

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A404348916

FACILITY: Dow Silicones Corporation		SRN / ID: A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Jennifer Kraut , Air Specialist		ACTIVITY DATE: 05/22/2019
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU303-09, EU303-15 and EU303-16		
RESOLVED COMPLAINTS:		

Inspection Date: 5/22/2019

Inspection Started: 8:30

Inspection Ended: 12:00

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

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Jennifer Kraut (Air Specialist, DSC)
- Pranavi Aradhyula (Production Engineer for 303 Building, DSC)
- Ben Wieber (Production Engineer for 303 Building, DSC)
- Leah Olson-Perry (Mi-Ops, Environmental Specialist)
- Mallory Bunker (Summer Student Intern, DSC)

Records reviewed as part of the inspection were:

- ROP Annual report for 2018
- 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report
- 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report

EU303-09

Flake resin hydrolysis process. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF. EU303-09 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 726-78B.

- Graphite block service water condenser (3335). This device is a CAM subject unit for VOCs and Toluene
- Glycol condenser DV24697. This device is a CAM subject unit for VOC and Toluene.
- Cyclone (3446). This device is a CAM subject unit for Particulate.
- Reverse jet fabric filter (22770). This device is a CAM subject unit for Particulate.

SC I.1. restricts PM, VOC and Toluene emissions based on a 12-month rolling time period as determined at the end of each calendar month, to less than 0.20 tpy, 11 tpy, and 8.6 tpy, respectively. The ROP does not have an associated condition under monitoring and recordkeeping. During the next renewal additional recordkeeping will be added in under R213(3) to close the monitoring and recordkeeping loop on this condition. I reviewed emission records for the 12-month rolling time period ending March 2019. VOC emissions were 0.42 tpy, Toluene was 0.37 tpy and PM was 0.12 tpy.

SC III.1. requires the graphite block service water condenser (3335) to operate with the coolant flow rate at least 40 gallons per minute (gpm) or greater. During the inspection we viewed the coolant flow rate at 51.8 gpm. SC VI.1. is the associated monitoring and recordkeeping record to monitor and record, on a continuous basis, the coolant flow rate of the graphite block service water condenser (3335). I reviewed coolant flow rate records from April 1, 2018 through April 30, 2019. During this time period, the flow rate was greater than 40 gpm during times of production.

SC III.2. requires the shell and tube service water condenser (DV24697) to operate with the exhaust gas temperature below 95F (35C). During the inspection the condenser was operating at 11.2C. SC VI.1. is the associated monitoring and recordkeeping record to monitor and record, on a continuous basis, the exhaust gas temperature of the shell and tube service water condenser (DV24697). I reviewed exhaust gas

temperature records from April 1, 2018 through April 30, 2019. During this time period, the exhaust gas temperature was below 95F (35C) during times of production.

SC III.3. requires the reverse jet fabric filter (22770) pressure drop to operate between 0 and 20 inches of water column ("W.C.). During the inspection the fabric filter was operating at 1.6 "W.C. I reviewed differential pressure records for the reverse jet fabric filter from April 1, 2018 through April 30, 2019. During this time period, the differential pressure was between 0 and 20 "W.C. during times of operation.

SC III.4. restricts operation of EU303-09 unless the following air pollution control devices are installed and operating properly: 3335 (graphite block service water condenser), DV24697 (glycol condenser), 3446 (cyclone), and 22770 (reverse jet fabric filter). Proper operation is operating within the ranges defined in the ROP. During the inspection it appeared the plant was meeting this requirement.

SC VI.4 and SC VI.5 are CAM monitoring requirements. CAM requirements and reporting is discussed below in the Compliance Reporting section.

SC VI.6. requires the plant to equip and maintain the shell and tube service water condenser (DV24697) with an exhaust gas temperature monitor. During the inspection we viewed this condenser and the associated temperature monitor. Condenser DV24697 is on a 48 month preventative maintenance (PM) schedule. The condenser was last calibrated on 3/20/2019 and 3/31/2015.

