

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

N089523818

FACILITY: LACKS INDUSTRIES INC		SRN / ID: N0895
LOCATION: 4260 AIRLANE SE, KENTWOOD		DISTRICT: Grand Rapids
CITY: KENTWOOD		COUNTY: KENT
CONTACT: Phillip Schneider , Asst. Director, Environmental Quality		ACTIVITY DATE: 11/05/2013
STAFF: David Morgan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On November 5 and November 14, 2013, a series of onsite partial compliance evaluations were conducted by Air Quality Division staff Dave Morgan as part of 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. Accompanying AQD staff during the site visits were Phil Schneider, Assistant Director of Environmental Affairs and Justin Oleniczak, Environmental Manager. During the site visits, stack testing was being performed on both the North and South 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 VOCs and is permitted under Renewable Operating Permit (ROP) No. MI-ROP-N0895-2012. The facility is also subject to the NESHAPS for Chromium Electroplating and Commercial Boilers (40 CFR Part 63, Subpart N and Subpart DDDDD).

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. A new digital flow meter was installed on the North DCP scrubber. Flow values are recorded at least once per day. It is noted that a new flow meter has also been installed on the electroless copper scrubber. The company plans on installing additional flow meters on other scrubbers at the North and South platers in the near future.

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.

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. For the South plater, water from the etch rinse tank 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, 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 control room in each plant. For all packed bed scrubbers, the amperage to the water pumps and blowers is monitored continuously with alarms should the level fall below a set point. Water levels were also checked. 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. The company is in the process of updating its equipment monitoring system.

The company uses pressure drop to determine how each CMP is functioning. Below is a summary of CMP pressure drop during the inspection.

Scrubber Unit	Observed Pressure Drop (inches of H2O)	Range	Observation Date
Chrome Plate CMP North	1.6	0.54 to 4.54	11/14/13
Chrome Etch CMP North	4.0	1.80 to 5.80	11/14/13
Chrome Plate CMP South	2.2	1.15 to 5.15	11/5/13
Chrome Plate #4 CMP South	3.1	0.0 to 3.79	11/5/13
Chrome Etch CMP South	4.9	3.27 to 7.27	11/5/13

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 2013 through July 2013 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. These records were reviewed on site any problems noted were addressed. The company is doing a better job of tracking work orders as a result of preventative maintenance activities and are also in the process of getting a new maintenance software program to enhance recordkeeping efforts.

Overall the company is following the Operation and Maintenance Plan as required by the ROP.

Testing:

At the time of the inspections, stack testing was being conducted in accordance with the ROP. The testing was being conducted by Network Environmental. At the time of the tests, the plating lines were operating under maximum routine production. Below is a summary of the most recent stack test results for both the North and South Platers. All testing was done in accordance with the ROP.

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	0.0000854	0.00037	9/2012
Chromium (EUPN12)	chrome plate	CMP	0.0000426	0.00043	9/2012
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
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Nickel (EUPS3, EUPS10)	nickel tanks	NA	0.002090	0.0063	4/2011
Chromium (EUPS-5)	chrome etch	CMP	0.0000491	0.000125	11/2013
Chromium (EUPS-7)	chrome plate	CMP	0.000123	0.000489	11/2013
Chromium(EUCHROME4)	chrome plate #4	CMP	0.0000665	0.0005	11/2013
Formaldehyde (EUPS3)	electroless copper	PBS	0.0809	0.6458	4/2011
Methanol (EUPS3)	electroless copper	PBS	8.096	9.12	7/2011
1,3-dichloro-2-propanol (EUPS6)	conditioner	PBS	0.0212	0.84	4/2011
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 every four hours of tank operation.

It is noted that in 2013, the company had some issues with maintaining surface tension values in accordance with the operation and maintenance plan. These issues were due to the introduction of a new wetting agent that does not perfluorooctane sulfonate (or PFOS). The company has rectified the problems and is now operating with consistent surface tension values.

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 23, 2013 for the period of January 1, 2013 through July 31, 2013.

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.

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).

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

There is a new building that is part of the stationary source. This building houses a recycling center and maintenance shop. There is a small spray booth used to do minor non-production painting. According to plant personnel, approximately ten gallons of paint is used per month. This booth is exempt from permitting under Rule 287 (c).

SUMMARY

The Lacks Airplane stationary source appears to be in compliance with all applicable requirements. Attached to this report are records.

NAME [Signature] DATE 1/24/14 SUPERVISOR PAB