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| DEPARTMENT OF ENVIRONMENTAL QUALITY |
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| AIR QUALITY DIVISION |
| ACTIVITY REPORT: On-site Inspection |

| N127004410 | | | |
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| FACILITY: WEBASTO SUNROOFS INC | | SRN / ID: N1276 | |
| LOCATION: 2700 PRODUCT DR, ROCHESTER HLS | | DISTRICT: Warren | |
| CITY: ROCHESTER HLS | | COUNTY: OAKLAND | |
| CONTACT: Bradley Lawrence , HSE Engineer | | ACTIVITY DATE: 09/06/2022 | |
| STAFF: Sebastian Kallumkal | COMPLIANCE STATUS: Non Compliance | SOURCE CLASS: SM OPT OUT | |
| SUBJECT: Scheduled annual inspection | | | |
| RESOLVED COMPLAINTS: | | | |

On August 31, 2022, I, Michigan Department of Environment, Great Lakes & Energy – Air Quality Division (EGLE-AQD) staff, Sebastian Kallumkal requested information and records pursuant to PTI No. 84-05 and 84-05A from Webasto Roof Systems, Inc (N1276) located at 2700 Product Drive, Rochester Hills, Michigan. Due to the Covid 19 pandemic protocols, the records were requested and reviewed prior to conducting inspections to limit the time spent at the site. The records were requested to be submitted by September 1st. Lawrence Bradley, HSE Engineer forwarded of these records.

On Tuesday, September 6th, 2022, I conducted an onsite inspection at Webasto Roof Systems, Inc. located at 2700 Product Drive, Rochester Hills, Michigan. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Rules and conditions of Permit-to-Install (PTI) No. 84-05 (approved June 2, 2005) and 84-05A (approved December 19, 2019). Previous AQD inspection at this facility was conducted on September 13, 2021.

I arrived at the facility at about 10:15 AM. The inspection was announced due to the EGLE Covid pandemic protocol. At the facility, I met Mr. Lawrence Bradley, Health, Safety, Environment (HSE) Engineer.

Webasto is an OEM sunroof, moonroof, and panorama roof manufacturer for automotive vehicles such as Stellantis Jeep Cherokee, Grand Wagoneer, Dodge RAM, Ford F-150, etc. Facility has about 324 employees, and operates 2 shifts 8-10 hours each), for 5 days (Mon-Friday). The facility has no emergency generators, fire pumps or cold cleaners on site.

During the pre-inspection meeting we discussed the permit requirements and processes at the facility. The molding and final assembly processes permitted under PTI No. 84-05 are no longer performed at the facility. The PTI (84-05A) for the current PU process (five polyurethan encapsulation presses) was issued on <u>December 19, 2019</u>. The two glass molding application and final assembly lines G4 and G5 which were considered Rule 290 exempt was ceased production in <u>June 2021</u>.

The facility recently converted the application of black and clear primer to the glass from manual to robotic in 3 of the 5 PU processes (Total five polyurethan encapsulation presses which are also called carriers). The other two will be converted to robotic in 2023. The robotic application involves purging the lines using methanol or MEK when the applicators are not used for more than 6 hours. Methanol is used purge the clear primer line and MEK is used for the black primer line. The

purge is a closed loop system. The spent purge is collected in a closed container. The facility applied for a permit to install for this change. About 20.6 gallons of MEK is used per unit per year and 6.9 gallons of methanol is used per year per unit.

PTI No. 84-05 includes requirements for EU-W1-AIR1GLASS, EU-W1-SRXGLASS, EU-W1-BSEALANT, (FG-W1-GLASSLINES); EU-W2-AIR1GLASS, EU-W2-BSEALANT (FG-W2-GLASSLINE) and FGFACILITY which has synthetic minor limits for individual and aggregate hazardous air pollutants (HAP).

We discussed how to change the PTI No. 84-05 because the processes are no longer at the facility. I suggested that if the processes covered under PTI 84-05 is no longer at the facility, they may request to void this PTI. However, because it contains the synthetic minor limits for HAPs, they need to evaluate their current potential to emit (PTE) for individual and aggregate HAPs and if the PTE is less than the major source thresholds (10 tons per year {TPY} for individual HAP and 25 TPY for aggregate HAPs), the facility does not need synthetic minor limits for HAP(s) and they could request to void the PTI. If the PTE is more than major source thresholds for HAPs, they may void the PTI No. 84-05 and requested AQD permit section to evaluate and add the synthetic minor limits for HAPs while modifying PTI No. 85-05A to opt out of being subject to potential National Emission Standards for HAPs (NESHAP, 40 CFR Part 63) and Clean Air Act Title V permit (40 CFR Part 70). I suggested that he discuss it further with AQD permit engineer. I forwarded training materials and AQD recorded webinar links to him.