SC VI.7. requires the plant to equip and maintain the graphite block service water condenser (3335) with a liquid flow rate indicator. During the inspection we viewed this condenser and the associated flow meter. Condenser 3335 is on a 48-month PM schedule and was last calibrated on 3/30/2019 and 3/31/2019.

SC VI.8. requires the plant to equip and maintain the cyclone (3446) and the reverse jet fabric filter (22770) with a pressure drop indicator. During the inspection we viewed the cyclone (3446), which is essentially a knockout before the reverse jet fabric filter (22770). The electronic pressure gauge for filter 22770 was installed on 10/8/2013 and was previously a mechanical gauge, therefore the PM cycle starts on the date of install. It is scheduled to have maintenance performed on 12/03/2019. Questioned where the monitoring and recordkeeping requirements were for the cyclone 3446 as it pertains to CAM. It seems a likely argument that this equipment should be considered process equipment and maybe shouldn't have been included in the original PTI for this emission unit. I will revisit this during the ROP renewal.

SC VII.1. through VII.6 requires ROP and CAM reporting, which is discussed below. At the time of the inspection, the facility appeared to be meeting these requirements.

Compliance Reporting

As part of the records review, the ROP Annual report for 2018, 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report, and 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report were all reviewed.

1/1/2018 MON MACT

After a third-party consultant evaluated approximately 1,400 products or other materials, it was determined that several process units, products and distribution operations were either subject to a 40 CFR Part 63 reg not previously identified or subject to a different subpart of 40 CFR Part 63. Corrective action: By April 30, 2019 submit to EPA for approval a CAA Compliance Plan with proposed schedule, including milestones, for all process units, products, and distribution operations to achieve compliance with 40 CFR Part 63. The schedule for compliance will be enforceable as part of the final Consent Decree.

11/1/2018 EU303-01, EU303-02, EU3-03-06 and EU303-07

Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON

Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections. During the inspection, I requested weekly AVO LDAR pump and agitator inspection logs following discovery of this deviation. In a follow up email from J. Kraut on May 10, 2019 discussed that "After the inspection, it was determined that mixer/agitator 22400 was not in-service August 2018 through November 30, 2018. Therefore, attached are the weekly inspection logs for December 2018 through May 2019. Based upon these

logs, it doesn't appear AI22400 (agitator 22400) was added to the log until January 2019. At this time, it's unknown as to why it wasn't added to the December 2018 log. A root cause investigation will be conducted, and corrective action will be implemented."

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

No CAM excursions were reported for in the 2018 annual CAM excursion/exceedance report.

EU303-15

1600 Batch Kettle batch manufacturing process consisting of an agitated, jacketed kettle, with a service water condenser (DV1602), water trap, receiver, blending and filtration, and product packaging. The process can also use a shared vacuum pump that exhausts through a glycol condenser (DV1637). This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF. EU303-15 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 146-16.

- Service water condenser DV1602 and glycol condenser DV1637. These devices are CAM subject units for VOC

SC III.1. restricts the operation of 1600 Batch Kettle when venting through SV303-019 unless the service water condenser DV1602 exit water temperature is 35°C or less. During the inspection we viewed the service water condenser DV1602 and the instantaneous readout for the exit water temperature was 24.91° C, with a high alarm set at 31 °C. Neither Batch Kettle 1600 or 1650 were in operation during the inspection. This device is also CAM subject for VOCs and an excursion of the exit water temperature is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. SC VI.2. is the associated monitoring and recordkeeping requirement to monitor and record, in a satisfactory manner, the service water condenser DV1602 exit coolant temperature on a continuous basis. I reviewed the exit water temperature of service water condenser DV1602, for the time period, April 1, 2018 through April 30, 2019. During this time period, the exit water temperature did not exceed 35C during times of production.

