meshpad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.

Packed-bed scrubber - an add-on air pollution control device consisting of a single or double packed bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

§63.342(c)(1)(ii) – **UNKNOWN** – total chromium in the exhaust gas stream not to exceed 0.015 mg/dscm for all open surface hard chromium electroplating tanks located at small hard chromium electroplating facilities.

Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm. It is unknown if emissions have continued to be in compliance with the emission limit as monitoring and inspection records are not maintained. As described above, the pitot tubes to monitor pressure drop were disconnected during the inspection.

§63.342(f)(1)(i), §63.342(f)(1)(ii) – **NOT IN COMPLIANCE** – At all times, including startup, shutdown, and malfunction shall operate and maintain any affected source, including associated pollution control devices and monitoring equipment in a manner with good air pollution control practices. Malfunctions shall be corrected as soon as practicable. During the inspection it was observed that the pressure drop gauge for the packed bed scrubber is non-operational with pitot tubes not hooked up properly. According to Mr. Joye, Jr., the tubes for the pressure drop gauge were damaged during the recent winter.

§63.342(f)(3)(i)(A) – **NOT COMPLIANCE** – Shall prepare an operation and maintenance plan. The plan shall specify the operation and maintenance criteria for the affected source and air pollution control device, and standardized checklist to document the operation and maintenance of this equipment. The facility did not have record of an operation and maintenance plan during the inspection. However, during review of AQD facility files the plan for the packed bed scrubber was identified titled "Operations and Maintenance Plan for Hexmaster Chrome Scrubber". The facility was provided with a copy of the plan. The plan currently does not have standardized checklist to document the operation and maintenance of equipment.

§63.342(f)(3)(i)(B) and (F) – **NOT IN COMPLIANCE** – The operation and maintenance plan shall incorporate practices identified in Subpart N, Table 1. The plan shall include housekeeping procedures as specified in Table 2 of Subpart N. The existing plan does not include items identified in Table 1 and Table 2 of Subpart N.

§63.342(f)(3)(i)(D) and (E) – **COMPLIANCE** – The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur. The plan shall include procedure for identifying malfunctions and for implementing corrective actions to address such malfunctions. The plan appears to satisfy these requirements.

§63.343(c)(3) and §63.343(c)(1) – **COMPLIANCE** – For sources that use packed-bed scrubber in conjunction with a composite mesh-pad system shall meet emission limitations of §63.342 and shall meet monitoring requirements for composite mesh-pad systems of §63.343(c)(1). Shall establish as a site-specific operating parameter the pressure drop across the system, setting the value that corresponds to compliance with the

applicable emission limitation, using the procedures in §63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept ± 2 inches of water column from this value as the compliant range.

Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm. The following pressure drop readings were reported during the testing: Stage 1 - N/A, Stage 2 - 0.5 inches, and Stage 3 - 0.1 inches. According to the Retro-Hex specification sheet in AQD files (see attached), stage 1 is packing type (existing scrubber), stage 2 is coalescing pad type – mono-filament, and stage 3 is mist eliminator type – 2 inch diameter polypropylene packing.

§63.346(a) – **NOT IN COMPLIANCE** – Shall fulfill all recordkeeping requirements of Table 1 of Subpart N. Per Table 1 the following are required quarterly: 1. visually inspect device to ensure there is proper drainage, no chromic acid buildup on the pads, and no evidence of chemical attach on the structural integrity of the device; 2. visually inspect back portion of the mesh pad closet to the fan and ensure there is no breakthrough of chromic acid mist; 3. visually inspect ductwork from tank to the control device to ensure there are no leaks. Additionally, perform wash down of the composite mesh-pads in accordance with manufacturer's recommendations.

Jo-Mar has no records of the above inspections required or wash downs as required by the manufacturer.

§63.346(b)(1), (2), (3), (4), (8), (9), (10), (11)– **NOT IN COMPLIANCE** – Shall maintain inspection records included in Table 1, records of maintenance, records of occurrence, duration and cause of malfunctions, records of actions taken during periods of malfunction to minimize emissions, records of monitoring data required by §63.343(c) that are used to demonstrate compliance with the standard including the date and time the data are collected, the specific identification of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on pollution control, or monitoring equipment, and the total process operating time.

