

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

B771158215

FACILITY: SHERWIN-WILLIAMS COMPANY		SRN / ID: B7711
LOCATION: 636 East 40th Street, HOLLAND		DISTRICT: Kalamazoo
CITY: HOLLAND		COUNTY: ALLEGAN
CONTACT: Ron Zibbell , EHS Manager		ACTIVITY DATE: 04/13/2021
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On April 13, 2021 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 636 East 40<sup>th</sup> Street, Holland Michigan at 2:30 PM to conduct an announced air quality inspection of Sherwin Williams Company (hereafter SWC). Staff used the telephone in the lobby entrance to make contact with Ron Zibbell, SWC, EHS Manager. The previous AQD contact Steve Eckart had moved to a regional role within the company. Mr. Zibbell is the new air quality contact and arrived shortly thereafter and took staff to a conference room for further discussions.

SWC manufactures a variety of aerosol and liquid products for the consumer products industry. SWC has four aerosol can filling lines and one liquid product filling line. There is an outdoor tank farm consisting of 28 steel tanks ranging in size from 5,400 to 25,000 gallons capacity. There are various indoor mixing tanks used to formulate and supply the liquid portion to the filling lines. Propellants are stored outside in several pressurized tanks.

On the four aerosol lines, the product filled cans are directed to ventilated gas houses to be filled with propellant. Although some volatile organic compounds occur during storage, mixing, and liquid filling of materials, the majority of the emissions occur from gas house stacks during propellant filling.

SWC was last inspected by the AQD on July 24, 2019 and appeared to be in non-compliance at that time with MI-ROP-B7711-2016. Staff asked, and Mr. Zibbell stated that the facility does not have any emergency generators.

Mr. Zibbell along with Warren Shunk (Plant Manager) and Clark Folkert (Production Manager) gave staff a tour of the facility. Required personal protective equipment are long sleeve shirts, safety glasses, hearing protection, high visibility vest, and steel toe boots. Staff observations and review of records provided during and following the inspection are summarized below:

**SOURCE-WIDE:**

This flexible group includes all source wide equipment including grandfathered and exempt equipment. As a part of this flexible group the facility is required to comply with emissions limits for Individual HAPs and Aggregate HAPs.

SWC is currently calculating both monthly Individual and Aggregate HAP emissions. The facility has identified 12 individual HAPs that are emitted in their production process. 10 of the 12 HAPs emit less than 100 lbs per month. The two largest individual HAP emissions are Hexane and Toluene. Staff requested and was provided with emission data for January 2019 through December 2020. Hexane's largest 12-month rolling emissions occurred during February 2019 which amounted to 1.1 TPY. Toluene's largest 12-month rolling emissions occurred during February 2019 which amounted to 1.1 TPY. These are well below the permitted 9 TPY for individual HAPs.

The facility is calculating Aggregate HAP emissions from the process. Since January 2019 the largest facility-wide aggregate HAP emissions occurred in August and September 2019 emitting 5.0 TPY on a 12-month rolling time period. This is well below the permitted 22 TPY of Aggregate HAPs.

#### EU-TANKS-STORAGE:

The facility has 28 carbon steel outside solvent storage tanks. These tanks are where SWC stores the most widely used solvents. Each tank is individually numbered from 28-55. The numbers are easily visible on each tank when looking from the north side of the tank farm. Each tank is dedicated to a specific solvent.

Staff did not observe any of the tanks in the tank farm being loaded during the inspection. Staff did inquire information on the procedure for when the tanks do get filled with solvent from Mr. Zibbell. Staff was told that the tanks are loaded one solvent or compound at a time. The facility never simultaneously fills two tanks at the same time. This appears to be compliant with Special Condition III.2. Staff also asked how the facility ensures that the loading rate of the compounds into any tank do not exceed 110 gallons per minute. Staff was provided with documentation showing that start and stop times are recorded along with the amount of gallons that are filled in the tank. In the documentation no tank was loaded faster than 70 gallons per minute which is lower than the required 110 gallons per minute required by Special Condition III.3

Special Condition III.1 requires tanks 30 and 31 to not be filled with a material with a vapor pressure greater than or equal to 15 kilopascals (112.5 mm of mercury). Tank 30 stores with Toluene which is the same as the previous inspection. The SDS that was provided for Toluene documents the vapor pressure being less than 24 mm of mercury at 68 -77 degrees Fahrenheit. Tank 31 stores Versene 100 which was the same as the previous inspection. The SDS that was provided for Versene 100 documents the vapor pressure being the same as water. A SDS sheet from LabChem was used as reference for the vapor pressure of water. The LabChem SDS sheet documented that the vapor pressure of water at 50 degrees Celsius is 92.51 mm of mercury. Both the Toluene and Versene 100 appear to comply with the requirements of Special Condition III.1.

