

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

K215554201

<b>FACILITY:</b> FERRIS STATE UNIVERSITY		<b>SRN / ID:</b> K2155
<b>LOCATION:</b> 625 S WARREN AVE, BIG RAPIDS		<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> BIG RAPIDS		<b>COUNTY:</b> MECOSTA
<b>CONTACT:</b> Michele Upton, Environmental Coordinator		<b>ACTIVITY DATE:</b> 07/01/2020
<b>STAFF:</b> Chris Robinson	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY '20 on-site inspection to determine the facility's compliance status with applicable air quality rules and regulations including PTI no. 5-14.		
<b>RESOLVED COMPLAINTS:</b>		

On June 23, 2020, per recent field work guidance, Chris Robinson (CR) from the Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) contacted Michelle Upton from Ferris State University (Ferris) prior to departure to the site to ensure the facility was operating and proper staff were onsite as well as to prepare for any Covid19 related entry procedures. Ms. Upton indicated that most staff are working from home and that she was unable to accommodate such an impromptu meeting due to scheduling issues. Also, she would need to make sure proper staff were present in order to get building access since the campus is locked. The inspection was rescheduled for July 1, 2020.

On July 1, 2020, CR met with Michelle Upton, Ferris's Environmental Coordinator to conduct an on-site scheduled inspection of Ferris State University (SRN K2155) located at 625 South Warren Street in Big Rapids, Mecosta County, Michigan, to determine compliance with applicable air quality rules and regulations, including the facility's Title V Opt-out Permit No. 401-86K. Ms. Upton was informed of the purpose of the inspection and identification was provided. Proper PPE and social distancing were maintained throughout the inspection.

Weather conditions: partly cloudy 80 degrees F with calm winds coming out of the east-southeast at approximately 9mph ([www.weatherunderground.com](http://www.weatherunderground.com)). CR surveyed the perimeter of the facility upon arrival for odors and visible emissions. None were observed.

### **COMPLIANCE EVALUATION**

Ferris's main campus is located in Big Rapids, which is where this inspection took place. This facility is a Title V opt out source for hazardous air pollutants (HAPS), NOX, SO2 and CO2e. This facility operates equipment both under PTI No. 401-86K and Rule 201 permit exemptions.

#### **PTI No. 5-14**

#### **EU-INCINERATOR:**

The facility operates a pathological waste incinerator (J.A.R. Model MCP60). This unit is subject to a particulate emission limit of 0.20 pounds per 1,000 pounds of exhaust gases, corrected to 50% excess air. Compliance with this limit is demonstrated through proper operation and maintenance. A list of recommended operating and maintenance procedures is listed in Appendix A of the permit and posted next to the incinerator. Per discussion with the operator all of the guidelines listed in Appendix A are being followed except for No. 8, which states the following:

*"Observe the stack frequently and adjust your operation as necessary to eliminate smoke and fly ash".*

The incinerator operates very minimally, maybe 1-3 times per year. Since operations are so minimal inspections to check and service the equipment are being conducted prior to use, not quarterly as noted in Item 10 of Appendix A. Inspections and maintenance are not being documented; however, the only recording keeping requirement in PTI 5-14 for EU-INCINERATOR is to maintain daily records of the time, description and weight of the waste being combusted. This is being done and the records were reviewed on site.

The incinerator was not operating during this inspection but visually appeared to be well maintained. CR informed both the operator and Ms. Upton that going forward visible emission observations must be conducted when the unit is in use. Additionally, CR recommends that the facility document both the visible emission observations and any inspections prior to use.

Lastly, the unit is equipped with a manual timer switch and operating instructions as required in Special

Condition (SC) IV.1 and although the stack dimensions outlined in SC VIII.1 were not verified, the stack appeared to meet these requirements. Ms. Upton also indicated that there have been no changes to the stacks since permitting.

**EU-COGEN:**

The facility's Cogen unit which consists of a 1130 KW gas turbine and a boiler (duct burner) rated at 50,000 pounds of steam per hour with a heat input rating of 45 million BTUs per hour, is no longer in use. The main high-pressure natural gas line was flanged off prior to entering the building. This unit is also permitted to use fuel oil, which is still possible. However, per the plant's operator, Matt Burmeister, the facility had tried operating the unit on fuel oil some time ago and determined that the Cogen could not operate properly unless natural gas was used. The facility plans on slowly dismantling the unit but in the short term will check on disconnecting the fuel oil line so that the unit can be considered inoperable per AQD. Records are still being maintain (attached) even though they show no use. No further discussion is necessary.

**EU-BOILER:**

This emission unit consists of a 75,000 pound per hour steam boiler also known as the "Volcano" boiler. In practice, the boiler operates on natural gas only, but it can use No. 2 fuel oil as a backup/emergency fuel. EU-BOILER is subject to an SO2 emission limit of 34.3 tpy. Based on records for June 2019 through May 2020 the maximum rolling 12-month SO2 emissions were 0.052 tons for February 2020.

In addition, the Volcano Boiler is subject to a visible emission limit of 20%, except as specified in 40 CFR Part 60 Subparts A and Dc. The facility operates two additional boilers located in this building that the facility claims are exempt from Rule 201 permitting requirements (discussed below). They are units four (4) and five (5). Only these two (2) units were operating during this inspection. No visible emissions were observed.

