App No. 202400082

June 25, 2024

CERTIFIED MAIL
7021 0950 0001 46470 9628

Michigan Department of EGLE
Air Quality Division
Grand Rapids District Office
350 Ottawa Avenue NW, Unit 10
Grand Rapids, MI 49503
EGLE-ROP@michigan.gov

cc: Gina McCann; MI Dept. of EGLE; Air Quality Division; Saginaw Bay District Office; 401 Ketchum Street Suite B; Bay City, MI 48708; McCannG2@michigan.gov
Caryn Owens; MI Dept. of EGLE; Air Quality Division; Cadillac District Office; 120 West Chapin Street; Cadillac, MI 49601-2158; Owensc1@michigan.gov

DOW SILICONES CORPORATION RULE 216(2) CHANGE NOTIFICATION: FGTHROX, FGSITESCRUBBERS, FGBLOWERS

Please find attached the notification forms required by Rule 216(2) for changes to Dow Silicones Corporation Renewable Operating Permit number MI-ROP-A4043-2019b.

On February 25th, 2022, FGTHROX, FGSITESCRUBBERS, and FGSITEBLOWERS received special conditions associated with permit to install application no. 91-07F. Dow Silicones Corporation requests that these special conditions be included in the renewable operating permit.

Attached are the M-001, C-001, and A-001 forms and the CAM plan. If you have questions regarding this submittal, please contact Jim Alger at (989) 615-1901.

Kristan Soto

Kristan Soto
Responsible Care Leader
1790 Building, Washington Street
Midland, MI 48674
(989) 633-1809

Enclosures

App No. 202400082

EGLE Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

RENEWABLE OPERATING PERMIT APPLICATION
C-001: CERTIFICATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type **C-001**	SRN A4043

Stationary Source Name Dow Silicones Corporation	
City Midland	County Midland

SUBMITTAL CERTIFICATION INFORMATION

1. Type of Submittal *Check only one box.*

☐ Initial Application (Rule 210) ☒ Notification / Administrative Amendment / Modification (Rules 215/216)

☐ Renewal (Rule 210) ☐ Other, describe on AI-001

2. If this ROP has more than one Section, list the Section(s) that this Certification applies to FGTHROX, FGSITEBLOWERS, and FGSITESCRUBBERS

3. Submittal Media ☒ E-mail ☐ FTP ☐ Disk ☒ Paper

4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.

AI FGTHROX

CONTACT INFORMATION

Contact Name Jim Alger	Title Midland Area State Air Permitting Specialist
Phone number 989-615-1901	E-mail address james.s.alger@dow.com

This form must be signed and dated by a Responsible Official.

Responsible Official Name Kristan Soto			Title EH&S Responsible Care Leader	
Mailing address 1790 Building, Washington Street				
City Midland	State MI	ZIP Code 48674	County Midland	Country USA

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this submittal are true, accurate and complete.

Kristan Soto — Signature of Responsible Official

06/25/2024 — Date

EGLE

Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division

App No. 202400082

RENEWABLE OPERATING PERMIT
M-001: RULE 215 CHANGE NOTIFICATION
RULE 216 AMENDMENT/MODIFICATION APPLICATION

This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment.

1. SRN A4043	2. ROP Number MI-ROP-A4043-2019b	3. County Midland
4. Stationary Source Name	Dow Silicones Corporation	
5. Location Address	3901 S. Saginaw Road	6. City Midland

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.*

- ☐ **Rule 215(1) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(2) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(3) Notification of change.** *Complete Items 8 – 11 and 14*
- ☐ **Rule 215(5) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment.** *Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☒ **Rule 216(2) Minor Modification.** *Complete Items 8 – 12 and 14*
- ☐ **Rule 216(3) Significant Modification.** *Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification.** *Complete Items 8 – 12 and 14*

8. Effective date of the change. (MM/DD/YYYY) *See detailed instructions.* 06/25/2024	9. Change in emissions? ☒ Yes ☐ No

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

This is the notification to roll PTI No. 91-07F into the ROP as the TOX has been completely installed and is ready to be operated. This request is to also remove FGSITEBLOWERS from the ROP.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☒ Yes ☐ No

If Yes, enter the PTI Number(s) 91-07F ____ - ____ - ____ - ____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☒ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.* **AI FGTHROX**

14. Contact Name	Telephone No.	E-mail Address
Jim Alger	(989) 615-1901	james.s.alger@dow.com

15. This submittal also updates the ROP renewal application submitted on ____/____/____ ☐ Yes ☒ N/A
(If yes, a mark-up of the affected pages of the ROP must be attached.)

