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MAVILA

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

B579449909

FACILITY: JO MAR ENTERPRISES INC		SRN / ID: B5794
LOCATION: 7489 DAVISON EAST, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Joseph Joye ,		ACTIVITY DATE: 07/30/2019
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Hard Chrome Plating		
RESOLVED COMPLAINTS:		

**SCHEDULED INSPECTION**

INSPECTOR: Terseer Hemben                      EGLE-AQD

PERSONNEL PRESENT: Mr. Joseph Joye, Jr.

FACILITY PHONE NUMBER: (313) 365-9200

Date: July 30, 2019

SRN: B5794

**FACILITY BACKGROUND**

Jo-Mar Enterprises (JME) facility is located at 7489 East Davison, Detroit, Michigan. The facility operates an open surface hard chrome plating shop. JME services the automotive and medical industries. The facility has five employees and operates 7:00 AM to 5:30 PM, and five days a week. The JME facility operates under Wayne County Installation Permits C-9979 and C-11172/11173. The operation 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: one with a capacity 1,200 gallons under WC permit C-9979; and the other has the capacity 700 gallons under WC permit C-11172. Emissions from the chrome plating tank are controlled by vertical mist eliminator and horizontal packed bed scrubber under the WC permit C-11173. Other equipment installed at the facility include Safety Kleen cold cleaner, 2 boilers, and an enclosed glove sandblaster. These sets of equipment are discussed in the regulatory summary section.

**INSPECTION NARRATIVE**

I arrived at the Jo-Mar facility located at 7489 East Davison, Detroit, Michigan on July 30, 2019 at 1110 hours. Purpose of the visit was to conduct a compliance inspection and follow up on the JME's ongoing Administrative Consent Order (ACO) observation. Temperature at the hour was 79 F and Sunny, and windspeed 5 mph with humidity 82%. I was admitted onto the facility by Mr. Joseph Joye, Jr. We had pre-inspection interview and proceeded on the tour of facility operations. Mr. Joye, Jr. informed there had been no change made to equipment or process at the facility since the previous 2018 inspection. During the post-inspection conference, the records of chrome plating operations were reviewed and discussed with Mr. Joye, Jr. Mr. Joye informed the facility does not use any chemical fume suppression or surfactants. Safety data sheets (SDS) for the material used in the chrome bath were extracted for review. JME emphasized the facility does not use, and never used material containing perfluorooctane sulfonic acid (PFOS) or per- or polyfluoroalkyl substance (PFAS) in past operations.

We inspected the two chrome plating tanks. The facility has two hexavalent chrome plating tanks (1,200 gallons and 700 gallons). The 700-gallon chrome tank was not in use at the time of the inspection. The ampere - hours process was estimated between 4,000 and 5,000 (Ampere-hours day) per tank. The chrome bath concentration is 32 ounces chromic acid per gallon. Approximately 2400 cubic centimeters sulfuric acid is also added to the 1,200 - gallon tank. The chrome bath is maintained at 130 degrees Fahrenheit. More information pertaining to the JME process layout is described in the 2018 inspection report located in AQD file.

We inspected the scrubber and mist eliminator performance, the sand blast box-an enclosed sand blast glove box unit, and a small size cold cleaner, which comprised an aqueous based soap called Safety Kleen, ArmaKleen MM-Dip Cleaning Solution, with surface area dimensions of approximately 2 feet by 3 feet. The SDS for the cold cleaner solution is in AQD file. The facility operates 2 natural gas fired boilers. Detail information on the boilers is described in the regulatory summary section.

**COMPLAINT/COMPLIANCE HISTORY**

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

The compliance inspection conducted on June 8, 2018 determined the facility to be in noncompliance with record keeping requirements of the conditions in Wayne County Installation Permit C-11172/11173; 40 CFR Part 63, Subpart N; and R336.1941; R336.1707 parts rule. A violation notice was issued on July 6, 2017. The facility entered an ACO AQD No. 2018-02 on February 22, 2018 for the listed violations. Details of the ACO are on AQD files.

