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

B716244097

FACILITY: SMS Technical Services LLC, Warren Division		**SRN / ID:** B7162
LOCATION: 12880 EAST 9 MILE ROAD, WARREN		**DISTRICT:** Southeast Michigan
CITY: WARREN		**COUNTY:** MACOMB
CONTACT: Mohsen Kambod , Environmental Consultant		**ACTIVITY DATE:** 01/19/2018
STAFF: Joe Forth	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Onsite Inspection		
RESOLVED COMPLAINTS:		

On January 19, 2018, I, Joseph Forth, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) Staff, conducted a scheduled inspection of SMS Technical Services LLC, located at 12880 East Nine Mile Road in Warren, Michigan. I was accompanied by AQD inspectors Adam Bognar and Lauren Magirl. 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) Nos. 375-86, 374-98, 374-86, 927-93A, & 136-04, and 40 CFR Part 63 Subpart N (Chrome NESHAP).

We arrived at SMS at approximately 1:30 PM. We met with Mohsen Kambod, an environmental consultant contracted by SMS. Mr. Kambod is the primary environmental contact for the facility. A tour of the facility was provided by Mr. Kambod. Chris Binsfeld, Chemist, also provided assistance during the inspection.
SMS Technical Services performs hard chrome plating and electroless nickel plating for customer supplied industrial parts. They currently have approximately 25 employees. The Roll Shop generally operates two to three shifts per day, seven days per week. The Chrome Floor, Racking Area, and Electroless Nickel Shop typically operate one shift per day, five days per week.

Shot Blaster & Sand Blaster (PTI No. 375-86)

Special Conditions:

10. PM emissions shall not exceed 0.10 lbs/1000lbs of exhaust dry gas.
11. No visible emissions from the equipment.
12. Equipment shall not be operated unless the baghouse is installed and operating properly.
13. Disposal of collected PM shall be done in a way that minimizes introduction of the contaminants to the outer air.
14. Exhaust gases shall be discharged unobstructed vertically to the ambient air via stack.
15. Facility shall not substitute raw materials for those described in this permit which would cause an increase in emissions without notification to and approval by the Air Quality Division.

The Sand Blaster is located on the Chrome Floor. It is used to prepare the surface of parts before plating. SC 10 was not verified this inspection. A properly operated baghouse which controls the emissions may achieve this limit. The baghouse appeared to be properly maintained and operated. AQD did not request testing. Emissions from the Sand Blaster are controlled by a baghouse (SC 12). The collection system is located outside of the building, but within a housing unit. The particulate matter is collected in two hoppers and deposited into two small barrels. The barrels are disposed properly on an as needed basis (SC 13). The stack associated with the Sand Blaster is vertical and unobstructed (SC 14). The Sand Blaster was not operating during the inspection. The ground near the collection system and blaster appeared to be clean of process dust (SC 11).

The company no longer uses the Shot Blaster, which was also located on the Chrome Floor. The shot blasting enclosure is currently used for storage. The ductwork and blower from the unit have been removed and sent off-site for scrapping, the sand blaster is not operable.
Chrome Tank #13 (Grandfathered, Chrome NESHAP)

Tank #13 is located on the Chrome Floor. It is used to plate smaller industrial steel parts. Tank #13 was not operating at the time of the inspection. The tank's generator capacity is 15,000 amps. The tank is equipped with a non-resettable meter used to track ampere-hours (amp-hrs). The tank was decommissioned in January 2017.

Emissions from the Chrome Tank #13 were vented outside via two separate ventilation systems, each with a chevron blade mist eliminator and horizontal vent.

Tank #13 was installed in 1964 and is, therefore, grandfathered from Permit to Install requirements. It is, however, subject to the Chrome NESHAP. A performance test completed by SMS on August 5, 1996, correlated a surface tension of 62 dynes/cm as measured by stalagmometer to an emission rate of 0.015 mg total chromium/dscm. The company switched to tensiometer reading method in 2015 to comply with 40 CFR 63. The surface tension limit when measured by a tensiometer is 33.0 dynes/cm. Tank operators recorded the surface tension at least once every 40 hours. The surface tension did not exceed 33.0 dynes/cm from 12/2015 to 1/2017. (See Attachment A)

Chrome Tank #15 (PTI No. 136-04, Chrome NESHAP)

Special Conditions:

1.1a&b: Total chromium emission limits of 0.015 mg per dscm (corrected to 70 ^{o}F and 29.92 in Hg) or
0.000034 pph. (Compliant via stack test performed July 28, 2005).

