

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

N089536157

FACILITY: LACKS INDUSTRIES INC		SRN / ID: N0895
LOCATION: 4260 AIRLANE SE, KENTWOOD		DISTRICT: Grand Rapids
CITY: KENTWOOD		COUNTY: KENT
CONTACT: Karen Baweja, Supervisor of Air Quality		ACTIVITY DATE: 08/25/2016
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On August 25, 2016, Air Quality Division (AQD) staff Dave Morgan and Chris Robinson conducted a scheduled inspection of Lacks Enterprises located at 4280 Airlane SE in Kentwood. The purpose of the evaluations was to determine the facility's compliance with state and federal air pollution regulations as well as Renewable Operating Permit (ROP) No. MI-ROP-N0895-2012 and to observe the stack test conducted at the time. Accompanying AQD staff during the inspection was Karen Baweja, Supervisor of Air Quality and Jim Darby, Maintenance Manager. During the inspection, stack testing was being performed on the North plating lines.

FACILITY DESCRIPTION

The Lacks Airlane stationary source consists of the North and South plating facilities, Airlane Northwest Molding, and Airwest Molding. The North and South plating facilities each consist of a plastic automotive parts decorative chrome plating line. The Airlane Northwest and Airwest Mold facilities conduct plastic injection molding.

The stationary source is a major source of HAPs and is permitted under Renewable Operating Permit (ROP) No. MI-ROP-N0895-2012. A ROP Renewal application is due by December 28, 2016.

The facility is also subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Chromium Electroplating, Commercial Boilers, and Emergency Generators (40 CFR Part 63, Subpart N, Subpart DDDDD, Subpart ZZZZ).

COMPLIANCE EVALUATION

Airlane North & South Platers

The North (FGN-1) and South Platers (FGS-1) each consist of a fully automated decorative chrome plating line used to plate plastic automotive parts. The process consists of a conditioner tank controlled by a packed bed scrubber (PBS), four chrome etch tanks controlled by a composite mesh pad (CMP) scrubber, neutralizer tank, catalyst tank, accelerator tank, electroless copper tank controlled by a PBS, copper strike tank, acid-copper tank, copper-activator tank, semi-bright, bright, and microporous nickel tanks, and three chrome plating tanks controlled by a CMP scrubber. The South plating line has a fourth chrome plating tank and associated CMP (EUCHROME4) that was installed in 2011. The electroless copper tank produces formaldehyde and methanol, which is the pollutant which makes the facility a major source of HAPs. It is noted that the company is also permitted to use electroless nickel which emits ammonia, however, this would require revamping the line.

Nickel tanks on FGN-1 are vented directly to the ambient air through uncontrolled stacks. Nickel tanks on FGS-1 are indirectly vented through seven general ventilation ducts located above the nickel tanks and ducted to the ambient through one uncontrolled stack.

Both the FGN-1 and FGS-1 conditioner tanks which contain 1,3-dichloro-2-propanol (DCP) are exhausted to PBSs. The South line PBS is roof-top mounted and the North line PBS is installed on the floor beside the line within the building.

The chrome plate and chrome etch tanks on FGN-1 and FGS-1 are exhausted through individual 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. A wash down was not observed while on site.

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

Monitoring and Recordkeeping:

The company monitors all control device operation through automated computer systems and also maintains a separate computer system for scheduling maintenance. For the CMPs and PBSs, the computer system monitors real time data including the differential pressure drop, exhaust blower, wash down pump amperage, and washdown flow (in gallons per minute). This information is relayed from various sensors and transducers to the plant computer network. 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. Flow meters are installed on each CMP and PBS to monitor scrubber water flow rates. Flow values are recorded at least once per day.

In addition, the company monitors pressure drop of each CMP and PBS. Below is a summary of monitored parameters noted during the inspection.

