

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

A404356395

FACILITY: Dow Silicones Corporation		SRN / ID: A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		DISTRICT: Bay City
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Jennifer Kraut , Air Specialist		ACTIVITY DATE: 12/16/2020
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU212-01, EU212-03 and EU212-05		
RESOLVED COMPLAINTS:		

Off-Site Inspection performed via WebEx

DOW Silicones/EGLE-AQD staff present during the inspection:

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Jennifer Kraut (MIOps Air Specialist, DOW Silicones)
- Steve Warner (Production Engineer-212 Building DOW Silicones)
- Amanda Karapas (MIOps Air Specialist, DOW Silicones)
- Anthony Robbins (Student Assistant Building 212)

Records reviewed as part of the inspection were:

- ROP Annual report for January 1, 2019 through December 31, 2020
- ROP Semi-Annual report for January 1, 2020 through June 30, 2020

Mid-March 2020 the State of Michigan was placed under quarantine. Executive orders from the Department of Human Health and Services (MDHHS) required State of Michigan residents to adhere to social distancing guidelines in response to the Covid-19 pandemic crisis. In lieu of an in-person inspection, EGLE-AQD staff performed an off-site inspection which included a records review of the select emission units and viewing real-time process control data.

On December 16, 2020, EGLE-AQD staff sent a records request to DOW Silicones Corporation (DSC). Attached is the request sent on December 16, 2020 and the response from DSC staff received on December 18, 2020.

EU212-01

- Controlled by chilled condenser 6060

This is a batch reaction process consisting of the 6054 batch kettle (agitated, jacketed kettle), a heater, a receiver, and a service water cooled heat exchanger located in 212 building. This unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF.

The most recent PTI for this emission unit is PTI No. 63-14A.

Special condition (SC) I.1. restricts VOC emissions to 0.88 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.3 requires the monthly and 12-month rolling time period records of the VOC emission rate from EU212-01 to be maintained. I reviewed the VOC emission rates for the 12-month rolling time period ending October 2020, emissions were 0.23 tpy.

SC III.1 restricts operation of EU212-01 unless the chilled condenser 6060 coolant temperature is 10 degrees Celsius or less. During the inspection, I observed the temperature at 3.9 degrees Celsius at 9.28. An audio and visual alarm is set to activate if the temperature reaches 9.00 degrees Celsius.

Calibration of the chilled condenser 6060 occurs on an annual basis. The last calibrations were on March 20, 2019 and March 5, 2020. SC IV.1 requires the chilled condenser 6060 to be installed, maintained, and operated in a satisfactory manner, except as allowed by SC IV.2.

SC IV.2. allows venting of EU212-01 through SV212-018, while bypassing chilled condenser 6060, for drum off of final products. Drum off can be determined when the level of the tank is viewed as lowering and SV212-017 is closed, which is indicated by turning red on the operators' screens.

SC VI.1. requires the plant to monitor and record, the chilled condenser 6060 coolant temperature on a continuous basis, at least once every 15 minutes, while EU212-01 is venting to it. I reviewed glycol temperature of chilled condenser 6060 from September 25, 2019 through December 16, 2020 at 9:35 A.M. The temperature was below the required 10 degrees Celsius during this time frame.

Compliance Reporting

No deviations were reported during the reporting periods, January 1, 2019 through December 31, 2019 or January 1, 2020 through June 30, 2020. No deviations were reported pursuant to the requirements of 40 CFR Part 63, Subpart FFFF.

EU212-03

- No pollution control equipment.

This is a cold blend mixing process in 6019 Kettle with product drum-off at DV212DO. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF.

SC I.1 restricts VOC emission to 4.0 tpy based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.2. requires the VOC emission rate to be calculated monthly, for the preceding 12-month rolling time period. I reviewed VOC emissions for the 12-month time period ending October 2020. VOC emissions were 0.97 tpy.

SC III.1 restricts the period of time that the manway for 6019 Kettle is open during production operations to a maximum of 1.0 hour per day on an annual average. The lid of the Kettle has a sensor that is activated whenever the connection is broken between the lid and the Kettle. Every minute it is open is equal to 0.01667 of an hour. The timer starts as soon as the lid is

opened and an alarm sounds at 30 minutes. The alarm can acknowledge the alarm and it will sound every 15 minutes until lid closes. I viewed hours open log from December 1, 2019 through November 30, 2020. The lid of the Kettle was open for a maximum of 0.55 hours in a single day, which was February 11th, 2019. A secure process alarm (SPA) is in place, which is a timed manway alarm that operators cannot override.

The annual average shall be based on a rolling 12-month time period as determined at the end of each calendar month. SC VI.4 requires this log to be recorded. During the annual average, based on the rolling 12-month time period December 1, 2019 through November 30, 2020 the average hours open were 0.12 hours.

SC III.2 restricts the period of time that the manway of 6019 Kettle is open during production operations to a maximum of 3.0 hours during any calendar day. SC VI.3 requires this log to be recorded. I reviewed hours the manway was open from December 1, 2019 through November 30, 2020.

Compliance Reporting

No deviations were reported during the reporting periods, January 1, 2019 through December 31, 2019 or January 1, 2020 through June 30, 2020. No deviations were reported pursuant to the requirements of 40 CFR Part 63, Subpart FFFF.

During the 2018 inspection a deviation from 2017 was discussed. The "manway open/closed" sensor was not operating properly. Process alarms indicated the manway was open, but operators confirmed after each alarm incident that it was actually shut. The "manway open/closed" sensor was loose. This is a potential cause for the malfunction. In addition, excessive gum buildup on the manway lid may have been a contributing cause.

Corrective action was to properly secure the sensor. Gum buildup was removed, and procedures were revised to provide for more frequent inspection and removal of buildup. The run sheet was updated to include a procedure for adding c-clamps to each side of the kettle to secure the manway lid. Operators were trained on the use of c-clamps. During this off-site inspection it appeared the corrective action had been implemented and has mitigated future deviations.

No deviations were reported pursuant to the requirements of 40 CFR Part 63, Subpart FFFF.

EU212-05

- No pollution control equipment.

- This is a cold blend mixing process in 6009 Gum Kettle with product drum-off. The most recent PTI for this emission unit is PTI No. 108-18. This emission unit is subject to the requirements of 40 CFR Part 3, Subpart FFFF.

SC I.1 restricts VOC emissions to 7.15 tpy, based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.2 requires the VOC emission rate from

EU212-05 to be calculated, for the preceding 12-month rolling time period. I reviewed the 12-month rolling time period ending October 2020 and VOC emissions were 0.31 tpy.

SC I.2 restricts ethylbenzene emission to 0.5 tpy based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.3 requires the ethylbenzene emission rate from EU212-05 to be calculated, for the preceding 12-month rolling time period. I reviewed the 12-month rolling time period ending October 2020 and ethylbenzene emissions were 0.002 tpy.

Compliance Reporting

No deviations were reported during the reporting periods, January 1, 2019 through December 31, 2019 or January 1, 2020 through June 30, 2020. No deviations were reported pursuant to Article 63, Subpart FFFF.

NAME



DATE 12/18/2020

SUPERVISOR