EU-Boiler is subject to several material limits (SC II.1-3) limiting fuel use to either natural gas or No. 2 fuel oil. If fuel oil is used, the sulfur content cannot exceed 0.4% by weight and the usage is limited to 1,200,000 gallons per 12-month rolling time period. Records were provided, which are attached. Based on these records fuel oil was last used in February 2017 and the amount used for that month was 8,265 gallons. Mr. Burmeister and Ms. Upton confirmed this and also noted that Ferris has not received a new shipment of fuel oil since the last AQD inspection conducted on November 24, 2015. The AQD inspector at that time noted in his report that he had previously obtained a sample of the No. 2 fuel oil for analysis which indicated compliance with the sulfur restrictions at 0.07% sulfur content by weight. Any future shipments would be Ultra Low Sulfur Diesel with a sulfur content of 15ppm by weight. Per Ms. Upton and Mr. Burmeister, the facility has not received any new shipments since the previous AQD inspectors' sample was analyzed. At this time, it appears that Ferris is in compliance with the material limits specified in PTI 5-14 for EU-Boiler.

**Daily, monthly and 12-month rolling records of fuel type, fuel usage, NOx emissions and SO2 emissions are being maintained as required per EUBOILER SC VI.2-4. Monthly and 12-month records for CO emissions are being maintained as required per EUBOILER SC VI.5. Records are attached.**

Lastly for this emission unit, although the stack dimensions outlined in SC VIII.1 were not verified, the stack appeared to meet these requirements and both Ms. Upton and Mr. Burmeister indicated that there has been no changes to the stacks since permitting.

**FGFACILITY:**

The following emission limits apply to the entire facility including exempt and grandfathered equipment, all of which is being properly tracked. Emission calculations were provided and are also summarized in the table below.

**[HH(1)]Compliance with NOx limits?**

Pollutant	Limit (tpy)	Time Period	Facility's Maximum Calculated Emissions over a 12-month rolling time period	Within Permitted Limit (Yes/No)
NO <sub>x</sub>	Less than 90.0	12-month rolling	18.702 (June 2019)	Yes
SO <sub>2</sub>	Less than 90.0		0.112 (June 2019 – Sept. 2019)	Yes
Each individual HAP	Less than 9.0		N-Hexane = 0.337 (June 2019)	Yes

Aggregate HAPs	Less than 22.5	0.352 (June 2019)	Yes
CO <sub>2e</sub>	89,000	22,575.4 (June 2019)	Yes

The facility is subject to material limits of 3.165 million gallons of fuel oil and 1,479.6 million cubic feet of natural gas, both per 12-month rolling time period. Based on the records the facility used 8,265 gallons of fuel in February 2017 and none since. Therefore, usage is well under the permitted limit. The maximum natural gas usage, based on a 12-month rolling period, for July 2019 through May 2020 was 374.03 million cubic feet (June 2019). Based on the records provided, Ferris appears to be in compliance with the emission and material limits established in FG-FACILITY SC I.1-5 and II.1 of the permit. Daily, monthly and 12-month rolling records of fuel usage are being maintained as required per FG-FACILITY SC VI.2. Monthly and 12-month records for NOx, SO<sub>2</sub>, HAPs and CO<sub>2e</sub> are being maintained as required per FG-FACILITY SC VI.3-5. Records are attached.

**MAERS:**

Emissions data for 2019 was received on time on March 4, 2020. The facility is using both MAERS and EPA emission factors providing supporting documentation as required for the use of the EPA emission factors. No changes were made to the submittal. The 2019 submittal is attached and summarized below.

Pollutant	2019 Emissions	
	Pounds	Tons
Ammonia	181.28	0.09
CO	31,077.43	15.54
Lead	0.18	0.00009
NOx	36,996.98	18.50
PM	2,811.82	1.41
SO <sub>2</sub>	222.01	0.11
VOC	2,034.83	1.02

**Other:**

Boiler No. 1 or the "Wick's Boiler" is rated at 75,000 pph steam production and was installed in approximately 1965. Since it was installed prior to 1967 and has not been modified since, this boiler is considered to be "grandfathered" from Rule 201 permitting requirements. Fuel use and estimated emissions are incorporated into recordkeeping and FG-FACILITY requirements.

Boilers four (4) and five (5) are natural gas fired only and were installed in 2013. Nameplate capacities were identified as being 20.4 mmBtu/hr heat input and rated emissions of 30 ppm NOx. Both of these boilers appear to be exempt from Rule 201 permitting requirements per Rule 282(2)(b)(ii). However, they are subject to New Source Performance Standard (NSPS) Subpart Dc. Initial Notifications were received by the AQD on 6/28/2013. The Boiler MACT does not apply since Ferris is an Area Source of HAPs and the Area Source Rule does not regulate gas-fired boilers. The existing boilers are exempted from the Area Source Boiler MACT as Gas1 Units based on documented use of oil for less than 48 hours per calendar year. The plant's operator, Mr. Burmeister and Ms. Upton were aware that operation of any of the equipment on oil for more than 48 hours per calendar year would trigger regulation under the Boiler MACT as liquid-fired units. This was briefly discussed.

Ferris also operates five (5) 2mmBtu/hr natural gas-fired boilers in the Bond Hall. These appear to be exempt from Rule 201 permitting requirements per Rule 282(2)(b)(i). Ms. Upton confirmed that there have been no changes to any of these boilers.

**CONCLUSION**

Based on observations and discussions made during the inspection and a subsequent review of the facility's records, Ferris State University appears to be operating in compliance with applicable air quality rules and regulations including the requirements established in PTI No. 5-14.

NAME *Mark Palmer*

DATE 7/15/2020

SUPERVISOR *[Signature]*