SC III.2. restricts operation of 1600 Batch Kettle when venting through the vacuum pump to glycol condenser DV1637, unless the glycol condenser DV1637 exit coolant temperature is 5°C or less. This device is CAM subject for VOCs and an excursion of the exit coolant temperature is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. During the inspection we viewed the exit coolant temperature of glycol condenser DV1637 and the instantaneous readout was -15.41 °C, with a high alarm set at 31 °C . Neither Batch Kettle 1600 or 1650 were in operation during the inspection. SC VI.3. is the associated monitoring and recordkeeping requirement to monitor and record, while 1600 Batch Kettle is venting to glycol condenser DV1637, the glycol condenser DV1637 exit coolant temperature on a continuous basis. I reviewed the exit coolant temperature of the glycol condenser DV1637, for the time period, April 1, 2018 through April 30, 2019. During this time period, the exit coolant temperature of did not exceed 5°C during times of production.

SC IV.1. restricts routing emissions from 1600 Batch Kettle through SV303-019 unless the emissions are routed to service water condenser DV1602 and the condenser is installed, maintained, and operated in a satisfactory manner. As part of the records request the last two maintenance dates of service on the DV1602 heat exchanger was requested. The unit was last maintenance on 4/1/2018 and 5/20/2013. The plant appears to be meeting this requirement.

SC IV.2. restricts routing emissions from 1600 Batch Kettle through the vacuum pump unless the emissions are routed to glycol condenser DV1637 and the condenser is installed, maintained, and operated in a satisfactory manner. As part of the records request the last two maintenance dates of service on the DV1637 glycol condenser was requested. The unit was last maintenance on 12/30/2017 and 11/29/2017. The condenser is on a 48 month PM. The plant appears to be meeting this requirement.

SC IV.3. requires the plant to equip and maintain service water condenser DV1602 with an exit coolant temperature indicator. During the inspection walk through we viewed this condenser and the temperature probe indicator. At the time of the inspection the plant was meeting this requirement.

SC IV.4 requires the plant to equip and maintain glycol condenser DV1637 with an exit coolant temperature indicator. During the inspection walk through we viewed this condenser and the exit coolant temperature indicator. At the time of the inspection the plant was meeting this requirement.

SC IV.5. requires the plant to calibrate the temperature indicator for condensers DV1602 and DV 1637 in a satisfactory manner. The last calibrations of the temperature indicator condensers DV1602 and DV 1637 were 9/14/2016 and 9/28/2012. These condensers are on a 48 month PM cycle. At the time of the inspection the plant was meeting this requirement.

SC VI.4. requires monthly and 12-month rolling time period records of the VOC emission rate from EU303-15 to be maintained. SC I.1. restricts VOC emissions to 15 tpy. I reviewed the 12-month rolling time period ending March 2019. VOC emissions were 0.76 tpy.

SC VI.5. through VI.8. pertains to CAM reporting and VII.1. through VII.6. pertains to ROP reporting, which is discussed below. At the time of the inspection, the facility appeared to be meeting these requirements.

Compliance Reporting

As part of the records review, the ROP Annual report for 2018, 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report, and 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report were all reviewed.

No CAM or ROP deviations were reported for this unit. In my opinion, there are several deviations to report regarding compliance with condenser 3400's conditions as it doesn't exist, therefore the plant is not meeting requirements related to this condenser.

1/1/2018 MON MACT

After a third-party consultant evaluated approximately 1,400 products or other materials, it was determined that several process units, products and distribution operations were either subject to a 40 CFR Part 63 reg not previously identified or subject to a different subpart of 40 CFR Part 63. Corrective action: By April 30, 2019 submit to EPA for approval a CAA Compliance Plan with proposed schedule, including milestones, for all process units, products, and distribution operations to achieve compliance with 40 CFR Part 63. The schedule for compliance will be enforceable as part of the final Consent Decree.

11/1/2018 EU303-01, EU303-02, EU3-03-06 and EU303-07

Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON

Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections. This agitator is part of EU303-01, see the discussion under EU303-01.

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

EU303-16

1650 Batch Kettle batch manufacturing process consisting of an agitated, jacketed kettle with a service water condenser (DV3420), water trap, receiver, blending and filtration, and product packaging. The process can also use a shared vacuum pump that exhausts through a glycol condenser (DV1637). This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF. EU303-16 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 147-16.

