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

N160463929

FACILITY: Kent County Waste to Energy Facility		**SRN / ID:** N1604
LOCATION: 950 Market Ave SW, GRAND RAPIDS		**DISTRICT:** Grand Rapids
CITY: GRAND RAPIDS		**COUNTY:** KENT
CONTACT: Brian Foster , Regional Environmental Manager		**ACTIVITY DATE:** 06/28/2022
STAFF: Kaitlyn DeVries	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: The purpose of the inspection was to determine compliance with MI-ROP-N1604-2018a.		
RESOLVED COMPLAINTS:		

On Tuesday June 28, 2022, Department of Environment Great Lakes and Energy (EGLE) Air Quality Division (AQD) Staff Kaitlyn DeVries (KD) conducted an unannounced, scheduled inspection of the Kent County Waste-to-Energy Facility located at 950 Market Avenue, Grand Rapids, Michigan. The purpose of the inspection was to determine compliance with MI-ROP-N1604-2018a. The facility was also conducting required stack testing on the days (June 27 – June 30, 2022) that KD was at the facility. Information regarding the stack test may be found in the Stack Test Observation Notes report.

KD arrived on site shortly after 9:00 am on Tuesday June 28, 2022, the day which most of the inspection took place. AQD's Technical Programs Unit (TPU) staff Jeremy Howe (JH), Daniel Droste (DD), and Andrew Riley (AR) arrived around 11:00 am. Staff met with Mr. Brian Foster, Regional Environmental Manager for Covanta Energy, who served as the primary contact during the inspection along with Mr. Andrew Pelton, Operations Supervisor. Mr. Paul Kantola from Covanta, joined for the discussions surrounding the records.

FACILITY DESCRIPTION

The Kent County Waste-to-Energy (KWTE) Facility is a 625 ton per day waste-to-energy facility that burns municipal solid waste and natural gas. The plant is owned by the Kent County Department of Public Works and is operated by Covanta Energy. During the post-inspection discussion, Mr. Kantola informed KD that Covanta would no longer be the operator of the facility in February 2023. At that point Vicinity Energy would be taking over operations.

The facility was constructed in 1989 and started operations in 1990, with round the clock operations. The facility is rated for a total output of 18 megawatts (MW), with an actual output of 11-13 MW after parasitic consumption. The facility receives approximately 900-1,100 tons of waste per day, of which approximately 550 tons is burned; any excess waste received at the facility is sent to a landfill.

The facility operates two (2) identical municipal solid waste mass burn waterwall combustors that can be co-fired with natural gas. The two (2) combustors produce steam that is converted into electricity for power generation.

REGULATORY ANALYSIS

KWTE is subject to the Title V program and is currently operating under Renewable Operating Permit (ROP) No. MI-ROP-N1604-2018a. The facility is a major source of Nitrogen Oxides (NOx), Sulfur Dioxides (SOx), Carbon Monoxide (CO), and Hazardous Air Pollutants (HAPs).

The facility is subject to 40 CFR Part 60 Subpart Cb the New Source Performance Standards (NSPS) Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors, which are incorporated by reference in 40 CFR Part 62, Subpart FFF, the Federal Requirements for Large Municipal Waste Combustors. The updates to Subpart Cb were re-promulgated in 2019, thus the references to Subpart FFF in the ROP were removed and replaced with R 336.1973. The facility is also subject to the Maximum Achievable Control Technology Standards for Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63 Subpart ZZZZ and the NSPS for Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 60 Subpart IIII. Additionally, this source is subject to the provisions of 40 CFR Part 64 Compliance Assurance Monitoring. Each of these Federal regulations will be discussed in further detail in the Compliance Evaluation portion of this report.