The process at the facility includes encapsulating the laminated glass in a mold (carrier) using polyurethane (which is a polymer of Elastolit M50005T Isocyanate (liquid) and Elastosit M55310 R-01 Resin (liquid)). According to the manufacturer of the chemicals, BASF Corporation, the resin and the isocyanate are kept in closed systems before mixing. Their reaction together to produce a urethane substrate generates no off gassing or other emissions, so there are no VOC emissions from this process. He informed me that the polymer components are currently applied using robots. He also informed me that they use a water-based mold release agent and alcohol wipes to clean the inside of the mold (applied manually).

After the polyurethane encapsulation of the glass, it is cleaned with alcohol wipes and glass cleaner (Windex) and labelled.

The facility has 7 assembly lines and are assigned for different vehicles (3 lines for Ford 150 pickup trucks, 2 lines for Dodge RAM, 1 for Jeep Cherokee, 1 for Grand Wagoneer). Assembly line for Grand Wagoneer is newly built. The space for previous G4 and G5 assembly lines are currently used as storage areas.

In the final assembly line, initially the metallic frame is assembled. Sealant (TERSON RB 962 aka Tero Stat 962N) and grease (Klubersynth P 84-52 G) are applied to the front rails and the end caps of the roof assembly frame. The sealant is heated prior to application. An adhesion promoter (3M Adhesion Promotor 4298UV) is used to place the label on the glass and add rubber foam to frame for anti-vibration. All emissions are exhausted in to in-plant environment.

The rest of the assembly process consists of putting together the glass, sunshade, motor, module and other components. Facility does not manufacture the sunshade and are imported from other countries.

Prior to packaging, the moonroof glass is cleaned using ethanol dispensed from small bottles. Facility also use premoistened wipes for cleaning. This is included in the VOC/HAP emissions.

After the pre-inspection meeting, he accompanied me for an inspection of the facility. Initially we visited the final assembly area. We walked through one of the lines that was not running at that time. He showed me where parts are assembled. Couple of lines were operating at that time.

Next, we visited the encapsulation area. The facility has five Polyurethane Encapsulation Presses (EU-POLYPRESS1, EU-POLYPRESS2, EU-POLYPRESS3, EU-POLYPRESS4, and EU-POLYPRESS5).

Prior to the encapsulation process, clear (BETASEAL 43518 Glass Primer) and black primer (BETASEAL 43520 A Glass Primer) are applied either manually or robotically to the sunshade glass (brought from an outside vendor), using disposable felts. The used felts are collected and send out as hazardous waste. Mr. Bradley told me the facility is considered a small quantity generator for waste regulations.

From this station, it goes to a holding section prior to the encapsulation. Initially mold release agent (Chem-Trend MOC-10009) is manually sprayed to the sides of the mold where encapsulation take place. Next, inside of the mold which touches the glass is cleaned using alcohol wipes. Glass is placed in the mold and kept it closed. The resin and the isocyanate are combined and injected into the mold. The molding is formed. The mold is opened, and encapsulated glass is transferred to next station.

Here, the excess molding is cut off and the glass is wiped using alcohol wipes (SWC30048) and a commercial glass cleaner mixed with water using tissues. In the next station, the glass is labelled, racked and send to the assembly area.

The spent felt, wipe issues are hauled away as hazardous/non-hazardous waste by US Ecology. The facility is keeping records of the VOC emissions from the applications of primers, mold release agent, mold cleaner, glass cleaner, etc.

During the post-inspection meeting, we discussed further about modifying the permit, understanding AQD rules especially R201 permit to install and R290 exemption from permit to install for low VOC emission processes, and the trainings available. Later, I emailed him the links for AQD rules, and the AQD permit to install and Emission Reporting webinars.

PTI No.84-05

Requirements for FG-W1-GLASSLINES and FG-W2-GLASSLINE are not evaluated because these processes are no longer at the facility since 2018-2019.

FGFACILITY-Has facility wide synthetic minor limit for HAPs.

SC 3.1a and SC 3.1b: Facility-wide individual HAP limit is 9.0 TPY and facility-wide aggregate HAP limit is 22.5 TPY. Facility submitted emissions calculations for 2021 and 2022. They calculated the HAP emissions from the encapsulation (PTI 84-05A) and the final assembly processes separately. As of July 2022, the total HAP emissions from the final assembly processes are 0.39 TPY and the encapsulation

processes are 0.11 TPY. Total facility-wide aggregate HAP emissions are 0.50 TPY. This is in compliance with individual and aggregate HAP emission limits.

SC 3.2. HAP content is determined using formulation data, as allowed in permit.

SC 3.3. The facility is keeping appropriate HAP emissions records.

SC 3.4. Facility keeps the following information on a monthly basis: material usage records; HAP content of each HAP containing material; HAP individual and aggregate mass emissions per month; and HAP individual and aggregate mass emissions per 12-month rolling time period.

PTI No.84-05A

This PTI contains requirements for five polyurethane encapsulation presses which uses water-based mold release material. Prior to encapsulation, the raw glass panels are cleaned and primed manually or robotically using disposable felts. The primed glass panels are then placed in the mold to install the polyurethane molding. FG-POLYPRESSES contains requirements for these five poly press units.

