

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

N588345249

<b>FACILITY:</b> Christensen Fiberglass, LLC	<b>SRN / ID:</b> N5883
<b>LOCATION:</b> 126 ANILINE AVE, HOLLAND	<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> HOLLAND	<b>COUNTY:</b> OTTAWA
<b>CONTACT:</b> Bill Christensen , Owner	<b>ACTIVITY DATE:</b> 07/14/2018
<b>STAFF:</b> Tyler Salamasick	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Unannounced minor source inspection FY 2018.	
<b>RESOLVED COMPLAINTS:</b>	

### Background

Christensen Fiberglass SRN: N5883 is a fiberglass facility that specializes in manufacturing composite molds primarily for the marine industry. The production facility is located at 126 Aniline Avenue, Holland Michigan 49424. Christensen Fiberglass is located in a mixed residential and industrial area with the nearest residential structure approximately 100 feet east of the facility. The facility was inspected on 7/14/2018 by Tyler Salamasick, Environmental Quality Analyst of the Michigan Department of Environmental Quality, Air Quality Division. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and PTI No. 57-04A. Christensen had received a violation notice in 2009 for violating Rule 201. The facility had responded to the violation within approximately 2 weeks.

### Inspection

Site arrival was at 9:15 am on 7/14/2018. Prior to entering the facility, I made observations off site. I did not detect solvent or styrene odors. Upon meeting, I presented my State of Michigan identification card, informed the facility representative of the intent of my inspection and was permitted onto the site. Owners, Shelly Christensen and Bill Christensen showed me the facility.

The facility uses various materials to build composite molds for the marine industry. The molding consists of a wood support structure, a metal base and a smooth fiberglass face. Christensen Fiberglass uses foam and a large CNC machine to form the initial shape of the mold. They then manually shape the foam into the smooth base. This mold acts as the inverse shape for the final composite mod.

The first step of building the mold begins at foam stage. Workers build a wooden frame and apply a foam in the booth. This foam consists of primarily Polyether Polyol, Polyol(s) and Diphenylmethane Diisocyanate (isomers and homologues). During the inspection I observed the spray booth. The booth is a large partially sealed room. The back wall has an exhaust stack with a fabric filter. I observed the filter, which appeared to be in good condition. I did notice a small gap on the left end of the filter, but Shelly was able to adjust it and cover the gap.

Once the frame is coated with the foam, the CNC machine is used to cut the shape. The cutting processes can take between 3 days to a week. The shape that is cut very closely resembles the shape of the final product being built (ie. a ship hull, or deck).

Staff fine sand and finish the foam to prepare it to be used to make the composite mod. The composite mold consists of fiberglass and resin. The resin styrene and methyl methacrylate (MMA) content is limited by weight by PTI NO. 57-04A.

After the mold is built, welders attach a metal cage to its back portion. Additional finish sanding of the final mold is completed, and the mold is prepared for shipping.

Regulatory compliance -Permit No. 57-04A

### SPECIAL CONDITIONS

**EULAMINATION**- This emission unit pertains to the resin lamination process. The resin materials are hand applied. The resin application is conducted in the booth area, which is emitted through stack SV-FIBERGLASS. This booth is equipped with a fabric filter. Any particulate emissions are presumably controlled by the filter. The VOC, styrene and MMA emissions are limited by the material usage requirements under EULAMINATION.

### Emission Limits

The permit limits the VOC (including styrene) emissions to 5.9 tons per year (tpy) per a 12 month rolling time period. The highest reported 12 month total since Jun-2016 was 3.1 tons during the months of both June and July. The most recent 6 month emissions were lower, between 1.9 and 1.7 tpy.

### Material Usage Limits

The styrene content of all resins used in EULAMINATION is limited to 50 percent by weight. The provided records indicated that the material with the highest styrene content by weight was the ASJ DX 470-00M Derakane VE at 50%. The records indicate that the most commonly used resin is C1-30001-18 & 28 which has a styrene content of 34.00% by weight.

### Equipment

The permit requires the booth associated with EULAMINATION has exhaust filter installed, that are maintained and operated in a satisfactory manner. I observed the filters, and as stated above, and they were in good condition. There was a small gap in the filter cover, but that was corrected while I was on site. They were also not operating it at that time.