The ROP renewal application is due between November 14, 2021 and November 14, 2022. KD informed Covanta staff that this ROP would be going through the AQD's ROP central unit. Since Mr. Kantola communicated to KD that Covanta would not be the operator of the facility in 2023, KD asked about the pending renewal. Mr. Kantola stated that Covanta will be submitting the renewal application, along with Kent County's consultant, but likely Covanta will be stepping away from the process as they transition out of operations and Vicinity Energy transitions in. KD and Mr. Kantola discussed some items that will need to be addressed in the pending ROP renewal, and KD said that if Covanta can get the renewal application in earlier, this may allow for Covanta to be in some of the discussions of the draft ROP.

COMPLIANCE EVALUATION

Source-Wide Conditions

The Source-Wide conditions require the implementation and maintenance of a Fugitive Dust Control Strategy and a Consolidated Plan for Waste and Odors (Handling of Hazardous or Unacceptable Waste/Odor Control Strategy Program). There have been no new updates to the Fugitive Dust Control Strategy, and the Consolidated Plan for Waste and Odors, which were most recently revised in October 2020. Per records, the facility is following these plans.

The Fugitive Dust Control Strategy specifies the potential sources of fugitive dust at the facility and the control strategies that are utilized to reduce and prevent fugitive dust. As part of the plan, weekly observations are conducted for fugitives from source points such as roadways, and the roof vent. No fugitive dust was observed during the inspection, including during the load out from the ash.

The Consolidated Plan for Waste and Odors outlines the sources strategy for controlling odors and is based upon three (3) elements: Handling incoming municipal solid waste (MSW), facility design, and operational procedures. The AQD has not received any recent odor complaints from the facility nor were any odors detected off property.

EU-ASHSYSTEM

This emission unit is for the ash storage and handling equipment. There is a separate ash handling system for each combustor. Bottom ash and fly ash are quenched before being

combined and transported by a single covered vibrating conveyor to an inclined belt conveyor and then to an enclosed ash storage building. Rooftop ventilation of the enclosure is equipped with vent filters.

This emission unit has an emission limit of up to nine (9) minutes of visible fugitive ash emission per three (3) hour period. Any visible emissions are documented on the weekly environmental inspections form that the facility maintains, and a review of the records showed no fugitive dust from the roof vents were observed. No visible emissions were observed during the inspection either.

The facility is required to conduct visible emissions testing for fugitive dust from EU-ASHSYSTEM utilizing USEPA Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares, on an annual Basis. This testing was part of the annual testing that was being conducted during the inspection. No visible emissions were observed at any point during the inspection.

The facility also has implemented and maintains a Malfunction Abatement Plan (MAP) for the roof vent filter. An updated plan was received from the facility, dated October 2020.

EU-LIMESYSTEM

This emission unit is for the lime storage and handling equipment. Pebble lime is transferred from bulk trucks through an enclosed conduit to a vented storage silo, equipped with a filter to control particulate emissions from displaced silo air. The lime is used in the dry scrubber for acid gas control.

Particulate Matter (PM) emissions from EU-LIMESYSTEM are limited to 0.015 grains per dry standard cubic foot of exhaust gas and opacity is limited to 5% based upon a six (6) minute average. Compliance with the emission limits is based upon the proper operation of the bin vent filter on the storage silo. Monthly visual inspections for opacity, while in operation, are required. A review of the records indicated no visual emissions were observed during observations. Observations are being conducted during receipt of lime as well as observations of the lime silo on a weekly basis as part of the weekly environmental inspection report. No visible emissions were observed during the inspection.

The facility has properly implemented and maintains a MAP for this emission unit.

EU-COOLINGTOWER

This emission unit is the counter flow mechanical induced draft cooling tower with mist eliminators. KWTE is required to have the mist eliminators installed and operating. KWTE is required to conduct and record semi-annual inspections to confirm the mist eliminators are installed and properly operating. Per the records, KWTE is properly conducting these inspections.

