

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

K212054892

FACILITY: MDOC IONIA FACILITIES		SRN / ID: K2120
LOCATION: 1342 WEST MAIN STREET, IONIA		DISTRICT: Grand Rapids
CITY: IONIA		COUNTY: IONIA
CONTACT: Trever LeBarre , Manager of Environmental Health, Fire Safety,		ACTIVITY DATE: 09/03/2020
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Full compliance inspection.		
RESOLVED COMPLAINTS:		

Inspection of Michigan Department of Corrections, Ionia Correctional Facilities.

FACILITY DESCRIPTION

The stationary source is comprised of several correctional facilities located in close proximity to each other. The facilities include Bellamy Creek Correctional Facility, Michigan Reformatory, Richard A. Handlon Correctional Facility and Ionia Correctional.

REGULATORY ANALYSIS

The stationary source has one opt-out permit (PTI#148-15) that covers all processes regulated at the stationary source. The permit covers three existing natural gas-fired steam boilers at the Michigan Reformatory and two natural gas-fired boilers (yet to be installed at the time of permit issuance) which replace the existing boilers. In the permit the existing boilers are identified as EU-BOILER1, EU-BOILER2 and EU-BOILER3. The new boilers are identified as EU-BOILER4 and EU-BOILER5. Since the issuance of the permit, the facility has installed the two new boilers. The two new boilers, which the facility identify as Boiler No.1 and Boiler No.2, are located where EU-BOILER1 and EU-BOILER3 were previously located. EU-BOILER2 has been removed from service. The permit also covers six existing diesel-fired emergency generators located at the individual facilities, of which only two are still in operation. Currently the power plant at the Michigan Reformatory provides steam for all of the facilities and the emergency generators are used in case there is a loss of power from the public utility grid system. In addition to the permit requirements, the two new boilers (EU-BOILER4 & EU-BOILER5) are subject to NSPS Dc. The six emergency generators are subject to the NESHAP requirements under Subpart ZZZZ.

COMPLIANCE EVALUATION

On August 28, 2020, an offsite survey of the building housing the boilers at the Michigan Reformatory was conducted from the public roadway. During this evaluation, no opacity or abnormal observations were made, only steam was observed being emitted.

Due to the COVID-19 pandemic, a form of digital inspection was conducted instead of physically entering the facility.

Due to the nature of the facility, video recording etc. is generally discouraged/prohibited. Therefore, video conferencing was not conducted. An agreement was made for the facility to provide electronic copies of facility photos taken in August 2020, which were provide along with the permit required records. Facility compliance with the permit/NSPS requirements is based on fuel type, fuel usage, hours of operation, and emission records, for which compliance is based on facility records. No control equipment or addition compliance monitoring is required by the facility.

Records were provided by the facility's consultant, Lillian Woolley, FTC&H. (records attached)

All processes at the stationary source are covered under Opt-Out Permit No. 148-15. The special conditions evaluated and compliance status are summarized below.

FG-BOILERS

Flex group includes the three existing natural gas-fired steam boilers and two new natural gas-fired boilers located at the Michigan Reformatory.

The three existing 89.9 MMBtu/hour natural gas-fired boilers are no longer in operation at the facility. EU-BOILER1 and EU-BOILER3 have been removed, while EU-BOILER2 has been taken out of service (photos provided). The two new boilers have been installed (EU-BOILER4 and EU-BOILER5) in the locations that EU-BOILER1 and EU-BOILER3 previously occupied.

Emission/Material Limits

Each boiler has a NOx limit of 100 lb/MMscf. The emission limit is the emission factor for NOx for a non-low NOx burner using natural gas. Compliance is based on using natural gas. The boilers are only fired with natural gas.

Design/Equipment Parameters

Requires the installation and operation of a device to monitor and record natural gas usage in FG-BOILERS on a monthly and 12-month rolling time period.

The facility monitors and records natural gas usage for FG-BOILERS and provided records of usage as requested from January 2018 until June 2020. The records document monthly and 12-month rolling time period usage.

FG-NSPSBOILERS

FG-NSPSBOILERS includes the two 40.8 MMBtu/hour gas-fired boilers, EUBOILER4 and EUBOILER5, which are subject to NSPS Subpart Dc.

Monitoring/Recordkeeping

The facility is required to monitor and record the natural gas usage on a monthly basis.

The facility provided monthly natural gas usage for FG-NSPSBOILERS, from January 2018 until June 2020.

FG-EMGGENS

Flex group includes six diesel fuel fired emergency generators.

EU-EMGRICE1, EU-EMGRICE2, EU-EMGRICE3, EU-EMGRICE4, EU-EMGRICE5, EU-EMGRICE6

Facility records show the removal dates for the following generators:

EU-EMGRICE2 - 2019
EU-EMGRICE3 - 2017
EU-EMGRICE5 - 2018
EU-EMGRICE6 - 2019

Therefore, of the permitted generators, only EU-EMGRICE1 and EU-EMGRICE4 are still in operation.

Material Limits

Restricts the sulfur content of the fuel oil used to 500 ppm by weight.

Under contract, the fuel supplied is an ultra-low sulfur diesel (ULSD) that contains a maximum sulfur level of 15 ppm.

A copy of the SDS for the fuel supplied under contract by Crystal Flash was provided. The facility's last delivery of ULSD was 518.8 gallons on November 20, 2019.

Process/Operational Restrictions

Restricts the operation of each engine to no more than 500 hours per year on a 12-month rolling time period.

Records were provided showing hours of operation for each generator. The maximum monthly usage did not exceed 100 hours for any single generator in FG-EMGGENS.

FG-FACILITY

Flex group that establishes facility-wide opt out limits for NOx and CO and restricts natural gas usage.

Emission/Material Limits

Facility-wide NOx and CO emission limits: 89 tpy for each, on a 12-month rolling time period.

Review of records back to January 2018 showed that CO emissions did not exceed 12 tons on a 12-month rolling time period and NOx emissions did not exceed 17 tons on a 12-month rolling time period basis.

Restricts facility-wide natural gas usage to 1,215 million cubic feet per year, based on a 12-month rolling time period.

Records were provided documenting fuel usage from January 2018 until June 2020. The highest usage on a 12-month rolling time period was 266 million cubic feet per 12-month rolling time period.

MISCELLANEOUS

In addition to the permitted generators, the facility provided usage records for two additional generators. The generators are identified by the facility as EU-EMGICF and EU-EMGDORM. EU-EMGICF is listed as a 330 kW (3.54 MMbtu/hr) generator that is exempt from permitting, while EU-EMGDORM is listed as a 175 kW (1.88 MMbtu/hr) generator that is exempt from permitting. Each of the generators appear to be exempt from permitting under Rule 282(b)(ii), based on the heat input rating. Emissions from the generators were included with the facility records and are accounted for in demonstrating compliance with the emission limits for FG-FACILITY. The facility reported hours of operation for EU-EMDORM exceeded 200 hours in 2019. The elevated hours of operation were associated with emergency use related to local power outages.

CONCLUSION

Based on this inspection, the facility is in compliance with applicable air quality rules and regulations at this time.

NAME Eric Grinstern

DATE 9/3/2020

SUPERVISOR HH