

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

G712632354

| | | |
|--|-------------------------------|---------------------------|
| FACILITY: GRAND VALLEY STATE UNIVERSITY | | SRN / ID: G7126 |
| LOCATION: 123 Service Building, ALLENDALE | | DISTRICT: Grand Rapids |
| CITY: ALLENDALE | | COUNTY: OTTAWA |
| CONTACT: DAVID COX , SAFETY MANAGER | | ACTIVITY DATE: 12/03/2015 |
| STAFF: Steve Lachance | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT |
| SUBJECT: Scheduled Inspection for FY '016 (SLachance, 12/3/15) | | |
| RESOLVED COMPLAINTS: | | |

This scheduled inspection commenced at about 1 PM, Thursday, 12/3/15. Weather conditions were about 40 degrees F, overcast, humid, with mild winds. No visible emissions from the Allendale Campus Utilities Building were noted upon approaching the facility.

The facility was represented during the inspection by Mr. David Cox (Safety Manager and main AQD contact; 616-331-3083), Mr. Terry Pahl (Facilities Engineer); FTC&H consultant Mr. Tim Swainston who was on-site this day for other purposes; and current student interns Ms. Tyler Joyce, Mr. Mark Crosetto, and Mr. Justin Mitchell. Other staff (Mr. John McIntire - Boiler Operations) assisted as necessary. The primary purpose for the inspection was to assess compliance with opt-out permit No. 182-84A.

FACILITY DESCRIPTION:

Grand Valley State University (Allendale Campus) is located in Ottawa County, which is currently designated as attainment for all criteria pollutants.

Permit to Install (PTI) No. 182-84A regulates emissions from two boilers in the Central Utilities Building as well as source-wide emissions of SO₂. This permit limits emissions of sulfur dioxide to less than 100 tpy, thereby opting the facility out of regulation by the Renewable Operating (RO) Permit Program (i.e., "Title V".) This is accomplished primarily through restrictions on fuel oil quantity and quality (sulfur content), accompanied by appropriate monitoring and recordkeeping. The facility is considered to be a true minor source of other Criteria Pollutants and Hazardous Air Pollutants (HAPs).

Other on-site equipment includes emergency diesel engine electric generators and various Rule 201-exempt natural gas-fired boilers and water heaters.

SL observed that the campus is continuously and actively growing.

Entrance Interview: Upon entry into the facility, SL announced his intent to inspect the facility and provided Mr. Cox and others (to the extent materials were available) with copies of DEQ's "Environmental Inspections: Rights and Responsibilities" pamphlet. SL stated his objectives for the inspection; to review current boiler operations and available records relative to PTI No. 182-84A's requirements; to review the "opt-out" conditions of this permit; and to assess any other Clean Air Act applicable requirements.

The first item of business was to review the status of Consent Order AQD No. 7-2002 for asbestos concerns. While both Mr. Cox and SL recalled having discussed/addressed/terminated this in the past, it appeared to still be in the AQD system as "active" and so therefore subjecting the facility to possible stipulated penalties and other risk. Facility personnel located their request for termination dated July 20, 2012; SL obtained a copy of this and will ferry this termination request through the system separate from this inspection; this issue is not considered any further, here.

Because of the audience, SL provided more detailed background information than usual on the history

of the CAA amendments of 1990, Title V permitting, and this facility's history and opt-out path during these entrance discussions.

Mr. Pahl explained various efficiency and conservation measures that have taken place; and SL found internet data (attached) supporting the positive effect of these. GVSU has also partnered with Consumers Energy in a 3 MW Solar Garden which is currently under construction off 48th Street, near Pierce Road and South of M-45.

COMPLIANCE EVALUATION:

Two Boilers in the Central Utilities Building ("FGBOILERS" in PTI No. 182-84A); 2 Wickes boilers were installed in about 1965. (As such, these precede regulation under NSPS.) Boiler No. 1 is capable of operating on either natural gas or fuel oil, while Boiler No. 2 operates only on natural gas. These boilers provide heating/cooling to the entire campus, with the exception of the Calder Arts Center and some newer construction. (These facilities, as well as various housing units are served by small, exempt, gas-fired boilers and heaters.)

