

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

N737434687

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|---|-------------------------------|---------------------------|
| FACILITY: LACKS ENTERPRISES INC. | | SRN / ID: N7374 |
| LOCATION: 5675 KRAFT AVENUE, CASCADE TWP | | DISTRICT: Grand Rapids |
| CITY: CASCADE TWP | | COUNTY: KENT |
| CONTACT: Karen Baweja , Supervisor of Air Quality | | ACTIVITY DATE: 05/24/2016 |
| STAFF: David Morgan | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: | | |
| RESOLVED COMPLAINTS: | | |

On May 24, 2016 Air Quality Division staff Dave Morgan conducted a scheduled inspection of the Plastic Plate -Kraft Plater (a Lacks Enterprises company) located at 5675 Kraft Avenue in Cascade Township. The purpose of the inspection was to verify the compliance status of the stationary source with state and federal air pollution regulations as well to observe stack testing that was being performed. Accompanying staff was Karen Baweja, Supervisor of Air Quality and Jeff Cowdrey, Plant Manager.

FACILITY INFORMATION

Plastic Plate Kraft conducts chrome plating of plastic automotive parts. The facility is a major source of HAP emissions (formaldehyde and methanol) and operates under Renewable Operating Permit (ROP) MI-ROP-N7374-2015. FGCHROME1 at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks promulgated in 40 CFR Part 63, Subpart N. FGBOILERS is for boilers subject to the NESHAP for Industrial Boilers promulgated under 40 CFR Part 63, Subpart DDDDD. EUKPGENSET is for an emergency generator subject to the NESHAP for Reciprocating Internal Combustion Engines under 40 CFR Part 63, Subpart ZZZZ and the New Source Performance Standard (NSPS) for Stationary Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subpart JJJJ.

COMPLIANCE EVALUATION

The Kraft Plater consists of a fully automated decorative chrome plating line used to plate plastic automotive parts. The process consists of various acid, conditioning and rinse tanks. The following table is a summary of emission units and flexible groups from MI-ROP-N7374-2015:

| Unit | Description | Stack ID | Regulated Pollutants | Control |
|---|--|----------|--|--|
| EUCONDITIONER | EUCONDITIONER is for one tank used to prepare plastic parts to accept plating metal. | K-1 | 1,3 dichloro-2-propanol (DCP) | Packed bed scrubber w/ mist eliminator (PBS) |
| EUCHROMEETCH | Three chromic acid etch tanks. | K-2 | Chromium | Composite Mesh Pad (CMP) |
| FGNEUTCATACC (EUNEUTRALIZER, EUCATALYST, EUACCELERATOR) | Neutralizer, catalyst, and accelerator process tanks. | K-3 | NA | No control |
| EUELECTROLESSCU | Electroless copper plating tank. | K-4 | Formaldehyde, methanol | PBS |
| FGCOPPER (EUACIDCU, EUCUSTRIKE) | Copper electroplating tanks. | K-5 | NA | No control |
| FGNICKEL (EUSEMIBRNI, EUBRITENI, EUPLATINUM, EUDURNINI) | Five semi-brite nickel electroplating tanks. | K-6, K-7 | Nickel, formaldehyde, sodium hydroxide | No control |
| | Three decorative chrome plating | | | |

| | | | | |
|--|--|------------|--------------------------------------|------------|
| FGCHROME1 | tanks and a chrome recovery unit. | K-8 | Chromium | CMP |
| FGSTRIPTANKS (EUCHROME STRIP, EUNITRIC STRIP) | One chromic acid and one nitric acid strip tanks. | K-9 | Nitric acid, sodium hydroxide | PBS |
| EUKPGENSET | One 190 brake horsepower, natural gas fueled, 4 stroke rich burn (4SRB), spark ignition internal combustion engine (SI ICE) designed to provide 125 kW of emergency electrical power. | NA | NA | NA |
| FGBOILERS | Five natural gas-fired boilers all rated 1.8 MMBtu/hr. | NA | NA | NA |

All stacks appeared to meet required dimensions.

EUCHROMEETCH and FGCHROME1:

CMPs:

The chrome plating tanks and chrome etch tanks are controlled by CMPs. The company uses add-on control to meet the 0.006 mg/dscm chromium limit required under ROP MI-ROP-N7374-2015 and Subpart N. Each CMP unit consists of three composite mesh pads. The first pad is washed down hourly, the second pad is washed down daily, and the third pad is washed down weekly. All wash downs consist of fresh water. The weekly wash of the final pad is performed during blower shut down on weekends. The company monitors washdown performance with digital water flow meters and records the water flow (in gallons per minute) once per day. The normal flow range for wash water to the etch CMP is between 40 and 80 gpm and for the chrome plate CMP between 41 and 70 gpm.

