

DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

FCE Summary Report

Facility : Warren Waste Water Treatment Plant	SRN : B1792
Location : 32360 Warkop	District : Warren
	County : MACOMB
City : WARREN State: MI Zip Code : 48093	Compliance Status : Compliance
Source Class : MAJOR	Staff : Robert Joseph
FCE Begin Date : 8/9/2019	FCE Completion Date : 4/16/2021
Comments : Scheduled inspection of Wastewater Treatment Plant (activity date 03/22/21).	

List of Partial Compliance Evaluations :

Activity Date	Activity Type	Compliance Status	Comments
04/15/2021	ROP Annual Cert		Semi-annual, Annual, Deviation, CAM excursion, CAM downtime reports 01/01/20 - 12/31/20. See ROP Semi Cert dated 08/19/20 for information occurring during the time period of 01/01/20 - 06/30/20. Information noted here will be for time period 07/01/20 - 12/31/20. pH: Dates (July 7, October 17, October 24, November 7, December 20). It dropped below the established parameters between 1 to 3 hours on these dates. Scrubber water is recirculated through the plant and is not discharged to any surface water. Scrubber flow rate:

Activity Date	Activity Type	Compliance Status	Comments
04/14/2021	Stack Test	Compliance	Electronic copy of test plan received for NOx and CO testing scheduled for June 15, 2021. The last performance test occurred last June 2020 (see 08/18/20 report for results), and all the pollutants were 75% below their emission limit except NOx, therefore, per 40 CFR 60.5205 of Subpart Mmmm, all pollutants must be retested within 13 months. NOx will be retested here and CO will also be tested given the inverse combustion relationship they have to one another.
03/22/2021	On-site Inspection	Compliance	Scheduled Inspection of Wastewater Treatment Plant

12/24/2020	ROP Annual Cert	Compliance	City of Warren Multi-Hearth Incinerator Annual Compliance Report July 1, 2019 to June 30, 2020. Performance test conducted on June 16-17, 2020. -Minimum Combustion Chamber Temperature: 1346 F -Minimum Pressure Drop across the Wet Scrubber: 24.3 inches water column -Minimum Water Flow through the Scrubber: 806 gal/min -Minimum pH: 6.3. Facility does not utilize a continuous emission monitoring system to determine compliance with actual emission limits. -Combustion Chamber Temp. 12-hour period high and low: 1625 F and 1337 F. -Pressure Drop across the Scrubber (water column) high and low: 27 inches and 24.7 inches. -Water Flow through Scrubber while incinerating 12-hour period high and low (gal/min): 926 and 785. -Scrubber pH while incinerating high and low: 7.9 and 6.3. -Facility states there were no periods when a qualified operator was not available. The annual air pollution control device inspection was conducted on May 11-13, 2020. From 11/23-12/2, 2020, the primary continuous monitoring recording system locked up. The facility had to verify compliance through the use of the back-up data recording system provided by SCADA, otherwise, were no continuous monitoring system malfunctions or out of control while the facility was incinerating sludge. -There were no revisions made to the site specific monitoring plan during the reporting period. There were no malfunctions of the incinerator, scrubber, or compliance monitoring system. The wastewater treatment plant experienced a loss of power on Aug. 8, 2019, when the there was
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12/24/2020	ROP Annual Cert	Compliance	sewage sludge cake in the incinerator. The bypass opened and it the incinerator vented to the atmosphere for 1.7 hrs. during burn-off. The bypass was closed when power was restored and the scrubber was in proper operation. -New Subpart M Operating Limits; -Daily Feed Rate (ton/day): 157.3 -Minimum Pressure Drop across the Wet Scrubber (inches WC): 24.29 -Minimum Water Flow through the Scrubber(gal/min): 806.0 -Minimum pH limit: 6.26 -Minimum Combustion Chamber Temperature: 1346 F. The following deviations occurred with the Incinerator 07/01/19-12/31/19: -08/27: Pressure drop < 24.6 WC due to power loss for 4 hours. -08/27: Total Scrubber Flow < 755 gpm due to power loss for 1.7 hours. -08/24-11/19: pH < 6.5. Twelve instances due to equipment malfunction, power loss, or unknown cause ranging from 3 to 24 hours. The following deviations occurred with the Incinerator 01/01/20-06/30/20: -02/22: Chamber temperature < 1311 due to probe failure for 2 hours. The following deviations occurred with the Incinerator 07/01/19-12/31/20: -07/26: Chamber temperature < 1370 due to probe failure for 7 hours.
10/13/2020	Stack Test	Compliance	June 2020 Stack Test Report Revision -See Stack test report dated 08/18/20 for stack test conducted on 06/16-06/17/20. Process data provided in Appendix B of the original test report contained a printing error in which not all of the data was provided.

