

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

P089352749

FACILITY: American Rack Company		SRN / ID: P0893
LOCATION: 1125 Morren Court, WAYLAND		DISTRICT: Kalamazoo
CITY: WAYLAND		COUNTY: ALLEGAN
CONTACT: Jeremy Hopkins , Plant Manager		ACTIVITY DATE: 11/21/2019
STAFF: Cody Yazzie	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On November 21, 2019 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 1125 Morren Court, Wayland, Michigan at 10:00 AM to conduct an unannounced air quality inspection of American Rack Company (hereafter ARC). Staff made initial contact with the office receptionist and provided her with a business card and stated the purpose of the visit. Jeremy Hopkins, ARC, Shop Supervisor, arrived shortly thereafter to escorted AQD Staff around the facility. Staff was informed that Mr. Hopkins may not know where some specific recordkeeping is maintained. For any information that Mr. Hopkins was unable to provide at the time of the inspection Staff was given the information for Thomas Jekel who was noted as ARC's Plant Manager at the time of the inspection.

ARC operates a batch type burn-off oven that is used for removing Plastisol coatings, with polyvinyl chloride (PVC) resin from metal parts. After the old plastisol product is removed in the burn-off oven, the racks are coated in two dip tanks. The racks first get dipped in the primer coating tank, and an air hose is used to spray excess primer coating back into the tank. The racks then air dry before being placed in the curing oven. The second time the parts are coated they are dipped into a plastisol coating dip tank. After these parts are dipped, they are placed once again in the curing oven. ARC has around 7 employees. The burn-off oven and dip coat operations operate on one shift per day from 6:00 A.M. – 2:30 P.M. Monday through Friday.

ARC moved from a Grand Rapids location to the new location in Wayland in 2018. During the move ARC obtained PTI No. 16-18 on April 30<sup>th</sup>, 2018. This stationary source was given the SRN of P0893. Since the move and issuance of PTI No. 16-18 the AQD has not inspected this location prior to November 21, 2019. Staff asked, and Mr. Hopkins stated that the facility does not have any boilers, emergency generators, or cold cleaners.

Mr. Hopkins gave staff a tour of the facility. Required personal protective equipment are safety glasses, steel toe boots, and hearing protection. Staff observations and review of records provided during and following the inspection are summarized below:

#### **FGFACILITY:**

This is the source-wide flexible group that covers all permitted, exempt, and grand-fathered equipment. This flexible group requires the facility to calculate and record monthly individual HAP and aggregate HAP emissions.

Both EU-Burnoff and EU-DIPCOAT are sources of HAP emission at this facility. The facility has identified three different HAP emissions associated with these emission units. HCl is associated with EU-BURNOFF emissions. Toluene and Glycol Ether are both identified and associated with EU-DIPCOAT. The largest individual HAP emission for ARC are HCl emissions. ARC provided individual HAP emission records that showed the 12-month rolling emissions for HCl. Since the facility started operating the largest HCl emissions recorded was 7.48 TPY of HCl during the July 2019 12-month rolling recording time period. This is roughly 84% of the 8.9 individual HAP limit. Both Toluene and Glycol Ether are minimal contributors. The largest 12-month rolling Toluene emissions were calculated to be 0.08 TPY in November 2019. The largest 12-month rolling Glycol Ether emissions were calculated to be 0.02 TPY in November 2019.

Natural gas HAP emissions were calculated on a worst-case basis for operating 8760 hours a year from both the EU-DIPCOAT and EU-BURNOFF. The total maximum heat input capacity used was 11.91 MMBTU/hour. The facility identified 28 different organic HAP compounds from natural gas combustion and 14 different metal HAP emissions from natural gas emissions. The largest HAP emission from natural gas combustion was identified to

be Hexane at 0.0966 TPY

The facility is required to record the total aggregate HAP emissions at ARC. The facility did include 12-month rolling emissions calculations. The largest total aggregate HAP's emissions were calculated to be 7.53 TPY in July 2019. This is well below the 22.4 TPY permit limit.