**APPLICABLE RULES/PERMIT CONDITIONS**

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

SC 17. Total chromium emissions from the hard chrome plating line, herein after “process”, with mist eliminators and three stage scrubbers (RHH-43) should not exceed 0.000023 pounds per hour nor 0.0001 ton per year could not be determined following this inspection. The process stack gas stream to be tested covers two tanks that include both chrome tanks: 1,200 gallons permitted under WC-9979; and 700 gallons permitted under WC-11172. The AQD does not have information to evaluate compliance with this condition. The facility had no records of emission rates calculated in the pounds per hour nor tons per year units. Testing and calculating emission rates in the units as stated in the condition has not been requested by AQD.

SC 18 and SC 25. The total chromium emission from the process stack showed compliance; and did not exceed 0.0009 milligram per dry standard cubic meter exhaust air, corrected to 70°F and 22.92 inches mercury. Testing conducted on December 19, 1996, indicated the emissions were 0.0008 mg/dscm. The results inferred the emissions were less than or equal to 0.0008 mg/dscm if the control device had been operating properly. Records of pressure drop submitted by JME covering the last 12 months showed the highest pressure drop was as follows: scrubber – 1.20 inches water; and the mesh pad – 0.2 inches water; indicating that the operation is within the  $\pm 1$  inch water as specified by SC 24.(iii) [Attachment B, while the original test result is listed in Attachment D].

SC 19. JME complied with visible emission condition. Visible emissions from the process. There were no visible emissions at the time of inspection.

SC 20. JME complied with proper process installation and operating condition. The pressure drop gauge for the packed bed scrubber was properly installed and operated. Records submitted by JME indicated the pressure drop values for stages 2, and pressure drop values followed compliance with allowable pressure drop differential. The scrubber was operating in a proper and satisfactory manner at the time of inspection [Attachment B].

SC 21. JME complied with the equipment maintenance requirement condition to equip and maintain the controls with pressure drop indicators to measure pressure drop across the controls. Pressure drop gauges were properly installed, operated in a proper and satisfactory manner. Attachment B indicated compliance.

SC 22. Exhaust air was discharged unobstructed vertically upwards with maximum diameter of 24 inches and not less than 31 feet above ground level. Staff visually verified the state of stack during the inspection.

SC 23. JME complied with the condition required to submit an operation and maintenance plan including start-up, shut down, and malfunction plan of controls. The plan included 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 did not occur. The facility submitted the “Operations and Maintenance Plan for Hexmaster Chrome Scrubber” identified during the previous 2018 inspection. The plan was updated to include a standardized checklist to document the operation and maintenance of equipment and is in AQD files.

SC 24. JME complied with the condition to 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:

Stage one: 15 second wash down conducted once per hour.

Stage two: 15 second wash down conducted once every three hours.

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  $\pm 1$  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.

Records provided for the above conditions indicated the facility complied with the wash down timing requirements except during the times close to shutting down operation for the day. Many readings taken at the times of nearing shutdowns showed wash down at intervals of 2 or less hours in stage 2 and 3 [Attachment C].

SC 26 and 27. Records submitted by JME indicated compliance with the condition requiring on a quarterly basis that the operator visually inspected the control device (mist eliminator and scrubber simultaneously to ensure proper drainage to ensure to chromic acid build up on the mesh pads and that the structural integrity was maintained. JME maintained records of inspections required to comply with applicable work practice standards of 40 CFR §63.342(f). Records identified the device inspected, the date, approximate time of inspection, and a brief description of the working condition of the device during the inspection [Attachment A and B].

The facility provided records of quarterly inspections as required in Subpart N, Table 1. Mr. Joye provided records of malfunctions [Attachment A, pgs. 4 and 5, occurring on 11/8/18 and 12/7/18, respectively].

