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

N160459105

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:** 06/16/2021
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 Wednesday June 16, 2021, Department of Environment Great Lakes and Energy (EGLE) Air Quality Division (AQD) Staff Kaitlyn DeVries (KD) conducted an announced, 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 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 before 9:00 am on Wednesday June 16, 2021. AQD's Technical Programs Unit (TPU) staff Matt Karl arrived around the same time as KD with Trevor Drost arriving shortly thereafter. After completing the required COVID-19 screening questionnaires and the required safety video, staff met with Mr. Brian Foster, Regional Environmental Manager for Covanta Energy, who served as the primary contact during the inspection with Mr. Todd Shewmaker, Operations Supervisor also joining for the discussions surrounding the records.

Throughout the inspection, social distancing was practiced where practical and AQD staff wore facial coverings.

FACILITY DISCRIPTION

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.

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 the 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.

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). Mr. Foster provided KD with updated versions of the Fugitive Dust Control Strategy, and the Consolidated Plan for Waste and Odors, which were most recently revised in October 2020.

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. While on site, official Method 22 Visible Emissions observations were made from the load out of the ash. 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 and no odors were 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. KD was able to observe the observations that were being taken from the loadout of the ash storage area. No visible emissions were observed.

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-annul 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 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 2021 testing was primarily for Unit 1, with a subset of pollutants from 40 CFR Part 60 Subpart Cb being conducted for Unit 2 as well. As previously mentioned,

compliance testing was being done during the inspection. 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 2019, or 2020. Results of the 2021 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[A]
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: 0.364 mg/dscm corrected to 7% oxygen Unit 2: 1.87 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: 0.0000159 gr/dscf corrected to 7% oxygen. Unit 2: 0.000816 gr/dscf corrected to 7% oxygen
Particulate Matter (PM)	2.6 pounds per hour (pph)	Based upon a 2-hour average	Unit 1: 0.0417 pph Unit 2: 0.216 pph
Opacity	10%	6-minute average 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 *And* 6-minute average	COMS readings on June 16, 2021 Unit 1: 0.13% Unit 2: 0.79%
Sulfur Dioxide (SO_2)	29 ppmv on a dry basis (ppmvd), or 25% of uncontrolled emissions,	Based on a 24-hour daily geometric mean, when firing MSW or a combination of MSW and sweet natural gas, except	Unit 1: 5 ppmvd Unit 2: 6 ppmvd

	whichever is less stringent, corrected to 7% oxygen	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	
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: 5 ppmvd Unit 2: 7 ppmvd CEMS Observations from June 17, 2021 Unit 1: 9 ppmvd Unit 2: 9 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: 1.62 pph Unit 2: 2.09 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	CEMS Observations made on June 17, 2021 Unit 1: 157 ppmvd Unit 2: 182 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: 181 ppmvd Unit 2: 190 ppmvd CEMS Observations made on June 17, 2021 Unit 1: 110 ppmvd Unit 2: 169 ppmvd
Oxides of Nitrogen (NO_x)	86 pounds per hour	Based on a 1-hour block average, when firing	Unit 1: 39.9 pph

	when firing MSW	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 2: 42.8 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: 187 ppmvd Unit 2: 189 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: 36.9 pounds per hour Unit 2: 42.6 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: 9 ppmvd Unit 2: 5 ppmvd CEMS Observations from June 17, 2021 Unit 1: 11 ppmvd Unit 2: 10 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: 13 ppmvd Unit 2: 6 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: 1.74 pph Unit 2: 0.772 pph
Carbon Monoxide (CO)	50 ppmvd, corrected to 7% oxygen	Based on an 8-hour block average, when firing MSW or a combination of	Unit 1: 9 ppmvd Unit 2:

		MSW and sweet natural gas	5 ppmvd CEMS Observations from June 17, 2021 Unit 1:10 ppmvd Unit 2: 9 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: 1.22 pph Unit 2: 0.704 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: 20.0 ppmvd Unit 2: 13.2 ppmvd
Hydrogen Chloride (HCl)	8.55 pph	Based on a 3-hour block average	Unit 1: 3.52 pph Unit 2: 2.24 pph
Total Fluorides	2.5 milligrams per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: 0.108 milligrams per dscm Unit 2: <0.0852 milligrams per dscm
Total Fluorides	0.28 pph	Based on a 2-hour average	Unit 1: <0.0124 pph Unit 2: <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: 0.133 pph Unit 2: 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: 0.00969 milligram per dscm Unit 2: 0.0689 milligram per dscm
Lead (Pb)	0.87 milligram per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: 0.00211 milligram per dscm Unit 2: 0.0689 milligram per dscm
Lead (Pb)	0.10 pph	Based on a 2-hour average	Unit 1: 0.000241 pph Unit 2: 0.00287 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: 0.00193 milligram per dscm Unit 2: 0.0245 milligram per dscm
Mercury (Hg)	0.61 milligram per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: 0.00193 milligram per dscm Unit 2: 0.0245 milligram per dscm
Mercury (Hg)	0.07 pph	Based on a 2-hour average	Unit 1: 0.000219 pph

