

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

A404357556

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: 03/26/2021
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU207-01 and EU207-02		
RESOLVED COMPLAINTS:		

Inspection Date: 3/26/2021

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

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Nathanael Gentle (EGLE-AQD, Environmental Quality Analyst)
- Amanda Karapas (Air Specialist, DOW Silicones)
- Logan Miller (Production Engineer for 207 Building, DOW Silicones)

Records reviewed as part of the inspection were:

- ROP Annual report for 2020
- 2020, 40 CFR Part 64 CAM excursion/exceedance reports
- 40 CFR Part 63 Subpart FFFF (MON MACT) semiannual compliance report

Mid-March 2020 the State of Michigan was placed under restrictions to limit the spread of Covid-19. Department of Human Health and Services orders required State of Michigan residents to adhere to social distancing guidelines in response to the Covid-19 pandemic crisis. At the request of DOW Silicones, an off-site inspection was performed in lieu of an in-person inspection. EGLE-AQD staff performed a records review of EU207-01 and EU207-02 as part of the FCE.

On March 26, 2021, EGLE-AQD and DSC staff met via a MS Team call and a follow-up records request was sent later that day. At the time of the inspection the facility was in compliance with the units' active permits, applicable state and federal applicable regulations.

EU 207-01: Compliant

EU 207-01 is a silicone rubber manufacturing process. The most recent PTI issued for this process is 134-08. EU 207-01 is controlled by a condenser (19251) and baghouse (12912), which are both subject to CAM requirements of 40 CFR Part 64 for VOCs and particulate, respectively. This emission unit is also subject to the requirements of 40 CFR Part 63, Subpart FFFF, MON MACT.

DSC is currently undertaking a large re-permitting effort due to EPA Consent Decree 19-11880 agreements issued January 24, 2020. As part of the re-permitting process EU207-01 is being carved into smaller emission units and each mixer (3-9) will be a separate PTI.

During the inspection we viewed both the condenser and baghouse operating parameters. There is a north and south baghouse that run in parallel. The process

was operating at the time of the inspection.

The table below shows the observations at the time of the inspection.

Condenser (19251)			Baghouse (12912)		
Exit gas temperature (Fahrenheit)	Alarm set point (Fahrenheit)	Operational Restriction (Fahrenheit)	dP ("W.C.) North and South	Alarm set point ("W.C.)	Operational Restriction ("W.C.)
25.7 F	38.00 F*	40 F	3.7 "W.C.	18.00 "W.C.	0.5 -10

*Cannot be changed by 207 operators or process engineer. Requires engineering access only.

Special condition (SC) III.1. requires the glycol condenser to operate below 40F and exceeding this parameter is an excursion. SC VI.1. is the associated monitoring and recordkeeping requirement that requires the facility to monitor and record on a continuous basis, the exit gas temperature of the glycol condenser (19251).

Continuous basis is defined as at least once every 15 minutes. I viewed records from January 1, 2020 though the time of the inspection on March 26, 2021. Two periods of time stood out when viewing the data. Upon looking further into the data, I was able to verify the process was not in operation by looking at the operating status of the vacuum pumps for the process. During the remaining time period, values were below 40 degrees Fahrenheit and were continuously recorded.

SC III.2. and III.3 require the pressure drop across baghouse (12912) to be within the range of 0.5 inches of water ("W.C.) to 10 "W.C. SC VI.2. is the associated monitoring and recordkeeping requirement that requires the facility to monitor and record, on a per shift basis, the dP across the baghouse (12912). I viewed records from January 1, 2020 though the time of the inspection on March 26, 202. August 3, 2020-August 7, 2020 stood out in the data as the pressure drop outside of this range. Upon further investigation into the data, I was able to verify the process was not in operation by looking at the kilowatt (KW) output on the associated mixers 3-9. DSC said a filter change had taken place during this timeframe. The remaining timeframe had differential pressure values in compliance with the process and operational restrictions in the permit.

I did not ask for monthly production records of non-PL bases, PL bases and LSR's combined during the inspection as these are considered business confidential. These records are used to comply with special condition VI.4 and did not appear to be a compliance point in the new draft permits.

SC I.2. restricts VOC emission to 18.4 ton per year (tpy) and SCI.4. restricts Ammonia emissions to 30.0 tpy, both based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.4. is the associated monitoring and

recordkeeping requirement that requires the facility to calculate and record emissions from the process for the previous calendar month to demonstrate compliance with VOC and Ammonia 12-month rolling time period emission limits. I reviewed the 12-month rolling time period ending February 2020 and February 2021. The table below compares emissions to the limits in ton per year (tpy).

Pollutant	February 2020 (tpy)	February 2021 (tpy)	Limit (tpy)
VOC	11.41	9.22	18.4
Ammonia	17.51	18.45	30.0

SC IV.3. requires the plant to calibrate the temperature gauge on condenser 19251 and the pressure drop indicator on baghouse 12912 in a satisfactory manner. As part of the records request, I asked for the last two calibration performed on the temperature transmitter on condenser 19251 and the pressure drop indicator on baghouse 12912. Below is a table showing the frequency of calibration appears to be annually.

