

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

N783465250

FACILITY: MUSKEGON DEVELOPMENT, Otsego Lake Facility		SRN / ID: N7834
LOCATION: SW 1/4 NE 1/4 SW 1/4 SEC 6, OTSEGO LAKE		DISTRICT: Gaylord
CITY: OTSEGO LAKE		COUNTY: OTSEGO
CONTACT: Bennett Myler ,		ACTIVITY DATE: 10/13/2022
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2023 FCE onsite inspection and records review. sgl		
RESOLVED COMPLAINTS:		

On October 13, 2022, AQD District Staff conducted an unannounced scheduled site inspection of the Muskegon Development Otsego Lake 6 Facility (N7834). The referenced Facility is located in the SW ¼, NE ¼, SW ¼ of Section 6, T29N-R3W, Otsego Lake Township, Otsego County, Michigan.

The Facility operates under Permit to Install (PTI) 228-07, issued on November 13, 2007. The most recent site inspection was conducted on July 21, 2020.

A records request was submitted to the facility electronically on September 6, 2022, with the response received electronically on October 5 and October 21, 2022. Review of the documents submitted has been incorporated into this document.

Weather conditions at the time of inspection included overcast skies, with light winds and temperatures in the mid 40's. With the exception of puffs from the dehy building stack, no visible emissions were noted at the time of the inspection.

FACILITY

The Facility is described by the permittee as a NG compression and conditioning facility. NG produced at remote wells is transported to the site at low pressure by pipeline. Per the permit application, the equipment had been installed onsite in 1987 and 2002.

Hydrogen sulfide content of NG stream coming into the Facility at the time of permitting was reported to be 10 ppm. Following compression, hydrogen sulfide is removed from the gas after which it enters a glycol dehydrator which removes water vapor from the gas stream.

The Facility is located a very short distance from Lambda Otsego 6 CPF (B5667), both of which are located on High Tower Trail, in undeveloped property owned by the State of Michigan.

A review of readily available aerials indicate that the Facility was constructed between December 1985 and May 1994. The neighboring Lambda Facility (Otsego 6 Facility at 2443 Hight Tower Trail) was present in aerials dated December 1985.

To reach the Facility, District Staff recommend traveling southerly off Lake Manuka Road. To reach the Facility, travel west on Lake Manuka Road from the intersection with W. Otsego Lake Road. Travel just under 1/2- mile then make a left and travel southerly on what Google Earth identified as an un-named trail for approximately 1.4 miles as the crow flies. The Facility is located on the left hand side of the road, and is fenced and gated. Note that there are multiple trails the join up with the drive. Stay on the most used roadways. The road itself is only approximately one and half car width, with some large puddles and plenty of wildlife. The

roadway from the intersection of High Tower Trail and W. Otsego Lake Road is very narrow, soft and on poor condition. It was navigated at the time of the October 13, 2022, site inspection but is not recommended by AQD Staff.

Note that the second drive on the south side of Lake Manuka road, is unpaved and appears to be a public drive. Small signs nailed to the trees at the drive intersection indicated the Otsego CPF and a Lambda Energy Facility down the drive. The first drive had a gate at the time of the October 13, 2022, site inspection.

REGULATORY

Permitting – One PTI (228-07) is of record for the Facility. Issued on November 13, 2007, the document includes requirements for operation of EUDEHY, EUENGINE1 and FGFACILITY. The permit also references FGMETHANOL (<5000-gallon methanol storage tanks) but has not requirements for the FG.

Federal Regulations - The referenced facility does not process or store petroleum liquids, nor store them onsite and is therefore appears to not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);
- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

With regards to the existing engine(s) it appears that based on a manufacture date of September 20, 2005 reported by the company, that EUENGINE1 would not be subject to NSPS for Spark Ignition (SI) RICE.

Subpart OOOO would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. Based on available information it appears that the referenced subpart is not applicable at this time but that future changes may be subject to the referenced subpart.