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

EGLE

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: A4043	Section Number (if applicable):

1. Additional Information ID
AI-FGTHROX

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

FGTHROX is subject to CAM (40 CFR Part 64) for VOCs, particulate matter (PM), PM less than 10 microns in size (PM10), and PM less than 2.5 microns in size (PM2.5). Therefore, the following CAM plan is being submitted as part of the application.

Please refer to the attached CAM plan.

I. BACKGROUND

A. Emission Unit

Description: Site wide thermal oxidizer system consisting of EUTHROX and EUTOX.

Identification: FGTHROX

Facility: Dow Silicones Corporation
3901 S. Saginaw Rd
Midland, MI 48686

B. Applicable Regulation, Emission Limit, Monitoring Requirements

Permit Number: 91-07F

Emission Limits:

PM10: 8.9 tpy, Rule 205(3)

Monitoring Requirements:
EUTHROX Combustion Chamber Temperature
EUTHROX Combustion Chamber Residence Time
EUTHROX IWS 1st Stage Secondary Voltage
EUTHROX IWS 2nd Stage Secondary Voltage
EUTHROX IWS Secondary Current
EUTHROX IWS Packing Recycle Rate per Stage
EUTOX Combustion Chamber Temperature
EUTOX Combustion Chamber Residence Time
EUTOX Venturi Scrubber Water Flow Rate
EUTOX WESP Minimum Secondary Voltage
EUTOX WESP Minimum Secondary Current

C. Control Technology

2 Thermal Oxidizers (THROX and TOX)
2 Stage Ionizing Wet Scrubber (IWS)
Venturi Scrubber
Wet Electrostatic Precipitator (WESP)

II. MONITORING APPROACH

		EUTHROX Combustion Chamber Temperature
A.	**Indicator**	EUTHROX combustion chamber temperature is monitored through two redundant thermocouples. It is continuously monitored and recorded in 15-minute intervals.
B.	**Indicator Range**	An excursion is defined as a combustion chamber temperature less than 1800 °F. Excursions trigger action under the Malfunction Abatement Plan (MAP).
C.	**QIP Threshold**	None selected
D.	**Control Bypass**	In the event that both EUTHROX and EUTOX are both unavailable, vent streams can be sent to FGSITESCRUBBERS by a control valve that is located upstream of the combustion chamber.

		EUTHROX Combustion Chamber Residence Time
E.	**Indicator**	EUTHROX combustion chamber residence time is calculated via gas flow rate monitors located on the stack and physical dimensions of the combustion chamber. It is continuously calculated and recorded.
F.	**Indicator Range**	An excursion is defined as a combustion chamber residence time of less than one second. Excursions trigger action under the Malfunction Abatement Plan (MAP).
G.	**QIP Threshold**	None selected
H.	**Control Bypass**	In the event that both EUTHROX and EUTOX are both unavailable, vent streams can be sent to FGSITESCRUBBERS by a control valve that is located upstream of the combustion chamber.