1.2 Facility must have and implement and satisfactory operation and maintenance plan which includes: work practice standards and a malfunction abatement plan. I reviewed the plans at the facility but did not collect for the report.

1.3 The permittee shall not operate EUCHROME1 unless the mesh pad scrubber system is installed, maintained, and operated satisfactorily.

1.4 The mesh pad scrubber system shall be equipped with a differential pressure monitor.

1.5 Facility must verify chromium emissions within 180 days of trial operation. (Completed July 28, 2005 via stack test).

1.6 Facility must perform inspections of the Composite Mesh Pad Scrubber (CMP) system including:
a. Determine pressure drop across the CMP system daily. Any variance of more than 2 in of water gauge (above or below) must be documented and corrective action must be taken and documented as well.
b. Visually inspect the CMP system quarterly for proper drainage, no chromic acid build up on the pads, and no evidence of chemical attack on the control device.
c. Visually inspect the back of the mesh pad to ensure no breakthrough of chromic acid mist.
d. Inspect duct work for leaks.
e. Perform wash-down of CMPs according to manufacturer's guidelines.

1.7 Permittee shall monitor operation and maintenance information to comply with the Chrome NESHAP.

1.8 Permittee shall maintain records of inspections detailed in SC 1.6.

1.9 Permittee shall keep records of any emissions and operating and maintenance information in compliance with the Chrome NESHAP.

1.10 Permittee shall submit a notification of: the date when construction started with 30 days, the date of startup within 30 days, notification of Performance Test Report, notification of Performance Test Results Report and Compliance Status report within 90 days of the last test. Compliant as of September 2005 AQD was notified and approved the installation.

1.11 Stack must be less than 20 in diameter and at least 40 feet above ground level. Tank #15 is located in the Racking Area. It was installed in June 2005 and is used to plate small industrial steel parts. Tank #15's generator capacity is 10,000 amps. Tank #15 was operating at the time of the inspection. Tank #15 is covered by PTI No. 136-04 and is subject to the Chrome NESHAP. The tank is equipped with a non-resettable meter used to track amp-hrs. The company replaced the meter on August 19, 2011. An operator records the amp-hrs at the beginning of each month. The most recent amp-hrs records are attached (See Attachment B). During the inspection, I recorded the Tank #15 meter reading as: 11,578,992 amp-hrs.

SMS complies with the Chrome NESHAP and SC 1.3 &1.4 on Tank #15 using a composite mesh pad scrubber. The scrubber was manufactured by Midwest Air Products Co., Inc. (MAPCO). A performance test was conducted on the MAPCO Scrubber on July 28, 2005. The standard pressure drop established as a result of the July 28, 2005, performance test was 1.4". The Chrome NESHAP allows the company to operate the scrubber within +/- 2 inches of the standard pressure drop. The standard pressure drop is based on the total pressure drop across the system. During the inspection I recorded the following pressure drops: Stage 1= 0.8", Stage 2= 1.4", Total = 2.2" and Stage 3 (HEPA Filter) = 1.7". The Tank #15 Operator monitors and records pressure drop readings each day that the tank is in operation. See Attachment C for the most recent pressure drop records (Records from January 2016 were provided, only Aug 2017-Present have been included with this report). The records show that the company has been operating the MAPCO Scrubber within +/- 2 inches of the standard pressure drop (never exceeded the max of 3.4 in. of water). The scrubber's wash down schedule is set up by timer according to the manufacturer's recommendations. Mr. Kambod explained to me that whenever the pressure drop nears limit the facility performs an extra manual wash down.