In addition, the company monitors the pressure drop across the CMPs. For the chrome plating CMP, a pressure drop range is required by the NESHAP to be established through stack testing. For the chrome etch CMP, the pressure drop range is established through stack testing only as a condition of the company's Operation and Maintenance (O&M) Plan. The pressure drop is recorded on a daily basis in accordance with the Chrome NESHAP and O&M Plan. Pressure drop records were reviewed and all pressure drops were within established ranges. On the day of the inspection, the pressure drop across the entire chrome plating CMP was 3.1" of H₂O which is within the normal operating range of 1.3" to 5.3" of H₂O established during the most recent stack testing. The pressure drop across the entire etch CMP was 5.0" of H₂O which is within the normal operating range of 2.14" to 6.14" of H₂O established during the most recent stack testing.

The company monitors all control device operation through an automated computer system and also maintains a separate computer system for scheduling maintenance. Process data is monitored by the automated system continuously and alarm set points are monitored and alarms sound should readings fall outside or below set parameters. It is noted that the computer system records alarms and exceptions to normal operating conditions including the date and time. If a malfunction occurs, the process is shutdown and a work order requested. Attached are records of alarms and corresponding work orders for both the etch and plate CMPs. Inspection of the mesh pads for proper drainage, chemical breakthrough, leaks, visible emissions, pressure drop and water flow is conducted on a daily basis in accordance with the NESHAP and O&M Plan. This is more frequent than the quarterly monitoring required under the NESHAP. The facility keeps daily, weekly, monthly, and quarterly maintenance records. Staff reviewed records on site as well as received records of scrubber alarms and corresponding work orders to correct identified problems. See attached records. No problems were identified during the last four quarterly inspections. No problems were noted during AQD staff inspection of the CMPs while on the roof.

Surface Tension:

The company is not using surface tension as a control measure to comply with the NESHAP, however, surface tension is required in order to meet Rule 225. Under ROP MI-ROP-N7374-2015 the company can establish an alternate surface tension limit greater than 45 dynes/cm based on the most recent stack test. Stack testing conducted in 2013 established an alternate surface tension value on the chrome etch tanks of 70 dynes/cm. During stack testing in 2015, surface tension on the chrome etch tanks was 47 dynes/cm.

In February 2016 and as part of the ROP Semi-annual Report Certification, the company self-reported that the surface tension on the chrome etch tanks exceeded the 47 dynes/cm value established during the most recent stack test conducted in August 2015. EUCHROMEETCH, Condition III.2 states:

"The permittee shall not operate any tank in EUCHROMEETCH unless... the surface tension of each tank does not exceed, at any time during operation, the surface tension as specified in the MAP or the surface tension as measured during the most recent stack test, whichever is lower."

From August 26, 2015 through October 9, 2015 there were 58 occurrences reported where the surface tension exceeded the established surface tension of 47 dynes/cm. Once discovered, the company began operating under the surface tension value determined during the August 2015 test. It is noted that the stack test report for this test was not submitted until October 8, 2015. The company began operating under the 47 dynes/cm surface tension on October 9, 2015.

Under FGCHROME1 a similar condition states:

"The permittee shall not operate any tank in FGCHROME1 unless...the surface tension of each tank does not exceed, at any time during operation, 45 dynes/cm as measured by a tensiometer. An alternate surface tension may be developed based on stack testing results as long as the stack test was performed using, methods, plans and procedures approved by the AQD District Supervisor prior to testing."

Stack testing conducted in 2013 established an alternate surface tension value on the chrome plating tanks of 50 dynes/cm. During stack testing in 2015, surface tension on the chrome plating tanks was around 40 dynes/cm. It was unclear to the company and to AQD staff whether this condition allowed for a one time establishment of an alternate surface tension or whether an alternate surface tension was required at each subsequent performance test. No deviations were reported for surface tension for those times above the surface tension used during the 2015 test due to an interpretation that an alternate (worse case) surface tension could be established during the initial performance test. Future stack testing should be conducted with a surface tension that the company plans to operate at or below in order to ensure operations are running consistent with those during a compliant test.

The facility takes surface tension measurements at least every 4 hours of tank operation and makes surfactant adds as needed. Staff reviewed surface tension records and verified that emissions were below the allowable values after October 9, 2015.