#### **EU-BURNOFF:**

EU-BURNOFF is a batch type natural gas-fired burn-off oven, Model GO-7212072, for use in removing Plastisol coatings with polyvinyl chloride (PVC) resin from metal parts. The oven is equipped with an 800,000 BTU/hour afterburner control system.

Special Condition VII.1 requires that the facility report within 30 days after the completion of the installation or construction notify in writing of the completion of the activity. In a letter dated July 3<sup>rd</sup>, 2018 the facility sent a letter to Mary Douglas (District Supervisor at time of submittal) that EU-BURNOFF had been installed on June 14<sup>th</sup>, 2018. This appears to meet the requirements of Special Condition VII.1.

This burnoff oven can only be fueled by natural gas. ARC also has permit conditions included in PTI No. 16-18 that require EU-BURNOFF to only process PVC/Plastisol coatings, cured paints, oil or grease on metal parts, racks or hangers. The permit also has language that specifically exclude the burnoff oven being used for the thermal destruction of rubber, uncured paints, or any other materials containing non-chlorine halogens such as Teflon. When asked during the inspection Mr. Jekel answered that the facility only processes racks for the automotive industry.

Permit No. 16-18 requires that the EU-BURNOFF not be operated unless a secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. ARC is also required by the permit to maintain this secondary chamber or afterburner to a temperature of 1400 degrees Fahrenheit and keep records of the temperature at least once every 15 seconds. The facility uses a thermocouple and a circle chart to monitor and record the temperature of the afterburner on a continuous basis. There were five random dates of circle charts that were reviewed. The dates of circle charts that were reviewed were 7-15-2019, 7-16-2019, 9-13-2019, 11-15-2019, and 11-20-2019. All these dates showed that the afterburner were maintained above 1400 degrees Fahrenheit while EU-BURNOFF was in operation. The thermocouple was reported as being last calibrated on 6-18-19. The facility is required to calibrate this device at least once per year. Since operation of the facility began in the summer of 2018 the calibration date appears to meet the requirement.

ARC has restrictions on how many pounds of plastisol coating can be processed through EU-BURNOFF. There is both a pounds per batch limit along with pounds per 12-month rolling time period limit. ARC weighs the racks that are processed through EU-BURNOFF before and after in order to record the pounds of plastisol coatings that were processed. The facility was able to provide records for each batch and the 12-month rolling time period as required by the permits. Recordkeeping that is maintained by the facility include Burn date, Rack identification, weight before, weight after, and total weight burned. The limit on the a per batch basis is 260 pounds of plastisol coating per batch. Since July 2018 it appears that the largest amount of plastisol coating that was processed per batch was 145.0 lbs. which occurred on November 27, 2019. The majority of the of the batches appear to process around roughly 50 lbs. of plastisol coatings per batch. This is well below the permit limit. Since July 2018 the largest 12-month rolling plastisol coating throughput was calculated to be 25,634.5 lbs. This is approximately 84% of the 30,500 lbs of plastisol coating allowed to be processed through EU-BURNOFF as a part of PTI No. 16-18.

ARC is required to calculate and maintain records of 12-month rolling HCl emissions. The facility is keeping monthly HCl emission records based on Plastisol coating removed and an emission factor of 0.583 lbs of HCl emitted per lbs of plastisol removed. The emission factor is based on the stoichiometric conversion of carbon, chlorine and hydrogen that occurs from PVC combustion. A similar emission factor is used in the permit application of PTI No. 16-18. ARC calculated that the most HCl emission that have occurred since operations commenced at the Wayland facility occurred in July of 2019. The facility's recordkeeping shows that the 12-month rolling emission were 7.48 TPY during that time. This is roughly 84% of the permitted limit.

