

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

N780945983

FACILITY: ADEPT PLASTIC FINISHING INC (Plant 4)		SRN / ID: N7809
LOCATION: 30540 BECK RD, WIXOM		DISTRICT: Southeast Michigan
CITY: WIXOM		COUNTY: OAKLAND
CONTACT: James Unsworth, Environmental Coordinator		ACTIVITY DATE: 07/31/2018
STAFF: Joe Forth	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: On-site Inspection		
RESOLVED COMPLAINTS:		

On July 31, 2018, I, Joe Forth, from the Department of Environmental Quality's (DEQ), Air Quality Division (AQD), conducted an inspection of Adept Plastic Finishing, State Registration Number (SRN): N7809, located at 30540 Beck Rd, Wixom, MI. The purpose of this inspection was to determine the facility's compliance with Permit to Install (PTI) No. 186-91B, 40 CFR Part 63, Subpart N, the National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome NESHAP), the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, and Michigan's Air Pollution Control Rules.

Facility Description

Adept Plastic Finishing is a plastic parts coating company. The company has several plants. The plant for this inspection is #4. At this plant the major process is metal plating of plastic parts, including chrome plating. Plant #4 operates 24 hours a day, Monday through Friday. This plant has approximately 50 employees. The variety of tanks at the facility includes: electroless nickel, acid copper, decorative chrome, acid etch, and several other varieties of nickel finishes. The electroless nickel line is controlled by a packed bed wet scrubber. The acid copper tanks and decorative nickel lines are controlled by packed bed mist eliminators. A cross flow packed bed wet scrubber is used to control the nitric strip tanks. The chrome and acid etch processes are controlled by composite mesh pad systems. The chrome tanks at the facility also make use of fume suppressants to reduce emissions from the baths. The current fume suppressant used by the facility is Macuplex STR NPFx, which is a PFOS free product. However, from approximately 2008-2015 the facility was using Macuplex STR in its chrome tanks. Macuplex STR is a PFOS containing product. The facility does not have any generators or cold cleaners. There is a boiler at plant #4, however it is exempt per R 336.1282(2)(b)(i) as its max heat input is only 6,276,000 BTU/hr. The facility disposes of its hazardous waste by having ERG Environmental Services remove it from the site. (See Attachment G)

Adept Plastic Finishing is in the process of changing ownership over to Tribar Manufacturing, LLC.

Facility Inspection

I arrived at the facility at 1:00 pm. I stated the purpose of the inspection and provided my credentials. James Unsworth, Environmental Coordinator, and Ed Barriager, Waste Treatment Manager, from Tribar were the company representatives assisting me for the inspection. First, we reviewed the applicable regulations and required paperwork. After the record review, the inspection of the facility began. The facility had recently replaced some of their scrubbing units with new equipment. A new permit is being drafted for the facility due to the changes in control equipment. Stack tests have not been performed on these new units yet to establish their pressure drop range. However, I recorded their pressure drop ranges at the time of inspection. For the composite mesh pad (CMP) controlling the chrome tank and two of the etch tanks, the pressure ranges were (all in inches of water): Overall: 3.2, HEPA: 0.4, Stage 1: 0.5, Stage 2: 0.6, Stage 3: 1.2

The pressure drop ranges for the rest of the etch process, controlled by CMP, are (all inches of water): Etch ERU (Overall: 3.0, HEPA: 1.0, Stage 1: 0.2, Stage 2: 0.5, Stage 3: 1.7), Etch Dragout (Overall: 3.2, HEPA: 0.6, Stage 1: 0.5, Stage 2: 0.9, Stage 3: 1.4), ABS etch (Overall: 3.8, HEPA: 0.4, Stage 1: 0.8, Stage 2: 0.6, Stage 3: 1.4), PC ABS etch (Overall: 4.0, HEPA: 0.6, Stage 1: 0.5, Stage 2: 0.7, Stage 3: 1.8)

I tested the push-pull air system for each of the plating tanks to confirm that air was being drawn from

the tanks. I could feel that the air was flowing.

We then went onto the roof in order to get a reading of the FGSYSTEMS pressures as there are no monitors currently within the facility. The pressure drops for FGSYSTEMS are (all inches of water): EUSYSTEM1 (packed bed wet scrubber, 1.7), EUSYSTEM2 (packed bed mist eliminator, 0.7), EUSYSTEM6 (packed bed mist eliminator, 1.2). While on the roof, I confirmed that all exhaust stacks were venting unobstructed vertically.

I left the facility at 3:10 pm.

