

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

B202525387

FACILITY: Aquatic Co		SRN / ID: B2025
LOCATION: 888 W BROADWAY RD, THREE RIVERS		DISTRICT: Kalamazoo
CITY: THREE RIVERS		COUNTY: SAINT JOSEPH
CONTACT: Sarah Mercer, HSE		ACTIVITY DATE: 06/03/2014
STAFF: Dennis Dunlap	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

This was not an announced inspection. The contact person is Sarah Mercer. The inspection brochure was handed out during a subsequent meeting. There are two shifts per day. Units produced are 275 per shift.

There is a wood shop with dust collectors that emit inside the facility. There is a bulk tank for resin, two storage tanks, and two mixing tanks. It appears that the lids were on. Sulfate and featherlite is added to the resin. Usage of the resin is determined by scales to determine the weight used. This is checked daily. Catalyst is added to the resin from separate containers. Before air reaches the RTO there is a pre-filter and box filter. These are checked periodically.

Gel coat and resin is applied in one room. The filters appeared to be installed correctly with no gaps. All containers appeared to have lids on. The products are bath tubs and showers. Molds are used. Wax is first applied to the molds to facilitate removal of the finished product. Gel coat is applied using HPLV spray guns. The gel coat is in 55 gallon drums. White is usually used and is supplied by Cook. The molds go through a heat tunnel. Some reinforcement made be made with gel coat pads. The first layer of fiberglass is applied using chop guns and resin. The material is then rolled out by hand. Reinforcement with wood strips may be done before a second coat of resin is applied. This is then rolled out by hand. There is a third lamination process. Clean up is done with acetone but mostly with "liquid green". According to the MSDS this does not contain VOC. After it is dried the mold is released by inserting air pressure. The finished product is taken to a room to cut holes and grind the rough edges. The room has dust collectors that emit inside the facility. Some acrylic caulk in tubes is used also to finish the product. The MSDS was checked for resin and gelcoat for styrene content.

For the MACT, Part 63 WWWW, the facility is using the weighted average emission limit method in 63.5810(c). For this method, each month the facility sums up the last 12 months of gel coat and resin usage separately, then multiplies each one (gel coat and resin) by the emission limit found in Table 3 of WWWW. For resin this should be the emission limit for open molding-non CR/HS mechanical resin application = 88 lb/ton. For gel coat this should be open molding whit/off white pigmented gel coat = 267 lb/ton. The total tons of resin used in the last 12-month period is multiplied by the emission limit (88) and the total tons of gel coat used in the last 12-month period is multiplied by the emission limit (267). The products of these two calculations are added together and divided by the total tons of resin and gel coat (added together) used in the last 12-month period. This will give a number. For the inspection the period Jan. 2013 through Dec. 2013 was used and the number calculated was 130. On the Aquatic recordkeeping sheet this is labeled as "WAEI".

The other part of this method is to multiply the resin and gelcoat used in the last 12-month period by emission factors derived from Table 1 of WWWW. For gel coat this is atomized spray gel coat application or $0.445 \times .30$ (percent styrene of gel coat) = .1335. This number appears on the Aquatic recordkeeping sheet as gel coat uncontrolled and is used to multiply the gel coat used (in pounds) when the RTO is bypassed. The .1335 can be multiplied by 2000 = 267 to be multiplied using tons of gelcoat. The controlled emission is 0.1335 multiplied by the efficiency of the RTO. Currently the facility is using a total efficiency of 96.5% based on a 1600 degree temp. of the RTO. Thus 0.1335 is multiplied by 0.035 (1- the control efficiency) = 0.0047. This should be the controlled gel coat emission factor but 0.0108 appears on the sheet. To use this for tons of gel coat multiply 0.0047 by 2000 = 9.4. For this other part, then, the amount of gel coat used in the last 12-months while the RTO is in the bypass mode is multiplied by the uncontrolled emission factor. The amount of gel coat used in the last 12-months while the RTO is operating is multiplied by the controlled emission factor. The products of these two operations are added together and will be added to the resin calculations below.