FG-COMBUSTORS

This flexible group includes two (2) identical Municipal Solid Waste (MSW) mass burn waterwall combustor units. Each unit is equipped with a baghouse, a dry scrubber, a carbon injection system, and a selective non-catalytic reduction (SNCR) system. The MSW

combustors produce steam for process use, export, and for electrical generation. Each unit is rated at 312.5 tons per day MSW at a higher heating value of 4,800 BTU/lb. and 125 MMBTU per hour. The baghouses are subject to 40 CFR Part 64 for Compliance Assurance Monitoring (CAM), for PM emissions, which will be discussed in more detail below.

There are several emission limits imposed on each of the two (2) combustors, and compliance testing is required to be conducted annually, alternating between Unit 1 and Unit 2. The 2022 testing, that was underway during the inspection, was being done for both units. Historically, one of the units had more testing than the other, alternating each year. However, since Covanta will not be the operator of the facility in early 2023, all pollutants were being tested for to ensure compliance prior to transitioning the operations to Vicinity. Table 1, below, outlines the emission limits set forth for each combustor and the most recent test results. Since testing was underway, the test results in Table 1 are either from 2020, or 2021. Results of the 2022 testing will be reviewed upon completion of the report and a review by AQD's Technical Programs Unit (TPU). The methodology, as outlined in in MI-ROP-N1604-2018a, is also evaluated by AQD's TPU.

Table 1: Emission Limits for FG-COMBUSTORS

Pollutant	Limit (each Unit)	Averaging Times	Actual Emissions
Particulate Matter (PM)	25 mg/dry standard cubic meter (dscm), corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a of this permit and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: 1.20 mg/dscm corrected to 7% oxygen Unit 2[A]: 0.670 mg/dscm corrected to 7% oxygen
Particulate Matter (PM)	0.010 grain/dry standard cubic foot (dscf), corrected to 7% oxygen	Based upon a 2-hour average	Unit 1[A]: 0.000524 gr/dscf corrected to 7% oxygen Unit 2[A]: 0.000293 gr/dscf corrected to 7% oxygen
Particulate Matter (PM)	2.6 pounds per hour (pph)	Based upon a 2-hour average	Unit 1[A]: 0.151 pph Unit 2[A]: 0.0764 pph
Opacity	10%	6-minute average while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup,	COMS readings on June 28, 2022 Unit 1: 0.1%

		shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced *And* 6-minute average	Unit 2: 0.4%
Sulfur Dioxide (SO_2)	29 ppmv on a dry basis (ppmvd), or 25% of uncontrolled emissions, whichever is less stringent, corrected to 7% oxygen	Based on a 24-hour daily geometric mean, when firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: 9 ppmvd Unit 2[A]: 9 ppmvd
Sulfur Dioxide (SO_2)	50 ppmvd, or 25% of uncontrolled emissions, whichever is less stringent, but not to exceed 75 ppmvd, corrected to 7% oxygen	Based on an 8-hour block average	Unit 1[A]: 6 ppmvd Unit 2[A]: 10 ppmvd CEMS Observations from June 29, 2021 Unit 1: 6 ppmvd Unit 2: 0 ppmvd
Sulfur Dioxide (SO_2)	15 pounds per hour, or 25% of uncontrolled emissions, whichever is less stringent, but not to exceed 22.45 pph	Based on an 8-hour block average	Unit 1[A]: 2.01 pph Unit 2[A]: 3.13 pph
Oxides of Nitrogen (NO_x)	205 ppmvd, corrected to 7% oxygen	Based on a 24-hour daily arithmetic average, when firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) reference	Unit 1[A]: 157 ppmvd Unit 2[A]: 175 ppmvd CEMS Observations made on June 29, 2021 Unit 1: 131 ppmvd