At the time of the inspection, only Boiler No. 2 was operating (on natural gas only), producing steam at about 18.8 kpph and throttling at about 53% of fuel capacity. (This boiler's rated capacity is nominally about 40 kpph.) No visible emissions were noted. The control panels for the boilers have been updated and so SL was able to obtain the following operations/performance data for Boiler No. 2:

- Steam Production: 18.8 kpph
- Efficiency: 80%
- O₂: 2.8%
- Capacity: 53%
- Stack Temp: 396 F
- Economizer: 39 F "delta T"

(A note here about future campus growth and energy needs; the campus needs to have redundant facilities (multiple units and secondary fuel capability.) The University has been very effective at implementing conservation and efficiency measures, and so has been able to accommodate growth with the current utility system and small, exempt, efficient units. See discussion, above. However, future growth might challenge the ability of existing units to cover these needs, especially during winter. Facility personnel were clearly on top of this issue and SL was able to re-iterate the need to incorporate Clean Air Act requirements into any future changes, whether it be new emissions units or changes in processes for existing units. The facility appeared ready and able to do so.)

In a previous inspection, SL had obtained a sample of the fuel oil serving FGBOILERS. The sample was submitted to the MDEQ Laboratory for analysis of heating value and sulfur content. Based on the analytical results for the fuel oil sample (see the 11/06/08 MACES report), the oil inventory at that time was compliant with the sulfur-in-oil requirements of PTI No. 182-84A. Moreover, oil shipments since that time have all been designated as "MV15" or "Ultra LSD2" oil with sulfur contents defined as less than 15 ppm, which equates to <0.0015% sulfur (compliant with PTI No. 182-84A.) SL requested a Bill of Lading for the most recent oil shipment; receipt of this is pending.

SL requested monthly records (starting in January 2014) for boiler fuel use, as required by the permit and for MAERS reporting. These were current and readily available. See attached.

Recent diesel fuel usage is minimal (48 hours or less in each of 2014 and 2015; all in one continuous run in February of 2015) The facility is fully aware of the restriction to 48 hours of diesel operation per annum in order to maintain "Gas1" status with respect to the Area Source Boiler MACT, 40 CFR 63, Subpart JJJJJJ.

FGBOILERS SUMMARY; these records indicate compliance with PTI No. 182-84A. Specifically;

- Boiler No. 1 burns only natural gas or compliant No. 2 fuel oil;
- Boiler No. 2 burns only natural gas;
- **Daily operation logs indicated fuel use that were rolled into the records below;**
- **The facility demonstrated acceptable usage records and sulfur-in-oil documentation;**
- Acceptable Monitoring and Recordkeeping practices are in place;
- Stacks appear to be constructed in compliance with the permit's Stack/Vent restrictions; and
- No visible emissions were noted from the operating boiler.

FGFACILITY SUMMARY; based on fuel oil used (about 6,200 gallons in 2015 (attached) compared to the 300,000 gallons per 12-month period allowed by permit) and the documented sulfur content of this oil, facility-wide SO₂ emissions are very much less than the 5 tpy allowed (about 140 pounds per MAERS and supporting documentation. See attached.) Acceptable records to document this are in place.

Note, the Records for 2014 received during the inspection correspond to the throughput values used in the EI 2014 MAERS submittal reviewed as part of this Full Compliance Evaluation.

Boiler MACT Discussion; this facility is an Area Source of HAPs and so is potentially subject to 40 CFR 63, Subpart JJJJJJ. SL previously concluded that as a natural-gas-fired boiler, Boiler No. 2 is not subject to this rule. Moreover, Boiler No. 1 also qualifies as a Gas-Fired Boiler if it burns Fuel Oil < 48 hours per year, which appears to be the case currently. Mr. Cox had previously provided a FTC&H memo reaching this same conclusion and recommending that GVSU document the number of hours oil is burned. GVSU is doing this, as documented during this inspection. The facility is aware that burning oil for non-testing/non-emergency purpose for >48 hours per year would subject the boiler to Boiler MACT regulation per JJJJJJ (which would basically entail an energy assessment and a tune-up every other year.)

Exit Interview/SUMMARY; Current records, sulfur-in-fuel documentation (pending at the time of writing but expected soon) and previous laboratory test results indicate compliance with PTI No. 182-84A. The facility is an Area Source for HAPs and a True Minor Source for GHG/CO₂e. The Boiler MACT will apply if the facility operates for >48 hours per year on fuel oil.

Attachments:

A gvsu.edu information regarding campus energy use (2 pages)

B 2014 and 2015 Monthly Fuel Use Records

C 2015 record of Fuel Oil Burned

D MAERS EI2014 Source Total Report

NAME



DATE

12/4/15

SUPERVISOR

