

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

N687442869

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|---|-------------------------------|---------------------------|
| FACILITY: Quantum Composites Inc. | | SRN / ID: N6874 |
| LOCATION: 1310 South Valley Center Drive, BAY CITY | | DISTRICT: Saginaw Bay |
| CITY: BAY CITY | | COUNTY: BAY |
| CONTACT: Duane Gohr , Production Manager | | ACTIVITY DATE: 12/20/2017 |
| STAFF: Gina McCann | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Inspection of MI-PTI-N6874-2016. The facility was in compliance with the ROP and applicable state and federal regulations at the time of the inspection. | | |
| RESOLVED COMPLAINTS: | | |

I (glm) conducted an announced inspection of Quantum Composites, Inc.-A. Schulman in Bay City, MI. I was accompanied by Mr. Duane Gohr, Director of Manufacturing (A. Schulman), Mark Gallett, EHS (A. Schulman), Liza Gross (Administrative Support, (A. Schulman) and Keith Held, Consultant (THG). The facility was issued MI-ROP-N6874-2016 to limit VOC and HAP emissions. The facility is subject to 40 CFR Part 63 Subpart WWWW, Reinforced Plastic Composites Production.

The facility has recently went through a series of acquisitions and are rebranded as the Innovation and Collaboration Center for A. Schulman. The company currently has Mr. Gohr and Mr. Wisdom Dzotsi listed as Responsible Officials (RO). The facility is required to send in an M-001 form requesting the RO change to remove Mr. Dzotsi per R215(5).

The facility is a sheet molding compound (SMC) and bulk molding compound (BMC) manufacturing facility located in an industrial park. Resinous paste, fillers, and product enhancers are mixed in batches in one of seven mixers that range in size from five gallons to 300 gallons. The emissions from the mixers are controlled by a VTI dust collector which then vents to the energy recovery unit. The paste mixture is transferred to one of the three molding compound machines. Fiberglass or carbon fiber may be added to the paste mixture for reinforcement and the paste mixture is spread between layers of carrier film. Heat and chilling may be used to control reaction rates. The product is packaged and shipped or placed in a cooler. Production equipment is cleaned with solvents. The used solvents are temporarily stored on site until disposed. There are also quality assurance and product development testing laboratories, which are exempt from obtaining a PTI.

All in plant air is vented to the VTI dust collector which is then vented to the 2.8 MMBTU energy recovery unit.

Regulatory Overview

The facility is considered a major source of Hazardous Air Pollutants (HAPs) as they have the potential to emit (PTE) over 10 tons per year (tpy) of a single HAP and/or over 25 tpy of all HAPs combined. The facility has taken operational limits per R205 to restrict the VOC PTE, which include operating hours, material usage and styrene limits. Limiting the VOC PTE considers this source a synthetic minor with regards to the Prevention of Significant Deterioration (PSD) regulations.

FGSMCBMC (EUSMCI, EUSMCII, EUSMCIII, EUMIXERS, EUBMCMIXER, EUSOLVENT, EUPRESS): Compliant

All three sheet molding compound processes are similar.

During the December 20, 2017 visit EUSMCI was the only line in operation. The EUSMCI process starts with the application of a bottom layer of resin mixture. Carbon fiber or fiberglass fibers are added on top of the resin. A carrier film is rolled on top of the resin/fiber material. The mixture begins to cure as it travels along a conveyor. EUSMCI has the ability to heat the sheet molding compound with emissions exhausted to SV-14. The curing sheet of material can then be chilled to curtail the speed of the curing. All emissions after the heated portion of the process are vented to the in plant air which is then vented to the energy recovery unit.

The mixed formulations are specific to each customer's needs and must be accurate to obtain desired characteristics. The production material use values for air pollution records assume 100% of the material purchased is used in production. The facility tracks styrene percent by product group and emission unit. I reviewed 12-month rolling records from December 2015 through December 2017.

Product Shop Hours are recorded by each employee. Each employee records the amount of time spent on a run including cleanup time when solvents are used.

FGSMCBMC has emission limits of 37.2 tpy for VOCs, based on a 12-month rolling time period as determined at the end of each calendar month and 8.8 pound per hour limit for styrene based on a calendar day average. The production information from the Formulation & Mix Log and the employee time record is used to generate a site compliance report with hours of operation and pounds of each formulation used by process equipment/emission unit.

VOC emission rates were 5.45 for the 12-month rolling time period ending November 30, 2017. I spot checked the hourly styrene emission rate records for December 2015, July 2016 and November 2016. The emission rates were below the permitting 8.8 pph. The facility's ROP contains site specific calculations in Appendix 7 for emissions from FGSMCBMC, which are being utilized by the facility.

