

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Off-site Inspection**

K215358455

FACILITY: Marquette Branch Prison		SRN / ID: K2153
LOCATION: 1960 U.S. Highway 41 South, MARQUETTE		DISTRICT: Marquette
CITY: MARQUETTE		COUNTY: MARQUETTE
CONTACT: Trever LeBarre , Manager		ACTIVITY DATE: 06/02/2021
STAFF: Sydney Hewson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Records request to verify compliance with PTI 112-15B and all other applicable state and federal air quality regulations		
RESOLVED COMPLAINTS:		

On June 2, 2021 I (Sydney Hewson) submitted a records request to Mr. Trever LeBarre with the Michigan Department of Corrections – Marquette Branch Prison located at 1960 U.S. Highway 41 South in Marquette, Michigan. Due to the current global pandemic the prison is not allowing visitors, so this inspection was done electronically. The facility’s environmental consultant, Lillian Woolley, submitted the records on behalf of the prison, via email June 9, 2021. Below is a summary of the permit requirements and records received.

Facility Description:

Marquette Branch Prison is both a Level one and Level five facility that currently operates under Permit to Install PTI 112-15B. The facility currently operates 3 boilers and one emergency engine with the following energy ratings and fuel input:

EU-BOILER1	A 25 MMBtu/hr natural gas fired steam boiler capable of burning fuel oil as a back-up fuel.
EU-BOILER2	A 25 MMBtu/hr natural gas fired steam boiler capable of burning fuel oil as a back-up fuel.
EU-BOILER3	A 9.55 MMBtu/hr natural gas fired steam boiler capable of burning fuel oil as a back-up fuel.
EU-EMGGEN1	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 909 hp diesel-fueled reciprocating internal combustion emergency engine.

Emission Unit: EU-EMGGEN1

Unit Description: *This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 909 hp diesel-fueled reciprocating internal combustion emergency engine.*

Material Limits: *The Permittee shall burn only diesel fuel in EU-EMGGEN1 with the maximum sulfur content of 15 ppm (0.0015 percent) by weight, and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent.*

Records: The State of Michigan has an existing contract with Northern Oil (fuel supplier) that specifies ULSD, which has a maximum sulfur content of 15 parts per million (ppm). This is the fuel that is used for emergency generator. MBP received 7,551 gallons of ULSD from Northern Oil on December 12, 2018. Prior to that, a shipment of 7,599 gallons of ULSD was received September 11, 2017.

Pollutant	September 11, 2017 Shipment	December 12, 2018 Shipment
Sulfur (Less than 15 ppm)	The documents the facility submitted for these deliveries did not contain a fuel analysis showing the sulfur content, cetane index, or aromatic content. I requested the facility submit a sample of the fuel they have onsite for analysis. The sample was submitted for analysis on July 7, 2021. The result will be sent to AQD when they are received.	
Cetane Index (40 or a max aromatic content of 35 volume percent)		

Process/Operational Restrictions:

The permittee shall not operate each engine of EU-EMGGEN1 for more than 500 hours per year on a

12-month rolling time period basis as determined at the end of each calendar month. The 500 hours includes the hours for the purpose of necessary maintenance checks and readiness testing.

Records are attached to the hard file of this report, Total hours of operating for EU-EMGGEN1 Through May 2021 are 25.8 hours.

The permittee may operate EU-EMGGEN1 for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. EU-EMGGEN1 may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing.

The facility operated 32.8 hours in 2020, records are attached to the hard file of this report.

If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60 Subpart IIII, for the same model year and maximum engine power, the permittee shall meet the following requirements for EU-EMGGEN1:

- a. *Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions;*
- b. *Change only those emission-related settings that are permitted by the manufacturer; and*
- c. *Meet the requirements as specified in 40 CFR 89, 94, and/or 1068, as they apply*

The facility submitted a copy of the engine certification and maintenance records, these documents are attached to the hard file of this report.

Design/Equipment Parameters: The permittee shall equip and maintain each engine of EU-EMGGEN1 with non-resettable hours meters to track the operating hours.

The emergency generator has a non resettable hour meter.

The maximum rated power output of EU-EMGGEN1 shall not exceed 600 kW (909 HP), as certified by the equipment manufacturer.

The engine certification is attached to the hard file of this report, as long as the facility continues to follow the manufacturers written instructions they do not have to test the engine for emissions.

Monitoring/Record Keeping: The facility monitors and records the hours of operation for EU-EMGGEN1, Records are attached to the hard file of this report.

The permittee shall keep the following records

- a. *Engine manufacturer; The engine manufacturer is Perkins and the generator and engine package was put together and sold by Generac.*
- b. *Date engine was manufactured; April 2016*
- c. *Engine model number; 2806-E18TAG3*
- d. *Engine horsepower; 909 bhp*
- e. *Engine serial number; JGDF5335N02129B*

- f. Engine specification sheet; Engine Spec Sheet is attached to the hard file of this report
- g. Date of initial startup of the engine; August 2016
- h. Date engine was removed from service at this stationary source.

The permittee keeps the following records of maintenance activity for EU-EMGGEN1:

Records of the manufacturer's emission-related written instructions, and records demonstrating that the engine has been maintained according to those instructions are attached to the hard file of this report. Details of weekly and monthly test/checks are attached.

The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in EU-EMGGEN1, demonstrating that the fuel meets the requirement of 40 CFR 80.510(b). The certification or test data shall include the name of the oil supplier or laboratory, the sulfur content, and cetane index or aromatic content of the fuel oil.:

- The facility is taking a sample of the fuel and sending it in for analysis they ordered the kit June 23, 2021 to send into a lab. Analysis results will be submitted as soon as they receive them.

FG-BOILERS:

Flexible Group Description: Three (3) natural gas-fired steam boilers capable of burning fuel oil as a back-up fuel.

Emission Limits/Material Limits/Monitoring/Record Keeping/ Process/Operational Restrictions:

Pollutant	Emission Limit	Compliance verification method
SO ₂	0.056 lb/mmBtu	The facility only uses ultra-low sulfur fuel with a sulfur content of less than 0.05% by weight tracks fuel usage to meet this emission limit
NO _x	0.020 lb/gal	The facility track fuel usage monthly and annually to verify compliance with this emission limit.

The facility must use less than 990,000 gallons of fuel oil in a 12 month rolling time period, they submitted records, which are attached to the hard file of this report. The facility only used 8 gallons of fuel oil through the month of May 2021. The facility sent the fuel oil in for analysis on July 7, 2021. Results will be attached to the hard file of this report once they are submitted to AQD

The facility only uses fuel oil in FG-BOILERS during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel does not exceed a combined total of 48 hours for each unit in FG-BOILERS during any calendar year.

The permittee does not operate EU-BOILER3 using fuel oil for more than 500 hours per 12-month rolling time period as determined at the end of each calendar month. The facility did not operate on fuel oil during the last 12 months through May 2021.

FGFACILITY:

Flexible Group Description: All process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

Emission Limits:

Pollutant	Emission Limit	Records reviewed
NOx	39.5 tpy	0.02 Tpy through May 2021
SO2	21.0 tpy	0.02 tpy through May 2021

Compliance Determination:

After my records review, it appears the Marquette Branch Prison is in compliance with PTI 112-15B and all other state and federal air quality regulations.

NAME 

DATE 7-13-21

SUPERVISOR 