SC 28. Records submitted by JME complied with the condition that required monitoring and recording of emissions, operating and maintenance information as required to comply with 40 CFR Part 63, Subparts A and N. Records to be kept on file for at

least 5 years.

Regulatory Summary of records submitted by the facility indicated JME performed monitoring and record keeping requirements of Subpart N and SIP.

#### 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). Each boiler has a rated heat input capacity less than 10 MMBtu/hour [Attachment A, pg. 22].

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

R336.1941 states that the provisions of Subpart N be adopted by reference in R336.1902.

The facility is a small open surface 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 [Attachments B; AM Amps and PM AMPS columns].

The chromium electroplating process vents emissions from tanks through an individual vertical mist eliminator (one for each tank). Emissions from both tank mist eliminators are combined and vented to a horizontal packed bed scrubber located at roof level. The following Subpart N definitions apply to the control equipment:

The composite mesh-pad system (CMP-facility vertical mist eliminators) is an add-on air pollution control device typically consisting of several mesh pad 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 re-entrained particles not collected by the composite mesh pad.

The packed-bed scrubber is 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) JME complied with the condition that required 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, demonstrating initial compliance pursuant to §63.343(b)(1). During the inspection the pressure drop was as follows: scrubber – 1.15 inches water; mesh pad – 0.2 inches water; indicating that the operation is within the  $\pm 2$  inch water of the pressure drop established during the performance test, as specified by §63.343(c)(1) below and thus demonstrating continued compliance. Previous inspections admitted this data as retained on AQD file.

§63.342(f)(1)(i), §63.342(f)(1)(ii) complied with the condition that required at all times, including startup, shutdown, and malfunction should operate and maintain any affected source, including associated pollution control devices and monitoring equipment in a manner with good air pollution control practices. Malfunctions should be corrected as soon as practicable. The facility met this requirement. JME provided records indicating compliance through documentation of incidents that occurred in 2018 [Attachment A, pgs. 2-5].

§63.342(f)(3)(i)(A) complied with the condition that required the facility to prepare an operation and maintenance plan. The plan should 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 operates using the “Operations and Maintenance Plan for Hexmaster Chrome Scrubber” identified during previous inspections. The plan was updated to include a standardized checklist to document the operation and maintenance of equipment as retained in AQD file.

§63.342(f)(3)(i)(B) and (F) complied with the condition that requires the operation and maintenance plan should incorporate practices identified in Subpart N, Table 1. The plan should include housekeeping procedures as specified in Table 2 of Subpart N. The updated plan retained on AQD file met these requirements and as illustrated in Attachment A, pgs. 2-5.

§63.342(f)(3)(i)(D) and (E) complied with the condition that required the plan should specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions did not occur. The plan should include procedure for identifying malfunctions and for implementing corrective actions to address such malfunctions. The plan satisfied these requirements as illustrated in Attachment A, pgs. 2-5.

§63.343(c)(3) and §63.343(c)(1) complied with the condition that required that for sources that use packed-bed scrubber in conjunction with a composite mesh-pad system should meet emission limitations of §63.342 and shall meet monitoring requirements for composite mesh-pad systems of §63.343(c)(1). Should 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  $\pm 2$  inches of water column from this value as the compliant range. The pressure drop across the composite mesh-pad system should be monitored and recorded once each day that the source is operating.

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 was packing type (existing scrubber), stage 2 was coalescing pad type – monofilament, and stage 3 was mist eliminator type – 2-inch diameter polypropylene packing.

The facility recorded the pressure drop once per day as required. The facility does not record pressure drop during nonoperating days. Mr. Joye stated that the operator draws a line through the data row indicating non-operating sessions. The recorded pressure drops during operating days were within the  $\pm 2$  inches of water column requirement [Attachment B].

§63.346(a) JME complied with the condition that required the facility to fulfill all recordkeeping requirements of Table 1 of Subpart N. Per Table 1 the following were required quarterly: 1. visually inspect device to ensure there was proper drainage, no chromic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device; 2. visually inspect back portion of the mesh pad closest 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.

