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

A404361135

FACILITY: Dow Silicones Corporation		**SRN / ID:** A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		**DISTRICT:** Bay City
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Amanda Karapas , Air Specialist		**ACTIVITY DATE:** 11/30/2021
STAFF: Gina McCann	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: Inspection of EU207-13, EU207-14, EU207-15, EU207-16, EU207-16, EU207-17, EU207-18 and EU207-19.		
RESOLVED COMPLAINTS:		

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

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Amanda Karapas (Air Specialist, DOW Silicones)
- Sarah Wakumoto (207 building, Production Engineer)

EU207-01 was split into separate emission unit during the consent decree work required by USEPA. Emission units EU207-13 through EU207-19 were carved from EU207-01 and share the same control devices, condenser 19251 and dust collector 12912. Process/operational restrictions, design/equipment parameters, testing/sampling, monitoring/recordkeeping, stack/vent restrictions and other requirements are identical for each of these units with the exception of EU207-17. EU207-17 also has an additional vent path in which emissions are vented through an IPA scrubber 19298 and condenser 19296 when manufacturing methoxy-treated products. Similarly, each emission unit EU207-13 through EU207-19 has PM, PM10, and PM2.5 emission limits of 0.68 lb/hr that are verified through testing as requested and controlled by proper operation of dust collector 12912.

One difference between each of the units is VOC emission limits in ton per year (tpy). VOC limits are defined as shown below in the table compared to the 12-month rolling time period ending October 2021. The plant was required to maintain emission calculations for EU207-01 until the individual permits were issued and minor modification requests received July 21, 2021. According to the plant VOC emissions for EU207-01 for the time period October 2020 through July 2020 was 8.90 tpy. An inspection for EU207-01 was completed March 26, 2021 and the emission unit was in compliance with the permit conditions at that time.

Emission Unit	**12-Month Rolling Limit (tpy)**	**12-Month Rolling Ending October 2021 (tpy)**
EU207-13	**1.7**	**0.03**
EU207-14	**8.34**	**0.25**

EU207-15	8.3	0.03
EU207-16	4.8	0.06
EU207-17	9.5	0.12
EU207-18	4.79	0.13
EU207-19	4.81	0.26

Each of the permits restricts operation of the emission unit unless the exit gas temperature of the glycol condenser (19251) is 40°F or less and the pressure drop across the dust collector (12912) is 0.5 inches water or more but not nor more than 10 inches of water. Each permit has an associated monitoring and recordkeeping requirement that requires the plant to monitor and record, on a continuous basis, the exit gas temperature of the glycol condenser (19251). Conditions in each permit require the plant to monitor and record, on a per shift basis, the pressure drop across the dust collector (12912) with instrumentation acceptable to the AQD. The plant monitors and records on a 15-minute average the pressure drop across the dust collector (12912).

I reviewed records for the time period January 1, 2020 through November 30, 2021. For the time period September 26th through the 30th, condenser 19251 appeared to operate out of range when viewing the Pi graph. This time period coincides with a plant wide shutdown. While onsite I viewed historic operations and was able to verify that mixers were not operating. The production engineer had identified an episode as "investigate potential deviation". Upon further investigations it turned out the mixer was not venting, but likely testing equipment as part of the maintenance being performed. During the records review the baghouse was not in operation during the time period August 3, 2020 through August 7, 2020. We viewed process data and verified vacuum pumps to the process were not in operation.

In addition to the restrictions on condenser 19251 and dust collector 12912, EU207-17 has restrictions for the IPA scrubber 19298 and the glycol condenser 19296 that apply when manufacturing methoxy-treated products. When manufacturing methoxy-treated products, the exit gas temperature from the glycol condenser (19296) must remain below 15°C and the plant must maintain a minimum liquid flow rate of 20 pounds per minute in the packed column scrubber 19298.

I reviewed records for the time period January 1, 2020 through November 30, 2021. For the time period September 26th through the 30th, condenser 19296 appeared to operate out of range. Likewise with condenser 19251, there was a plant wide shutdown and we were able to verify that the process was not operating as the vent compressor was turned off.

Scrubber 19298 appeared to operate outside of acceptable parameters during the time period March 3, 2021 through March 23, 2021, however the vent compressor was not on and the block valve was off, and they were not running treated product. Therefore, this was not a deviation. In

addition, the plant is required to keep records for when methoxy-treated products are being manufactured on a monthly basis. These records shall include dates, times, and duration of batches processed; and other records necessary to demonstrate compliance with the emission limits. I reviewed records for the same time period and the plant did not record manufacturing of these products during this time period.

During the inspection we viewed each of the control devices and the observed values compared with their process operational restrictions are in the table below.

	Process/Operational Restriction	Alarm set point	Observed Value
Condenser 19251	Exit gas temperature ≤ 40 F	38.00 F	25.5 F
Baghouse 12912	0.5 -10 "W.C.	18.00 "W.C.	3.9 "W.C North 3.7 "W.C. South
IPA scrubber 19298	Flow Rate ≥ 20 lb/min	20 lb/min	58.8 lb/min
Glycol Condenser 19296	Exit gas temperature ≤15 C	15.00 C	15.4 C

As part of the records request, I asked for the last two calibrations on each of the transmitters for each control device. The following is the frequency of calibration.

	Device Calibrated	Date Calibrated	Date Calibrated
Condenser 19251	Temperature Transmitter (TT)	3/20/2020	1/29/2021
Baghouse 12912	Pressure Transmitter	5/19/2020	5/13/2021
Glycol Condenser 19296	TT	11/30/2020	11/18/2021

At the time of the inspection, emission units EU207-13 through EU207-19, were in compliance.

NAME  DATE 12/14/2021 SUPERVISOR