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

N558173734

FACILITY: Great Lakes Gas - Farwell Compressor Station 12		**SRN / ID:** N5581
LOCATION: 3400 HICKORY RD, LAKE GEORGE		**DISTRICT:** Bay City
CITY: LAKE GEORGE		**COUNTY:** CLARE
CONTACT:		**ACTIVITY DATE:** 08/07/2024
STAFF: Rachel Benaway	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On-site inspection to verify compliance with MI-ROP-N5581-2023 and all state and federal air use regulations.		
RESOLVED COMPLAINTS:		

Michigan Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff, Rachel Benaway, conducted an unannounced air quality inspection of Great Lakes Gas Transmission, LP-Farwell Compressor Station (N5581) on 8/7/2024. The purpose of this inspection was to evaluate the Farwell Compressor Station is in compliance with their Renewable Operating Permit (ROP) MI-ROP-N5581-2023 and all applicable requirements of the Federal Clean Air Act, the Michigan Air Pollution Control Rules, and the Michigan Natural Resources and Environmental Protection Act (Act 451 of 1994).

The Farwell Compressor Station is a natural gas pipeline compressor station located just outside of Lake George, MI (Clare County). The function of the facility is to maintain pressure in the pipelines during the transport of natural gas to storage facilities, industrial customers, or local distribution centers. This site is considered a major source of hazardous air pollutants (HAPs), nitrogen oxides (NOx), and carbon monoxide (CO) emissions. The facility is subject to New Source Performance Standard (NSPS) in 40 CFR Part 60 Subparts A and GG for Stationary Gas Turbines. The facility is also subject to the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 63 Subpart DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters. The last inspection was completed at the facility on 12/1/2021 and the facility was considered in compliance at that time. Benjamin Samuelkutty is the Environmental Analyst for the facility, responsible for submitting requested records. Kevin Ray, site mechanic, was present for the on-site inspection.

While the station has the potential to operate 7 days a week and 24 hours a day, storage and delivery contracts, gas availability, and end user demands determine the intermittent use of the engines, whether that be simultaneously or independently. Personal protection equipment includes a hard hat, safety glasses, safety shoes, and hearing protection.

#	**Equipment at Facility**
5	Natural gas-fired RICE compressor engines **(EU-UNIT1201, EU-UNIT1202, EU-UNIT1203, EU-UNIT1204, EU-UNIT1205)**
1	Natural gas-fired turbine (**EU-UNIT1206**)
1	MMBtu/hr emergency generator (**EUGENERATOR1**)
3	MMBtu/hr natural gas-fired boilers (Exempt Rule 282(2)(b)) **(EUBOILER1, EUBOILER2, EUBOILER3)**
	Exempt Equipment at Facility
1	Cold cleaner

The following is a summary of information obtained from the on-site inspection and the submittal of requested records. Where applicable, compliance determinations are indicated for each special condition established in the ROP, organized by emission unit or flexible group.

EUUNIT1206

The Solar Taurus 70 stationary natural gas-fired turbine has a dry low NOx burner for pollution control and is used to power a natural gas pipeline compressor. The turbine is reported to have a rated capacity of 9,700 hp and heat input of 74.20 MMBtu/hr.

The turbine was "replaced" in 2018. A previous inspection report from 7/25/2018 contained a statement from the inspector that the turbine has an approximate 10-year lifespan before requiring refurbishment and rebuilds, but no maintenance plan was ever submitted to document this as a necessity. Michigan Air Pollution

Control Rule 336.1285(2)(a)(vi) is an exemption for the replacement of engines, compressors, or turbines, but this activity must be part of a "normal maintenance program." Furthermore, the turbine subjectivity to either 40 CFR Part 60 Subpart GG or Subpart KKKK is determined by its installation date.

Staff will be requesting a Rule 278a applicability demonstration for the turbine replacement, a PTE demonstration for the entire facility, and a demonstration of applicability for either 40 CFR Part 60 Subpart KKKK or GG. If the facility would like to use Rule 285(2)(a)(vi) as an applicable exemption, Staff is also requesting the submittal of a malfunction abatement plan (MAP) so the need for future turbine replacements is documented in a "normal maintenance program" on file.

Emission Limits:

SC	Pollutant	Limit	Time Period / Operating Scenario	COMPLIANT?
I.1	NOx- 25 parts per million by volume, at 15 percent oxygen and dry gas basis			Yes
I.2	NOx- 8 pounds per hour			Yes

- **The last stack test was completed on 12/17/2020 by Environmental Quality Management, Inc. The submitted test report demonstrated compliance with the NOx emission limits listed in SC I.1 and I.2.**

Testing/Sampling:

SC	Condition	COMPLIANT?
60.335(b)(2)	The 3-run performance test required by 60.8 must be preformed within 5% at 30, 50, 75, and 90-100% of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 % of peak load, or at the highest achievable load point if 90-to-100% of peak load cannot be physically achieved in practice. • **Test date 12/17/2020: Runs 1-3 were completed at approximately 100% load, runs 4-6 were completed at 90% load, runs 7-9 were completed at 77% load, and runs 10-12 were completed at 63% load. The unit was able to comply with the BACT NOx limits in SC I.1 and I.2 at those particular load levels but if no previous test has been completed according to the load percentages required by 60.335(b)(2), the next test should be conducted in this manner to show compliance with the Subpart.**	Yes

- **SC V.2 states that emission testing for NOx and CO from EUUNIT1206 shall be conducted within the first three-year period after issuance of the ROP. This is not standard testing language. MI-ROP-N5581-2023 was issued in 2023 and the facility has not yet conducted stack testing on this unit. Stack testing to verify compliance with the NOx BACT limits in SC I.1 and I.2 is required to be completed, at a minimum, every five years from the date of the last test. If the facility waits until the third year after ROP issuance to complete testing, they will have exceeded the five-year reliability period of the previous test results. The next stack test should occur by 12/16/2025.**

Monitoring/Recordkeeping:

SC	Condition	COMPLIANT?
VI.1	Permittee shall monitor and record the hours of operation and fuel consumption for the turbine each calendar month. • **The facility submitted a report with the monthly total run hours and total fuel usage for EUUNIT1206 from August 2022 through July of 2024. The most hours run per month occurred in December of 2023 at 34 hours with a total fuel usage of 2,526.11 MCF.**	Yes

EUUNIT1206 appears to be in compliance with all current permit requirements.

