

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

B752948905

FACILITY: BAY CITY ELECTRIC LIGHT & POWER		SRN / ID: B7529
LOCATION: 900 S WATER ST, BAY CITY		DISTRICT: Saginaw Bay
CITY: BAY CITY		COUNTY: BAY
CONTACT: Lee Techlin , Generation & Maintenance Supervisor		ACTIVITY DATE: 05/07/2019
STAFF: Kathy Brewer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Determine compliance with Opt-Out PTI #587-96		
RESOLVED COMPLAINTS:		

I (KLB) conducted an announced inspection at the City of Bay City Electric Light & Power (BC EL&P) Water Street generating station. The BC EL&P was issued air permit, PTI #587-96 for two generators, one 8000 horsepower and one 9630 horsepower generator. The facility is also subject 40 CFR Part 63 Subpart ZZZZ.

I met with Mr. Lee Techlin, Generation and Maintenance Supervisor, for the BC EL&P. We viewed the electric power generators (#1 & #2), including metering devices, fuel handling equipment, and the required records for the emission units

We viewed the engine operating hours, kilowatts generated, diesel fuel use, and natural gas fuel use meters. The meters are the source of readings taken for required reporting parameters. The most current records are maintained in the generator building by the onsite operators. The daily operating information is transferred onto a spreadsheet and required calculations are performed to determine compliance with the emission limits in PTI#587-96

MAERs reported emissions for 2018:

Pollutant	Lbs
CO	3576.79
NOX	23309.56
PM10,FLTRBLE	284.29
PM10,PRIMARY	136.45
PM2.5,FLTRBL	284.29
PM2.5,PRIMARY	136.45
SO2	269.62
TOC	329.77
VOC	1116.83

Upon arrival I noticed some slightly brown visible emissions form the engine exhaust stack. Between 10:55 and 11:05 I conducted a non – Method 9 VE observation. The VE varied between 0 and 10%. The facility's permit does not have a special condition for opacity. All observations were below the General Conditions opacity limit of 20%.

Attached

Diesel fuel supplier June 19, 2018 Ultra Low Diesel Fuel delivery documents

May 7, 2019 Daily records Engine #1, Engine #2

Diesel fuel  
Natural gas  
Engine hours  
Kilowatt Generation

Feb 2017 through April 2019 Graphs

Monthly Fuel use  
Yearly fuel use v. limit  
SO2 Limit v. actual emissions  
NOx limit v. actual emissions

February 2017 through January 2019

SO2 24 hour emissions  
NOx TPY and lbs/MMBTU emissions  
Natural gas usage  
Diesel fuel usage

File review

2017, 2018, 2019 40 CFR Part 63 Subpart ZZZZ area source RICE MACT semi-annual reports

MAERS 2018 emissions

May 2106 Stack test report

**FGENGINES:Compliant**

Two dual-fuel fired, compression ignition Reciprocating Internal Combustion Engine (RICE) generators each fitted with a catalytic oxidizer. The units are operated as peaking units. The RICE initially fire up on diesel fuel with the transition to a 95% NG and 5% diesel mix occurring over 20-30 minutes. I recorded the following from each engines manufacture plate information.

Engine	Plate rating	Year	Hours * May 7, 2019
<b>EUENGINE1</b>	<b>5757</b>	<b>1981</b>	<b>246</b>
<b>EUENGINE2</b>	<b>6955</b>	<b>1985</b>	<b>424</b>
<b>*Since 2013 Rebuild</b>			

**Emission limits**

The range of 24 hour SO2 lbs emitted /MMBTU between February 2017 and January 2019 was zero to 0.05. The site uses an emission constant of 0.0397 lbs SO2/MMBtu. The emissions for the months of February 2017, August 2018, and January 2019 are below.

Pollutant	Limit	Time Period / Operating Scenario	Feb 2017	Aug 2018	Jan 2019
1. SO <sub>2</sub>	0.56 lb/MMBTU heat input <sup>a</sup>	24-hour	Not Operated	0.04	Not operated
<sup>a</sup> Equivalent to using diesel fuel with a 0.5% sulfur content and a heat value of 18,000 BTUs per pound.					