- Service water condenser DV3420 and glycol condenser DV1637. These devices are CAM subject units for VOC.
- FGTHROX
- FGSITSCRUBBERS

SC III.1. restricts operation of the 1650 Batch Kettle when it is venting through SV303-019, unless the service water condenser DV3420 exit water temperature is 35°C or less. This condenser is a CAM subject unit for VOCs and an excursion of the exit water temperature is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. During the inspection, the service water condenser DV3420 exit water temperature, instantaneous, readout was 24.92°C, with a high alarm set at 31.0°C. SC VI.2. is the associated monitoring and recordkeeping requirement to monitor and record, in a satisfactory manner, the service water condenser DV3420 exit coolant temperature on a continuous basis. I reviewed the exit water temperature of the service water condenser DV3420, for the time period, April 1, 2018 through April 30, 2019. During this time period, the exit water temperature of did not exceed 35°C during times of production.

SC III.2. restricts operation of the 1650 Batch Kettle when it is venting through the vacuum pump to glycol condenser DV1637, unless the glycol condenser DV1637 exit coolant temperature is 5°C or less. This condenser is a CAM subject unit for VOCs and an excursion of the exit coolant temperature is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. During the inspection, the instantaneous readout, of the exit coolant temperature, for condenser DV137 was -15.41°C. SC VI.3. is the associated monitoring and recordkeeping requirement to monitor and record, in a satisfactory manner, the glycol condenser DV1637 exit coolant temperature on a continuous basis. I reviewed the exit coolant temperature on the glycol condenser DV1637, for the time period, April 1, 2018 through April 30, 2019. During this time period, the exit water temperature of did not exceed 5°C during times of production.

SC IV.1. restricts routing emissions from 1650 Batch Kettle through SV303-019 unless the emissions are routed to service water condenser DV3420 and the condenser is installed, maintained, and operated in a satisfactory manner. The plant has a 48 month PM cycle set for this condenser. At the time of the inspection they appeared to be meeting this condition.

SC IV.2. restricts routing emissions from 1650 Batch Kettle through the vacuum pump unless the emissions are routed to glycol condenser DV1637 and the condenser is installed, maintained, and operated in a satisfactory manner. During the inspection we viewed this condenser and it appeared to be installed. The condenser exit coolant temperatures did not exceed permitted levels for the time period, April 1, 2018 through April 30, 2019, therefore it appears to be operated properly.

SC IV.5. requires the plant to calibrate the temperature indicator for condensers DV3420 and DV1637 in a satisfactory manner. As part of the records review, I requested the dates of the last two calibrations on the temperature indicator for condenser DV3420. The plant last performed calibrations on 9/28/2012 and 9/14/2016 on the 3420 temperature indicator.

SC VI.4. requires monthly and 12-month rolling time period records of the VOC emission rate from EU303-15 to be maintained. The condition has a typo as it should be required for EU303-16. SC I.1. restricts VOC emissions to 15 tpy. I reviewed the 12-month rolling time period ending March 2019. VOC emissions were 0.78 tpy.

SC VI.5. through VI.8. pertains to CAM reporting and VII.1. through VII.6. pertains to ROP reporting, which is discussed below. At the time of the inspection, the facility appeared to be meeting these requirements.

Compliance Reporting

As part of the records review, the ROP Annual report for 2018, 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report, and 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report were all reviewed.

No CAM or ROP deviations were reported for this unit. In my opinion, there are several deviations to report regarding compliance with condenser 3400's conditions as it doesn't exist, therefore the plant is not meeting requirements related to this condenser.

1/1/2018 MON MACT

After a third-party consultant evaluated approximately 1,400 products or other materials, it was determined that several process units, products and distribution operations were either subject to a 40 CFR Part 63 reg not previously identified or subject to a different subpart of 40 CFR Part 63. Corrective action: By April 30, 2019 submit to EPA for approval a CAA Compliance Plan with proposed schedule, including milestones, for all process units, products, and distribution

operations to achieve compliance with 40 CFR Part 63. The schedule for compliance will be enforceable as part of the final Consent Decree.

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Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON

Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections. This agitator is part of EU303-01, see the discussion under EU303-01.

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

NAME *Glenn R. McAnn* DATE *5/31/19* SUPERVISOR *C. Hore*