

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

P062540772

FACILITY: MDOC-Muskegon Complex		SRN / ID: P0625
LOCATION: 2400 S. Sheridan Drive, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Derron Kippen , Physical Plant Manager		ACTIVITY DATE: 07/11/2017
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY '17 on-site inspection to determine the facility's compliance status with PTI No. 133-15, Consent Order No. AQD-13-2016 and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

The Michigan Department of Corrections – Muskegon Complex (MDOC) is located at 2400 South Sheridan Drive in Muskegon, MI. AQD staff Chris Robinson (CR) arrived at this location at approximately 9:55 am on July 11, 2017 to conduct an unannounced site inspection to determine compliance with applicable air rules and regulations, including the facility's Permit to Install (PTI) No. 133-15 and Consent Order No. AQD-13-2016. Weather conditions were sunny and clear, approximately 80°F with WSW winds at 6 mph. CR met with Mr. Deron Kippen, Physical Plant Manager of the Muskegon Correctional Facility and Mr. Ken McComb, Physical Plant Manager of the Brooks and West Shore Correctional Facilities. CR announced intent to inspect and provided proper identification and business cards.

#### FACILITY DESCRIPTION

The MDOC Muskegon complex consists of three separate facilities within a single stationary source: Earnest C. Brooks Correctional Facility, West Shoreline Correctional Facility, and the Muskegon Correctional Facility. The facilities are located contiguous to one another. Therefore, the facilities are considered and permitted as one source. The following table provides the location and description of the permitted emission units for these facilities.

Emission Unit ID	Installation Date	Primary Fuel Type	Secondary Fuel Type	Location	Emission Unit Description
EU-BOILER-1	1972	Natural Gas	~20,000 Gallon Diesel AST	Muskegon Correctional Facility	24 MMbtu/hr natural gas and oil-fired boiler
Replacement EU-BOILER-1	6/19/2017				16.305 MMbtu/hr natural gas and oil-fired boiler
EU-BOILER-2	1972				24 MMbtu/hr natural gas and oil-fired boiler
Replacement EU-BOILER-2	4/3/2017				16.305 MMbtu/hr natural gas and oil-fired boiler
EU-EMGRICE-1	1974	~20,000 Gallon Diesel AST	None	Muskegon Correctional Facility	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 340 kW
EU-EMGRICE-2					Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 340 kW
EU-EMGRICE-3		2,000 Gallon Diesel UST		Earnest C. Brooks Correctional Facility	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 500 kW
EU-EMGRICE-4		800 Gallon Diesel UST		West Shoreline Correctional Facility	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 563 kW

#### COMPLIANCE EVALUATION

The facility uses pipeline quality natural gas as a primary fuel for the boilers and ultra-low sulfur diesel (< 500 ppm (0.05%) by weight) as a primary fuel for the emergency generators and a secondary fuel for the boilers. The facility has three Diesel Fuel tanks. Mr. Kippen provided a bill of lading for the Muskegon Correctional facility tank (20,000 gallons), confirming use of Ultra Low Sulfur Diesel (ULSD). Mr. McComb provided a bill of lading for the Earnest C. Brooks (2,000 gallon) and West Shoreline (800 gallon) Correctional Facilities along with email correspondence from crystal flash confirming use of ULSD (**Attachment A**).

Natural gas to the Muskegon Correctional Facility's Physical Plant, which houses the boilers and emergency generators EU-EMGRICE-1 and EU-EMGRICE-2, is metered. Records are obtained weekly through Work Order management and maintained as required for five (5) years. There are two natural gas meters. The large meter is used to monitor fuel usage to the boilers and the small meter is used for monitoring fuel usage to the complex's Food Services. The facility's boiler emission calculations include fuel usage through the small meter. CR advised Mr. Kippen to not include the readings for this meter going forward because it will slightly overestimate actual boiler emissions.

Meter	Flow Reading (MMcf)
Small Flow Meter	3,106
Large Flow Meter	11,954,987

**- PTI No. 133-15**

Opt-out PTI No. 133-15 establishes legally enforceable limits on this facility's emissions. These limits are below the thresholds established by Title V of the Clean Air Act, as amended in 1990. The PTI was acquired to comply with the provisions of Consent Order No. AQD-13-2016. "Opt Out" status relative to Title V permitting provisions is based on demonstrated adherence to the PTI's facility fuel restrictions, associated emissions levels, and properly documented records.