Process Unit	Control	Observed Pressure Drop (inches of H2O)	Range (inches of H2O)	Observed Water Flow (gpm)	Water Minimum (gpm)	Observed Surface Tension highest per tank (dynes/cm)	Surface Tension per O&M * (dynes/cm)
Chrome Plate North	CMP	1.87	0.0 - 3.68	NA	30	39.8	45
Chrome Etch North	CMP	5.1	2.5 - 7.5	NA	30	37.2	45
Electroless Copper North	PBS	1.1	0.1 - 3.0	82.1	50	--	
Conditioner North	PBS	0.8	0.1 - 3.0	102.5	50	--	
Nitric Strip North	PBS	1.2	0.1 - 3.0	110.0	80	--	
Chrome Plate South	CMP	3.3	0.67 - 4.67	NA	25	41	45
Chrome Plate #4 South	CMP	3.76	1.98 - 5.98	NA	25	40.8	45
Chrome Etch South	CMP	5.05	2.5 - 7.5	NA	35	33.5	45
Conditioner South	PBS	1.35	0.1 - 3.0	37.3	25	--	
Electroless Copper South	PBS	0.4	0.1 - 3.0	104.0	80	--	
Nitric Strip South	PBS	1.27	0.1 - 3.0	130.0	80	--	

The company manually records the pressure drop of each CMP once per shift; however, the company is only required to record the pressure drop once per day (as required by the NESHAP). Company pressure drop records for January 2016 through July 2016 were previously reported and show that the daily pressure drop on all CMPs has been within acceptable ranges during production.

AQD staff observed the CMP and PBS units for Airline North and South and no apparent problems were identified. No visible emissions were observed from any of the process exhaust stacks.

The company conducts maintenance inspections and preventative maintenance on a weekly, monthly, and quarterly basis in accordance with the NESHAP and ROP. The company has inspection sheets for each interval of inspection. There is also a checklist for the NESHAP required quarterly inspection records of the CMP to ensure proper drainage, no chromic acid build up on the pads, and no evidence of chemical attack. Attached are alarm records for each air pollution control device. Alarms are identified and work orders created in order to address problems.

The company is following the Operation and Maintenance Plan as required by the ROP. In September 2, 2016, the company requested a revision to the O&M Plan to modify the differential pressure range on the chrome evaporator

from 2.5-6.5" H2O to 0.5-4.5"H2O. This change is approved. In addition, the company will update the O&M Plan to revise monitored pressure drops based on the pressure drop established during the most recent compliance test.

Testing:

At the time of the inspection, stack testing was being conducted in accordance with the ROP on the North chrome plate and etch CMPs simultaneously. The testing was being conducted by Network Environmental using Method 306A which consists of three, 2-hour runs. Chrome Plate, Run 1 test began at 9:50 A.M. and Run 2 began at 12:30 P.M. Chrome Etch, Run 1 test began at 9:43 A.M. and Run 2 at 12:29 P.M. AQD staff did not attend third run. It is noted that there was a shutdown of the line for approximately 15 minutes during the second run. The plating line was operating under maximum routine production at 29 bars per hour. All testing was done in accordance with the ROP.

Below is a summary of the most recent stack test results for both the North and South Platers. Results from the August 2016 test are pending.

Pollutant Summary for the North Plating Line:

Pollutant	Tank	Control	Test Result (lb/hr)	Limit (lb/hr)	Test Date
Nickel (EUPN1,EUPN2,EUPN3,EUPN6)	nickel tanks	NA	0.0057	0.0598	11/2013
Chromium (EUPN10)	chrome etch	CMP	0.00012	0.00037	9/2014
Chromium (EUPN12)	chrome plate	CMP	0.000064	0.00043	9/2014
Formaldehyde (EUPN6)	electroless copper	PBS	0.052	2.72	11/2013
Methanol (EUPN6)	electroless copper	PBS	4.95	8.25	11/2013
1,3-dichloro-2-propanol (EUPN11)	conditioner	PBS	0.143	0.84	11/2013
Nitric Acid (EUPN13)	chrome and nitric strip	PBS	0.0212	1.23	5/2001

Pollutant Summary for the South Plating Line:

