

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

K215526742

FACILITY: FERRIS STATE UNIVERSITY		SRN / ID: K2155
LOCATION: 625 S WARREN AVE, BIG RAPIDS		DISTRICT: Grand Rapids
CITY: BIG RAPIDS		COUNTY: MECOSTA
CONTACT: Daniel Sovinski, Plant Engineer		ACTIVITY DATE: 09/03/2014
STAFF: Steve Lachance	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled but Unannounced Inspection; FCE for FY '014. Field dates 9-3-14 and 9-8-14. See CA_K215526742.		
RESOLVED COMPLAINTS:		

This was a scheduled inspection for FY2014. The purpose of the inspection was to assess compliance with applicable air use rules and regulations, including the conditions of Permit to Install (PTI) No. 05-14, which is the recently modified facility-wide "opt-out" permit.

The inspection commenced at about 9:30 AM, Wednesday 9/3/14. No odors or visible emissions attributable to regulated processes were noted as SL toured the campus, got a parking pass and approached the General Services Building. Weather conditions were clear, calm and about 70 F. The facility was represented by Mr. Daniel Sovinski, Plant Engineer. (The former, long-term AQD contact, Mr. Roger Bula, is deceased; this was SL's first meeting with Mr. Sovinski.) SL provided the "DEQ Environmental Inspections: Rights and Responsibilities" brochure to Mr. Sovinski. The inspection continued with an entrance interview, records review and then further discussion about the campus' regulated equipment.

Mr. Sovinski oversees/maintains a database for fuel use and required "opt-out" records. These are based on daily fuel meter readings and acceptable MAERS emission factors. See attached for an example subset of these records. Each permitted emission unit (combustion) is incorporated; and SL has verified use of MAERS emission factors for combustion processes.

On this first day of inspection, as SL reviewed the available records, it became apparent that a computing "gremlin" had inserted itself into the spreadsheet in approximately May 2014. Records from that time on were clearly non-sensical; there was either a discrepancy in units, multiple-accountings, error in meter reading, data entry, or calculation that was making the results from the spreadsheet non-trust-worthy. Neither SL nor Mr. Sovinski could easily trouble-shoot the origin of this error, and so the inspection was suspended until Monday, September 8, 2014, when the inspection could be further supported by FSU Environmental Coordinator Ms. Michele Upton and Consulting Engineers FTC&H (as necessary.)

The Inspection continued at about 9 AM, Monday September 8, 2014. It was another beautiful, calm, clear, 70 F day with no odors or visible emissions noted. SL met with Mr. Sovinski and Ms. Upton. SL again declared his intention to complete the inspection and shared DEQ's brochure with Ms. Upton. SL also provided copies of MACES Activity Reports for this facility as a way of providing background/history of the facility's record of compliance with its opt-out Air Permits.

The inspection continued with discussion, review of the compliance spreadsheet, and observations in the Power House and of the Pathological Waste Incinerator.

Mr. Sovinski characterized the spreadsheet issue observed on 9/1/14 as a data entry interruption that had affected further calculations. He and FTC&H had found and corrected this interruption and reviewed it for accuracy. (This is the version that is attached.) They've further added QA/QC control boxes to indicate the date of last review/change.

This attached record is the basis for compliance with the PTI's opt-out limits and shows that emissions are well-below allowed limits.

SL also review attached "Input Data" which shows daily meter readings, boiler(s)/turbine operations for the day, and use of any oil as fuel. This was available and current through the previous day, and SL verified the entries as valid later in the day, when he observed the gas meters at the Power House.

Beyond discussion of the recordkeeping, SL reviewed PTI 05-14 with Mr. Sovinski and Ms. Upton on a (nearly) condition-by-condition basis. For each condition, the basis of compliance was further discussed, as necessary.

Mr. Sovinski and Ms. Upton appear to understand the comprehensive/opt-out nature of this permit and also recognize that a more complete inventory of miscellaneous sources (small, exempt, individual combustion sources such as any emergency generators, miscellaneous boilers and hot water heaters), and estimated potential emissions from these sources (*expected to be very minor in comparison to the equipment explicitly permitted under PTI 05-14*) would improve the FGFACILITY records and further demonstrate that total source emissions are below the allowed limits.

Specific observations and details of discussion during the inspection are included below.

#### EU-INCINERATOR

Only pathological waste is burned in this unit per Special Condition (SC)II.1. This unit was not in use at the time of the inspection. It is infrequently used and records indicate the last use in February. (See SCVI.2.) The current operator ("Richard") was very helpful and appears to be very familiar with maintenance and operational issues for the unit. Procedures were observed to be posted by the unit in accordance with SCIII.1 and Appendix A. The required switches and procedures are installed and used per SCIV.1. The stack appears to meet the requirements of SCVII.1. Richard is familiar with the requirements of Appendix A, and his discussions of unit operating procedures were consistent with these.