			Unit 2: 172 ppmvd
Oxides of Nitrogen (NO_x)	400 ppmvd, corrected to 7% oxygen	Based on a 1-hour block average, when firing MSW or a combination of MSW and sweet natural gas	Unit 1[A]: 153 ppmvd Unit 2[A]: 180 ppmvd CEMS Observations made on June 29, 2021 Unit 1: 146 ppmvd Unit 2: 173 ppmvd
Oxides of Nitrogen (NO_x)	86 pounds per hour when firing MSW	Based on a 1-hour block average, when firing MSW or a combination of MSW and sweet natural gas *And* Based on a 1-hour block average, when firing sweet natural gas only	Unit 1[A]: 33.6 pph Unit 2[A]: 41.6 pph
Oxides of Nitrogen (NO_x)	350 ppmvd, corrected to 7% oxygen	Based on a 3-hour block average, when firing MSW or a combination of MSW and sweet natural gas	Unit 1[A]: 161 ppmvd Unit 2[A]: 173 ppmvd
Oxides of Nitrogen (NO_x)	75.25 pounds per hour when firing MSW	Based on a 3-hour block average, when firing MSW or a combination of MSW and sweet natural gas *And* Based on a 3-hour block average, when firing sweet natural gas only	Unit 1[A]: 35.6 pounds per hour Unit 2[A]: 39.9 pounds per hour
Carbon Monoxide (CO)	100 ppmvd, corrected to 7% oxygen	Based on a 4-hour block average, when firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) reference	Unit 1[A]: 9 ppmvd Unit 2[A]: 12 ppmvd CEMS Observations from June 29, 2021 Unit 1: 8 ppmvd Unit 2: 12 ppmvd

Carbon Monoxide (CO)	200 ppmvd, corrected to 7% oxygen	Based on a 1-hour block average, when firing MSW or a combination of MSW and sweet natural gas	Unit 1[A]: 18 ppmvd Unit 2[A]: 19 ppmvd
Carbon Monoxide (CO)	26.05 pph when firing MSW	Based on a 1-hour block average, when firing MSW or a combination of MSW and sweet natural gas *And* Based on a 1-hour block average, when firing sweet natural gas only	Unit 1[A]: 2.34 pph Unit 2[A]: 2.71 pph
Carbon Monoxide (CO)	50 ppmvd, corrected to 7% oxygen	Based on an 8-hour block average, when firing MSW or a combination of MSW and sweet natural gas	Unit 1[A]: 5 ppmvd Unit 2[A]: 13 ppmvd CEMS Observations from June 29, 2021 Unit 1:5 ppmvd Unit 2: 10 ppmvd
Carbon Monoxide (CO)	6.51 pph when firing MSW	Based on an 8-hour block average, when firing MSW or a combination of MSW and sweet natural gas *And* Based on an 8-hour block average, when firing sweet natural gas only	Unit 1[A]: 0.948 pph Unit 2[A]: 1.82 pph
Hydrogen Chloride (HCl)	29 ppmvd, or 5% of uncontrolled emissions, whichever is less stringent, corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: 10.9 ppmvd Unit 2[A]: 21.1 ppmvd
Hydrogen Chloride (HCl)	8.55 pph	Based on a 3-hour block average	Unit 1[A]: 2.08 pph Unit 2[A]: 3.77 pph

Total Fluorides	2.5 milligrams per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: <0.0754 milligrams per dscm Unit 2[B]: <0.0852 milligrams per dscm
Total Fluorides	0.28 pph	Based on a 2-hour average	Unit 1[A]: <0.00963 pph Unit 2[B]: <0.00994 pph
Non-methane Hydrocarbons	8.3 milligrams per dscm, corrected to 7% oxygen	Based on a 1-hour average	Unit 1: 1.10 milligrams per dscm Unit 2: 1.41 milligrams per dscm
Non-methane Hydrocarbons	0.94 pph	Based on a 1-hour average	Unit 1[A]: 0.0542 pph Unit 2[B]: 0.166 pph
Lead (Pb)	0.400 milligram per dscm, corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: 0.00567 milligram per dscm Unit 2[A]: 0.00184 milligram per dscm
Lead (Pb)	0.87 milligram per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: 0.00567 milligram per dscm Unit 2[A]: 0.00184 milligram per dscm
Lead (Pb)	0.10 pph	Based on a 2-hour average	Unit 1[A]: 0.000712 pph Unit 2[A]: 0.000213 pph

