

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Off-site Inspection

N737462553

<b>FACILITY:</b> Plastic Plate Kraft		<b>SRN / ID:</b> N7374
<b>LOCATION:</b> 5675 KRAFT AVENUE, CASCADE TWP		<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> CASCADE TWP		<b>COUNTY:</b> KENT
<b>CONTACT:</b> Karen Baweja , Supervisor of Air Quality		<b>ACTIVITY DATE:</b> 04/11/2022
<b>STAFF:</b> April Lazzaro	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Records review Partial Compliance Evaluation to complete a Full Compliance Evaluation.		
<b>RESOLVED COMPLAINTS:</b>		

This report represents a Partial Compliance Evaluation (PCE) records review. The on-site inspection pursuant to Renewable Operating Permit MI-ROP-N7374-2020 was conducted the same day as stack testing which occurred on October 19, 2021. An email was sent to facility Environmental Manager, Karen Baweja, on February 22, 2022 requesting recordkeeping pursuant to the permit. The requested records were received in multiple emails and will be attached to this report. All information was received from the facility contact in a timely manner.

### FACILITY DESCRIPTION

The Lacks Plastic Plate Kraft location is a decorative hexavalent chrome electroplating facility that primarily electroplates on automotive parts but also on plumbing fixtures, household appliances and business machines. The process consists of pretreatment, alkaline cleaning, acid dipping, and strike plating of copper, copper electroplating, nickel electroplating, and chromium electroplating. Electroless copper, conditioner, and rack stripping is controlled by packed bed scrubbers while the chrome plating and etching are controlled by composite mesh pad scrubbers. The facility is a major source of Hazardous Air Pollutants.

The hexavalent chrome plating operations are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chromium emissions in Subpart N.

### COMPLIANCE EVALUTION

The data presented below was compiled from information provided by Lacks based on stack test results per the dates indicated.

Equipment	Control	Observed Pressure Drop (inches of H2O)	Observed Water Flow (gpm)	Water Bleed Off Rate (gpm)	Surface Tension at time of Inspection (dynes/cm)	Emission Limits	Test data
EUCONDITIONER (K-1)	PBS	2.1	73	3.46	NA	DCP 1.5 pph	6/16/2017 0.0446 pph

This EU is no longer in use.							
EUCHROMEETCH (K-2)	CMP	Scrubber 2.28  Evaporator 0.747  Evaporator temp: 117.8°F	NA	NA	Tank 1 44  Tank 2 45  Tank 3 Empty	Total Chromium  0.016 mg/dscm    0.0032 pph	10/19/2021  0.012 mg/dscm  (Previous results  0.0088 mg/dscm)   0.0019 pph
EUELECTROLESSCU (K-4)	PBS	0.617	170.9	3.28	NA	Formaldehyde  1.1 pph   Methanol  9.00 pph   Sodium hydroxide  0.22 pph	4/6/2021  0.102 pph   5.83 pph  (Previous results:  0.4413 pph)   0.0212 pph
FGNICKEL (SVK-6 and SVK-7)	NA	NA	NA		NA	Nickel (semibri)  0.19 pph	4/6/2021  0.002 pph

				NA		Formaldehyde 0.04 pph	0.033 pph
						Nickel (all others) 0.27 pph	0.003 pph
						Formaldehyde 0.04 pph	0.22 pph
						Sodium hydroxide 0.33 pph	0.051 pph
FGCHROME1 (K-8)	CMP	Scrubber 3.7 Evaporator 1.8	NA	NA	Tank 1 38 Tank 2 39 Tank 3 39	Total chromium 0.006 mg/dscm 0.003 pph	4/06/21 0.002 mg/dscm 0.00021 pph
FGSTRIPTANKS	PBS	1.955	266.8	3.7	NA	Nitric acid 1.9 pph Sodium hydroxide 0.4 pph	02/25/20 0.067 pph 0.053 pph

**EUCONDITIONER**

This emission unit includes one 1,3-dichloro-2-propanol (DCP) tank and associated controls which consists of a packed bed scrubber system with mist eliminator. At

the time of the inspection, the DCP used in EUCONDITIONER has been replaced with the materials associated with EUPREETCHTANK. As detailed below, a PTI was issued for this change. At this time, Lacks does not use DCP in the plating process.