			Unit 2: 0.00278 pph
Sulfuric Acid Mist	39 milligrams per dscm, corrected to 7% oxygen	Based on a 1-hour average	Unit 1: <0.0663 milligrams per dscm Unit 2: <0.0476 milligrams per dscm
Sulfuric Acid Mist	4.4 pph	Based on a 1-hour average	Unit 1: <0.00795 pph Unit 2: 0.00578 pph
Arsenic (As)	6.2 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: <0.158 micrograms per dscm Unit 2: <2.54 micrograms per dscm
Arsenic (As)	7.0×10^{-4} pph	Based on a 2-hour average	Unit 1: $<1.78 \times 10^{-5}$ pph Unit 2: $<2.88 \times 10^{-4}$ pph
Beryllium (Be)	0.16 microgram per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: <0.0394 microgram per dscm Unit 2: <0.0417 microgram per dscm
Beryllium (Be)	1.83×10^{-5} pph	Based on a 2-hour average	Unit 1: $<4.46 \times 10^{-06}$ pph Unit 2: $<4.78 \times 10^{-06}$ 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)	Unit 1: 0.284 micrograms per dscm Unit 2: 5.04 micrograms per dscm

		referenced by 40 CFR 60.38b	
Cadmium (Cd)	37 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: 0.284 micrograms per dscm Unit 2: 5.04 micrograms per dscm
Cadmium (Cd)	4.17×10^{-3} pph	Based on a 2-hour average	Unit 1: 3.21×10^{-5} pph Unit 2: 5.73×10^{-4} pph
Hexavalent Chromium	4.2 micrograms per dscm, corrected to 7% oxygen	Based on a 2-hour average	Unit 1: 0.333 micrograms per dscm Unit 2: 1.02 micrograms per dscm
Hexavalent Chromium	4.69×10^{-4} pph	Based on a 2-hour average	Unit 1: 3.82×10^{-5} pph Unit 2: 1.19×10^{-4} pph
Municipal Waste Combustor Organic Compounds, expressed as total mass dioxins/furans	30 nanograms 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: 1.00 nanograms per dscm Unit 2: 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: 0.00376 nanograms per dscm Unit 2: 0.0121 nanograms per dscm
Total Polychlorinated Dibenzo-p-dioxins (PCDD) and Total Polychlorinated	$3.38. \times 10^{-7}$ pph, expressed as 2,3,7,8 TCDD toxic equivalents using	Based on a 4-hour average	Unit 1: 4.35×10^{-10} pph Unit 2:

Dibenzo-furans (PCDFs) including all tetra through octa isomers	factors in Appendix 5		1.37 x 10^{-9} pph

[A] Unless otherwise noted, the Unit 1 emissions are from the 2019 stack test, while the Unit 2 emissions are 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 78,000 pounds per hour and Unit 2 had a steam flow of 78,400 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 8,270,000 cubic feet for Unit 1, and a total of 6,007,900 cubic feet for the calendar year 2020 (MAERS). Unit 1 also had an hourly high of 58,878 cubic feet per hour (cfh) (based on 981.3 cubic feet per minute), while Unit 2 had an hourly high of 58,800 cfh (based upon 980 cubic feet per minute). 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 9.4 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 all of calendar year 2020, a total of 165,503.069 pounds of carbon was injected. Thus far in calendar year 2021, a total of 79,098.819 pounds of carbon was injected. 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 14.0 (Unit 1), and 11.3 (Unit 2) inches of water column (“WC). The baghouses for each unit most recently had the differential pressure gauges calibrated on April 12, 2021. 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 1.8 “WC and Unit 2 with a differential pressure of 1.7 “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 6.7 pounds per hour. As previously mentioned, the carbon feed rate was 9.4 hours per hour. For a short period of time during testing there was a problem with the carbon injection system, but after discussing this with KWTE staff, the system was shutdown (to the extent possible), and the repair was quickly done, and the carbon injection was continued.

A lime slurry is used for acid gas control. The lime slurry feed system is automatically modulated and interfaces with the SO2 CEMS, automatically increasing with an increase in SO2 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 1.12 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.

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 2020, the engine operated for a total of 44 hours; it has run for a total of 17 hours thus far in 2021.

Routine maintenance is conducted on the engine; 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. 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.

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 2020, the engine operated for a total of 29.5 hours; it has run for a total of 10.7 hours thus far in 2021.

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. Shewmaker, 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 2021 performance testing is pending until the completion of review by the AQD.

NAME Kaitlyn Davis DATE 7/14/2021 SUPERVISOR HH