Each tank has a material limit that restricts the amount of solvent that gets loaded into the individual tanks per year. This limit is based on the capacity of the individual tank. The facility uses a spreadsheet that indicates the capacity of each tank. Capacity range from 5,400 gallons to

25,000 gallons. This spreadsheet also indicates the allowed gallons for 275 "Turns". The facility appears to be calculating the individual material limit specified in Special Condition II.2 correctly. Since January 2019 the two most frequently filled tanks are Tanks 54 and 55. These tanks reached about 15.85% of their permitted limit.

Special Condition II.1 is an aggregate material limit specifying the total amount of solvent that can be loaded into the tank farm per year. Records showed that the facility was about 37.5% of this limit.

SWC is required to maintain monthly VOC emission rates. These monthly emission rates are to be used to calculate both a 12-month rolling TPY and pounds per hour VOC emission rates. Records were reviewed from January 2019 through December 2020. The largest pound per hour since January 2019 occurred in September 2020 and was recorded as 0.47 pounds per hour of VOC. The pound per hour emissions are calculated by calculating the monthly emission of the tank and dividing by the number of hours in the month. The largest 12-month rolling VOC emissions occurred in September 2019 recording 1.01 TPY of VOC emissions. Both these recorded and calculated VOC emissions were well below the permitted limits in Special Conditions I.1-2.

The facility has reported that methyl isobutyl ketone is no longer being stored in the storage tanks in the previous inspection. Staff did ask Mr. Zibbell if the facility still was not storing methyl isobutyl ketone in the tank farm to which he confirmed that SWC still does not store it in the tank farm. Storage of the methyl isobutyl ketone stopped in August 2018.

#### Aerosol Can Filling Lines:

SWC has four aerosol can filling lines in the plant that all have similar configurations. Each line has stations that insert the agitator, paint filling, crimping and sealing of the valve assembly, propellant gas injection, cleaning (if needed), water bath pressure testing, and labeling. The labeling process does have hot glue application. The hot glue adhesive on the lines appears to be exempt by Rule 287(2)(i). All four lines are given emission unit ID's in the emission unit summary table. Their emission unit ID's are EU-LINE-01-AERO, EU-LINE-06-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO. EU-LINE-06-AERO is the only line that does not have a specific emission unit table in the ROP.

Special Condition I.1 in EU-LINE-01-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO is a VOC emission limit that is required to go through testing to show compliance. The testing was required to be completed by September 30, 2019 for this ROP. The facility did request extensions mentioned in the previous inspection report. From the previous inspection report the extensions were accepted by the AQD and testing was conducted on October 1<sup>st</sup>-3<sup>rd</sup>, 2019. The VOC emissions rates for EU-LINE-01-AERO, EU-LINE-09-AERO, and EU-LINE-10-AERO were determined to be 0.00060, 0.00057 and 0.00027 lbs per can respectively. These meet the Special Condition I.1 limits for each emissions unit which are 0.0010, 0.001103, and 0.0010 lbs per can respectively.

#### EU-LINE-01-AERO:

Aerosol can production line #1 is one of the four aerosol cans filling lines located at the plant. This line fills cans up to 24 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a "through the valve" pressure filler in the 1/6 gashouse. The emission unit has its

own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

Special Condition VI.2 requires SWC to maintain records of VOC emissions on a monthly basis and number of cans filled. These records are then used to show compliance with the facility's emission and material limits.