#### EU-COGEN

This consists of a 1130 kW gas turbine and a 45 mmBtu/hr "Nebraska" heat recovery steam generating boiler. (The boiler is also known as Boiler No. 2.) This equipment was not in use at the time of the inspection.

SL had previously obtained a sample of the No. 2 fuel oil that would be used in this equipment to verify compliance with the sulfur in fuel restriction in SC 2.3. Analysis of this sample for sulfur content indicated compliance with applicable sulfur restrictions at 0.07% sulfur content by weight. Any oil received onsite since would be Ultra-Low Sulfur Diesel (ULSD) with a maximum sulfur content of 15 ppm by weight. Mr. Sovinski has access to bills of lading from the oil vendor; but on-site use of oil is only for emergency use and oil has not been used in the previous year or more.

SL considers this unit to be in compliance with the emission limits of PTI #05-14, based on the most recent test results and the accepted emissions revisions/corrections contained in this permit.

#### EU-BOILER

This is also known as "Boiler 3" or the "Volcano" Boiler. It's rated at 75,000 pph steam production and was installed in 1996. (It's subject to NSPS, Subpart Dc.) In practice, the boiler operates on natural gas only, but it can use the same No. 2 fuel oil sampled above as a backup/emergency fuel. This boiler was the only one operating, at about 30% capacity at the time of the inspection (21,000 pph steam production and 22 kcfh natural gas used.)

SL discussed with Operator "Dean" how a load condition is targeted and maintained; and reviewed the graphical/computerized system depictions available to the operators.

Dean led SL to the gas meters (outside the Power House, to the north) and collected the following meter readings (SL also verified that the units for the readings are CSCF):

Low Pressure: 19276167

**High Pressure\*: 22075008**

\*High Pressure gas serves the turbine, only. Low pressure gas serves all other Power House equipment.

These readings are consistent with the Data Input data from Mr. Sovinski, discussed above; and indicate "0" high pressure gas use (i.e., no turbine operations) and about 4500 cscf natural gas for this day; which is consistent with current daily use.

This monitoring and recordkeeping substantiates compliance with SCVI.1 through VI.6, and the stack appears to be constructed in accordance with the requirements of SCVIII.1.

No visible emissions were noted during this visit to the Power House.

**(Other Emission Units That Have Been/Were Observed)**

Wick's Boiler No. 1; this boiler is rated at 75,000 pph steam production and was in not use at the time of the inspection. It was installed in about 1965 and is grandfathered from Rule 201 permitting requirements. Fuel use and estimated emissions are incorporated into recordkeeping and FG-FACILITY requirements.

New Units Boilers 4 and 5; these natural gas (only) boilers were not operating but were installed in 2013 and have nameplate capacities of 20.4 mmBtu/hr heat input and rated emissions of 30 ppm NOx. Per previous discussion with site personnel and FTC&H:

- FTC&H has examined Rules 278 and 282 and has concluded that the project to the installation of 2 NG-fired boilers rated at 20.4 mmBtu/hr each is eligible for exemption (SL concurs);
- NSPS Initial Notifications have been prepared and submitted (received by AQD on 6/28/13);
- These will NOT be regulated by the Boiler MACT since FSU is an Area Source of HAPs and the Area Source Rule does not regulate gas-fired boilers.
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- In fact, SL noted that 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. SL discussed this with Mr. Sovinski and Ms. Upton and noted 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.

Also; Bond Hall and East Campus Apartments Boilers; SL had previously observed five (5) 2mmBtu/hr natural gas-fired boilers servicing Bond Hall. Mr. Bula had indicated that these are the largest boilers servicing an individual building; Boilers 1 and 3 centrally provide for the bulk of the campus' needs. These are exempt from permitting per Rule 282(b)(i). Mr. Bula had incorporated these into his facility-wide records and emission estimates.

**FG-FACILITY**

This section of the permit requires facility-wide emission limits, recordkeeping, and emissions tracking. Available records (SCVI.1 through VI.5) incorporate each of the above sources. Emissions of HAPs use in vocational programs are negligible as these programs have reduced in extent. Due to use of natural gas, low utilization of EU-COGEN, and declining emissions of HAPs from the vocational program, the facility's emissions are well below those established in SCI.1 through I.5.

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At the time of the inspection, SL considers the facility to be in compliance with the requirements of PTI No. 05-14 and applicable air use rules and regulations,

**ATTACHMENTS**

**A; Emission Factors**

**B; Main Spreadsheet/Monthly and 12-month Rolling Emissions Estimates**

**C; Input Data**

NAME 

DATE 9-9-14

SUPERVISOR 