		EUTHROX IWS 1st Stage Secondary Voltage
I.	**Indicator**	EUTHROX IWS 1st stage secondary voltage is monitored through a voltmeter located in the IWS 1st stage. It is continuously monitored and recorded in 1-hour intervals.
J.	**Indicator Range**	An excursion is defined as an hourly average voltage less than 10 kV while emissions are routed to the THROX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
K.	**QIP Threshold**	None selected
L.	**Control Bypass**	None present

		EUTHROX IWS 2nd Stage Secondary Voltage
M.	**Indicator**	EUTHROX IWS 2nd stage secondary voltage is monitored through a voltmeter located in the IWS 2nd stage. It is continuously monitored and recorded in 1-hour intervals.
N.	**Indicator Range**	An excursion is defined as an hourly average voltage less than 15 kV while emissions are routed to the THROX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
O.	**QIP Threshold**	None selected
P.	**Control Bypass**	None present

		EUTHROX IWS Secondary Current
Q.	**Indicator**	EUTHROX IWS secondary current is monitored through an ammeter located in the IWS 1st and 2nd stage. It is continuously monitored and recorded in 1-hour intervals.
R.	**Indicator Range**	An excursion is defined as an hourly average current less than 50 mA while emissions are routed to the THROX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
S.	**QIP Threshold**	None selected
T.	**Control Bypass**	None present

		EUTHROX IWS Packing Recycle Flow per Stage
U.	**Indicator**	EUTHROX IWS packing recycle rate per stage is monitored through a liquid flowmeter located in each IWS stage. It is continuously monitored and recorded in 1-hour intervals.
V.	**Indicator Range**	An excursion is defined as an hourly average packing recycle rate less than 324 gallons/minute per stage while emissions are routed to the THROX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
W.	**QIP Threshold**	None selected
X.	**Control Bypass**	None present

		EUTOX Combustion Chamber Temperature
Y.	**Indicator**	EUTOX combustion chamber temperature is monitored through two redundant thermocouples. It is continuously monitored and recorded in 15-minute intervals.
Z.	**Indicator Range**	An excursion is defined as a combustion chamber temperature less than 1800 °F. Excursions trigger action under the Malfunction Abatement Plan (MAP).
AA.	**QIP Threshold**	None selected
BB.	**Control Bypass**	In the event that both EUTHROX and EUTOX are both unavailable, vent streams can be sent to FGSITESCRUBBERS by a control valve that is located upstream of the combustion chamber.

		EUTOX Combustion Chamber Residence Time
CC.	**Indicator**	EUTOX combustion chamber residence time is calculated via gas flow rate monitors located on the stack and physical dimensions of the combustion chamber. It is continuously calculated and recorded.
DD.	**Indicator Range**	An excursion is defined as a combustion chamber residence time of less than two seconds. Excursions trigger action under the Malfunction Abatement Plan (MAP).
EE.	**QIP Threshold**	None selected
FF.	**Control Bypass**	In the event that both EUTHROX and EUTOX are both unavailable, vent streams can be sent to FGSITESCRUBBERS by a control valve that is located upstream of the combustion chamber.

		EUTOX Venturi Scrubber Water Flow Rate
GG.	**Indicator**	EUTOX venturi scrubber water flow rate is monitored through a liquid flowmeter located at the inlet to the venturi scrubber. It is continuously monitored and recorded in 15-minute intervals.
HH.	**Indicator Range**	An excursion is defined as a venturi scrubber water flow rate less than 15-gallons per minute while emissions are routed to the TOX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
II.	**QIP Threshold**	None selected
JJ.	**Control Bypass**	None present

		EUTOX WESP Secondary Voltage
KK.	**Indicator**	EUTOX WESP stage secondary voltage is monitored through a voltmeter located in the WESP. It is continuously monitored and recorded in 1-hour intervals.
LL.	**Indicator Range**	An excursion is defined as an hourly average voltage less than 25 kV while emissions are routed to the TOX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
MM.	**QIP Threshold**	None selected
NN.	**Control Bypass**	None present

		EUTOX WESP Secondary Current
OO.	**Indicator**	EUTOX WESP secondary current is monitored through an ammeter located in the WESP. It is continuously monitored and recorded in 1-hour intervals.
PP.	**Indicator Range**	An excursion is defined as an hourly average current less than 30 mA while emissions are routed to the TOX. Excursions trigger action under the Malfunction Abatement Plan (MAP).
QQ.	**QIP Threshold**	None selected
RR.	**Control Bypass**	None present