EUGENERATOR1

The emergency generator is a Caterpillar G3516 SITA natural gas-fired, spark ignition, 4-stroke lean burn (4SLB) auxiliary power unit (AXU) rated at 1,053 hp and subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63, Subpart ZZZZ.

Process/Operational Restrictions and Monitoring/Recordkeeping:

SC	Condition	COMPLIANT?
III.3 and VI.1	Permittee may operate EUGENERATOR1 for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing • **The facility submitted maintenance records from August 2022 through August 2024. According to submitted records, the facility ran the EUGENERATOR1 for maintenance and readiness checks a total of 6.6 hours total in 2023 and 2.9 hours between January and the end of July of 2024.**	**Yes**
III.4 and VI.2	EUGENERATOR1 may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in SC III.3. • **The facility is tracking the purpose for each engine use. EUGENERATOR1 was used for emergency purposes a total of 50.4 hours in 2023 and 30 hours between January and the end of July 2024.**	**Yes**
IV.1 and VI.2	Permittee shall equip and maintain EUGENERATOR1 with non-resettable hours meters to track the operating hours. • **Meter Reading on 8/7/2024: 2033.2 hours.** • **Facility is monitoring and recording the hours of operation on a monthly basis and documenting the purpose of each use.**	**Yes**

EUGENERATOR1 appears to be in compliance with all applicable conditions at this time.

FGENGINES
The facility's 5 natural gas-fired, 2-stroke lean burn (2SLB) spark ignition engines are used to compress natural gas into the pipeline for transport. The 3,400 hp Cooper Bessemer model 10V-250 (EUUNIT1201, EUUNIT1202, and EUUNIT1203) were installed in 1968. The 3,400 hp Cooper Bessemer model 10V-250 (EUUNIT1204) was installed in 1969. The 8,000 hp Cooper Bessemer model 16W330 (EUUNIT1205) was installed in 1975. All five units were installed prior to regulations that prohibited the use of permitting exemptions for engines of their size located at a major source of HAPs. Although these engines are considered grandfathered and were not subject to New Source Review (NSR) permitting requirements, future modifications of this equipment may be subject to NSR requirements.

Per 40 CFR 63.6590(b)(3), existing spark ignition 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions do not have to meet the requirements of this subpart and of the subpart A of this part, including initial notification requirements.

FGENGINES appears to be in compliance at this time.

FGBOILERMACT
EUBOILER1 (installed 1998) and EUBOILER2 (installed 1999) are Hurst Model S3-G-150-15-W natural gas-fired boilers with a maximum heat capacity of 4.18 mmBTU/hr each. EUBOILER3 (installed 1990) is a Weil-McLain Model PFG-7 natural gas-fired boiler with a maximum heat capacity of 0.39 mmBTU/hr. According to the ROP renewal application submitted on 11/18/2022, all three boilers are subject to 40 CFR Part 63, Subpart DDDDD (Boiler MACT) for boilers with a heat input capacity of less than 10 MMBtu/hr located at a major source of HAP emissions.

- Per 40 CFR 63.7575 and 40 CFR 63.7491, industrial boilers and process heaters are subject to the DDDDD Subpart. If the facility considers EUBOILER3 to be a hot water heater, they should amend the

description of the unit in the ROP application for the next renewal and include the unit in the list of equipment exempt from PTI requirements.

SC	Condition	COMPLIANT?
III.1	Conduct a 5-year tune-up according to 40 CFR 63.7540(a)(12). Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. • **The date of the last boiler tune-ups was 7/22/2020.**	**Yes**

Monitoring/Recordkeeping:

SC	Condition	COMPLIANT?
VI.4	Submit boiler or process heater tune-up compliance reports to the appropriate AQD District Office and must be postmarked or submitted by March 15th of the year following the applicable 5-year period starting from January 1 of the year following the previous tune-up to December 31 (of the latest tune-up year). • **Biennial Compliance Certification Report received on 1/22/2021** • **The date of the last boiler tune-ups was 7/22/2020.**	**Yes**

FGBOILERMACT appears to be in compliance with all applicable requirements at this time.

FG-RULE285(2)(mm)
The FGRULE285(2)(mm) conditions pertain to the venting of natural gas for routine maintenance or relocation of transmission and distribution systems or field gas venting for routine maintenance or relocation of gathering pipelines, in amounts greater than 1,000,000 standard cubic feet. These conditions require the facility to notify the AQD District Supervisor prior to a scheduled venting and provide necessary notification to other regulatory agencies and the pollution emergency alert system (PEAS) as applicable.

AQD has no record of this type of notification from the facility since the last inspection was conducted in 2021.

FGRULE285(2)(mm) appears to be in compliance with applicable permit conditions at this time.

NAME Rachel Tornaway DATE 9/24/24 SUPERVISOR