

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

G712647210

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: 11/30/2018
STAFF: Tyler Salamasick	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2019 unannounced inspection of SO2 opt out source.		
RESOLVED COMPLAINTS:		

Clean Air Act Inspection report for Grand Valley State University, (GVSU) Allendale, Michigan

Facility Background

Grand Valley State University is a college university campus. The facility's main emissions are generated by the facility boilers, which are used to provide heat to the campus buildings.

Grand Valley State University is not subject to the Title V program, which is discussed below, in the regulatory analysis section of this report.

Compliance History

The facility has not received any violation notices from the AQD in the past five years. The facility was last inspected in Fiscal Year 2016 and was found to be in compliance with the applicable air quality rules and regulations at that time.

Location

Grand Valley State University located at 1 Campus Drive, Allendale, Michigan. This area is a college campus surrounded by primarily light commercial and residential. The student housing is intermixed on the campus with some residential structures approximately 350 feet to the south of the facility's main emission units (FGBOILERS).

Introduction and purpose of inspection

On November 30, 2018 Tyler Salamasick, Environmental Quality Analyst of the Michigan Department of Environmental Quality, Air Quality Division conducted an unannounced, scheduled inspection of Grand Valley State University. The MDEQ inspected the facility located at 1 Campus Drive, Allendale, Michigan.

The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and PTI No 182-84A.

Observations and facility processes

AQD staff met with David Cox, Safety Manager, presented their identification and informed the representative of the intent of the inspection. The facility representative agreed to show the AQD the facility and its processes. Grand Valley State University's main emission sources are the two large building heat boilers. One of the permitted boilers is capable of firing both natural gas and #2 fuel oil. I

first inspected the boiler area and observed the nameplate capacity as well as fuel connections. Only one of the boilers appeared to be connected to fuel oil, as described in PTI No. 182-84A. After observing the boilers David printed out a list of the facility's emergency generators. While conducting the inspection we cross reference the list and confirmed the capacity and fuel use met the listed specifications of some of the generators.

Grand Valley's art building has a single spray booth with a fabric filter installed. The process appears to be exempt from requiring a permit. While in the area I inspected the filters and they appeared to be properly installed and free of gaps and penetrations. They were slightly used but appeared to be in good condition.

Regulatory analysis and compliance evaluation

Facility emission category

Grand Valley State University is an opt out source for sulfur dioxide (SO₂). PTI No. 182-84A establishes a facility wide (FGFACILITY) SO₂ limit of 5.0 tons per year (tpy) per 12 month rolling time period. FGFACILITY applies to all processes at GVSU which emit air contaminants including both permitted, exempt and grandfathered processes.

Federal Regulations

Grand Valley State University's EUBOILER1 has the capability of firing #2 fuel oil. As indicated in past reports, the facility is an Area Source of hazardous air pollutants (HAPs) and is potentially subject to 40 CFR Part 63, Subpart JJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (6J). 6J defines a gas-fired boiler as the following:

...“Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Boiler 1 is considered gas-fired if it burns fuel oil for less than 48 hours per year, which GVSU appears to be complying with.

The boilers are also potentially subject to 40 CFR Part 60, Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. The previous inspection report indicates that the boilers were installed in 1965 and may predate the NSPS; it should be noted that the facility applied for a permit modification in 2008 due to modifying the boilers fuel usage capabilities as well as derating the boilers by lowering the fuel burning capacity. If the modification of the fuel orifices and changing of boiler capacity constitutes a modification as defined by 40 CFR Part 60 the equipment would be subject to the requirements of Subpart Dc. GVSU should determine if the modification would make the boilers subject to 40 CFR Part 60, Subpart Dc.

GVSU has multiple emergency generators that appear to be subject to NSPS 40 CFR Part 60, Subpart JJJJ (4J) Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and/or NSPS 40 CFR Part 60 Subpart IIII (4I) Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. 4J states that one method of complying with the standard is maintain a certified engine per manufacturer's specifications as described by the following:

(a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in §60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in §60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

Subpart IIII state that one requirement of the CFR is that the fuel meets a 1000 ppm maximum sulfur content limit. 4I also requires that the facility follow the manufacture's specifications.