An operator visually inspects Tank #15 and the associated scrubber at the beginning of each month. He logs his inspections, any deficiencies, and maintenance activities on the Operation & Maintenance Checklists (SC 1.7). The most recent record of tank inspection is included with Attachment D. The most recent records of scrubber inspections are attached (See Attachment D)(SC 1.8). As the amount of total inspection reports provided over 2 years totaled 150, only an example of an inspection for each piece of equipment was provided in Attachment D.

Emissions from the MAPCO scrubber are vented outside via stack. Stack parameters not verified during inspection as no changes have been made since installation. Stack appeared to be unobstructed and venting vertically. No visible emissions were observed outside.

Chrome Tank #20 (PTI No. 374-86, Chrome NESHAP)

Special Conditions:

14. Chromium emission limit of 3.35×10^{-4} lbs/hour and 1.47×10^{-3} tons/year. (Verified by stack test in 1987)

15. Visible emissions from the equipment shall not exceed a 6-minute average of 20% opacity. No visible emissions were seen coming from the bath or the stack outside.

16. Verification of chromium emission rate by testing. (Confirmed via stack test in 1987)

17. Permittee shall not operate the equipment unless the baffled wet scrubber is installed and operating properly.

18. The disposal of collected air contaminants shall be performed in a way which minimizes introduction of such to the outer air.

19. Exhaust gases shall be discharge unobstructed vertically to the ambient air with dimensions of 20 inches by 14 inches and at least 22 feet above ground level.

20. Facility shall not substitute raw materials for those described in this permit which would cause an increase in emissions without notification to and approval by the Air Quality Division.

Tank #20 is located in the Roll Shop. It is used to plate rollers from steel mills. The tank's rectifier capacity is 15,000 amps. The tank was installed in 1984. During the inspection Tank #20 was operating. Tank #20 is covered by PTI No. 374-86 and is subject to the Chrome NESHAP. Tank #20 is equipped with a non-resettable meter used to track amp-hrs. An operator records the amp-hrs at the beginning of each month. See Attachment #7 for the most recent amp-hr records. During the inspection, I recorded the current value to be 195,938,942 amp-hrs.

SMS complies with the Chrome NESHAP for Tank #20 using a packed bed scrubber with chevron mist eliminator. The packed bed scrubber (PBS) has composite mesh pads (CMP), which classifies it as a combination PBS/CMP system. The scrubber was manufactured by KCH. A performance test was conducted on the KCH scrubber May 1998. The standard pressure drop, established as a result of the May 1998, performance test, was 1.2". The standard pressure drop is based on the total pressure drop across the system. The Tank #20 Operator monitors and records pressure drop readings each day of tank operation. The most recent pressure drop records are attached (See Attachment E). The records show that the pressure drop has been maintained +/- 2 inches of the standard pressure drop as required by the Chrome NESHAP for PBS/CMP systems. The records also show that they have been maintaining the pressure drops within the limits set in the O&M Plan. During the inspection I recorded the following pressure drops: Stage 1= 0.6", Stage 2= 0.2", and Total= 0.8".

An operator inspects Tank #20, the mist eliminator, and the scrubber at the beginning of each month. He logs his inspections, any deficiencies, and maintenance activities on the Operation & Maintenance Checklists. The most recent record of tank inspection is included with Attachment D. The most recent record of scrubber inspection is attached (See Attachment D).

Emissions from the KCH scrubber are vented outside via stack. Stack parameters not verified during inspection as no changes have been made since installation. Stack appeared to be unobstructed and venting vertically. No visible emissions were observed outside.

*Note: Tank inspections for Tank #15 & Tank #20 are on one Operation & Maintenance Checklist, versus two separate forms. This is acceptable as long as it is specified which tank for any deficiencies observed and/or maintenance performed. Tank #13 was also included on the same form, but as previously stated is no longer in operation. Whoever fills out the forms simply crosses out tank #13 or mentions that it is shutdown.

Atmospheric Evaporator System (PTI No. 927-93A)

Special Conditions:

1. The chromium emissions from the atmospheric evaporator system shall not exceed 0.03712 milligrams per cubic meter, corrected to 70 degrees Fahrenheit and 29.92 inches Hg.