EU-LINE-01-AERO has a material limit of 30,000,000 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2019 the facility has not exceeded an annual can count of 24,625,825. This maximum can count in the reviewed time period occurred in the month of January 2019. The facility appears to be in compliance with this material limit as the maximum can count in the reviewed time period was below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-01-AERO's permitted emission factor of 0.0010 lbs./can and monthly cans produced. The test conducted in 2019 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Using the emission limit will result in an over estimation of VOC emissions due to the testing value being lower than the permitted limit. The facility could use the 2019 Stack testing data for VOC emissions per can to calculate VOC emissions from EU-LINE-01-AERO. Records for the 12-month rolling VOC emissions were reviewed since January 2019. The maximum 12-month rolling VOC emissions that occurred during this time was 12.31 TPY. This maximum occurred during the month of January 2019. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 15.0 TPY permitted limit.

#### EU-LINE-06-AERO:

Aerosol can production line #6 is one of the four aerosol cans filling lines located at the plant. This line fills cans up to 24 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a "through the valve" pressure filler in the 1/6 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC. This aerosol can production line does not have its own emission unit table but is included in FG-MIX-FILL-CHRG.

#### EU-LINE-09-AERO:

Aerosol can production line #9 is one of the four aerosol cans filling lines located at the plant. This line fills cans up to 16 oz. capacity with liquid paint or other chemical product. The gas propellant is added using a "through the valve" pressure filler in the 9/10 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

EU-LINE-09-AERO has a material limit of 33,544,878 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2019 the facility has not exceeded an annual can count of 24,718,330. This maximum can count in the reviewed time period occurred in the month of March 2019. The facility appears to be in

compliance with this material limit as the maximum can count in the reviewed time period was below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-09-AERO's tested emission factor of 0.001103 lbs per can and monthly cans produced. The test conducted in 2019 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Using the emission limit will result in an over estimation of VOC emissions due to the testing value being lower than the permitted limit. The facility could use the 2019 Stack testing data for VOC emissions per can to calculate VOC emissions from EU-LINE-09-AERO. Records for the 12-month rolling VOC emissions were reviewed since January 2019. The maximum 12-month rolling VOC emissions that occurred during this time was 13.63 TPY. This maximum occurred during the month of March 2019. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 18.5 TPY permitted limit.

#### EU-LINE-10-AERO:

Aerosol can production line #10 is one of the four aerosol cans filling lines located at the plant. The gas propellant is added using a "through the valve" pressure filler in the 9/10 gashouse. The emission unit has its own emission unit table as well as being subject to FG-MIX-FILL-CHRG, FG-40CFRPART59, and FG-40CFRSUBPARTCCCCCCC.

EU-LINE-10-AERO has a material limit of 60,000,000 cans that can be processed per year based on a 12-month rolling time period. The facility is maintaining a monthly can count of the aerosol line. The facility is calculating the 12-month rolling processed can count correctly. Since January 2019 the facility has not exceeded an annual can count of 25,317,214. This maximum can count in the reviewed time period occurred in the month of April 2019. The facility appears to be in compliance with this material limit as the maximum can count in the reviewed time period was well below the permitted limit.

SWC is calculating the monthly VOC records by using EU-LINE-10-AERO's tested emission factor of 0.0010 lb/can and monthly cans produced. The test conducted in 2019 showed that facility was able to meet this emission factor and would appear to be appropriate for the calculation. Using the emission limit will result in an over estimation of VOC emissions due to the testing value being lower than the permitted limit. The facility could use the 2019 Stack testing data for VOC emissions per can to calculate VOC emissions from EU-LINE-10-AERO. Records for the 12-month rolling VOC emissions were reviewed since January 2019. The maximum 12-month rolling VOC emissions that occurred during this time were 12.65 TPY. This maximum occurred during the month of April 2019. The facility appears to be in compliance with the 12-month rolling emission limit as the maximum calculated emissions were below the 35.9 TPY permitted limit.

#### FG-MIX-FILL-CHRG:

This flexible group includes Mezzanine mixing tanks; tank room mixing tanks; aerosol filling lines 1, 6, 9, and 10; and bulk liquid filling line number 4. These are designated as "filling processes". As part of this flexible group the facility is required to calculate the VOC, Methanol, and Dimethyl Ether emissions from the filling processes and the aerosol filling line change outs.

Special Conditions I.1-2 are VOC emission limits regarding the flexible group's filling processes. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The

facility does keep track of production hours. Since January 2019 largest pounds per hour VOC emissions from the filling processes occurred in March 2019. The pound per hour VOC emissions from these processes were calculated to be 25.9 pph. The largest 12-month rolling VOC emissions from these processes during the reviewed time frame was 79.2 TPY, which occurred in February 2019. Both these calculated emissions are below the permitted limits.