BAG HOUSE 12912	PRESSURE TRANSMITTERS	Bag house north side differential pressure indicators	5/19/2020	8/13/2019
BAG HOUSE 12912	PRESSURE TRANSMITTERS	Bag house south side differential pressure indicators	5/19/2020	8/13/2019
Condenser 19251	TEMPERATURE TRANSMITTER	Vent Condenser Glycol Temperature 19251	12/16/2020	1/28/202

Compliance Reporting

No deviations were reported for this emission unit in the ROP Annual report for 2020 or the MON (40 CFR Part 63 Subpart FFFF (MON MACT)) semi-annual compliance report for 2020.

Condenser (19251) and baghouse (12912) are both subject to CAM requirements of 40 CFR Part 64 for VOCs and particulate, respectively. Excursions, for the condenser (19251), occur when the exit gas temperature exceeds 40F. No excursions were reported for the time period reviewed.

EU 207-02: Compliant

This is the treated filler process. This process uses a mixer from EU 207-01 to make a product that is not covered by the PTI 134-08. Emissions from this process are controlled by a packed column scrubber (19298) and a water condenser (19296), which are subject to CAM requirements of 40 CFR Part 64 for VOCs, methanol, and particulate and VOCs and methanol, respectively. DSC refers to vents associated with this process as a treated process. This emission unit is also subject to the requirements of 40 CFR Part 63, Subpart FFFF, MON MACT.

This emission unit is currently permitted under PTI 336-88B. As part of the re-permitting effort due to EPA Consent Decree 19-11880 agreements issued January 24, 2020. EU207-02 is being carved into smaller emission units. My current understanding is the nomenclature EU207-02 will no longer exist and this emission unit will fully be incorporated into EU207-17 (PTI 173-20).

Special conditions III.1. and III.2. restricts the exit gas temperature from the chilled water condenser to remain below 15C and to maintain a steady scrubbing liquid flow rate, respectively. At the time of the inspection the process was not in operation and the condenser temperature was 16.9 C. I viewed records from January 1, 2020 though the time of the inspection on March 26, 2021. The liquid flow rate oscillated around 55 pounds per minute (lb/min) during this time period. We were able to view a few scenarios when the flow was below the alarm limit and verified the process was not in operation during these times. The glycol condenser gas temperature remained below 15C during times of operation when the plant was treating product.

The permit also requires the packed column scrubber (19298) to be equipped with a low flow switch with a minimum flow rate alarm of 20 lbs/min. During the inspection, we viewed the low flow alarm set at 20 lbs/min.

I did not ask for records of the number of batches processed on a monthly basis, as these are considered business confidential. These records are used to comply with special condition VI.3. During the inspection I verified the number of batches were being tracked on a monthly basis.

SC III.6. requires the plant to calibrate the temperature gauge on condenser 19296 and the flow gauge on packed column scrubber 19298 in a satisfactory manner. As part of the records request, I asked for the last two calibration performed on the temperature transmitter on condenser 19296 and the flow transmitter on packed column scrubber 19298. Below is a table showing the frequency of calibration appears to be annually.

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Condenser 19296	TEMPERATURE TRANSMITTER	11/30/2020	12/10/2019
Scrubber 19298	FLOW TRANSMITTER	11/30/2020	12/10/2019

SC I.2. restricts VOC emission to 8.7 ton per year (tpy), SC I.4. restricts Methanol emissions to 3.7 tpy, and SC I.6. restricts Isopropyl Alcohol (IPA) emissions to 4.9 tpy, all based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.3. is the associated monitoring and recordkeeping requirement that requires the facility to calculate and record emissions from the process for the previous calendar month to demonstrate compliance with VOC, methanol and IPA 12-month rolling time period emission limits. I reviewed the 12-month rolling time period ending February 2020 and February 2021. The table below compares emissions to the limits in ton per year (tpy).

Pollutant	February 2020 (tpy)	February 2021 (tpy)	Limit (tpy)
VOC	0.47	0.8	8.7
Methanol	0.02	0.04	3.7
IPA	0.38	0.64	4.9

Compliance Reporting

No deviations were reported for this emission unit in the MON (40 CFR Part 63 Subpart FFFF (MON MACT)) semi-annual compliance report for 2020.

The packed column scrubber (19298) and water condenser (19296) are both subject to CAM requirements of 40 CFR Part 64. The packed column scrubber (19298) is a subject device for VOCs, methanol, and particulate and the water condenser (19296) is a subject device for VOCs and methanol, respectively.

No excursions were reported for 2020 CAM excursion report.

A combined stack discrepancies deviation was reported for the 2020 Annual ROP deviation report. Permitted stack height requirements did not match actual stack configurations. Since this unit is currently undergoing permitting, this deviation will be corrected.

NAME 

DATE 4/5/21

SUPERVISOR 