Pollutant	Tank	Control	Test Result (lb/hr)	Limit (lb/hr)	Test Date
Nickel (EUPS3, EUPS10)	nickel tanks	NA	0.0029	0.0063	4/2015
Chromium (EUPS-5)	chrome etch	CMP	0.000074	0.000125	5/2015
Chromium (EUPS-7)	chrome plate	CMP	0.000081	0.000489	5/2015
Chromium(EUCHROME4)	chrome plate #4	CMP	0.000077	0.0005	5/2015
Formaldehyde (EUPS3)	electroless copper	PBS	0.092	0.6458	4/2015
Methanol (EUPS3)	electroless copper	PBS	3.909	9.12	4/2015
1,3-dichloro-2-propanol (EUPS6)	conditioner	PBS	0.044	0.84	4/2015
Nitric Acid(EUPS8)	chrome and nitric strip	PBS	0.02	0.11	5/2001

Chrome NESHAP (FGNESHAP):

On September 22, 2004, the facility chose to stop using surface tension as the daily NESHAP compliance method and replace it with daily pressure drop readings of the composite meshpads and maintain a chromium emission concentration of less than .01 mg/dscm. Pressure drop reading is used to assure that the end-of-pipe chromium concentration is less than 0.01 mg/dscm as established by stack testing. The company has demonstrated through stack testing that the 0.01 mg/dscm can be met (tested at 0.0015 mg/dscm).

Surface Tension:

EUCHROME4 is required to meet a surface tension of 45 dynes/cm in order to insure compliance with Rule 225. No other chrome plate tanks or chrome etch tanks at FGN-1 or FGS-1 have to meet a specific surface tension limit because the company is using add on controls to meet a 0.01 mg/dscm chromium emission limit. Regardless, the company maintains records documenting the surface tension, the amount of surfactant added and time between adds for all chrome plating and chrome etch tanks at FGN-1 and FGS-1. The company takes surface tension measurements and makes necessary adds approximately every four hours of tank operation.

Reports:

The facility has submitted all required reports in accordance with the ROP and NESHAP. These include:

- Semi-annual Ongoing Compliance Status (OSC) Report for the NESHAP
- Semi-annual and Annual ROP Certification Reports
- Annual MAERS Report

The latest OSC Reports for both the North and South facilities were submitted on August 30, 2016 for the period of January 1, 2016 through July 31, 2016.

Rack Cleaning:

Each facility has a rack cleaning operation consisting 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 North line both the acid and caustic tanks are exhausted to one PBS and on the South line nitric acid is exhausted to one PBS and the caustic tank exhausts to ambient air with no control. Again, the amperage draw on the water pump and blower for the PBS is continuously monitored and a visual liquid flow indicator (site glass) is provided to observe the operating liquid level in the return tanks. Staff observed water flowing in the scrubber water recirculation tank as well.

Staff advised Lacks that stack testing of these emission units would be required in the future with a schedule to be determined.

Subpart DDDDD:

The company has five natural gas fired boilers 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). Maintenance is being conducted in accordance with manufacturer specifications (see attached).

Emergency Generator:

This facility has a certified, natural gas-fired emergency generator with a rated heat input capacity of 270,000 Btu/hour which equates to approximately 100 horsepower. 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 May 10, 2016. Maintenance includes changing oil, spark plugs, air filters and more. See attached maintenance record. The equipment has operated less than 294.5 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. Under Subpart ZZZZ the company is basically required to 1) operate and maintain the engine per manufacturer's instructions or owner-developed maintenance plan, 2) must have hours meter and record hours of operation, and 3) keep records of maintenance.

Airlane Northwest Mold & Airwest Mold

All plastic injection molding operations at the Airwest Mold and Airlane Northwest Mold facilities are exempt from permitting under Rule 286(b).

There is one cold cleaner which meets the requirement in FGCOLDCLEANERS.

Airlane Recycling Center

This building houses a recycling center and maintenance shop.

SUMMARY

The Lacks Airlane stationary source appears to be in compliance with all applicable requirements. Attached to this report are records used in the evaluation of the source.

NAME 

DATE 9/7/16

SUPERVISOR 