SC I.1-VOC emissions are limited to 8.1 TPY based on a 12-month rolling time period as determined at the end of each calendar month. As noted earlier, each sunshade glass is primed (edges), mold release agent sprayed to the mold, mold cleaned, glass cleaned after molding using IPA wipes, etc. Facility submitted emission calculations for 2021 and 2022 and 12-month rolling emissions calculations. VOC emissions in 2021 (as of December 2021) were 2.67 TPY and in 2022, as of July 2022, were 0.54 TPY.

SC III.1- requires the permittee to capture all clean-up solvents and waste coatings and store them in closed containers. Also requires the permittee to dispose all waste materials in an acceptable manner. The facility collects all waste materials which are hauled offsite by US Ecology.

SC III.2- requires that the permittee handle all VOC and HAP containing materials in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times exempt when operator access is necessary. Facility keeps the containers for the spent felts (used in the application of primers) and the tissue papers (used in cleaning the glass) in closed containers.

SC IV.1- requires that the FG-POLYPRESSES be equipped with manual applicators or comparable technology with equivalent transfer efficiency. The isocyanate and resin are applied robotically, and primers are applied either robotically or manually.

SC VI.1-requires the permittee to complete all required calculations in a format acceptable to the AQD Supervisor by the 15th day of the calendar month for the previous month. The permittee appears to be completing the calculations by this time.

SC VI.2-requires the permittee to main a current listing from the manufacturer of the chemical composition of each chemical including weight percent of each component. The facility is keeping SDS for each chemical they are using in production. Facility provided SDSs for Alcohol wipes, BETASEAL 43518 glass primer, BETASEAL 43520A Glass primer, Mold Releasing Agent, Grease, Contec Satwipes, Elasstolit

M50005 isocynate (MDI), Elastolit M55310R-01 Resin, IPA alcohol, Klubersynth _P_84_G, and Terosta RB 962, etc.

SC VI.3 requires the permittee to keep the gallons of each material used, VOC content of each material in pounds per gallon, VOC emission calculations in tons on a monthly and 12-month rolling time period as determined at the end of each calendar month. *Facility is currently using the VOC content information from the SDS to calculate the VOC emission rates. The VOC content information in the coating manufacturer's formulation data is more accurate than the SDS data. The permittee is advised to use the information from the manufacturer's formulation data to calculate VOC emissions starting October 2022.*

SC VII.1-requires the permittee to notify the EGLE-AQD within 30 days after the completion of the installation of the processes authorized by this PTI. This permit was issued on December 19, 2019, but according to Mr. Bradly, parts were produced in this process starting from the spring of 2018. This deviation was resolved in response to a violation notice after the 2021 inspection.

Rule 290 exempt equipment

Operation of the Rule 290 exempt processes, Glass lines G4 and G5 were ceased by June 2021.

Final Assembly lines

In the final assembly lines, the facility applies grease, adhesion promotor (3M Adhesion Promotor 4298UV), Teroson RB 962N (Terostat 962N) sealant in the front rails and the end caps of the sunroof assembly frame to prevent water leaks in the roof module. The glasses are also cleaned using IPA. The facility calculated and submitted emission calculations from these processes. In 2021, VOC and HAP emissions from this process were 3.18 TPY and 0.67 TPY respectively. In 2022 (Jan-July) the VOC and HAP emissions were 1.73 TPY and 0.58 TPY respectively. The actual monthly uncontrolled VOC emissions are less than 1000 pounds, but the monthly emissions of ethyl benzene (CAS No. 100-41-4), a suspected carcinogen (ITSL 1000 μ g/m³; IRSL = 0.4 μ g/m³) is more than 20 pounds per month (41.46 pounds in January) in all months (Jan-July) in 2022. Therefore, this process cannot be exempt from R201-Permit to Install requirements pursuant to R290. This is a violation of the Rule 201 requirements. On Thursday, I discussed this violation with Bradley Lawrence, Webasto Contact. He is preparing a PTI application to modify PTI No. 84-05A to include the robotic application of black and clear primer and also the addition of MEK and Methanol usage during applicator purge. They also want to include the final assembly process in the PTI. I informed him that if he submits a complete application by October 15, 2022, EGLE-AQD would not send a violation notice for the R201 violation. He agreed to submit the PTI application as soon as possible. He submitted SDS for the adhesion promotor and 2021 VOC HAP calculations for PU process and the final assembly process.

Conclusion:

The application of adhesion promotor in the final assembly process is subject to R336.1201-Permit to Install requirements. The facility installed these processes without obtaining a permit to Install. This is a violation of the Rule 201 requirements. The facility has given until October 15, 2022, to submit a complete PTI application. A

notice of violation will be sent to the facility if an application has not been submitted by this date.

NAME <u>Sebastionykallemkal</u> DATE 09/12/2022 SUPERVISOR Joyce H