Special Conditions I.3-4 are VOC emission limits regarding the flexible group's aerosol filling line change outs. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The facility does keep track of production hours. Since January 2019 largest pounds per hour VOC emissions from the aerosol filling line change outs occurred in April 2019. The pound per hour VOC emissions from these processes were calculated to be 8.07 pph. The largest 12-month rolling VOC emissions from the line change out processes during the reviewed time frame was 3.44 TPY, which occurred in February 2020. Both these calculated emissions are below the permitted limits.

Special Conditions I.5-6 are methanol emission limits regarding the flexible group's filling processes. The facility is required to keep and maintain a pounds per hour and 12-month rolling record. The facility does keep track of production hours. Since January 2019 largest pounds per hour methanol emissions from the filling processes occurred in February 2019. The pound per hour methanol emissions from these processes were calculated to be 0.083 pph. The largest 12-month rolling methanol emissions from these processes during the reviewed time frame was 1.2 TPY, which occurred in January 2019. Both these calculated emissions are well below the permitted limits.

Special Conditions I.7-8 are dimethyl ether emission limits regarding the flexible group's filling processes. The records maintained since January 2019 show that the facility is hardly using any dimethyl ether. In most months' usage is so low that emissions round to 0.00 tons per month. The largest monthly calculated dimethyl ether emissions during the reviewed time period occurred in November 2019. The dimethyl ether emissions in November 2019 were calculated to be 96 lbs per month. Emissions are well below the permitted limits.

Special Condition II.1 is a material limit that limits FG-MIX-FILL-CHRG to not processing more than 40.17 million gallons of materials per year in the filling process based a 12-month rolling time period. In the reviewed time period the largest amount materials that were processed in the filling process was 11,916,145 gallons per year. This occurred in February 2019 and is well below the permitted limit.

#### FG-RULE-290:

On each aerosol line the lines are equipped with an InkJet can coder and a Marsh carton printing unit. These units are used to print a code on the cans going through the aerosol line that includes information such as the VOC content of the manufactured cans. The facility uses two different inks and the same make up solution for both inks. In the previous inspection the TH-18u and JP-K72u Make up solution appeared to be categorized correctly based chemicals in the solutions and the screening levels found in the AQD database. During Staffs review the screening levels for volatilizing chemicals were well above the 2.0 ug/m<sup>3</sup> as an ITSL. This allows for less than 1,000 lbs per month of the make up solutions TH-18u and JP-K72u combined. Since January 2020 the most volatile emissions were calculated to be 101.28 lbs in the month of May 2020.

The PIN 36 Series Black Ink is used for the MARSH carton coding units. Staff's review of this SDS showed that the Ink does contain Diethylene Glycol Monobutyl Ether which does have an AQD screening level of 1 ug/m<sup>3</sup> as an ITSL. This screening level only allows for 20 lbs per month of emissions. SWC's records showed that during the reviewed period of January 2020 – December 2020 the facility had a few months where 19.21 lbs of PIN-36081 ink were used. The emissions do not exceed 20 lbs per month which would require the facility to break the ink down into the actual emissions of the volatile components if the facility wished to show compliance with Rule 290. The facility appears to have the capability exceeding the 20 lbs per month limit if the emission units are not watched closely.

Based on the records review the facility appears to be complying with exemption Rule 290 recordkeeping requirements.

#### FG-40CFRPART59:

This flexible group is for emission units that are subject to 40 CFR Part 59 Subpart C– National Volatile Organic Compound Emission Standards for Consumer Products. This regulation requires that each container display the day, month, and year for which the product was manufactured. The facility is also required to label products with the VOC content in the product.

Special Condition VI.1 of the ROP does require that the facility maintain record of the product formulation which includes the weight percent and chemical composition of each individual product constituent. Staff was shown a sample of the tickets that are kept on record for each batch that is produced at the facility. It was indicated to Staff that these product ticket recipes are maintained on file for a period of 6 years. Staff only looked at the sample ticket and did not collect a copy for the inspection records due to it containing the formulation data of the products which can be considered confidential.