### Recordkeeping/Reporting/Notification

The permittee is required to keep a separate record of the VOC and styrene monomer content for each shipment of resin received. The provided records kept track of the materials used, styrene content, MMA content and percentage of VOC by weight. The spreadsheet appears to meet the requirements of the condition.

**EUGELCOAT**- This emission unit pertains to the spray application of gelcoat. The emissions from this process are emitted through the exhaust stack SV-FIBERGLASS.

### Emission Limits

The permit limits the VOC emissions from EUGELCOAT to 1.9 tpy per 12 month rolling time period. The records indicated that the highest emission per 12 month rolling was 1.4 tons. This was reached multiple times in 2016 and twice in 2017.

### Material Usage Limits

The permit limits the styrene and the MMA monomer contents as listed in the below table.

Material	Application Method	Styrene Content (wt %)	MMA Content (wt %)
Gelcoat	Atomized	43	5

(clear, white, colored, tooling)			
Sanding Primer (non-gelcoat)	Atomized	16.5	NA
Speed Patchaid (non-gelcoat)	Atomized	51	NA

Review of the records appeared to indicate that the current materials meet the material limits for both styrene and MMA. The highest styrene patch content was 50.11% styrene by weight. The highest MMA content was 4.98% by weight. The most commonly used material in June of 2018 had a styrene content of 20.41% and a MMA content of 0.00%.

### Equipment

The permit requires that the permittee not operate EUGELCOAT unless its respective exhaust filter is installed, maintained and operated in a satisfactory manner. At the time of my inspection they were not using EUGELCOAT but the booth was maintained and in proper condition. As discussed earlier there was a filter that needed to be adjusted.

### Recordkeeping/Reporting/Notification

The permittee is required to keep a separate record of the VOC and styrene monomer content for each shipment of resin received. Christensen's EUGELCOAT records are kept in conjunction with the EULAMINATION records and the EUCLEANUP records. The spreadsheet appears to meet the requirements of the condition.

**EUCLEANUP-** This emission unit pertains to use of acetone to clean parts and equipment. The emissions from this process are emitted through the exhaust stack SV-FIBERGLASS and the general in plant environment. Christensen uses a acetone reclaimer and is able to recycle their waste acetone.

### Emission Limits

The permit limits the acetone emissions from EUCLEANUP to 4.0 tpy per a 12 month rolling time period. The highest reported acetone emissions were 5.1 tpy per 12 month rolling time period during February 2017, March 2017 and April 2017. This exceeds the permit limit by 1.1 tons or 27.5% higher than permitted. This is a violation of permit Special Condition III.1.

**FGFIBERGLASS-** This emission unit pertains to the usage and storage of laminate resins, gelcoats, catalyst ect.

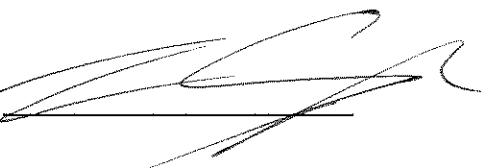
### Process/Operational Limits

The permit requires that all waste cleanup solvents, catalysts, resins, and gelcoats used in FGFIBERGLASS are captured and stored in closed containers. The permit also requires that the permittee dispose of all waste in an acceptable manner in compliance with all applicable state rules and federal regulations. At the time of my inspection all containers were closed. I observed the acetone recycling equipment which helps the facility reduce solvent waste. This area did smell like acetone, though it was only confined to a small area.

### Conclusion

Christensen Fiberglass is in violation of Special Condition III.1. In the past 24 months the facility exceeded the 4.0 tpy limit per 12 month rolling time period for 21 months. The highest exceedance occurred for 3 months at 5.1 tpy per 12 month rolling time period. This is 27.5% over the permit limit.

Christensen Fiberglass appears to be in compliance with all other requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and PTI No. 57-04A. The facility will be issued a violation notice seeking to resolve the non-compliance with permit condition SC III.1.

NAME  DATE 7/26/18 SUPERVISOR 