Compliance

PTI No. 115-07A

EUCHROME1 Special Conditions:

I(1). A total chromium emission limit of 0.01 milligram per dry standard cubic meter, corrected to 70°F and 29.92 inches Hg. Based on the Dec 2008 stack test total chrome emissions are in compliance. For the time being, and until the new stack test confirms current emission rates, according to the chrome NESHAP, the use of the fume suppressant will confirm compliance with the emission limit.

I(2). A total chromium emission limit of 0.000026 pounds per hour. Based on Dec 2008 stack test total chrome emissions are in compliance. For the time being, and until the new stack test confirms current emission rates, according to the chrome NESHAP, the use of the fume suppressant will confirm compliance with the emission limit.

III(1). The facility shall keep, on-site, an up-to-date operation and maintenance plan. The plan shall contain all information required by 40 CFR 63.342(f)(3)(i), which includes the following:

- a) Operation and maintenance criteria for EUCHROME1, add-on control device(s), and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;
- b) The work practice standards for the add-on control device(s) and monitoring equipment;
- c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and
- d) A systematic procedure for identifying process equipment, add-on control device(s) and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions.

I reviewed the Operation and Maintenance Plan on-site and it contained all necessary information. There is also a copy of the OMP in the AQD records for the facility.

III(2). The facility shall not operate EUCHROME1 unless the chemical fume suppressant is applied in quantities and at a frequency to ensure the surface tension of EUCHROME1 does not exceed 45 dynes/cm (3.1×10^{-3} lbf/ft), when measured using a stalagmometer, or 35 dynes/cm (2.4×10^{-3} lbf/ft), when measured using a tensiometer, at any time during operation. The current chrome NESHAP surface tension limit is 33 dynes/cm. The facility claims they were unaware of the change, however they said they would change the limit in their system to 33 dynes/cm. Due to the permit stating 35 dynes/cm as the limit, no violation notice was sent for the exceedances of the new values. The new permit for the facility will have the updated values. For the facility surface tension readings for the chrome tank. (See Attachment A)

IV(1). The facility shall not operate EUCHROME1 unless the composite mesh pad system is installed, maintained, and operated in a satisfactory manner. Based on pressure range records, the previous equipment appears to have been operating properly. The previous equipment is no longer at the facility, the new CMP for the chrome process has been installed and appears to be operating properly. However, chrome emission rates for the new system will be determined by the end of the calendar year via stack test.

IV(2). The facility shall equip and maintain the EUCHROME1 composite mesh pad system with a differential pressure monitoring device. The old CMP system records show that there was a pressure monitoring device equipped on the CMP system (See Attachment B). The current systems also have a pressure monitoring device installed that I saw during my inspection. During my inspection, the new

system's pressure readings were: Overall-3.2 in of water, HEPA-0.4 in of water, Stage 1- 0.5 in of water, and Stage 2- 1.2 in of water.

V(1). Within 180 days after permit issuance, the facility shall verify total chromium emission rates from EUCHROME1, by testing at owner's expense, in accordance with 40 CFR Part 63 Subparts A and N. Compliance testing performed in December 2008 confirmed the chromium emissions rates were within the permitted limits.

VI(1). The facility shall perform surface tension measurements once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. If an exceedance occurs as indicated through surface tension monitoring, monitoring must take place every four hours and the subsequent decrease in frequency shall follow the schedule as laid out in the Chrome NESHAP. The minimum frequency of monitoring allowed is once every 40 hours of tank operation. The surface tension shall be monitored with a stalagmometer or tensiometer as specified in Method 306B, appendix A of 40 CFR Part 63, except as allowed in 40 CFR 63.343(c)(5). The facility passed the initial surface tension requirements and has been maintaining the permitted tension limits (See Attachment A). Adept staff said they changed the set limit in their system to reflect the new NESHAP limit, 33 dynes/cm.

VI(2). The facility shall perform inspections of the composite mesh pad (CMP) system as follows:

- a) Determine pressure drop across the CMP system on a daily basis. If the pressure drop across the control varies by more than ± 2 inch of water column, from the pressure drop determined during compliance testing, the facility shall document the variation, and review the operation and maintenance procedures. The facility shall document any corrective action.
- b) Visually inspect the CMP system, on a quarterly basis, to ensure there is proper drainage, no chromic acid build up on the pads, and no evidence of chemical attack on the structural integrity of the control device.
- c) Visually inspect the back portion of the mesh pad closest to the fan, on a quarterly basis, to ensure there is no breakthrough of chromic acid mist.
- d) Visually inspect ductwork from tanks to the CMP system, on a quarterly basis, to ensure there are no leaks.
- e) Perform wash-down of composite mesh pads in accordance with manufacturer's recommendations (at a minimum of once per week).

The facility performs inspections pertaining to the previously stated requirements. Attachments C and D show the tasks the facility completes for their daily checks and weekly maintenance.