2. Permittee shall not operate the system unless the mist eliminator and mesh pad scrubber are installed and operating properly.

3. Permittee shall not operate the system for more than 55 hours per calendar week. A written log of the hours of operation shall be kept on file for a period of at least two years and made available to the Department upon request.

4. Permittee shall keep a written record of each wash down of the mesh pad scrubber and mist eliminator, including the wash down time, on file for a period of at least two years and make the record available to the Department upon request.

5. Applicant shall not operate the system unless the atmospheric evaporator maintenance plan has been implemented and is maintained.

6. The exhaust gases from the system shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 16 inches at an exit point not less than 52 feet above ground level.

7. Verification of chromium emission rates from the system by testing, at owner's expense, in accordance with Department requirements, may be required. The testing shall be conducted within 60 days following the receipt of the written notification of the requirement.

The Atmospheric Evaporator System (evaporator) is located inside the Roll Shop. After parts are plated in Tank #20, they are sprayed with rinse water. The rinse water drains into the chrome tank. The company circulates the chrome bath through the atmospheric evaporator in order to evaporate off the rinse water. The evaporator and associated scrubber were not operating during the inspection. The evaporator is covered by PTI No. 927-93A. It is not subject to the Chrome NESHAP because it is not considered a chrome tank. Emissions from the evaporator are controlled by a mesh pad scrubber with chevron mist eliminator. The control system was manufactured by Poly Products, Inc. The company conducted performance tests on the evaporator system on April 29, 1997, and on December 13, 2000. The Tank #20 Operator records roll shop operating time, evaporator flow rate & wash down time on a daily basis (see Attachment E). Records show that they have been operating the evaporator less than 55 hours per week in accordance with their permit. The pump for the evaporator produces a flow of 55-65 gallons per minute. The Roll Shop operators manually wash down the scrubber once per day. This is more frequent than the manufacturer's guidelines, which recommends using the spray to clean the mesh pads once a week.

The operator inspects the evaporator at the beginning of each month. He logs his inspections, any deficiencies, and maintenance activities on the Operation & Maintenance Checklist. See Attachment D for the most recent record of atmospheric evaporator/scrubber inspection.

Emissions from the evaporator scrubber are vented outside via stack. The stack appeared to meet all of the permit's stack parameter requirements and appeared to be in good working condition.

Grinding Machine (Exemption Rule 285(2)(l)(vi)(B))

The company uses a large automatic grinding machine to clean the rollers before they are chrome plated. The grinding machine vents to the general in-plant environment and is, therefore, exempt from permitting pursuant to Rule 285(2)(l)(vi)(B).

Electroless Nickel Tanks (Rule 36(b)- 1965/Rule 284(b)- 1980)

The company has three electroless nickel (EN) plating lines; one large and two small. EN Tank #'s 29, 7 & 19, and Nickel Strip Tank #36, vented outside to the ambient air via stacks. EN Tank #30 vents to the general in-plant environment. These tanks were installed, without the need for a permit, pursuant to grandfathered exemption Rule 36(b)/Rule 284(b). See the letter from SMS dated October 16, 2008, and the review notes of AQD staff, Mr. Robert Elmouchi, in his activity report dated November 15 2004 (both documents are located in the AQD district files). A diagram of the recent configuration of the tanks in the EN Building is included with Attachment #7 of the August 20, 2010, inspection report located in the AQD district files.

HCL Process Tanks (PTI No. 374-98)

Special Conditions:

1. The hydrochloric acid emission rate from the two tanks shall not exceed 0.19 pounds per hour.

2. Permittee shall not operate the two tanks unless the wet scrubber is installed and operating properly.

3. Applicant shall equip and maintain the wet scrubber with a liquid indication device.

4. The exhaust gases from the two tanks shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 16.3 inches at an exit point not less than 25 feet above ground level.

5. Permittee shall maintain monthly records of additions of hydrochloric acid as part of the concentration make-up of the two tanks. All records shall be kept on file for a period of at least two years and made available to the AQD upon request.