**• FG-BOILERS**

The Muskegon Correctional Facility operates two permitted boilers and one non-permitted boiler. The non-permitted boiler is a 12.55 MMBtu/hr natural gas-fired boiler considered exempt per Rule 282(2)(b)(i). This boiler, as well as boiler EU-BOILER-1 was in operation at the time of this inspection. Installation of Boiler EU-BOILER-2 was almost complete with an anticipated start-up date of 7/17/2017. The new boilers are considered exempt per Rule 282(2)(b)(i) but are subject to 40 CFR 60 Subpart Dc which required initial notifications of startup. CR informed Mr. Kippen of this requirement and provide the required forms as well as information regarding Subpart Dc.

Although the boilers have the capability of burning fuel oil, the permit only allows this for periods of curtailment, gas supply interruptions, startups, or periodic testing. Testing cannot exceed 48 hours per calendar year to avoid regulation by the Area Source Boiler MACT, 40 CFR 63 JJJJJJ. Mr. Kippen informed CR that the new boilers have not burned fuel oil since startup and the old boilers have not burned fuel oil since issuance of PTI 133-15.

Based on special condition I.1-3 of the PTI, boilers EU-BOILER-1 and EU-BOILER-2 are subject to a daily NOx emission limit of 0.020 lb/gallon and an SO2 emission limit of 0.056 lb/MMbtu when burning fuel oil and a NOx emission limit of 100 lb/MMscf when burning natural gas. As noted above, the facility has not burned fuel oil in the boilers since the issuance of the PTI. There are no special conditions requiring the facility to document compliance with these limits. These limits are MAERs emission factors and are only used to calculate emissions.

The following records were provided as required by PTI No. 133-15 FG-BOILERS SC VI.1-3 and are included in this report:

- Monthly and 12-month records for fuel type and amount of fuel used in FG-BOILERS
- Fuel Oil specifications confirming use of ULSD
- Hours of operation while burning fuel oil in FG-BOILERS

**• FG-EMGGENS**

The emergency generators were installed in approximately 1974 and are considered exempt from new source permitting per Rule 285(2)(g) and NSPS 40 CFR 60 JJJJ (Compression Ignition Internal Combustion engines) requirements because they were installed prior to July 11, 2005.

Each engine is equipped with a non-resettable hour meter as part of their original installation. The following hours were observed:

Engine	Hours of Operation

EU-EMGRICE-1	692
EU-EMGRICE-2	820
EU-EMGRICE-3	1,313
EU-EMGRICE-4	2,361

Each engine is limited to 500 hours of operation on a 12-month rolling time period. Mr. Kippen indicated that the engines are operated for approximately one (1) hour weekly for readiness. Engine hours are tracked as required for determining monthly hours of operation. Records are included in **Attachment B**. Based on these records the engines have operated for less than 50 hours since July 2016.

The following records were provided as required by PTI No. 133-15 FG-EMGGENS SC VI.1-3 and are included in this report:

- Monthly and 12-month rolling records for hours of operation for each engine
- Fuel Oil specifications confirming use of ULSD
- Records of specific engine details required by SC 1.4 are available but were not requested by CR.

#### • FG-FACILITY

In addition to the emission limits described above, MDOC is subject to facility-wide emission limits of 76.7 tpy of NOx and 12.1 tpy SO<sub>2</sub>, based on a 12-month rolling time period. Based on the provided records (**Attachment B**), the facility's NOx & SO<sub>2</sub> emissions for June 2017 were approximately 4.25 tons and 0.13 tons respectively.

Monthly fuel usage and monthly and 12-month rolling NOx and SO<sub>2</sub> emission calculations required by PTI No. 133-15 FG-FACILITY SC VI.1-2 were provided by Mr. Kippen and are included in **Attachment B**.

#### - Consent Order No. AQD-13-2016

The Compliance Program and Implementation Schedule established by paragraph 9 of this order require the facility to comply with the FG-BOILERS and FG-EMGGENS material limits outline in PTI No. 133-15 as well as the NOx and SO<sub>2</sub> emission limits specified in FGFACILITY. The facility provided records, which are attached, and appear to demonstrate compliance with these requirements.

#### COMPLIANCE DETERMINATION

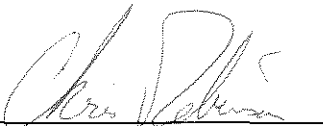
Based on observations made during this inspection, the Michigan Department of Corrections – Muskegon Complex appears to be compliant with PTI No. 133-15, Consent Order No. AQD-13-2016 and other applicable air rules and regulations.

Attachments:

A - Fuel Oil Documentation

B - Records and Calculation Spreadsheet

NAME



DATE

7/24/2017

SUPERVISOR

