

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

N573261181

<b>FACILITY:</b> Thumb Electric Cooperative		<b>SRN / ID:</b> N5732
<b>LOCATION:</b> 2437 East Dayton Road, CARO		<b>DISTRICT:</b> Bay City
<b>CITY:</b> CARO		<b>COUNTY:</b> TUSCOLA
<b>CONTACT:</b> Michael Reece , Facility Manager		<b>ACTIVITY DATE:</b> 12/08/2021
<b>STAFF:</b> Adam Shaffer	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> On-site inspection.		
<b>RESOLVED COMPLAINTS:</b>		

An onsite inspection and records review was conducted by Air Quality Division (AQD) staff Adam Shaffer (AS) of the Thumb Electric Cooperative (TEC) site located at 2437 East Dayton Road Caro, MI. Applicable records were requested and provided on December 6, 2021, and December 9, 2021, to verify compliance with permit to install (PTI) No. 544-95B. An in-person inspection to verify onsite compliance was completed on December 8, 2021.

### **Facility Description**

TEC is an electric utility company. This site is in operation with PTI No. 544-95B. The facility took opt-out limits for nitric oxides (NO<sub>x</sub>), sulfur dioxides (SO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOCs).

### **Offsite Compliance Review**

Based on the timing of the inspection, the 2020 Michigan Air Emissions Reporting System (MAERS) Report had been submitted on March 25, 2021. Upon review, no emissions were reported emitted for the 2020 year. After speaking with company staff this appears consistent with site operations.

### **Compliance Evaluation**

Records requests were sent to TEC staff for various records required by PTI No. 544-95B with records later provided on December 6, 2021, and December 9, 2021. An onsite inspection of the site was completed on December 8, 2021. AQD staff AS arrived onsite at 9:02am on December 8, 2021. Weather conditions at the time were cloudy skies, temperatures in the low 20's degrees Fahrenheit and winds from the south / southwest at 5-10mph. Upon arriving onsite, AS met with Mr. Michael Reece, Facility Manager, who provided a tour of the site and answered site specific questions. Requested records were provided by company staff.

As mentioned above TEC is an electric utility company. The engines and the remaining items onsite were reviewed during the inspection and will be discussed further below.

### **PTI No. 544-95B**

It had been determined that the last time the engines had been in operation was October 2019 and that had been for maintenance purposes.

Per Special Condition (SC) 1, the total NO<sub>x</sub> 12-month rolling time period emissions from Units 1-6 shall not exceed 88 tons. Additionally, TEC shall keep track of daily natural gas / daily fuel oil for each applicable unit. Records were requested and provided for select time periods. As of October 2019, 0.148 tons per year (tpy) of NO<sub>x</sub> emissions were reported emitted which is well within the permitted limit. Based on the records reviewed and

speaking with company staff the units have only been run one hour in 2018 and one hour in 2019, with the units not having been run since then. Additionally, based on the records reviewed, TEC appears to be keeping track of daily fuel used to run the engines.

Per SC 2, the NOx emission rate from Units 1-6, when firing #2 fuel oil, shall not exceed 8,088 pounds per calendar day. Records were requested and provided for select time periods. When the units were last run in October 2019, the daily value was 298.9 lbs of NOx which is well within the permitted limit. As mentioned above, the units have only been run one hour in 2018 and 2019. After further review, TEC appears to be meeting this emission limit.

Per SC 3, the NOx emission rate for Unit 5, when firing natural gas and #2 fuel oil, shall not exceed 1,219 pounds per day. Records were requested and provided for select time periods. For October 2019, the daily emission rate of NOx emissions noted was 64.6 lbs which is well within the permitted limit. After further review, TEC appears to be meeting this emission limit.

Per SC 4, the total CO emission rate from Units 1-6, when firing #2 fuel oil, shall not exceed 542.3 pounds per calendar day. Records were requested for select time periods. After speaking with company staff it appears that the company isn't keeping track of CO records. During the previous inspection, EPA AP-42 emission factors were used in order to calculate emissions to compare to the emission limit. The following calculation was used to compare emissions for this inspection.

CO emission factor (0.0055 lb/hp-hr) x each EU-UNIT1-6 horsepower and adding together = 71.511 lbs of CO emissions for October 2019.

The AP-42 emission factor used to determine CO emissions was discussed at length with the company. Moving forward, TEC shall keep applicable CO emission records as required by PTI No. 544-95B. After further review, TEC appears to be meeting this emission limit.

Per SC 5, the CO emission rate for Unit 5, when firing natural gas and #2 fuel oil, shall not exceed 273.6 pounds per day. Records were requested for select time periods. As mentioned above, TEC was not keeping track of CO emissions for the engines. During the previous inspection, EPA AP-42 emission factors were used in order to calculate emissions to compare to the emission limit. The following calculation was used to compare emissions for this inspection

CO emission factor (0.0055 lb/hp-hr) x EU-UNIT5 horsepower (2880 hp-hr/day) = 15.84 lbs of CO emissions for October 2019.

The AP-42 emission factor used to determine CO emissions was discussed at length with the company. Moving forward, TEC shall keep applicable CO emission records as required by PTI No. 544-95B. After further review, TEC appears to be meeting this emission limit.

Per SC 6, the SO2 emission rate from Units 1-6 shall not exceed 0.56 pound per million BTU's heat input, based on a 24-hour period. This is equivalent to using #2 fuel oil with a 0.50% sulfur content and a heat value of 19,300 BTU's per pound. Also, per SC 7, the sulfur dioxide emission rate from Units 1-6, when firing No. 2 fuel oil, shall not exceed the applicable daily limits listed in PTI No. 544-95B. Records were requested for select time periods and after further review, it does not appear that TEC is keeping track of SO2 emissions. During the previous inspection, EPA AP-42 emission factors were used in order

to calculate emissions to compare to the emission limits. It was verified that the fuel used has not changed for a significant period of time. The following calculations were used to compare emissions for this inspection.

Sulfur content (0.5%) x SO<sub>2</sub> emission factor (0.00809 lb/hp-hr) = SO<sub>2</sub> emission factor (0.00405 lb/hp-hr)

SO<sub>2</sub> emission factor (0.00405 lb/hp-hr) x each EU-UNIT1-6 horsepower and adding together = 52.59 lbs of SO<sub>2</sub> emissions for October 2019

The AP-42 emission factor used to determine SO<sub>2</sub> emissions was discussed at length with the company. Moving forward, TEC shall keep applicable SO<sub>2</sub> emission records as required by PTI No. 544-95B. After further review, TEC appears to be meeting the applicable limits.

Six stacks are listed as associated with PTI No. 544-95B and were observed during the course of the inspection. Speaking with TEC staff no changes were made since the last inspection to the stacks. After further review, the stacks appear acceptable at this time.

### **Additional Observations**

One parts washer was observed during the course of the inspection that has an air/vapor interface of less than 10 square feet and appears to be exempt per Rule 281(2)(h).

Several tanks containing propane, gasoline and diesel were observed during the course of the inspection.

### **Conclusion**

Based on the record reviewed and observations made at the time of the inspection, TEC appears to be in compliance with PTI No. 544-45B and applicable air pollution control rules.

NAME Adam Shaffer

DATE 12/17/2021

SUPERVISOR Chris Hare