#### **EU-DIPCOAT:**

This emission unit is two dip coating tanks. First the racks are dipped into the primer coating tank, and an air hose is used to spray the excess primer coating back into the tank. The parts air dry, then are placed in a natural gas-fired curing oven. The parts are then dipped into a plastisol coating dip tank, and then cured once again in the curing oven. The curing oven is equipped with a thermal oxidizer to reduce VOC emissions.

Both tanks are essentially holes in the floor that are filled with either the primer or the plastisol coating. ARC only

uses one specific primer and one specific plastisol coating, so the tanks are kept full. When the tanks are not being used the facility covers them to prevent excess VOC emissions.

Special Condition VII.1 requires that the facility report within 30 days after the completion of the installation or construction notify in writing of the completion of the activity. No letter was found in the correspondence file for the completion and installation of EU-DIPCOAT. During the inspection Staff asked if ARC could provide in writing the date of which EU-DIPCOAT complete installation. ARC responded that EU-BURNOFF and EU-DIPCOAT were installed at the same time. The date at which EU-DIPCOAT was installed was July 3, 2018.

Special Condition IV.2 requires that the facility maintain a minimum combustion zone temperature of 1425 degrees Fahrenheit. As a part of this condition the ARC is also required to install, maintain, and operate in a satisfactory manner a device that to continuously monitor the temperature of the thermal oxidizer and record the temperature at least once every 15 minutes. During the inspection the facility did have a electronic system that gave a real time value of the temperature inside the thermal oxidizer. After discussion with an ARC employee that typically operates the thermal oxidizer when racks are being loaded the only temperature monitoring that occurs is the time and temperature of when the thermal oxidizer get to 1425 degrees Fahrenheit. Staff informed that since Special Condition VI.5 requires that a record be kept every 15 minutes while the thermal oxidizer is operating that the read out must be read and recorded as such while the unit is operating. Or the facility could install a circle chart similar to what was being utilized on EU-BURNOFF.

At the time of the inspection the facility reported that from the facility first starting operation roughly July 3, 2018 until the time of inspection the facility has not had any malfunctions associated with the thermal oxidizer.

Special Condition VI.4 requires that the facility perform daily visible emission observation while EU-DIPCOAT is operating. The visible emission observation can be non-certified mean that only a "yes" or "no" indication a visible emission needs to be provided. At the time of the inspection the facility was not maintaining visible emission records. During the inspection Staff did not that there were no visible emissions coming from the EU-DIPCOAT stacks. Staff did indicate to Mr. Hopkins that the lack of visible emission recordkeeping was a violation of PTI No. 16-18.

The facility is required to required to maintain monthly VOC emission calculations. These calculations should include gallons of each material used, VOC content of each material as applied, VOC mass emission calculations determining the monthly emission rate in tons per calendar month, and VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period. The facility calculates VOC emissions based on monthly coating usage, coating density based on method 24 testing, and VOC content, based on method 24 testing. ARC initially submitted records that that only included showed VOC emission being calculated from primer usage. When staff asked about the VOC emissions being accounted for from plastisol coatings. The facility did supply VOC emissions with plastisol usage. Since the plastisol coating is water-based the VOC content by weight is very low. VOC emissions from the plastisol coating added roughly 100 lbs per month of VOC emissions. The largest 12-month rolling VOC emissions from EU-DIPCOAT occurred in November 2019. The facility had roughly 1.6 TPY of VOC emissions from both plastisol coating and primer. This is roughly 47% of the permitted limit in PTI-16-18.

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in non-compliance with PTI No. 16-18. Staff stated to Mr. Hopkins that a violation notice would be sent to the facility for the not having visible emission reading records on EU-DIPCOAT daily while the emission unit is operating and the facility not recording at least once every 15 minutes the temperature of the thermal oxidizer associated with EU-DIPCOAT. Staff concluded the inspection at 11:30 AM.-CJY

NAME Cody Younger DATE 3/9/20 SUPERVISOR RIL 3/10/20