## **EUPREETCHTANK**

This emission unit consists of one tank used to pre-etch plastic parts prior to plating. Recently, PTI No. 192-19A was issued that removed the scrubber from the emission unit description. The permit allows for the air stream to be vented uncontrolled through a stack to the ambient air. A ROP modification is required to make the change allowed by the PTI, however it has not yet been received. The permit limits VOC emissions to 595 lbs per year on a 12-month rolling time period. Emissions data was requested, and Lacks reports 277.31 lbs of VOC for the 12-month rolling time period ending in January 2022. The records indicate compliance with the limit.

## **EUCHROMEETCH**

This emission unit utilizes two etch tanks filled w/ chromic etch solution, however the permit allows for three. The third tank is empty and is used when one of the other tanks is switched out or it may be used in the future as a third production tank. For clarity, the AQD would require a new stack test following the use of the three chromic etch tanks all at one time because emissions from the three tanks operating at one time have not been tested before. Stack testing was conducted on October 19, 2021 and during the test Tank #1 and #2 were in service. Tank #1 was put into service on September 28, 2020. Maintenance and repairs were conducted on Tank #1 on May 4-5, 2019, which included on site tank welding which according to maintenance records, took approximately one hour. Records of surface tension measurements over the first month of service were requested and reviewed. EUCHROMEETCH Special Condition VI.3 requires that the permittee shall monitor the surface tension of each tank once every four (4) hours for the first 40 hours of tank operation. Lacks did not monitor the surface tension once every four (4) hours during the first 40 hours of operation. Clarification of this requirement has been provided to Lacks, and the correct monitoring frequency will be implemented in the future. The chromic acid etch tanks are not subject to the Chrome NESHAP, however they do utilize a PFOS free mist suppressant to help reduce chromic acid mist as required by the permit. The current total chromium emission limit is 0.016 mg/dscm and 0.0032 lb/hr. Stack test results with the HEPA filter in place was 0.0019 lb/hr, which indicate compliance. (Previous test results were: 0.0088 mg/dscm and 0.0013 lb/hr) Lacks conducted a separate engineering test with the HEPA filters removed. The test results indicate that the scrubber cannot meet the permit limits without the HEPA filters installed. As such, the MAP has been updated to require the use of the HEPA filters. If the HEPA filters are not properly operated, it could result in a determination of non-compliance. The surface tension during testing on October 19, 2021, as established by a three-run average per tank are as follows Tank 1: 45 dynes/cm Tank 2: 45 dynes/cm and Tank 3: 42.82 dynes/cm (was established during testing in 2019).

A review of surface tension records was conducted, and while there were several occasions where recorded values were over the limit established in the MAP, Lacks

stated that no production was occurring at those times. As such, it is not a violation of the permit limits.

The O&M Plan requirements are contained in the facility MAP. The quarterly scrubber inspections were requested for calendar year 2021. Lacks did not identify any issues with the scrubber on the quarterly inspection reports. The quarterly reports are attached.

#### **EUELECTROLESSCU**

EUELECTROLESSCU was subject to a case-by-case Maximum Achievable Control Technology (MACT) review under Section 112(g) of the federal Clean Air Act because HAP emissions for formaldehyde and methanol are greater than 10 tons per year for an individual HAP and 25 tons per year for combined HAPs. Section 112(g) (and adopted by reference in Rule 299(2)(b)) requires that any constructed or reconstructed major source of HAPs be equipped with MACT to control HAP emissions if a source specific MACT standard for the source category has not been promulgated under Section 112(d) or Section 112(h). MACT for EUELECTROLESSCU was determined to be a packed bed scrubber system to comply with methanol and formaldehyde emission limits.