Mercury (Hg)	0.050 milligram per dry standard cubic meter, or 15% of potential emissions, whichever is less stringent, corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: <0.000465 milligram per dscm Unit 2[A]: <0.000479 milligram per dscm
Mercury (Hg)	0.61 milligram per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: <0.000465 milligram per dscm Unit 2[A]: <0.000479 milligram per dscm
Mercury (Hg)	0.07 pph	Based on a 2-hour average	Unit 1[A]: <0.000059 pph Unit 2[A]: <0.000055 pph
Sulfuric Acid Mist	39 milligrams per dscm, corrected to 7% oxygen	Based on a 1-hour average	Unit 1[A]: 0.110 milligrams per dscm Unit 2[B]: <0.0476 milligrams per dscm
Sulfuric Acid Mist	4.4 pph	Based on a 1-hour average	Unit 1[A]: 0.0125 pph Unit 2[B]: 0.00578 pph
Arsenic (As)	6.2 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: 0.498 micrograms per dscm Unit 2[B]: <2.54 micrograms per dscm
Arsenic (As)	7.0×10^{-4} pph	Based on a 2-hour average	Unit 1[A]: 6.24×10^{-5} pph Unit 2[B]: $<2.88 \times 10^{-4}$ pph
Beryllium (Be)	0.16 microgram per dscm,	Based on a 2-hour average	Unit 1[A]: <0.0357 microgram

	corrected to 7% oxygen		per dscm Unit 2[B]: <0.0417 microgram per dscm
Beryllium (Be)	1.83 x 10^{-5} pph	Based on a 2-hour average	Unit 1[A]: <4.49 x 10^{-6} pph Unit 2[B]: <4.78 x 10^{-6} pph
Cadmium (Cd)	35 micrograms per dscm, corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 1[A]: 0.358 micrograms per dscm Unit 2[B]: <0.161 micrograms per dscm
Cadmium (Cd)	37 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: 0.358 micrograms per dscm Unit 2[A]: <0.161 micrograms per dscm
Cadmium (Cd)	4.17 x 10^{-3} pph	Based on a 2-hour average	Unit 1[A]: 4.50 x 10^{-5} pph Unit 2[A]: <1.86 x 10^{-5} pph
Hexavalent Chromium	4.2 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1[A]: 1.02 micrograms per dscm Unit 2[B]: 1.02 micrograms per dscm
Hexavalent Chromium	4.69 x 10^{-4} pph	Based on a 2-hour average	Unit 1[A]: 1.31 x 10^{-4} pph Unit 2[B]: 1.19 x 10^{-4} pph
Municipal Waste Combustor Organic Compounds,	30 nanograms per dscm, corrected to 7% oxygen	At all times while firing MSW or a combination of MSW and sweet natural	Unit 1[A]: 1.16 nanograms per dscm

expressed as total mass dioxins/furans		gas, except during periods of startup, shutdown, and malfunction, as explained in Appendix 1a and 40 CFR 60.58b(a)(1) referenced by 40 CFR 60.38b	Unit 2[B]: 2.32 nanograms per dscm
Total Polychlorinated Dibenzo-p-dioxins (PCDD) and Total Polychlorinated Dibenzo-furans (PCDFs) including all tetra through octa isomers	3.0 nanograms per dscm, expressed as 2,3,7,8 TCDD toxic equivalents using factors in Appendix 5, corrected to 7% oxygen	Based on a 4-hour average	Unit 1[A]: 0.00497 nanograms per dscm Unit 2[B]: 0.0121 nanograms per dscm
Total Polychlorinated Dibenzo-p-dioxins (PCDD) and Total Polychlorinated Dibenzo-furans (PCDFs) including all tetra through octa isomers	3.38. x 10^{-7} pph, expressed as 2,3,7,8 TCDD toxic equivalents using factors in Appendix 5	Based on a 4-hour average	Unit 1[A]: 5.91 x 10^{-10} pph Unit 2[B]: 1.37 x 10^{-9} pph

[A] Test results from the 2021 Stack Test.
[B] Test results from the 2020 Stack Test.