III. PERFORMANCE CRITERIA

		EUTHROX Combustion Chamber Temperature
A.	**Data Representativeness**	Two thermocouples operate in a redundant manner and are located within the THROX combustion chamber.
B.	**Verification of Operational Status**	Not Applicable (NA)
C.	**QA/QC Practices and Criteria**	The thermocouples are on a regular PM schedule.
D.	**Monitoring Frequency**	Combustion chamber temperature is continuously monitored.
E.	**Data Collection Procedure**	Combustion chamber temperature data is collected at 15-minute intervals (4 per hour) and recorded electronically.
F.	**Averaging Period**	15 minutes

		EUTHROX Combustion Chamber Residence Time
G.	**Data Representativeness**	EUTHROX combustion chamber residence time is calculated based on the stack flowrates and the physical dimensions of the combustion chamber.
H.	**Verification of Operational Status**	NA
I.	**QA/QC Practices and Criteria**	The gas flowmeters are on a regular PM schedule.
J.	**Monitoring Frequency**	Combustion chamber residence time is continuously calculated.
K.	**Data Collection Procedure**	Combustion chamber residence time is calculated continuously and recorded electronically at 15-minute intervals (4 per hour).
L.	**Averaging Period**	15 minutes

		EUTHROX IWS 1st Stage Secondary Voltage
M.	**Data Representativeness**	A voltmeter is located in the IWS 1st stage to measure secondary voltage.
N.	**Verification of Operational Status**	NA
O.	**QA/QC Practices and Criteria**	The voltmeter is on a regular PM schedule.
P.	**Monitoring Frequency**	IWS 1st stage secondary voltage is continuously monitored.
Q.	**Data Collection Procedure**	IWS 1st stage secondary voltage data is averaged into 1-hour intervals and recorded electronically.
R.	**Averaging Period**	1 hour

		EUTHROX IWS 2nd Stage Secondary Voltage
S.	**Data Representativeness**	A voltmeter is located in the IWS 2nd stage to measure secondary voltage.
T.	**Verification of Operational Status**	NA
U.	**QA/QC Practices and Criteria**	The voltmeter is on a regular PM schedule.
V.	**Monitoring Frequency**	IWS 2nd stage secondary voltage is continuously monitored.
W.	**Data Collection Procedure**	IWS 2nd stage secondary voltage data is averaged into 1-hour intervals and recorded electronically.
X.	**Averaging Period**	1 hour

		EUTHROX IWS Secondary Current
Y.	**Data Representativeness**	An ammeter is located in the IWS 1st and 2nd stage to measure secondary voltage.
Z.	**Verification of Operational Status**	NA
AA.	**QA/QC Practices and Criteria**	The ammeter is on a regular PM schedule.
BB.	**Monitoring Frequency**	IWS secondary current is continuously monitored.
CC.	**Data Collection Procedure**	IWS secondary current data is averaged into 1-hour intervals and recorded electronically.
DD.	**Averaging Period**	1 hour

		EUTHROX IWS Packing Recycle Rate per Stage
EE.	**Data Representativeness**	Liquid flowmeters are located in the IWS 1st and 2nd stages to measure packing recycle rate.
FF.	**Verification of Operational Status**	NA
GG.	**QA/QC Practices and Criteria**	The liquid flowmeters are on a regular PM schedule.
HH.	**Monitoring Frequency**	IWS packing recycle rate per stage is continuously monitored.
II.	**Data Collection Procedure**	IWS packing recycle rate per stage data is averaged into 1-hour intervals and recorded electronically.
JJ.	**Averaging Period**	1 hour

		EUTOX Combustion Chamber Temperature
KK.	**Data Representativeness**	Two thermocouples operate in a redundant manner and are located within the TOX combustion chamber.
LL.	**Verification of Operational Status**	Not Applicable (NA)
MM.	**QA/QC Practices and Criteria**	The thermocouples are on a regular PM schedule.
NN.	**Monitoring Frequency**	Combustion chamber temperature is continuously monitored.
OO.	**Data Collection Procedure**	Combustion chamber temperature data is collected at 15-minute intervals (4 per hour) and recorded electronically.
PP.	**Averaging Period**	15 minutes