VI(3). The facility shall monitor emissions and operating and maintenance information in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. The facility records their daily operational checklist and weekly maintenance (See attachments C and D). The NESHAP states that the emissions of the chrome processes do not need to be tested if the facility is properly using a fume suppressant. The facility appears to be properly using the fume suppressant in the tanks and maintaining the proper surface tension. (See Attachment A)

VI(4). The facility shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR 63.342(f). Each inspection record 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. The facility shall also record any actions taken to correct the deficiencies found during the inspection. The facility is satisfactorily keeping records of equipment maintenance/inspections. (See Attachments C and D)

VI(5). The facility shall keep records of emission information and operating and maintenance information to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. The facility records their daily operational checklist and weekly maintenance (See attachments C and D). The NESHAP states that the emissions of the chrome processes shall be under the limit if the facility is properly using a fume suppressant. The facility appears to be properly using the fume suppressant in the tanks and maintaining the proper surface tension.

VI(6). The facility shall keep records of the surface tension of EUCHROME1, the amount of chemical fume suppressant added to EUCHROME1 and the date and time of each addition. The facility maintained

the permitted 35 dynes/cm, measured by tensiometer, and tracks the additions of the fume suppressant. (See Attachment A)

VII(1). Facility shall submit the following notifications to the Department in accordance with 40 CFR Part 63.347:

- a) A notification of the performance test at least 60 calendar days before the test is scheduled to begin.
- b) A notification of compliance status after the performance test has been completed.
- c) Ongoing compliance status reports as required by 40 CFR 63.347(h).

The facility has followed the requirements relating to performance tests, the paperwork for the 2008 test is in the facility file. The facility submits Ongoing Compliance Status Reports every six months. (See Attachments E)

VIII. Exhaust gases shall be discharged unobstructed vertically upwards to the ambient air. Max exhaust diameter of 19.3 in, and a minimum height above ground of 39 ft. Stack parameters were not confirmed during the inspection, but the stacks were exhausting unobstructed vertically.

IX(1). The facility shall comply with all provisions of the Chrome NESHAP as specified in Subparts A and N, as they apply to EUCHROME1. The facility appears to be in compliance with all applicable provisions of subparts A and N.

EUSYSTEM5

I(1). A chrome emission limit of 0.00011 pounds per hour. Chrome emission rates confirmed to be under limit during December 2008 stack test (See Attachment H). For the time being, and until the new stack test confirms current emission rates, the use of the fume suppressant, according to the chrome NESHAP, is sufficient to control chrome emissions.

III(1). The facility shall retain on-site, and update as necessary, an operation and maintenance plan approved by the AQD District Supervisor. The plan shall contain all of the following:

- a) Operation and maintenance criteria for the packed bed scrubber system in EUSYSTEM5 and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;
- b) The work practice standards for the add-on control device(s) and monitoring equipment;
- c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and
- d) A systematic procedure for identifying process equipment, add-on control device(s) and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions.

The facility had the operation and maintenance plan on site, it appeared to contain all the required information stated above.

III(2.) The facility shall not operate tank 5 or 6 in EUSYSTEM5 unless the chemical fume suppressant is applied in quantities and at a frequency to ensure the surface tension of Tanks 5 and 6 do not exceed 35 dynes/cm (2.4×10^{-3} lbf/ft), when measured using a tensiometer, or an acceptable surface tension as determined during testing, at any time during tank operation. The current chrome NESHAP surface tension limit is 33 dynes/cm. The facility claims they were unaware of the change, however they said they would change the limit in their system to 33 dynes/cm. Due to the permit stating 35 dynes/cm as the limit, no violation notice was sent for the exceedances of the new values. The new permit for the facility will have the updated values. Surface tension readings for Tanks 5 and 6 were provided. (See Attachment F)

IV(1). The facility shall not operate any process tank in EUSYSTEM5 unless the associated packed bed scrubber system is installed, maintained, and operated in a satisfactory manner. Satisfactory operation shall include but is not limited to maintaining the pressure drop across the scrubber system per manufacturer specifications or as determined during compliance testing. The new packed bed system appeared to be properly installed and operating. According to their record keeping for pressure range monitoring, the facility was operating the old system properly as well. (See Attachment B)

IV(2). The facility shall equip and maintain the packed bed scrubber system in EUSYSTEM5 with a pressure differential monitoring device. The facility had a monitoring device on the old scrubber system and kept records as well (See Attachment B). The new system was also equipped with pressure monitors, ranges are stated above in the facility inspection section.