In addition to emission limits, KWTE has some material limits for FG-COMBUSTORS. The steam load for each of the combustors is limited to 81,000 pounds of steam per hour, based upon a four-hour block average. Federal Regulation 40 CFR Part 60 Subpart Eb the Standards of Performance for Large Municipal Waste Combustors further limit the steam flow to 10% greater than what is achieved during stack testing. However, since the maximum four-hour block average plus 10% is greater than the limit of 81,000 pounds per steam per hour, the 81,000 pounds of steam per hour is the maximum allowable steam rate. At the time of the inspection, Unit 1 had a steam flow of 79,600 pounds per hour and Unit 2 had a steam flow of 78,700 pounds per hour. Records for the week of testing as well as a review for the previous 12 months, indicate that the 4-hour block averages are below the maximum 81,000 pounds per hour.

Natural gas usage is limited to 59,524 cubic feet per hour, per unit and to 104,000,000 cubic feet per calendar year, per unit. Records indicate that a total of 3,344,864 cubic feet for Unit 1, and 4,125,344 cubic feet for Unit 2. Both are for calendar year 2021. Only sweet natural gas is burned.

As previously mentioned, each of the units has a baghouse used for PM control. The maximum baghouse temperature is established during stack testing, based upon a 4-hour arithmetic average, with the allowed maximum not more than 30°F above. The temperature that was established was 352°F for both units 1 and 2. Records indicate compliance with this limit.

Similarly, the average carbon mass feed rate is established during stack testing, based upon an 8-hour block average. During the inspection, the carbon feed rate was 9.6 pounds per hour on an 8-hour average, for both units. 9.4 pounds per hour was the established rate during previous performance testing. A review of the records for the carbon injection system indicated the injection rate is at or above 9.4 pounds per hour. For the time period of July 1, 2021, through June 30, 2022, a total of 80,581.8 pounds of carbon was injected for Unit 1, while a total of 82,255.3 pounds of carbon was injected for Unit 2. KWTE is properly tracking the carbon usage, as required.

For both the carbon injection system and the baghouse inlet temperature, Federal Regulation 60.58b allows for the source to request the temperature for the baghouse and the carbon feed rate requirement to be waived for the two (2) weeks preceding the annual dioxin/furan performance test, which was occurring this inspection. KWTE requested and the AQD approved the waiver of these two (2) requirements for the two (2) weeks preceding testing. This same request had been previously requested and approved by the AQD.

During the inspection all of the control devices, including, the dry scrubbers, baghouses, SNCR, and carbon injection system were properly operating. The baghouses had differential pressures of 14.4 (Unit 1), and 14.6 (Unit 2) inches of water column (“WC). The PM emissions from the baghouses are subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). KWTE has been properly submitting the required CAM reports.

The scrubbers were also properly operating with Unit 1 with a differential pressure of 1.7 “WC and Unit 2 with a differential pressure of 3.7 “WC. A review of the records for both the baghouses and the scrubbers for each unit have been properly operating. In addition to monitoring the differential pressure of the baghouses and scrubbers, KWTE monitors and records the inlet temperature for the baghouses and the outlet temperature of the scrubbers.

The SNCR uses ammonia to control NOx emissions. The ammonia injection rate was 12.8 pounds per hour. As previously mentioned, the carbon feed rate was 9.6 pounds per hour.