This emission unit consists of one electroless copper tank. Stack testing was most recently conducted on April 9, 2021. Emission limits are in place for formaldehyde- 1.1 lb/hr, methanol- 9.00 lb/hr and sodium hydroxide- 0.22 lb/hr. Emission rates reported are formaldehyde- 0.1023 lb/hr, methanol 5.83 lb/hr (previous test was 0.4413 lb/hr which is a significant increase) and sodium hydroxide- 0.0212 lb/hr. Lacks correctly adjusted the emissions of methanol in the 2021 Michigan Air Emissions Reporting System. The scrubber pressure drop reading observed during testing was 0.617" H<sub>2</sub>O, the water flow was 170.9 gpm and the bleed off rate was 3.277 gpm. These values differ slightly than those obtained during the previous compliance inspection. Production bar count was at 8-9: 25 which is lower than previous days of testing. The O&M Plan requirements are contained in the facility MAP. The quarterly scrubber inspections were requested for calendar year 2021. Lacks did not identify any issues with the scrubber on the quarterly inspection reports. The quarterly reports are attached.

#### **EUKPGENSET**

This emission unit consists of one 190 brake horsepower natural gas fired 4 stroke rich burn spark ignition internal combustion engine. The unit is properly maintained and is listed as a certified engine on EPA's spreadsheet for large spark ignition 2011 to present list which was confirmed by using the family name of the engine as listed in the ROP application. (ECESB06.8GDB) The engine is being operated pursuant to manufacturer's instructions.

#### **FGNEUTCATACC**

This flexible group includes the neutralizer tank (sulfuric acid), two catalyst tanks (hydrochloric acid) and accelerator tank (hydrochloric acid). There are no emission limits, however the permit requires that the facility include this FG in the MAP to ensure proper ventilation/fan operation. This equipment is continuously monitored for electrical current draw and a visual inspection is conducted once per quarter. The quarterly inspections were requested for calendar year 2021. Lacks did not

identify any issues with the equipment on the quarterly inspection reports. The quarterly reports are attached.

#### **FGCOPPER**

This flexible group includes one copper strike tank containing copper sulfate and sulfuric acid and six acid copper tanks containing copper sulfate, ferrous sulfate and sulfuric acid. There are no emission limits, however the permit requires that the facility include this FG in the MAP to ensure proper ventilation/fan operation. This equipment is continuously monitored for electrical current draw and a visual inspection is conducted once per quarter. The quarterly inspections were requested for calendar year 2021. Lacks did not identify any issues with the equipment on the quarterly inspection reports. The quarterly reports are attached.

#### **FGNICKEL**

This flexible group includes 5 semi brite nickel plating tanks, two brite nickel plating tanks, six platinum/nickel plating tanks and one durni (micro-porous) nickel plating tank. Emissions from this flexible group are uncontrolled.

Emission limits for EUSEMIBRINI include nickel- 0.19 lb/hr, formaldehyde- 0.04 lb/hr. Emissions from the 2021 test were nickel- 0.0023 lb/hr and formaldehyde 0.033. Both results indicate compliance. Limits for EUBRITENI, EUPLATINUM and EUDURNINI combined include nickel- 0.27 lb/r, formaldehyde- 0.04 lb/hr and sodium hydroxide 0.33 lb/hr. Emissions from the 2021 test were nickel- 0.0026 lb/hr, formaldehyde- 0.022 lb/hr and sodium hydroxide 0.051 lb/hr.

This equipment is continuously monitored for electrical current draw and a visual inspection is conducted once per quarter. The quarterly inspections were requested for calendar year 2021. Lacks did not identify any issues with the equipment on the quarterly inspection reports. The quarterly reports are attached.

#### **FGCHROME1**

This flexible group includes three decorative hexavalent chrome electroplating tanks with a shared composite mesh pad scrubber system and fume suppressant for control. The start-up date for each tank is June 2013. Compliance with NESHAP Subpart N is met using the control device, however since compliance testing was conducted with the use of a scrubber and mist suppressant, both are required to demonstrate continuous compliance with the NESHAP emission limit. The surface tension requirement is limited to 45 dynes/cm.