Activity Date	Activity Type	Compliance Status	Comments
09/23/2020	ROP Semi 1 Cert	Compliance	Semi-Annual ROP certification report, deviation report, CAM excursion, and CAM downtime reports. January 1, 2020 to June 30, 2020. -Incinerator: Temperature dropped below established temperature due temperature probe in Hearth 5 failed on 02/22/20. Probe was replaced and corrected. Also, on 03/27/20 power was shut down due to maintenance work. Facility indicates no emissions occurred. New parameters were also established on during June 2020 stack test (pH, scrubber flow, water column pressure, temperature, sludge feed rate).

09/23/2020	ROP Annual Cert	Compliance	City of Warren Multi-Hearth Incinerator Annual Compliance Report July 1, 2018 to June 30, 2019. Performance test conducted on June 12, 2018 and December 6, 2018. -Minimum Combustion Chamber Temperature: 1311 F -Minimum Pressure Drop across the Wet Scrubber: 24.6 inches water column -Minimum Water Flow through the Scrubber: 755.1 gal/min -Minimum pH: 6.5. Facility does not utilize a continuous emission monitoring system to determine compliance with actual emission limits. -Combustion Chamber Temp. 12-hour period high and low: 1593 F and 1334 F. -Pressure Drop across the Scrubber (water column) high and low: 29 inches and 25 inches. -Water Flow through Scrubber while incinerating 12-hour period high and low (gal/min): 954 and 805 -Scrubber pH while incinerating high and low: 7.7 and 6.2. -June 12, 2018 compliance test resulted in NOx exceeding emissions. December 6, 2018 compliance test resulted in both CO and NOx passing and under 75% of the allowable limits. -Facility states there were no periods when a qualified operator was not available. The annual air pollution control device inspection was conducted on May 14-15. There were no continuous monitoring system malfunctions or out of control while the facility was incinerating sludge. -There were no revisions made to the site specific monitoring plan during the reporting period. There were no malfunctions of the incinerator, scrubber, or compliance monitoring system. Incinerator was shut down from May 14, 2019 to June 30, 2019
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09/23/2020	ROP Annual Cert	Compliance	due to emergency repairs to one of the hearths. Sludge cake was disposed of to a landfill. -Combustion chamber temperature was < 1311 F from 07/01/18 to 12/31/18 on three different occasions due to low temperature upon start-up, burn off, power loss, and < 1370 between 01/01/19 to 06/30/19 due to low temperature during shut down and sludge cake conditions. Power was restored and increased gas flow to burners were the corrective actions to maintain the proper temperatures. -No deviations with total flow through the scrubber. Scrubber drain water pH dropped below 6.5 on four occasions between 07/01/18 and 12/31/18 and on 16 occasions between 01/01/19 and 06/30/19. Facility does not add chemicals to maintain the pH.