EUCONDITIONER and EUELECTROLESSCU:

Packed bed scrubbers:

The PBSs on EUCONDITIONER AND EUELECTROLESSCU appeared to be installed and operating properly. On the day of the inspection, the pressure drop on EUCONDITIONER was 2.0" H₂O which was within the normal operating range of 1" to 3" H₂O. The water flow was operating at 86.5 gpm which is within the normal operating range of 52 to 90 gpm. The pressure drop on EUELECTROLESSCU was 0.4" H₂O which was within the normal operating range of 0.3" to 0.9" H₂O. The water flow was operating at 175 gpm which is within the normal operating range of 136 to 250 gpm. The pressure drop and water flow is recorded on a daily basis.

It is noted that daily checks are conducted on PBS nozzles as part of the company's maintenance program. No problems were noted during AQD staff inspection of the PBSs while on the roof.

FGSTRIPTANKS:

Rack cleaning operations consist of a sodium hydroxide tank and a nitric acid tank. The nitric acid tanks are used to chemically remove copper and nickel from plating racks and the caustic tank uses reverse current to remove chrome from plating racks. On the line both the acid and caustic tanks are exhausted to one PBS. The pressure drop was around 2.0" of H₂O which is within the normal operating range of 1.25" to 3.25" H₂O. The water flow to the scrubber was within the normal operating range of 205 to 325 gpm. This process appeared to be operating properly at the time of the inspection. No problems were noted during AQD staff inspection of the PBS while on the roof.

FGBOILERS:

The company has five natural gas-fired boilers, each rated at 1.8 MMBtu/hour, subject to 40 CFR Part 63, Subpart DDDDD. Since they are natural gas-fired there are very few requirements that apply to these units. A tune-up will be required on these boilers by 2018 (or five years). Boilers 2 and 3 were last maintained in October 2015 and Boilers 1, 4 and 5 were last maintained in May 2016. Attached are boiler records. The boilers are part of the O&M Plan which identifies specific maintenance activities and associated frequencies.

EUKPGENSET:

This facility has a certified, natural gas-fired emergency generator rated at 125 kW, less than 500 hp. The unit is maintained and operated in accordance with manufacturer's recommendations. Maintenance is conducted annually by the manufacturer (Cummins Bridgeway LLC) and last occurred on December 1, 2015. Maintenance includes changing

oil, spark plugs, air filters and more. See attached maintenance record. The equipment has operated less than 63 hours since installation. There is a non-resettable hours meter to verify operating hours. The company is maintaining records in accordance with 40 CFR Part 63, Subpart ZZZZ. Because the unit is certified, performance testing is not required.

O&M Plan:

The company operates in accordance with the O&M Plan which was revised on June 6, 2016

Testing:

Below is a summary of the most recent test results.

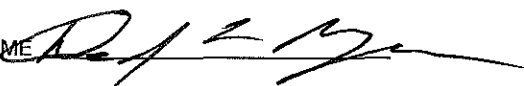
| Equipment | Pollutant | Test Result lb/hr | Limit lb/hr | Test Date | Compliance |
|--------------------|-------------------------|-------------------|---------------|-----------|------------|
| EUCONDITIONER-K1 | 1,3 dichloro-2-propanol | 0.074 | 1.5 | 11/2013 | Y |
| EUCHROMEETCH-K2 | total chromium | 0.0012 pph | 0.0032 pph | 8/2015 | Y |
| | | 0.0054mg/dscm | 0.016 mg/dscm | | Y |
| EUELECTROLESSCU-K4 | formaldehyde | 0.133 | 1.1 | 11/2013 | Y |
| | methanol | 4.647 | 9.0 | | Y |
| | sodium hydroxide | 0.029 | 0.22 | | Y |
| EUSEMIBRNI-K6 | nickel | 0.0023 | 0.19 | 11/2013 | Y |
| | formaldehyde | 0.029 | 0.04 | | Y |
| EUBRITENI-K7 | nickel | 0.0017 | 0.04 | 11/2013 | Y |
| | formaldehyde | 0.016 | 0.04 | | Y |
| | sodium hydroxide | 0.031 | 0.33 | | Y |
| FGCHROME1 -K8 | total chromium | 0.0003 pph | 0.003 pph | 5/2015 | Y |
| | | 0.0019mg/dscm | 0.006 mg/dscm | | Y |
| FGSTRIPTANKS-K9 | sodium hydroxide | 0.087 | 0.4 | 11/2013 | Y |
| | nitric acid | 0.062 | 1.9 | | Y |

Reports:

The company is submitting semi-annual NESHAP Ongoing Compliance Status Reports in accordance with 40 CFR Part 63, Subpart N as well as all annual and semi-annual ROP certification reports.

SUMMARY:

The company is in compliance with the applicable requirements. Records obtained as part of the inspection are attached.

NAME  DATE 6/20/16 SUPERVISOR PMB