For resin the emission factor is based on nonatomized mechanical resin application non-vapor suppressed and 48% styrene = $\{0.157 \times .48 (\% \text{ styrene})\} - 0.0165 = 0.0589$. The number that appears on the Aquatic recordkeeping sheet is for uncontrolled is 0.0765. To use this for tons multiply 0.0589 by 2000 = 117.8. For controlled this is multiplied by 0.035 = 0.0021. The number that appears on the Aquatic recordkeeping sheet is 0.0062. To use this for tons multiply 0.0021 by 2000 = 4.2. For this other part, then, the amount of resin used in the last 12-months while the RTO is in the bypass mode is multiplied by the uncontrolled emission factor, and the amount of resin used in the last 12-months while the RTO is operating is multiplied by the controlled emission factor. These are added together along with the ones from gel coat above and this is divided by the total gel coat and resin used in the last 12-month period. This will produce a number that is compared to the 130 derived above. For the period Jan. 2013 through Dec. 2013 a number of 7.84 was derived. Since this is less than 130 the facility is in compliance. On the Aquatic recordkeeping sheet this is "AWA HAP EF". Since Aquatic is using different emission factors it appears that they are overestimating emissions and the values that Aquatic is using in this column is about twice of 7.84. Another column is "% of WAEL". This would be 130 divided by 7.84.

AQD staff discussed the emission factors with Ms. Mercer. On the Aquatic recordkeeping sheet the emission factors were checked to see if they matched the following, and if not they were changed: gel coat uncontrolled, 0.1335; gel coat controlled, 0.0047; resin uncontrolled, 0.0589; resin controlled, 0.0021. If the facility reduces the RTO temp. to 1523 degrees, then RTO efficiency decreases to 91.9% (0.081). The controlled gelcoat emission factor would then become 0.0108 and the controlled resin emission factor would become 0.0048. It appears that Aquatic was using the controlled factor of 0.0108 for gelcoat even though the RTO temp. has not been turned down to 1523 degrees.

The gel coat and resin application room is a permanent total enclosure (PTE). There are two doors into the area that shut. The room is checked with a hand held anemometer quarterly. This measures air flow in feet per second. This is done by going around the room and checking that air flow is going into the room. During the inspection the air flow was checked when the one of the doors was open. Air flow was into the room. Air flow was checked at various other points and air was flowing into the filters going to the RTO.

In the control room for the RTO there is panel that shows the current monitor parameters. The RTO has two concentrators. The RTO temp. was reading above 1600 degrees. Other readings include: process air diff. pressure; heat exchanger; filter house bank 1 & 2; filter house bank 3; desorb temp; concentrator rotational speed. The rotational speed was 3.91. The desorb temp. was 359. The "process" was 2.27. These parameters have set points. If there is an excursion of a set point then there is red strobe light in the production area that will flash. The control room is checked several times per day. Outside the control room there are diff. pressure gages for each concentrator. There is a set of three that are labeled "process", "desorption", and "purge". These are not monitored in the control room except for "process". For concentrator #2 these reading were 2.0, 2.5, and 2.1, respectively. The ROP has a permit requirement for pressure drop across the concentrator absorbent of a range of 2.5-2.7. This corresponds to "process" or "process air diff. pressure" in the control room. During the last stack test these readings ranged from 2.1 to 2.3. The values in the ROP may need to be modified because they do not correspond to what is normally measured when the RTO is presumably functioning properly. The heat exchanger for each concentrator also has a diff. pressure gage outside the control room. The reading for concentrator 2 was 1.5, which is in the range of 1.3-1.5 in the ROP. There are also diff. pressure gages to monitor filters for the RTO. The gages for "filters" was reading 1.0, and the reading for filter house was <1.0.

The duct work for the RTO is checked twice a month for leaks. This is done by smell and pedo-tubes. A bubble test is done twice a year.

The facility has been using a fire retardant paint. AQD staff checked with the supplier and it has no VOCs. This does not have to be tracked in the Rule 287 group with the other paint. The 214 liquid wax that is used on the molds is tracked each month in pounds. According to the MSDS this has 6.9 lbs VOC/gal. In 2013 the facility used 1200 pounds or 166 gallons (7.2 lbs/gal density). This should be a Rule 287 group in the ROP.

NAME Dennis Dumlup

DATE 6/12/14

SUPERVISOR MD 6/12/2014