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

A016331376

FACILITY: Flexfab, LLC		**SRN / ID:** A0163
LOCATION: 1699 West M-43 Hwy., HASTINGS		**DISTRICT:** Grand Rapids
CITY: HASTINGS		**COUNTY:** BARRY
CONTACT: Patricia Modreske , EHS Specialist		**ACTIVITY DATE:** 09/23/2015
STAFF: Steve Lachance	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Scheduled Inspection for FY '015		
RESOLVED COMPLAINTS:		

This was an unannounced, scheduled inspection. SL presented himself to the receptionist at the Cook Road location at about 10:15 AM, Wednesday, September 23, 2015. SL learned that the former AQD contact was no longer with the company; and also that the current contact, "Pat" was located at the facility on M-43. The receptionist attempted to contact Pat via phone, but was unsuccessful. SL simply relocated to the M-43 location. Again unsuccessful attempting to reach Pat, SL left a voice-mail for Ms. Modreske on his cell phone and turned attention to another facility in Hastings. Upon completion of those activities, at about 11:20 AM or so, SL was in contact with Ms. Pat Modreske, EHS Specialist for Flexfab facilities. Inspection activities commenced at about 11:30 AM at the M-43 facility.

Weather conditions were calm, clear and about 70 degrees F. No visible emissions or odors attributable to the facility were noted.

The inspection commenced with introductions and an entry interview. SL announced his intention to complete an inspection of both (Cook Road and M-43) facilities and provided DEQ's "Environmental Inspections: Rights and Responsibilities" brochure, as well as the Boiler MACT/GACT insert. Ms. Modreske had been in the position for a couple of years, and this was SL's first visit to the facility, so there was a bit of catching up and alignment that took place in terms of equipment, permits, AQD Rules, operations, emission factors, etc. See specific discussions below.

The facility makes hoses, ducts, flexible connectors and such for the automotive, aerospace, transportation and industrial sectors. Basically, "silicone pig" is shaped and cured through heating; and the final product may be assembled (clamps, fittings and such) on-site. This facility has been in place since the 1960's.

It appears to be a low-emitting (minor) source, and all fuel used is natural gas. Although the facility is aged in parts, housekeeping was good and modernization efforts were obvious.

At about this point of the discussions, Mr. Mark Rushford, Maintenance Supervisor joined the conversation. Mr. Rushford has many years' experience with, and deep knowledge of the facility and its operations, and accompanied Ms. Modreske and SL for the duration of the inspection.

The following Permits are currently active and were discussed:

PTI No. 777-90 for a baghouse on a rubber milling process. This permit reflects old materials and operations, and very little milling takes place now. The baghouse is located near the southeast corner of the M-43 building. Despite little use, the baghouse is maintained on a monthly basis and differential pressures are monitored. At this time, milling was not taking place, but the baghouse was in operation. A differential pressure reading of 3.2 inches of water was noted; the magnahelic gauge was clear, readily accessible, and labelling indicated that a reading of greater than 2 inches was normal. No visible emissions were noted. Collected contaminants are collected in drums, and Mr. Rushford stated that it might take years to fill a drum with collected millings now.

PTI No. 873-91 for a vinyl welding machine. Again, this permit reflects old materials and operations, and the regulated portion of the operation (per PTI, propane combustion) is seldom used. Instead, the vinyl welding operations are accommodated by the introduction of tetrahydrofuran into the vinyl pellet weld process. This compound has a final Initial Threshold Screening Level (ITSL) of 8000 ug/m^3 and so

emissions of this compound are accounted for by the use of Rule 290(a)(ii)(A), which allows for the emissions of 1000 pounds per month of such a compound. Sections (c) and (d) of Rule 290 require specific recordkeeping for such units for the most recent 2-year period, to be made readily available to AQD upon request.

Ms. Modreske maintains a spreadsheet (attached) which calculates emissions of tetrahydrofuran based on material usage. Measurements of product within-barrel height, as well as barrel substitution on a monthly basis are converted geometrically to gallons. The attached MSDS establishes a density of VOC for the product; (88% that of water; the facility uses 7.41 pounds of VOC per gallon, which is slightly conservative); and assumes that all product is lost to the air. These records are current and SL confirmed various calculations within the spreadsheet. Usage rates are low (much production has been moved overseas) and emissions are generally <100 pounds per month for the last several years.