Jo-Mar has no records to demonstrate with the above listed record keep requirements.

§63.347(h)(1) – **NOT IN COMPLIANCE** – Shall prepare a summary report to document ongoing compliance status of the affected source. The report shall contain the information identified in §63.347(g)(3) and shall be completed annually.

The AQD has no record of annual compliance status reports. The facility was unable to produce any such records.

40 CFR Part 63, Subpart T – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The cold cleaner at the facility is not subject to Subpart T. The material used in the cleaner does not contain any of halogenated HAPs as defined in §63.460.

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources

Subpart JJJJJJ applies to boilers not classified at "gas-fired boilers" at area sources. The boilers at the facility are natural gas boilers. The AQD is not the delegated authority for Subpart JJJJJJ.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Boilers

The two natural gas boilers (each approximately 262,000 Btu/hour) are exempt from PTI requirements under the following Rule.

R336.1282(2)(b)(i): "The requirement to obtain a PTI does not apply to...fuel burning equipment... which burns only.. sweet natural gas, synthetic natural gas..and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour"

Cold Cleaner

The cold cleaner at the facility is exempt from PTI requirements under the following Rule.

R336.1281(2)(h): "The requirement to obtain a PTI does not apply to.. cold cleaners that have an air/vapor interface of not more than 10 square feet.

During the inspection the "cold cleaner" used at the facility was a metal 5-gallon bucket with lid.

The cold cleaner is subject to R336.1707 for new cold cleaners. During the inspection the SDS for the MEK was not obtained. According to a phone call with Mr. Joye, Jr, the MEK is at 100% concentration. According to internet searches, the vapor pressure of MEK Solvent is 10.3 kPa (1.49 psi).

R336.1707(2) – **NOT IN COMPLIANCE** - It is unlawful for a person to operate a new cold cleaner using a solvent having a Reid vapor pressure of more than 0.6 psia or heated above 120 degrees Fahrenheit, unless at least 1 of the following conditions is met: (a) The cold cleaner is designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. (b) The solvent bath is covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. (c) The cold cleaner is controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the department.

MEK has a vapor pressure greater than 0.6 psia. The cold cleaner at the facility does not meet any of the above requirements.

R336.1707(3)(a) – **NOT IN COMPLIANCE** - a cover shall be installed and closed whenever parts are not being handled in the cleaner. The cover shall be mechanically assisted in any of the following situations: (i) The Reid vapor pressure of the solvent is more than 0.3 psia. (ii) The solvent is agitated. (iii) The solvent is heated. During the inspection the lid was closed. The cold cleaner at the facility does not have a mechanically assisted lid.

R336.1707(4) – **NOT IN COMPLIANCE** – Written operational procedures shall be posted in an accessible, conspicuous location near the cold cleaner. The facility did not have operational procedures posted. A "DEQ Cold Cleaner Operating Procedures" sticker was provided to Mr. Joye, Jr.

Enclosed Glove Box Sand Blaster

The enclosed glove box sand blaster is exempt from PTI requirements under the following Rule.

R336.1285(2)(l)(vi)(B): "The requirement to obtain a PTI does not apply to equipment and any exhaust system or collector serving the equipment for... sand blast cleaning... metal... that has emissions that released only into the general in-plant environment.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not Applicable. All lots are paved.

MAERS

The facility is a Category III fee source. The facility is not required to submit MAERS.

FINAL COMPLIANCE DETERMINATION:

The facility is not in compliance with record keeping requirements of the letter of conditions to Wayne County Installation Permit C-11172/11173 and 40 CFR Part 63, Subpart N. Additionally, the pressure drop gauges for the packed bed scrubber were not operational during the inspection. The cold cleaner did not meet Rule 707 requirements. A violation notice will be issued regarding the above cited violations.

NAME



DATE

6/27/17

SUPERVISOR

JK