Two hydrochloric acid (HCL) tanks, Tank # 11 & Tank #23, are used on the smaller EN plating lines. These HCL tanks are located on the south side of the Nickel Building. An operator tracks HCL additions on a weekly basis. The most recent addition records are attached (see Attachment F). Tank #11 and Tank #23 are covered by PTI No. 374-98.

Emissions from Tank #11 and Tank #23 vent outside via stack. The stack appeared to meet all of the permit's stack parameter requirements. Maintenance staff regularly cleans the hoods to ensure proper capture of HCL fumes.

The emissions are controlled by a wet scrubber, which is located on the roof of the building. The scrubber was manufactured by Sumrack Equipment and Supply Company Inc (SESCO). Sodium Hydroxide is added to the scrubber water. The scrubber is equipped with a pH meter and a liquid observation window. Neither tank was being operated at the time of inspection, but I could still see water flowing in the window.
An operator inspects the scrubber at the beginning of each month. He logs his inspections, any deficiencies, and maintenance activities on the Operation & Maintenance Checklist. See Attachment D for the most recent record of inspection.

Emissions from the SESCO Scrubber are vented outside via stack. The stack appeared to meet all of the permit's stack parameter requirements and appeared to be in good working condition. No visible emissions were observed.

HCL Tank #45 is used on the large EN Line. Tank #45 vents to the general in-plant environment and is, therefore, exempt from permitting pursuant to Rule 285(2)(r).

Bake Ovens (Exemption Rule 282(2)(a)(i))

Two natural gas fired bake ovens are used to relieve stress of metal after (and occasionally before) chrome plating activities. One oven is located on the Chrome Floor and the other is located in the Racking Area. They are both rated at 1.5 MMbtu/hr and are, therefore, exempt from permitting pursuant to Rule 282(2)(a)(i).

Boilers (Exemption Rule 282(2)(b)(i))

There are five natural gas fired boilers installed on-site; two are located in the Chrome Building Boiler Room, two are located in the Nickel Building Boiler Room, and one is located in the Roll Shop Boiler Room. The boilers are all under 10 MMBTU/hr and are, therefore, exempt from permitting pursuant to Rule 282(2)(b)(i).

Chrome NESHAP Compliance Discussion

SMS maintains facility wide amp-hr records on a 12 month rolling basis. The records show that the company typically operates the chrome tanks at approximately 46,000,000 amp-hrs per 12-month rolling time period (see Attachment #13) and is, therefore, considered a small source by the Chrome NESHAP.
According to the schedule in 40 CFR 63.347(h)(2), the Chrome NESHAP requires ongoing compliance status reports (OCSRs) to be maintained annually, unless there are any exceedances, then they must report semi-annually. Due to the pressure drop exceedances discovered during the June 30, 2009, inspection, the company has been maintaining semi-annual ongoing compliance status reports. The OSCRs were submitted and appear to be in compliance. (See Attachment B)

The facility used Fumetrol 21 LF2 in tank #13 while it was still operational. Fumetrol 21 LF2 contains Polyfluoronatedsulfonic acid but not Perflourooctanesulfonic acid (PFOS). The facility does not use any other fume suppressant in the rest of their tanks. (See Attachment G)

We left the facility at approximately 3:00 PM.

In regard to the 2015 EPA consent order, SMS Modern Hard Chrome satisfied its violations with respect to chrome tank #13. The facility began properly performing and recording stalagmometer tests. The tank has been decommissioned and is no longer operating. Compliance was not verified with the other violations of the consent order as the MDEQ-AQD does not have authority to enforce those specific regulations relating to NESHAP 6W. The facility was advised by the department to maintain compliance with NESHAP 6W in order to comply with EPA regulations.

Conclusion

As a result of the inspection, it appears that SMS Technical Services is operating 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, PTI Nos. 375-86, 374-98, 374-86, 927-93A, & 136-04, and 40 CFR 63, Subpart N- National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

NAME JM Fitt DATE 5/1/18 SUPERVISOR SK