David provided me with the facility list of the generators, with 21 listed generators. The generators have different kW output and fuel types. Of the listed power output the range is between 6kW and 600kW. Nine of the generators indicate DSL as a fuel and the remainder indicate NG.

PTI-182-84A

FGFACILITY- Source Wide Conditions

The source wide conditions apply to all process equipment at the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment.

Emission limits

FGFACILITY is limited to 5.0 tpy of sulfur dioxide (SO₂) per 12 month rolling time period. The 12 month rolling time period applies to any 12 month period, not just per calendar year. After discussion the 12 month rolling totals, David provided an updated 12 month rolling format. The highest period of emissions was for April 2018 at 0.104 tons per year 12 month rolling. This is below the 5 ton limit and appears to comply with the requirements of PTI 182-84A.

FGBOILERS- EUBOILER1 and EUBOILER2

EUBOILER1 and EUBOILER2 are rated in the permit at 40 MMBtu and 37.6 MMBTU respectively. The equipment name plates do not indicate the size of the boilers, though this may not be relevant as be boilers were derated in 2008. The PTI 182-84A permit application indicates that the boiler capacity was decrease with smaller fuel orifices to restrict fuel usage. EUBOILER2 was also converted to only fire natural gas.

Emission limits

FGBOILERS do not have emission unit specific emission limits. Instead the boiler emissions are limited by FGFACILITY sulfur dioxide limits, as discussed above.

Material limits

PTI-182-84A requires that EUBOILER1 only burn natural gas or #2 fuel oil and EUBOILER2 only

burn natural gas. While conducting my inspection I observed that only EUBOILER1 had a fuel oil pump attached, EUBOILER2 did not appear to have this connection. Though the permit does allow for EUBOILER1 to burn #2 fuel oil without a restriction on hours of use, GVSU limits their #2 fuel usage below 48 hours in order to meet the definition of gas fired only as defined by 40 CFR Part 63, Subpart JJJJJ.

The permit required that the fuel oil sulfur content does not exceed 0.05 percent by weight (or 500 ppm). The facility's most recent fuel oil purchase indicates that the sulfur content of the fuel is 0.0015 percent by weight (or 15ppm). This appears to comply with the sulfur limit as established by the PTI.

GVSU has a fuel usage limit per 12 month rolling time period of 300,000 gallons of #2 fuel oil. The facility's records indicate that the highest usage of fuel oil occurred in January of 2016 when the facility's 12 month rolling total was 13,955 gallons. The 13,995 gallons used is below the 300,000 gallon limit and GVSU appears to be in compliance with the condition of the permit. The facility normally burns between 4,500 and 7,500 gallons per 48 hour cycle. It appears that the records might include two yearly 48 hour burns with in a single 12 month rolling time frame, totaling 13,955 gallons. The facility's permit application indicates that the boiler is capable of burning 202.4 gallons of #2 fuel oil per hour. Each individual 48 hour burn cycle could be expected to use up to 9,715 gallons of fuel oil, and the overlapping (12 month rolling) 48 hour burns would be expected to burn up to 19,430 gallons. Even while overlapping the 12 month rolling total, GVSU only reportedly used 4.65% of the permitted fuel oil usage limit.

Discussion

Compliance Assistance: I recommended to David Cox that they update the facility records to include a 12 month rolling average for fuel usage, and SO2 emissions. David had the records updated prior to submitting them to the MDEQ AQD and they appear to be in an acceptable format.

Concerns: GVSU should evaluate if the boiler modifications in 2008 constitute a modification that would make the boilers subject to 40 CFR Part 60, Subpart Dc. They should maintain the demonstration on site, and if required to comply with Dc, GVSU should take the appropriate actions to as required by the CFR.

Compliance statement: It appears that Grand Valley State University is in compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and 182-84A

NAME  DATE 12/26/18 SUPERVISOR 