Special Condition III.1 requires that the facility not manufacture any consumer product without ensuring that the VOC content levels do not exceed either the values listed in Table 1 or the High-Volatility Organic Compound (HVOC) content levels listed in Table 2 of Appendix 9 in the ROP. Staff requested a list of the consumer products produced at the facility, their product classification, and their VOC content in the product. The provided list showed that none of the consumer products exceeded the VOC limits identified in Table 1 in appendix 9 of the ROP. The facility did have one product CLQC00700-040 that was the same as the limit set for Oven/Girl Cleaner Aerosols but did not exceed the limit. There were several other products that came very close to the VOC limit identified in Table 1 but did not exceed. It appears that the facility is in compliance with Special Condition III.1 based on the data provided.

#### FG-40CFRSUBPARTCCCCCCC:

This flexible group includes all the emission units that are subject to the federal regulation 40 CFR Part 63 Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing. The emission units that are included in this flexible group are EU-LINE-01-AERO, EU-LINE-06-AERO, EU-LINE-09-AERO, EU-LINE-10-AERO, EU-MIXING, and EU-LINE-04-LIQ.

40 CFR 63.11601(a) requires affected sources to comply with the requirements in paragraphs (a) (1) through (5) of the section at all times. These requirements pertain to the addition of dry

pigments and solids that contain compounds of cadmium, chromium, lead, or nickel. These requirements state that particulate emissions of these compounds must be captured and routed to a control device.

The facility does not have any grinding or milling processes at the facility. SWC also does not have any dry pigments or solids addition that contain compounds of cadmium, chromium, lead, or nickel. The only dry solids addition that the facility will do as part of the mixing process is of Sodium Nitrite.

40 CFR 63.11601(b) requires affected sources to comply with the requirements in paragraphs (b) (1) through (5). These requirements pertain to process, storage, and mixing vessels that contain benzene or methylene chloride. Mr. Zibbell stated that the facility does not use any materials that contain benzene or methylene chloride.

#### Boilers and Furnaces:

There are two gas-fired boilers located in a room toward the rear of the building. Each has a nameplate rating of 4.18 MMBTU/hour. These units appear to be exempt from the ROP but are listed in the Staff Report

There are 7 gas-fired furnaces listed in MAERS that are located on the roof. These units are exempt from the ROP but are listed in the Staff Report. These units range from 0.032 MMBTU/hour to 6.5 MMBTU/hour.

#### Rule 285(2)(r)(iv):

The facility does have a parts washer style unit that is located up on the Mezzanine. During the previous inspection it was noted Acetone and Hexane gets used in this unit. When asked if the operation of this unit is still the same it was indicated to Staff that it was still operated the same as the previous inspection. The facility elected to classify the emission unit exempt under Rule 285(2)(r)(iv) which is for equipment that is used for metal cleaning that is only released to into the general in-plant environment. During the inspection it was noted that the unit was located roughly 20-30 feet from a large open loading door that was open for a breeze to come in the facility. Staff emphasized that if the exemption was to be used that the facility needs to ensure that the emissions stay in the general in-plant environment when operating the emission unit. Staff mentioned that if the facility can't ensure that the emissions meet the requirement of staying in the general in-plant environment that the unit may have to be permitted if the facility plans to operate it with Hexane and Acetone as indicated. Staff indicated it was up to the facility on how they wanted proceed with the operation of the unit. The facility indicated that they would post a sign and train the workers immediately on keeping the loading door closed while the washing unit is in operation. Staff was sent a picture of the posted sign within the day of the inspection. Staff should pay attention to this in future inspections. .

#### Acetone Can Cleaning Stations:

The facility has acetone can cleaning stations on each aerosol line. Acetone has an ITSL of 5900 micrograms per cubic meter. This allows for the facility to emit 1,000 pounds per month. This would roughly be 150 gallons of acetone. The records of the facility show that the largest amount

of acetone usage occurred in January 2020 on line 1 in which 77.5 gallons were used. The facility appears to be in compliance with Rule 290 for this emission unit.

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 compliance with MI-ROP-B7711-2016. Staff stated to Mr. Zibbell that a copy of the inspection report would be sent to the facility for their records. Staff concluded the inspection at 4:00 PM.-CJY

NAME Cody Yaggi

DATE 5/26/21

SUPERVISOR RIL 5/27/21