V(1). Within 180 days after permit issuance, verification of total chromium emission rates from tanks 5, 6, and 7 in EUSYSTEM5, by testing at owner's expense, in accordance with Department requirements, will be required. Chrome emission rates confirmed to be under limit during December 2008 stack test. For the time being until the new stack test confirms current emission rates, the use of the fume suppressant, according to the chrome NESHAP, is sufficient to control chrome emissions.

VI(1). The facility shall monitor, in a satisfactory manner, the surface tension of Tanks 5 and 6 in EUSYSTEM5 every once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. If an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule specified in the NESHAP must be resumed and the subsequent decrease in frequency shall follow the schedule as laid out above. The minimum frequency of monitoring allowed is once every 40 hours of tank operation. The surface tension shall be monitored with a tensiometer. The facility reads the surface tension on average once every 4-8 hours. When the system detects that exceedances have occurred, more fume suppressant is added until the surface tension reaches the set limit. Records for the surface tension of Tanks 5 and 6 were provided. (See Attachment F)

VI(2). The facility shall perform inspections of the packed bed scrubber system as follows:

- a) Determine pressure drop across the packed bed scrubber on a daily basis. If the pressure drop across the control varies by more than ± 1 inch of water column, from the pressure drop determined during compliance testing, the facility shall document the variation, and review the operation and maintenance procedures. The facility shall document any corrective action.
- b) Visually inspect the packed bed scrubber, on a quarterly basis, to ensure there is proper drainage, no chromic acid build up on packed beds, and no evidence of chemical attack on the structural integrity of the control device.
- c) Visually inspect the back portion of the mist eliminator (chevron blade), on a quarterly basis, to ensure that it is dry and there is no breakthrough of chromic acid mist.
- d) Visually inspect ductwork from tanks to the packed bed scrubber, on a quarterly basis, to ensure there are no leaks.
- e) Add fresh make-up water as needed.

Example documentation of daily checklist and weekly maintenance that the facility performs on the scrubber systems was provided. The facility appears to be properly monitoring and maintaining the packed bed scrubber system. (See Attachments C and D)

VI(3). The facility shall maintain records of the inspections as required by SC VI.2. Each inspection record 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. The facility shall also record any actions taken to correct the deficiencies found during the inspection. Example documentation of daily checklist and weekly maintenance that the facility performs on the scrubber systems was provided. (See Attachments C and D)

VI(4). The facility shall keep records of the surface tension of Tanks 5 and 6 in EUSYSTEM5, the amount of chemical fume suppressant added to each tank 5 and 6 in EUSYSTEM5 and the date and time of each addition. The facility keeps records of both surface tension and the additions of the fume suppressant. (See Attachment F)

VIII(1). The exhaust gases from the stack relating to EUSYSTEM5 shall be discharged unobstructed vertically upwards, a max diameter of 35.8 inches, and a minimum stack height of 41 feet above the ground. Stack parameters were not confirmed during the inspection. The stack relating to EUSYSTEM5 was venting unobstructed vertically.

FGSYSTEMS Special Conditions:

III(1). The facility shall retain on-site, and update as necessary, an operation and maintenance plan approved by the AQD District Supervisor. The plan shall contain all of the following:

- a) Operation and maintenance criteria for each scrubber system in FGSYSTEMS and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;
- b) The work practice standards for the add-on control device(s) and monitoring equipment;
- c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and
- d) A systematic procedure for identifying process equipment, add-on control device(s) and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions.

I reviewed the Operation and Maintenance Plan on-site and it contained all necessary information. There is also a copy of the OMP in the AQD records for the facility.

IV(1). The facility shall not operate any process tank in FGSYSTEMS unless the associated scrubber system is installed, maintained, and operated in a satisfactory manner. Satisfactory operation shall include but is not limited to maintaining the pressure drop across each scrubber system per manufacturer specifications.

IV(2). The facility shall equip and maintain each scrubber system in FGSYSTEMS with a pressure differential monitoring device. The facility has pressure drop monitors on all the scrubber systems in FGSYSTEMS.

VI(1). The facility shall monitor the pressure drop across each scrubber system in FGSYSTEMS on a daily basis. The facility has pressure drop monitors on all the scrubber systems in FGSYSTEMS. During my inspection, the pressures read as:

System 1: 1.7 in. of water
System 2: 0.7 in. of water
System 4: 0.5 in. of water
System 6: 1.2 in. of water

VI(2). The facility shall keep, in a satisfactory manner, daily records of the pressure drop readings for each scrubber system in FGSYSTEMS, as required by SC VI.1. The facility keeps pressure drop readings for the scrubber systems in FGSYSTEMS. (See Attachment B)

Conclusion

The facility appears to be operating in compliance with permit No. 115-07A, 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 J. M. T...

DATE 9-12-18

SUPERVISOR SK