The operation and emission records are attached for FGSMCBMC. The site has pounds per hour processing rate limits of 64,600,000, 180,000 and 1,000,000 for EUMIXERS, EUBMCMIXER, and EUPRESS respectively. In addition, the facility has operational restrictions on the number of hours per year it may operate EUSMCI, EUSMCI and EUSMCI. Operational restrictions vary depending on the material being processed as well as the emission unit. A review of the material operations limits compliance report provided by the facility in response to an email request, dated January, 29, 2018, shows hours of operation below permitted values.

Short term solvents usage is determined by a measuring stick correlated to the containers volume. The liquid height is recorded by floor workers, converted to volume used, and recorded. A copy of the solvent use record for January 2016, July 2016, April 2017 and September 2017 are attached. Annual solvent usage is based on amount of solvent used minus amount of solvent sent for disposal. Special Condition II.2 limits the net cleaning solvent usage rate to less than 100 gallons per month. We reviewed electronic records for solvent usage, disposal & emission calculations.

| Net Solvent Usage ≥ 100 gallons per month | | | |
|---|-----------|------------|----------------|
| January 2016 | July 2016 | April 2017 | September 2017 |
| 35 | 61 | 62 | 83 |

EUSMCI has a Torit dust collector used to control particulate matter from fiber chopping. The Torit dust collector is vented to the in plant air. The Torit dust collector is used to collect dust from carbon fiber cutting operations. A pressure gauge was added on the Torit. I was told the Torit cartridges are cleaned periodically and replaced as needed. This is usually just a few times each year based on a visual inspection. During the inspection the pressure read 0.8 " W.C. and is recorded once per shift. Monthly cleaning and inspection log for 2017 is attached.

On September 14, 2016 the facility submitted a meaningful change demonstration per R285 for an epoxy resin with VOCs to be used in the SMCI and SMCII lines. The demonstration appeared to meet the exemption, however the facility has not used this material.

FGMACT (EUSMCI, EUSMCI, EUSMCI, EUMIXERS, EUBMCMIXER, EUSOLVENT, EUPRESS): Compliant
We viewed electronic emission records including calculations for 12 month rolling averages for HAPs. The facility maintains a separate database to provide year to date information.

The facility has potential emissions for styrene of over 22 ton per year and for methanol over 10 ton per year. The flexible group has a 12 month rolling limit of less than 100 tons per year of HAPs. The facility is considered a "synthetic minor" source in regards to Prevention of Significant Deterioration regulation of 40 CFR 52.21 because the stationary source accepted legally enforceable permit conditions limiting the potential to emit to less than 100 tons per year. Operational limits per the requirements of Rule 205 restrict the VOC potential to emit. We viewed the electronic records for FGSMCBMC.

A summary of VOC and HAP emissions by emission unit and flexible group is attached. The total facility wide VOC emissions are also the HAPs emissions, with the exception of SP-182 which is a solvent used for cleanup. The total HAPs emissions for the 12-month rolling time period ending November 30, 2017 was 2.39 tpy.

The facility provided Notification of MACT WWWW Applicability on May 17, 2011. The facility is subject to the work practice standards in Table 4 of 40 CFR, Part 63, Subpart WWWW (attached). Work practice standards were observed during the walk through inspection.

FGBOILERMACT-Compliant

The facility has three boilers EULCHINVAR#1, EULCHINVAR#2 and EUSTEAMBOILER and are subject to the MACT standards for existing boilers and process heaters at a major source of HAPs, 40 CFR Part 63, Subparts A and DDDDD. The MACT requirements include meeting the tune-up and energy assessment work practice standards for each applicable boiler, completing the one-time energy assessment no later than January 31, 2016 and maintaining associated recordkeeping and reporting pertaining to annual maintenance on the units.

The facility conducted the one-time energy assessment on August 23, 2016 and has annual maintenance checks performed on the equipment. During the inspection we viewed the units. All units were tagged with inspections done in 2017.

All three units are exempt from obtaining a PTI under R336.1282(b)(I), which applies to fuel-burning equipment which is used for space heating, service water heating, electric power generation, oil and gas production or processing, or indirect heating and which burns only the following fuels: sweet natural gas, synthetic gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 20 MMBTU/HR.

FGRICEMACT

The facility has one emergency generator that utilizes natural gas and was installed in November, 2012. The generator is used when the facility loses power to their coolers. The coolers house product, which is required to maintain a certain temperature. At the time of the inspection the engine had 103.4 hours on it. I also viewed the service records from Hamilton Electric. The unit was last serviced on November 16, 2017.

At the time of the inspection the facility was in compliance with the ROP, MI-ROP-N6874-2016 and applicable state and federal regulations.

NAME *Mia L. McE* DATE *2/2/18* SUPERVISOR *C. Kase*