

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

A404356726

<b>FACILITY:</b> Dow Silicones Corporation		<b>SRN / ID:</b> A4043
<b>LOCATION:</b> 3901 S Saginaw Rd, MIDLAND		<b>DISTRICT:</b> Bay City
<b>CITY:</b> MIDLAND		<b>COUNTY:</b> MIDLAND
<b>CONTACT:</b>		<b>ACTIVITY DATE:</b> 01/14/2021
<b>STAFF:</b> Gina McCann	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MEGASITE
<b>SUBJECT:</b> EU324-18		
<b>RESOLVED COMPLAINTS:</b>		

**Inspection Date: 1/14/2021**

**Off-Site Inspection**

**DOW Silicones/MDEQ-AQD staff present during the inspection:**

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Jennifer Kraut (Air Specialist, DOW Silicones)
- Brandon Bishop (Environmental Specialist, DOW MiOps)
- Amanda Karapas (Air Specialist, DOW Silicones)
- Conner Kneip (Production Engineer for 324 Building, DOW Silicones)

Records reviewed as part of the inspection were:

- ROP Annual report for 2017
- ROP Annual report for reporting period 1/1/2019-12/31/2019
- ROP Semi-Annual report for reporting period 1/1/2020-6/30/2020

**EU324-18**

25156 batch kettle in 324 building, consists of a reactor, heat exchanger, and a receiver. Emissions are controlled by a service water cooled condenser and two parallel chilled condensers. The most recent PTI for this emission unit is PTI 19-14B, which was issued September 18, 2018. Pursuant to R216(2) the appropriate paperwork was submitted subsequent to this inspection.

- Service water cooled condenser (25159) vents to SV324-054 or operates in series with the chilled condenser pair (4804/4807).
- Chilled condenser pair (4804/4807) that vents to SV324-048. The condensers operate in parallel, but only one at a time, sharing a common coolant line and temperature monitor.

SC III.1 restricts the operation of the 25156 batch kettle unless the service water condenser 25159 coolant (DOW Therm J) temperature is 37C or less. At the time of the inspection, service water condenser 25159 was 23.5C. A high alarm is set at 32C and a high-high alarm is set at 37C. The operators receive audible and visual alarms, which require them to address. These are priority 2 alarms.

SC VI.1. is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, the service water condenser 25159's coolant temperature on a continuous basis. I reviewed coolant exit temperatures for service water condenser 25159 from January 1, 2020 through December 31, 2020. The plant experienced a power outage in late May, which showed a spike on the graph. However, the kettle was not in operation at this time.

SC III.2 restricts the plant from operating the 25156 kettle, except when producing 204 fluid, unless the chilled condenser 4804/4807 coolant temperature is -8C or less. At the time of the inspection, condenser 4804 was -28.4C. A high alarm is set at -10C and a high-high alarm is set at -8C. The operators receive audible and visual alarms, which require them to address. These are priority 2 alarms.

SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, the chilled condenser 4804/4807's coolant temperature on a continuous basis, except when producing 204 fluid. The plant rarely produces fluid 204 and it did not appear to be produced during the January 1, 2020 through December 31, 2020 timeframe. The coolant exit temperature graph shows a potential exceedance from June 3, 2020 to June 29, 2020. However, upon further investigation we viewed the pressure in kettle 25156 during this timeframe and no vacuum was being pulled.

SC IV.1 limits the operation of 25156 batch kettle unless the service water condenser 25159 is installed, maintained, and operated in a satisfactory manner. As part of the records review, I requested the last two maintenance dates and associated activities for service water condenser 25159. On 12/1/2020 the heat exchanger had an external inspection and on 5/28/2020 troubleshooting and adjustment was provided to a control valve. The condenser service water return temperature transmitter for 25159 condenser was last calibrated on 6/26/2019 and 4/9/2014.

SC IV.3 restricts the operation of 25156 kettle, except when producing 204 fluid, unless the chilled condenser 4804/4807 is installed, maintained, and operated in a satisfactory manner. The plant does not typically produce 204 fluid. They maintain the ability to, however the production engineers operate under the assumption that all requirements are to be met regardless of the fluid being produced. As part of the records review, I requested the last two maintenance dates and associated activities for condensers 4804 and 4807. On 6/19/2020 the heat exchanger on condenser 4804 had an internal and external inspection and on 3/19/2019 and 12/3/2018 condenser 4807 also had an internal and external inspection. Temperature transmitters for these condensers were last calibrated on 1/29/2018 and 8/29/2017.

SC VI.4 requires the VOC emission rate from EU324-18 to be calculated monthly, for the preceding 12-month rolling time period. SC I.1 restricts VOC emissions to below 20.0 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. VOC emissions for the 12-month rolling time period ending November 2020 were 6.54 tpy.

We also discussed stack vents and their associated activities. Stack vent ids are taken from PTI 19-14B. Activities were relayed during the inspection.

<b>Stack &amp; Vent ID</b>	<b>Associated Activity</b>
<b>SV324-013</b>	<b>Product</b>
<b>SV324-048</b>	<b>To atmosphere after 4804/4807 condensers</b>
<b>SV324-054</b>	<b>To atmosphere after 25159 heat exchanger</b>
<b>SV324-056</b>	<b>25156 tank</b>
<b>SV324-057</b>	<b>From feeder product</b>
<b>SV324-058</b>	<b>Drum off directly from kettle</b>

**Compliance Reporting**

***I reviewed the ROP Annual report for 2019 and the Semi-Annual report for reporting period 1/1/2020-6/30/2020. No deviations were reported during these timeframes.***

**The plant was in compliance at the time of the inspection.**

NAME 

DATE 1/26/2021

SUPERVISOR 