		EUTOX Combustion Chamber Residence Time
QQ.	**Data Representativeness**	EUTOX combustion chamber residence time is calculated based on the stack flowrates and the physical dimensions of the combustion chamber.
RR.	**Verification of Operational Status**	NA
SS.	**QA/QC Practices and Criteria**	The gas flowmeters are on a regular PM schedule.
TT.	**Monitoring Frequency**	Combustion chamber residence time is continuously calculated.
UU.	**Data Collection Procedure**	Combustion chamber residence time is calculated continuously and recorded electronically at 15-minute intervals (4 per hour).
VV.	**Averaging Period**	15 minutes

	EUTOX Venturi Scrubber Water Flow Rate
WW. Data Representativeness	A liquid flowmeter is located at the venturi scrubber inlet to measure water flow rate.
XX. Verification of Operational Status	NA
YY. QA/QC Practices and Criteria	The liquid flowmeter is on a regular PM schedule.
ZZ. Monitoring Frequency	Venturi scrubber water flow rate is continuously monitored.
AAA. Data Collection Procedure	Venturi scrubber water flow rate data is collected at 15-minute intervals (4 per hour) and recorded electronically.
BBB. Averaging Period	1 hour

	EUTOX WESP Secondary Voltage
CCC. Data Representativeness	A voltmeter is located in the WESP to measure secondary voltage.
DDD. Verification of Operational Status	NA
EEE. QA/QC Practices and Criteria	The voltmeter is on a regular PM schedule.
FFF. Monitoring Frequency	WESP secondary voltage is continuously monitored.
GGG. Data Collection Procedure	WESP secondary voltage data is averaged into 1-hour intervals and recorded electronically.
HHH. Averaging Period	1 hour

	EUTOX WESP Secondary Current
III. Data Representativeness	An ammeter is located in the WESP to measure secondary voltage.
JJJ. Verification of Operational Status	NA
KKK. QA/QC Practices and Criteria	The ammeter is on a regular PM schedule.
LLL. Monitoring Frequency	WESP secondary current is continuously monitored.
MMM. Data Collection Procedure	WESP secondary current data is averaged into 1-hour intervals and recorded electronically.
NNN. Averaging Period	1 hour

IV. JUSTIFICATION

A. Rationale for Selection of Performance Indicators

For the THROX and TOX, combustion chamber temperature and combustion chamber residence time are commonly monitored parameters that provide a means of assurance that the required destruction efficiency of VOCs is being achieved. A decrease in temperature or residence time may indicate that the THROX or TOX is not achieving the desired control efficiency.

For the IWS, the combination of the secondary voltage, secondary current, and packing recycle rate monitoring provides assurance that the IWS is achieving the desired PM removal efficiency. An excursion of any of these parameters may indicate that the IWS is not achieving the desired control efficiency of PM.

For the venturi scrubber, the water flow rate provides assurance that the venturi scrubber is achieving the desired PM removal efficiency. An excursion below the minimum water flow rate may indicate that the venturi scrubber is not achieving the desired control efficiency of PM.

For the WESP, the combination of the secondary voltage and secondary current provide assurance that the WESP is achieving the desired PM removal efficiency. An excursion from either of these parameters may indicate that the WESP is not achieving the desired control efficiency of PM.

B. Rational for Selection of Indicator Ranges

All indicator ranges included in this CAM plan for EUTHROX were established based on source testing of the THROX that demonstrates compliance with the required emission limits. An excursion of any of these parameters would trigger action based on the MAP. The THROX parameters are monitored continuously and recorded in 15-minute intervals. The IWS parameters are monitored continuously and recorded in 1-hour intervals. No QIP thresholds have been selected for these indicators.

All indicator ranges included in this CAM plan for EUTOX were established based on manufacturer recommendations. These parameters may be updated following initial performance testing of EUTOX. An excursion of any of these parameters would trigger action based on the MAP. The TOX and venturi scrubber parameters are monitored continuously and recorded in 15-minute intervals. The WESP parameters are monitored and continuously recorded in 1-hour intervals. No QIP thresholds have been selected for these indicators.