

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

A064837439

FACILITY: Allen Pattern of Michigan		SRN / ID: A0648
LOCATION: 202 McGrath Place, BATTLE CREEK		DISTRICT: Kalamazoo
CITY: BATTLE CREEK		COUNTY: CALHOUN
CONTACT: Greg Allen , Owner		ACTIVITY DATE: 10/31/2016
STAFF: Rex Lane	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: Self Initiated Inspection		
RESOLVED COMPLAINTS:		

On October 31, 2016, MDEQ-AQD staff arrived at Allen Pattern of Michigan, Inc. (APMI) at 2:15 pm to conduct an unannounced air quality inspection. Staff made initial contact with Mr. Dave Habenicht and stated the purpose of the visit and provided him with a business card. Mr. Greg Allen, owner of APMI came out shortly thereafter to meet with staff. The facility commenced manufacturing operations in 1976 (fka Bower Pattern) and is a job shop that produces patterns primarily for non-ferrous foundries that use sand molding equipment to produce castings. The facility currently has nine employees and operates one shift per day (6 am – 4 pm) Monday through Thursday. The facility has two buildings, the north building is the pattern shop and the south building is the machine shop. Mr. Allen gave staff a tour of both buildings and process equipment is described further below:

The pattern shop has three CNC machines, a paint booth, welding and miscellaneous metal and woodworking equipment. There is a small storage area in the northeast corner of the building where old mahogany wood patterns are kept. Mr. Allen indicated that patterns historically were made primarily out of mahogany because it is a dense hardwood, however there were health studies linking wood dust to respiratory issues and various cancers. APMI now makes patterns out of REN Boards (trade name) that are purchased in slab form. The REN Boards are also known as polyurethane tooling boards and are made out of polyurethane thermoset resins and come in either low, medium or high density form based on resin content.

The CNC machines are programmed to produce the desired pattern into the REN Board slabs and are internally vented and exempt from air use permitting requirements under Rule 285(l)(vi)(B). The welding equipment is exempt from permitting requirements under Rule 285(i). The metal working equipment is exempt from permitting under Rule 285(l)(vi)(B). The REN and wood working equipment is ducted to one of two plenums in the floor that go to a baghouse located outside the east wall that vents back in plant. This equipment is exempt from permitting under Rule 285(l)(vi)(B). The paint booth is located along the north wall of the building and is used to apply primer, black lacquer or clear sealer to finished patterns. Based on coating purchase records (see attached), coating usage rates averaged less than 20 gallons/year over the past few years. The paint booth is exempt from permitting requirements under Rule 287(c) provided coating usage remains below 200 gallons/month. Note: The facility may continue to use purchase records for compliance purposes until coating purchase rates exceed 200 gallons/year at which time actual use records will need to be kept on a monthly basis for this paint booth.

The machine shop has internally vented metal working equipment that is exempt per Rule 285(l)(vi)(B). The machine shop also has several tables where a filler called "metal-2-metal" (product is similar to automotive body repair filler) is used to fill in imperfections in castings before they are shipped off site to be powder coated. A copy of the filler MSDS sheet is attached to this report and the material contains 15 – 20% styrene by weight. The filler is mixed with a benzoyl peroxide hardener prior to application on the castings. According to the filler MSDS, once cross-linking of the polyester resin has occurred following mixing with the hardener, the as applied VOC (i.e. styrene) content is 0.55 pounds/gallon. The current initial risk screening level (IRSL) for styrene is 2 ug/m³. The process is exempt from permitting under Rule 290 provided that uncontrolled styrene emissions do not exceed 20 pounds/month. This emission rate would be equivalent to using approximately 36 gallons of metal-2-metal filler per month. Based on purchase records (attached), the facility purchases about 12 quarts of filler/year or three gallons/year. Note: The facility may continue to use purchase records for Rule 290 compliance purposes until metal-2-metal filler purchase rates approach 36 gallons/year at which time actual styrene emission rate records will need to be kept on a monthly basis in order to demonstrate continued compliance with Rule 290 emission limits.

Staff asked Mr. Allen if the facility had any boilers, emergency generators or cold cleaners and he said no. Building heat and A/C is provided by air handling units located on the building roofs.

Staff thanked Mr. Allen for his time and left the facility at 3:15 pm. At the time of the inspection and based on a

