

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

N207948764

FACILITY: Lacks Industries, Inc.		SRN / ID: N2079
LOCATION: 4375 52ND STREET SE, KENTWOOD		DISTRICT: Grand Rapids
CITY: KENTWOOD		COUNTY: KENT
CONTACT: Karen Baweja , Supervisor of Air Quality		ACTIVITY DATE: 05/01/2019
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On May 1, 2019 Air Quality Division staff Dave Morgan conducted a scheduled inspection of the Lacks Enterprises', Barden Plater in Kentwood. The primary contact on the inspection was Karen Baweja, Supervisor of Air Quality. The purpose of the inspection was to verify the compliance status of Renewable Operating Permit (ROP) No. MI-ROP-N2079-2017, Section 2 and other state and federal air pollution regulations as well as to observe conditions during a stack test of the chrome plating tanks.

A subsequent inspection of the Lacks Enterprises' 52nd Paint East, 52nd Paint West, and 52nd Mold facilities located as part of the overall stationary source will be conducted at a later date.

FACILITY INFORMATION

The Lacks Enterprises stationary source consists of 52nd Paint East, 52nd Paint West, 52nd Mold, Barden Assembly, and Barden Plater. This stationary source is a major source of VOC and hazardous air pollutants (HAPs) and permitted under ROP No. MI-ROP-N2079-2017. Although the source is a major stationary source, it is a synthetic minor source with respect to Prevention Significant Deterioration (PSD) requirements. The entire stationary source is subject to the Plastic Parts Surface Coating NESHAP (40 CFR Part 63, Subpart PPPP) and the Barden Plater is subject to the Chromium Electroplating NESHAP (40 CFR Part 63, Subpart N). The Paint East and Paint West coating lines are also subject to Compliance Assurance Monitoring (CAM) requirements (40 CFR Part 64).

COMPLIANCE EVALUATION

BARDEN PLATER (ROP Section 2)

The Barden 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 identifies a summary of emission units and flexible groups from ROP No. MI-ROP-N2079-2017 with applicable requirements.

Unit	Description	Stack ID	Pollutants	Control
EUCONDITIONER	EUCONDITIONER is for one tank used to prepare plastic parts to accept plating metal and is also controlled by CMP SV-1.	SVK-1	1,3 dichloro-2-propanol (DCP)	Packed bed scrubber w/ mist eliminator (PBS)
FGCHROME1	Three chromic acid etch tanks, a chrome conversion unit, and a chrome recovery unit.	SVK-2	Chromium	Composite Mesh Pad (CMP)
FGNEUTCATACC	Neutralizer, catalyst, and accelerator process tanks.	SVK-3	NA	No control
EUELECTROLESSCU	Electroless copper plating tank.	SVK-4	Formaldehyde, methanol	PBS
FGCOPPER	Copper electroplating tanks.	SVK-5	NA	No control
FGSEMINICKEL	Five semi-brite nickel electroplating tanks.	SVK-6	Nickel	No control
FGBRIMICRONI	Brite and micro-porous electroplating tanks.	SVK-7	Nickel	No control

FGCHROME2	Three decorative chrome plating tanks and a chrome recovery unit.	SVK-8	Chromium	CMP
FGSTRIPTANKS	Chromic acid and nitric acid strip tanks.	SVK-9	NA	PBS

It is noted that the company is also permitted to use electroless nickel (EUELECTROLESSNI) but does not do so at this time.

Testing:

At the time of the inspection, a stack test was being conducted in accordance with ROP No. MI-ROP-N2079-2017 on FGCHROME2. The testing was conducted by Network Environmental personnel Steve Byrd, Scott Cargill, Dave Eardhardt, and Rick Eardmans. The first run (2 hours) of testing began at 7:58am on FGCHROME2 which consists of three chrome plating tanks. These emission units are controlled by an evaporator, composite mesh pad scrubber, and fume suppressant surface tension control. Bar count from 7:58 -10:02 was 57, 10:18 -12:22 was 58 and 12:38 - 14:42 was 57 which averages 28.6 bars per hour. Maximum number of bars is 36 bars per hour.

Surface tension during the first day of testing was 38 dynes/cm for tank 1, 37 dynes/cm for tank 2, and 33 dynes/cm for tank 3. These surface tension values are below the permit maximum of 45 dynes/cm.