JME provided records of quarterly inspections as required in Subpart N, Table 1. The records included malfunctions or maintenance performed in 2018 to present. The facility met the wash down frequency requirement for the stage two and three of the control devices. [Attachments A, pgs. 2-5; and C].

§63.346(b)(1), (2), (3), (4), (8), (9), (10), (11)–complied with the condition that requires the facility should 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.

JME provided records demonstrating compliance with these requirements. The facility provided records of malfunctions or maintenance performed covering the last 12 months [Attachments A, B, and C].

§63.347(h)(1) JME complied with the condition that required the facility should prepare a summary report to document ongoing compliance status of the affected source. The report should contain the information identified in §63.347(g)(3) and should be completed annually.

On February 1, 2018, the AQD received a report entitled the “Ongoing Compliance Status Report 2017” from JME [On AQD file]. The facility agreed to submit biennial status reports going forward until notified by the AQD following the Administrative consent order. The next report is due in 2019.

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

The cold cleaners (MEK or Safety Kleen) operated at the JME facility is not subject to Subpart T. The materials used in either cleaner does not contain any of halogenated HAPs as defined in §63.460 [SDS in Attachment A, pgs. 6-13].

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

JME operates 2 boilers. Regulatorily, the MACT, Subpart JJJJJ applies to boilers not classified as “gas-fired boilers” at area sources. Technically, the boilers at the facility are natural gas fired boilers. The AQD does not have delegated authority for Subpart JJJJJ.

### 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): Exempts the facility from the requirement to obtain a PTI as related 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. Each boiler has heat input capacity 262,000 BTU/hr.

#### Cold Cleaner

JME operates a cold cleaner. The cold cleaner at the facility is exempt from PTI requirements under the following R336.1281(2) (h): The rule exempts the facility from the requirement to obtain a PTI as related to ... cold cleaners that have an air/vapor interface of not more than 10 square feet. The Safety Kleen cold cleaner has surface area dimensions of approximately 2 feet by 3 feet. The Safety Kleen material is ArmaKleen MM-Dip Cleaning Solution.

R336.1707(2) regulates Safety Kleen new cold cleaners. JME's Safety Kleen cold cleaner is exempt from this rule that states: - 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. The Safety Kleen cold cleaner fully satisfy the qualification for exempt from the condition. JME is not required to implement the (a), (b), or (c) conditions because the ArmaKleen MM-Dip Cleaning Solution has a vapor pressure of 17.5 mmHg (0.34 psi), which is less than 0.6 psia.

R336.1707(3)(a) Records indicated JME complied with the condition that require a cover should be installed and closed whenever parts are not being handled in the cleaner. The cover should 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 on the cold cleaner remains closed during operation of the equipment. The lid is mechanically assisted as required.

R336.1707(4) JME complied with the condition that requires that written operational procedures should be posted in an accessible, conspicuous location near the cold cleaner. Operational procedures were posted in the cleaning area.

Enclosed Glove Box Sand Blaster

JME operates a glove box sand blaster. The enclosed glove box sand blaster is exempt from PTI requirements under Rule R336.1285(2)(l)(vi)(B) that exempts 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.

Rule 301: There was no visible emissions attributed to the facility operations at the time of the inspection.

Rule 901: There was no nuisance or odor attributed to the facility at the time of inspection.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not Applicable. All lots are paved.

FINAL COMPLIANCE DETERMINATION:

The inspection of JME facility determined the process was operated in compliance with the Wayne County Installation Permits C-11172/11173, 40 CFR Part 63, Subpart N, and ACO AQD No. 2018-02. The facility does not use, and never in the past used material containing PFOS or PFAS. Hence the inspection indicated compliance with §63.342(c)(1)(v).

NAME         jh        

DATE         8/20/2019         SUPERVISOR         JK