Emission limits for FGCHROME1 include total chromium- 0.006 mg/dscm and total chromium- 0.003 pph. Emissions from the 2017 test was total chromium- 0.00183 mg/dscm and total chromium- 0.000248 lb/hr. Both results indicate compliance with permitted limits and testing was conducted within the required timeframe.

As indicated above all Lacks facilities use the same mist suppressant, and no PFOS has been used at this facility.

The O&M Plan requirements are contained in the facility MAP. The quarterly scrubber inspections were requested for calendar year 2021. Lacks did not identify

any issues with the scrubber on the quarterly inspection reports. The quarterly reports are attached.

Scrubber pressure drop data was requested and reviewed. Additional information was requested to clarify readings for January 2022 as those appeared different than previous months on a graphical representation. A review of additional information was conducted and Lack stated that the scrubber line was getting plugged due to freezing temperatures and facility staff addressed any issues immediately.

Surface tension readings were reviewed and found to be below the limit of 45 dynes/cm during the timeframe requested for tanks 1-3. An updated O&M Plan to include the surface tension values attained during stack testing to demonstrate ongoing compliance with the NESHAP emission limits was received on November 12, 2021.

Based on discussions with EPA Region 5 staff related to chrome NESHAP compliance, Lacks has been advised that since FGCHROME1 has not been tested without the use of a fume suppressant, both that and the scrubber are necessary to demonstrate continuous compliance with the chrome NESHAP. It is expected that future semi-annual NESHAP compliance reports include both scrubber pressure drop and surface tension data.

During the on-site inspection, the visual inspection of the scrubber was satisfactory. Readings were taken from the automated monitoring system and were as follows: Pressure drop stages 1-3 3.7" H<sub>2</sub>O, evaporator 1.8" H<sub>2</sub>O. Surface tension taken at 11:15 AM were as follows: #1: 39 dynes/cm, #2 38 dynes/cm #3: 39 dynes/cm.

These values are within the parameters identified in the current MAP for this emission unit.

#### **FGSTRIPTANKS**

This flexible group includes one chrome strip tank containing sodium hydroxide and one nitric acid strip tank. These two tanks are controlled by a packed bed scrubber equipped with mist eliminators. Visual inspection did not identify any obvious issues. Emission limits include nitric acid 1.9 lb/hr and sodium hydroxide 0.4 lb/hr. The nitric scrubber was tested on February 25, 2020 with emissions of nitric acid at 0.067 lb/hour and emissions of sodium hydroxide at 0.053 lb/hr both of which indicate compliance. No further testing is required at this time. The facility is performing inspections of the packed bed scrubber system as required. The nitric scrubber had some patching and was showing some aging at the seams that need to be closely monitored. The pressure drop for the nitric scrubber (K9) was 2.1" H<sub>2</sub>O.

The O&M Plan requirements are contained in the facility MAP. Scrubber water flow data was requested and reviewed, no flow measurements less than the 205 gallon per minute minimum were recorded during the time period requested. Pressure drop records were also requested, and no readings outside of the 1-3" H<sub>2</sub>O were recorded during the time period requested. The quarterly inspections were requested for calendar year 2021. Lacks did not identify any issues with the equipment on the quarterly inspection reports. The records are attached.

#### **FGBOILERS**

This flexible group includes 5, natural gas fired, 1.8 MMBtu/hr boilers subject to minimal requirements of 40 CFR Part 63, Subpart DDDDD. The first 5-year compliance report for these boilers was submitted on January 31, 2019. The next tune-up and report are due prior to January 31, 2024. The USEPA CEDRI reporting system must be used, along with a hard copy submittal to the AQD.

### CONCLUSION

Lacks Plastic Plate Kraft facility was in compliance at the time of the inspection.

NAME April Lazzaro

DATE 04/11/2022

SUPERVISOR HH