A lime slurry is used for acid gas control. The lime slurry feed system is automatically modulated and interfaces with the SO_2 CEMS, automatically increasing the injection rate when there is an increase in SO_2 emissions. The lime slurry feed rate has an established feed rate of twenty (20) pounds of lime per ton of waste fed, for both units. This rate is based on controlling the pH in the ash. KWTE monitors the specific gravity of the lime slurry, at least once per day, and adjusts the flow as needed to maintain the twenty (20) pounds of lime per ton of waste. Based on the records, the specific gravity of the lime is between 1.08 and 1.15.

The facility relies on a Continuous Opacity Monitoring System (COMS) for opacity, Continuous Emissions Monitoring Systems (CEMS) for SO_2, CO, NOx, and O_2. Each of the units have all of these systems. During the inspection, the annual Relative Accuracy Test Audit (RATA) was being conducted to ensure the accuracy of the equipment. The CEMS data is used to calculate and evaluate compliance with the emission limits outlined in Table 1 of this report (see above). The CEMS and the COMS units passed their daily calibrations, and the daily calibrations are attached to this report. The emissions records from the CEMS and the COMS units were reviewed during this full compliance evaluation and are reviewed

as part of the excess emissions reports that KWTE is required to submit. All reports have been submitted in a timely manner.

KWTE has implemented and maintains a MAP, with the most version being revised in October 2020. KWTE did report a couple of malfunctions, which resulted in some emissions exceedances, but all were previously reported, and reported appropriately, in compliance with the requirements of FGCOMBUSTORS SC VI. 48.

While the stacks were not explicitly measured, the two (2) identical stacks appeared to be of correct dimensions.

FG-CIRICEMACT

This flexible group covers one (1) emergency compression ignition internal combustion engine (EU-PUMPHOUSE-1) that is subject to the provisions of 40 CFR Part 63 Subpart ZZZZ. Due to the installation date of this engine, it is not subject to the NSPS requirements.

Hours of operation for the engine are limited to 100 hours per year. During the previous 12 months, the engine operated for a total of 46 hours

Routine maintenance is conducted on the engine including inspections of the air cleaner, hoses and belts; the most recent maintenance records are attached to this report.

FG-CIRICENSPS

The facility currently has one (1) emission unit in this flexible group, EU-PUMPHOUSE-2, which is an existing emergency compression ignition internal combustion engine that is less than 500 HP. This emission unit is subject to the RICE MACT, 40 CFR Part 63 Subpart ZZZZ and to NSPS 40 CFR Part 60 Subpart IIII. Compliance with Subpart ZZZZ is demonstrated via compliance with Subpart IIII.

This is a Certified engine and runs for the purposes of maintenance checks and readiness testing. As a Certified Diesel fired engine, it meets the emission requirements of 10.5 g/KW -hr for NMHC+NOx, 5.0 g/KW-hr for CO, and 0.80 g/KW-hr for PM. So long as this is a certified engine, testing is not required to verify the emissions.

The sulfur content of the diesel fuel is limited to a maximum content of 1,000 ppm. Per records from the supplier, the sulfur content of the diesel fuel is less than 15 ppm.

Hours of operation for the engine are limited to 100 hours per year. During the previous 12 months, the engine operated for a total of 24.3 hours

Routine maintenance is conducted on the engine; the most recent maintenance records are attached to this report.

FG-COLDCLEANERS

This flexible group covers any cold cleaner that is grandfathered or exempt from Rule 201 permitting pursuant to Rule 278, 278(a) and Rule 281(2)(h) or Rule 285(2)(r)(iv). Per Mr. Foster, these units are maintained by Safety Kleen, and are kept closed when not in use.

Compliance Determination

Based upon the observations made during the inspection and a subsequent review of the records it appears that Kent County Waste-to-Energy Facility is in compliance with applicable air quality rules and regulations at the time of the inspection. However, a final determination regarding the acceptance of the June 2022 performance testing is pending until the completion of review by the AQD.

NAME _____ DATE 8/5/2022 SUPERVISOR _____