The records for February 2017 through January 2019 are attached.

**Material Limits, Process/Operational restrictions, Reporting, Design/Equipment parameter conditions, or Testing/Sampling**

None except those required by 40 CFR Part 63 Subpart ZZZZ for Area Source facilities that are over 300 bhp, existing, dual fired, non-emergency, compression ignition engines at an area source. Review of semi annual MACT ZZZZ reports found no reported deviations or periods when the CMS was out of control. Stack testing is required once every three years or 8760 hours of operation. Stack testing was ongoing during the inspection. The most recent previous stack test was conducted in May of 2016.

**Monitoring and Record Keeping**

SC VI.1 The generator is required to burn low sulfur diesel fuel (0.5% sulfur content). The diesel oil supplier certifies a maximum sulfur content of 15 ppm. A copy of the most recent fuel oil purchase w/sulfur content certification from June 18, 2018 is attached. Based on the information the fuel provided to BCE is in compliance with permit limits.

**Stack/Vents**

The following stack/vent information was confirmed during the inspection:

Exhaust gases from the stacks listed in the table below discharge unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Description

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Description
1. SVENGINE1	28	40	5757 kWh engine
2. SVENGINE2	30	43	6955 kWh engine

**FGFACILITY** : *Compliant*

The monthly operating hours, natural gas usage, distillate oil usage, and emissions for February 2017 through January 2019 for engine #1 and #2 were reviewed.

#### Emission Limits

The range of 12 month rolling NOx emissions February 2017 and January 2019 was 0.68 to 2.11 TPY. The NOx emissions for the months of February 2017, August 2018, and January 2019 are below.

Pollutant	Limit	Time Period / Operating Scenario	Feb 2017	Aug 2018	Jan 2019
1. NOx	99.9 tpy	12-month rolling time period as determined at the end of each calendar month.	1.35 TPY		

#### Material Limits

The fuel usage for both engines during the months of February 2017, August 2018, and January 2019 are below.

Fuel	Limit	Time Period / Operating Scenario	Feb 2017	Aug 2018	Jan 2019
1. Natural gas	73,500,000 dscf/yr	12-month rolling time period as determined at the end of each calendar month.	4,668,000 dscf/yr	7,611,000 dscf/yr	6,253,000 dscf/yr
2. Diesel	63,500 gal/yr	12-month rolling time period as determined at the end of each calendar month.	6,516 gal/yr	9,091 gal/yr	6,405 gal/yr

#### Process/Operational restrictions

None required in the PTI

#### Design/Equipment parameter

SC IV.1 requires the facility to have a device to satisfactorily monitor and record the natural gas usage. The site uses the gas company meter for readings. An initial reading is taken before an engine is started and a reading taken when an engine is stopped.

SC IV.2 requires the facility to have a device to satisfactorily monitor and record the diesel fuel usage. A day tank has a meter to measure gallons used and a glass column and ruler used to determine fuel usage.

**Testing/Sampling**

SC V.1 requires performance test conducted required by 40 CFR Part 63, Subpart ZZZZ. Testing has been conducted every three years since the catalyst installation in 2013. Testing was performed during the inspection on May 7, 2019.

**Monitoring/Recordkeeping**

SC VI.2 requires the facility to monitor and record the natural gas usage. A manual record of the reading from the gas company meter taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC VI.3 requires the facility to monitor and record the diesel fuel usage. A manual record of the reading from the day tank glass column taken before an engine is started and when an engine is stopped is entered in the facilities electronic tracking system.

SC VI.4 requires the facility to keep monthly calculation records for 12 month rolling NOx. During the inspection the facility produced the calculations and NOx emissions for February 2017 through January 2019.

**Reporting**

None required in the PTI except those in 40 CFR Part 63 Subpart ZZZZ. For 2017 through 2019 reports received no deviations were reported. No periods during which the CMS was out of control were reported.

**Stack/Vent restrictions**

None required in the PTI

NAME 

DATE 5/21/2019

SUPERVISOR 