On the next day, FGCHROME1, which consists of three chrome etch tanks, was tested; AQD field staff did not attend the test. FGCHROME1 is equipped with an evaporator, composite mesh pad scrubber and fume suppressant surface tension control. According to Ms. Baweja, the bar count from 8:01-10:05 was 56, 10:22-12:27 was 58 and 12:47 - 14:51 was 58 which averages 28.6 bars per hour. Maximum number of bars is 36 bars per hour.

No issues with process or control devices were observed at the time of the test.

The following table is a summary of the most recent stack test results for the Barden Plater. Subsequent to the site visit, preliminary test results were provided for FGCHROME1 and FGCHROME2. The results will be further reviewed once a complete test report is submitted.

Equipment	Pollutant	Limit lb/hr	Test Result lb/hr	Test Date	Compliance	Next Test Due
FGCHROME1-SVK2	total chromium	0.0025	5.1E-04*	5/2019	Yes	5/2021
FGCHROME2-SVK8	total chromium	0.0006	8.1E-05*	5/2019	Yes	5/2021
EUELECTROLESSCU-SVK4	methanol	12.2	2.4	5/2017	Yes	5/2021
EUELECTROLESSCU -SVK4	formaldehyde	2.97	0.066	5/2017	Yes	5/2021
EUCONDITIONER-SVK1	1,3 dichloro-2-propanol	0.70	0.25	7/2017	Yes	7/2021
FGSEMINICKEL -SVK6	nickel	0.028	0.0028	5/2017	Yes	5/2021
FGBRIMICRONI - SVK7	nickel	0.017	0.0011	5/2017	Yes	5/2021

* Preliminary results from the 5/1/19 test.

O&M Plan:

The company operates all emission units at the Barden Plater in accordance with the O&M Plan. Subsequent to the inspection, Lacks provided an updated O&M Plan which incorporated operating values as a result of the stack testing. This plan has a revision date of June 6, 2019 and is deemed acceptable.

FGCHROME1 and FGCHROME2:

The company uses a control device to meet the 0.005 mg/dscm chromium limit for FGCHROME2 which is based on 40 CFR 63, Subpart N and the 0.012 mg/dscm chromium limit for FGCHROME1 which is based on Rule 225. FGCHROME2 also has a surface tension limit of 45 dynes/cm. Records for the last six months show the surface tension on the three chrome plating tanks did not exceed 45 dynes/cm (see attached records).

CMPs:

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.

For chrome plating CMPs a pressure drop range is required by the NESHAP to be established through stack testing. For the etch CMPs, 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.

AQD staff conducted observations of the pressure drop on the CMPs. At the time of inspection, the pressure drop across the entire chrome plating CMP was 4.6" of H₂O. The acceptable range at the time was 1.1" to 5.1" of H₂O. The pressure drop across the entire etch CMP was 3.2" of H₂O. The acceptable range at the time was 1.8" to 5.8" of H₂O. These pressure ranges were in the 2017 O&M Plan. New ranges will be established as part of the acceptable test.

The plating line also has a chromic acid reclaim system. This unit is inside the building prior to the roof mounted CMP. Air drawn from the three chrome tanks enters the two stage reclaimer which is comprised of plastic balls which provide surface area for the chrome to collect on. The chromic acid etch rinse tank water is taken from the tanks and is heated to evaporate a portion of the water. The chrome laden water is then piped back to the chromic acid etch plating tanks.

The company continuously monitors all control device and system operations (including differential pressures, washdown and scrubber water flow and blower amperage) through an automated computer system and also maintains a computer system for scheduling maintenance. Alarm set points are monitored and alarms sound should readings fall outside or below set parameters. 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.

Alarm records were reviewed for the chrome plating and etch tanks. For May 2018 through April 2019 pressure drops were outside of the established ranges on 11 occurrences for the chrome plate scrubber and 10 occurrences for the chrome etch scrubber. These occurrences were either part of planned maintenance activities or work orders were created to address a problem. Records are attached.

Inspection of the mesh pads for proper drainage, chemical breakthrough, and leaks is conducted on a quarterly basis (and sometimes as often as monthly) in accordance with the ROP, NESHAP, and O&M Plan. The facility keeps daily, monthly, and quarterly maintenance records. The company had documentation showing the quarterly inspections were conducted and had documentation of work orders to correct identified problems. For the chrome scrubber, it is noted that on 4/28/19, just prior to the stack test, the company welded in shims for each mesh pad and added welds along the side of the pads to cover gaps. This maintenance was documented and is attached.