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08/21/2020	Stack Test	Compliance	Stack Test emission results per ROP MI-ROP-B1792-2016. Per Subpart MMMM, all pollutants were under 75% of the permit limit except NOx. Therefore, NOx (along with CO due to combustion relationship) will be retested in 2021. The remaining pollutants will be tested again in 2023. -Particulate Matter: 0.0048 lbs of exhaust air corrected to 50% excess air. (Permit Limit 0.2 lbs). 2.4 %. -Particulate Matter: 6.15 mg/m3 at 7% Oxygen. (Permit Limit 80 mg/dscm). 7.7%. -Hydrogen Chloride: 0.56 ppmv dry at 7% Oxygen (Permit Limit 1.2 ppmv dry). 46.7%. -Carbon Monoxide: 2,340 ppmv dry at 7% Oxygen (Permit Limit 3,800 ppm v dry). 61.6%. -Dioxins/Furans (toxic equivalency basis): 0.026 ng/m3 (Permit Limit 0.32 ng/dscm). 8.1%. -Mercury: 0.045 mg/dscm at 7% Oxygen (Permit Limit 0.28 mg/dscm). 16.1%. -Oxides of Nitrogen: 185 ppmv dry at 7% Oxygen (Permit Limit 220 ppmv dry). 84.1% -Sulfur Dioxide: < 2.22 ppmv dry at 7% Oxygen (Permit Limit 26 ppmv dry). 8.5%. Compound was below the minimum detection limit of the analytical method. 1.1 ppm. -Cadmium: < 0.0040 mg/dscm at 7% Oxygen (Permit Limit 0.095 mg/dscm). 4.2%. Compound was below the minimum detection limit of the analytical method. -Lead: 0.027 mg/dscm at 7% Oxygen (Permit Limit 0.30 mg/dscm). 9%. -Fugitive Emissions: 0% . (Permit Limit 5% of hourly observation of combustion Ash). 0%. -Sludge feed rate, wet ton/hr: 5.47 (157.3 ton/day).
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08/21/2020	Stack Test	Compliance	-Scrubber pressure: 24.29 inches water column. -Scrubber flow rate: 806 gal/min. -Scrubber pH: 6.26. -Hearth 4-6 chamber temp (combustion temps): 1346 F
04/24/2020	Stack Test	Compliance	Stack Test plan for Subpart MMMM annual sewage sludge incinerator emissions testing. Scheduled to occur June 16, 17, 2020. All pollutants in the ROP are being tested this year. The last test for all pollutants was conducted in 2017. All except NOx were under 75% of their limit. NOx and CO were tested again 2018 and 2019.
04/10/2020	MAERS	Compliance	MAERS Report Submission.
03/09/2020	ROP SEMI 2 CERT	Compliance	Semi Annual Report July 1, 2019 to Dec 31, 2019. Chamber Temperature: 2 incidents; 7 and 11 hours. A failed temp probe for hearth 5 and laurel transmitter for hearth 6. Below established temp of 1370 degrees F. Scrubber Differential Pressure: 1 incident; 4 hours. Power interruption to the facility. Scrubber Water pH: 12 incidents, between 3 and 24 hours. Reasons include power interruption and equipment malfunction. Probe calibrations are required. pH fell below 6.5 Scrubber flowrate: 1 incident, 1.7 hours. Power interruption to the facility. The facility states they do not add chemicals to adjust pH for drain water. Current limit is a result of sludge cake quality on day of testing. All scrubber water is sent back plant for processing.

Activity Date	Activity Type	Compliance Status	Comments
09/24/2019	ROP Semi 1 Cert	Compliance	Semi Annual Report Jan. 1, 2019 to June 30, 2019. (2) occasions where incinerator dropped below 1370 F. This occurred due to low temperatures during 2nd 12-hr average period (4 hrs) and during shut down and burn off (1 hr). Facility implemented corrective actions. (16) were due to pH dropping below 6.5. All incidents were for 2 hrs and one was for 9 hr, 3 hr, 1 hrs, and 10 hrs. Facility did not know the cause of this. The facility feeds all scrubber water back into the plant for treatment. Facility believes low pH is indicative of additional chemical scrubbing being performed by the scrubber, and that the drain scrubber water is possibly of poorer quality than the sludge incinerated during the last performance test.

Name: Robert Joseph Date: 05-27-21

Supervisor: K. Kelly