OTHER PROCESSES:

Steam Bonding; inner hose is bonded to outer hose with a small amount of adhesive and steam heat. All adhesive VOCs are assumed lost. This process is little-used now, (none since February), and upon further discussion, this appears to take place at a third Flexfab location at the corner of M-43 and M179. Historical records indicate lessthan 200 gallons per adhesive used per month (and so exempt per Rule 287(c) regardless of location) and records assume total loss of VOC. See attached historical records for this dwindling process.

Formaldehyde Emissions; steam or heat curing silicone naturally evolves formaldehyde as the silicone cures. The attached study from GE Silicones shows that emissions are low, but temperature-sensitive. The study states that at 392 degrees F, 0.001% (i.e., 0.00001 mass fraction) evolves as formaldehyde. The facility has a solid grasp of overall silicone use and scrap rates; and at 98% silicone used in product, curing temperatures less than 350 degrees F, and an emission fraction of 0.00001, can calculate Formaldehyde emissions for its operations based on total silicone use. See attached. Note that the emissions can be prorated to each facility based on production at that facility.

Formaldehyde is a carcinogen, with an Initial Risk Screening Level (IRSL) of 0.08 ug/m^3. As a carcinogen, emissions are limited to 20 pounds per month (uncontrolled) per Rule 290(a)(ii)(C). Available records show that formaldehyde emissions are below this limit at current production rates.

Parts Cleaners; SL observed one Safety Kleen unit with Premium Solvent. (Others are also reportedly used at various locations by Flexfab.) This was a small unit with no heating or agitation and is eligible for exemption per Rule 281(h) or Rule 285(r)(iv). It was observed to open while not in use, and SL explained why AQD Rule 707 requires that such a unit be closed when not in use, as well as other requirements for labelling, part draining, proper disposal of solvent and contaminants, etc. Mr. Rushford took immediate action to close the unit and understood the nature of these requirements. (Note, in conjunction with another inspection in Hastings on September 25, 2015, SL dropped off multiple "Cold Cleaner Operating Procedures" for Ms. Modreske at the M-43 facility.)

Boiler MACT/GACT; as an Area Source of HAPs, the facility could be subject to 40 CFR 63 Subpart JJJJJJ, but this rule covers boilers only (not process heaters.) This rule does NOT regulate natural gas boilers of any size, and with natural gas being the only reported fuel for the source, SL concludes that there is no equipment currently on-site that is subject to 40 CFR 63 Subpart JJJJJJ.

Ovens and Heaters; there are multiple gas-fired and electric curing ovens on-site. The gas-fired units are typically 500,000 Btu/hr or less, and so are eligible for exemption per Rule 282(b)(i).

Given the multiple curing ovens observed, SL questioned overall natural gas use at the facility. Ms. Modreske provided natural gas records that cover all the Flexfab facilities, and at 53,334 thousand cubic feet (equivalent to 53.334 million cubic feet) used in the most recent Fiscal Year and using MAERS Emission Factors for external combustion of natural gas, highest emissions are:

53.334 mmcf/yr * 100 #NOx/mmcf = 5333 lb NOx = 2.7 tons; and while this is not a complete and official Potential to Emit assessment, SL does feel comfortable in stating that this is a Minor (Area) Source with respect to the Renewable Operating Permit Program and related requirements. Note also, this is for the various Hastings Flexfab locations in total; and so each of these locations is a Minor Source.

SUMMARY

SL concludes that the facility is in compliance with applicable air use rules and regulations at this time.

ATTACHMENTS

Vinyl Welding Tetrahydrofuran Emissions

Tetrahydrofuran MSDS

Steam Bond Adhesive Emissions

GE Silicones Study

Formaldehyde Emissions – Main Plant

Natural Gas Usage Records

NAME _____ DATE 9/25/15 SUPERVISOR _____