Surface Tension:

Although the company is not using surface tension to comply with the NESHAP, FGCHROME2 is required to meet a surface tension less than 45 dynes/cm in order to insure compliance with Rule 225. The facility maintains a surface tension less than 45 dynes/cm by measuring and making surfactant adds as needed every 4 hours of tank operation. Staff reviewed surface tension records (attached) and again there were no measurements above 45 dynes/cm during plating operation. The company typically adds additional surfactant and remonitors after four hours.

Reports:

The company is maintaining the semi-annual Ongoing Compliance Status Report in accordance with the NESHAP. The facility submits all required reports by the specified timeframes.

EUELECTROLESSCU, EUCONDITIONER, FGSTRIPTANKS and Packed bed scrubbers:

For all packed bed scrubbers, the company monitors pressure drop, minimum water flow rate and water bleed-off rate on a continuous basis. Alarms are in place should the level fall outside of established parameters. In addition a pressure drop is recorded by lab personnel on a daily basis. The packed beds were operating at the time of the inspection and no apparent problems, leaks or gaps were noted.

It is noted that weekly checks are conducted on PBS nozzles as part of the company's maintenance program. The company had documentation showing quarterly inspections were conducted and had documentation of work orders to correct identified problems.

EUCONDITIONER had a packed bed scrubber that appeared to be installed and operating properly. At the time of the inspection the pressure drop was 2.79" H₂O, water flow through the scrubber was 64.5 gpm, and bleed-off flow was 4.4 gpm.

EUELECTROLESSCU had a packed bed scrubber that appeared to be installed and operating properly. At the time of

the inspection the pressure drop was 1.08" H₂O, water flow was 183 gpm.

The company is currently recording the hours of operation from the electroless copper tank in accordance with the ROP. According to the permit, the company can calculate the hours limitation based on actual formaldehyde and methanol emissions. The company's calculated limit is 10,493 hours/year which the company will never exceed. From May 2018 through April 2019, EUELECTROLESSCU operated 5,745 hours. In addition, combined methanol and formaldehyde emissions (total VOC) were 7.7 tons which is below the 36 ton per 12-month rolling time period limit in the permit.

Under 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. Pressure drop across the packed bed scrubber and scrubber water flow are monitored and recorded. At the time of the inspection the pressure drop was 2.4" H₂O and flow was 186 gpm. This process appeared to be installed and operating properly.

NEUTRALIZER, CATALYST, ACCELERATOR, COPPER PLATING, and NICKEL Plating:

These emission units are vented to the ambient air without control. The company monitors electric draw on the fans and conducts quarterly inspections of the equipment in accordance with the O&M Plan.

EUEMERGENCYRICE-CI:

The Barden Plater has a diesel-fired emergency generator rated at 275 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 October 6, 2018. Maintenance includes changing oil, spark plugs, air filters and more. See attached maintenance record. The equipment has operated 677 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.

BARDEN ASSEMBLY (ROP Section 2)

The Barden Assembly facility consists of molding machines, various assembly processes, and several coating booths all exempt from air use permitting. At the Barden Assembly facility, plastic plated wheel covers are adhered to steel or aluminum wheel rims. Adhesive is applied using robots in various machines. In addition there are additional machines in which rigid foam is injected between the wheel cover and rim for adhesion. The foam is a two part isocyanate and catalyst mixture which contains polymeric diphenylmethane diisocyanate, 4,4 diphenylmethane, and diphenylmethane diisocyanate. The resin mixture is heated to 120°F. Once the foam reaction occurs, additional curing takes place in an oven set at 180°F. The rigid foam appears to be a closed cell, rigid foam and not subject to the requirements of the NESHAP for Flexible Foam under 40 CFR Part 63, Subpart III. There are also two prime booths used to apply a silicone rubber bead on cladding.

FGRULE290:

All equipment at Barden Assembly is exempt from permitting under Rule 290. Records kept by the company from April 2018 through Marc 2019 show VOC emissions at or below 451 lbs/month for all Rule 290 emission units at the facility. This is below the 1,000 lb/month limit for each emission unit.

FGCOLDCLEANERS:

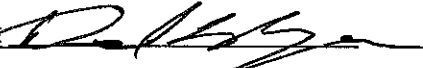
Company is in compliance with all requirements pertaining to cold cleaners.

EUEMERGENCYRICE-SI:

Barden Assembly has a natural gas-fired emergency generator rated at 20 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 October 6, 2018. Maintenance includes changing oil, spark plugs, air filters and more. See attached maintenance record. The equipment has only operated 266 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.

SUMMARY

The Lacks Barden Plater and Barden Assembly facilities appear to be in compliance with the ROP. Records obtained as part of the inspection are attached.

NAME 

DATE 6/12/19

SUPERVISOR 