With respect to 40 CFR Part 63 (Maximum Achievable Control Technology Standards A.K.A. MACT) the following Subparts may apply:

- Subpart HH (HAPS from Oil and NG Production Facilities)
- Subpart JJJJJ (Boiler MACT), and
- Subpart ZZZZ (Reciprocating Internal Combustion Engine aka RICE)

With respect to Subpart HH, the affected unit is believed to be the dehy unit. However, the facility reports that it is not subject to Subpart HH because it's average throughput is less than 3 million cubic feet per day (MMcfd). Based on information provided as part of this compliance evaluation. The 12-month rolling material total thuputs for the period of January 2021 through July 2022 was 1.346 MM scf. A compliance determination has not been made with respect to this subpart, and at the time of report preparation AQD does not have authority to enforce the subpart.

NESHAP subparts JJJJJ pertain to Industrial, Commercial and Institutional Boilers and Process Heaters for Area source of HAPS, respectively. At the time of the site inspection, it appears that

the reboiler of the glycol dehydration process would not be subject to the subpart, as a process heater is not subject for area sources. No compliance determination has been made with reference to the subpart.

With respect to Subpart ZZZZ, the company at the time of report preparation has provided no information indicating that the existing RICE would not be subject to the referenced subpart. At the time of report preparation, AQD has been delegated authority to implement and enforce the subpart. However, at this time compliance determinations for Federal requirements under Subpart ZZZZ for Area Sources have not been made.

EQUIPMENT

At the time of permitting the permit application, the Facility reported the presence of the following EUs:

- 500 HP CAT G398NA
- 203 HP CAT G3306TA
- H2S Treater and
- Dehydration unit.

During the permitting process, the Facility proposed replacement of the two existing compressors and their associated Reciprocating Internal Combustion Engines (RICE). A review of readily available information in District Files indicated that two RICE existing at the time of the permit application were replaced with a single engine (EUENGINE1), which based on serial no.s appears to have undergone an engine swing between site visits conducted in 2013 and 2019.

It was noted that what appears to be a very small, mothballed compressor is located on the east side of the compressor building. The operational one being located on the western side of the compressor building, closest to the Facility gate. The stack associated with this unused compressor is 13.4 feet above land surface.

EU	Date of Installation	Date of Removal	Comments
CAT G398NA 500 Hp No Control	1987	2007	
CAT G3306TA 203 HP No Control	2002	2007	
CAT G3406TA	2007	UNK	

Rich Burn 325 HP SN 4fd02988 No Controls			Records indicate presence as late as December 2012
CAT G3406TA Rich Burn 325 HP SN 4fd02800 No Controls NGCS 232	UNK	NA	Records indicate presence as early as 2019- name plate not identified on engine.

Note EUENGINE1 appears to have a newly installed oxygen analyzer. A note on the equipment indicated that it was installed August 15, 2022. Oxygen readings at the time of the October 13, 2022, site inspection indicated a concentration of 0.05 ppm oxygen. Operational parameters readily available at the time of the October 13, 2022, site inspection are summarized below:

Operational Parameter	Readings
RPMs	1415
Engine Oil Pressure	60 Psi

EUDEHY is reported to have a maximum circulation rate of 0.67 gpm, and is equipped with a 167,000 BTU/hr reboiler.

COMPLIANCE

EUDEHY

Special Condition (SC) 1.2 allows the company to show exemption from the more stringent emission control provisions of Subpart HH by one of two methods: Either by showing that natural gas processed is less than 85,000 cubic meters (about 3 million cubic feet) per day (SC 1.3), or by showing that benzene emissions are less than 0.90 megagrams (about one ton) per year (SC 1.4).

Records provided confirmed that production meets the exemption threshold of less than 3-million cubic feet/day as well as that VOC emissions of approximately 0.03 tons/month.

VEs were visible from the dehy stack at the time of the October 13, 2022, site inspection, but quickly dissipated. A strong odor was also noted when passing the building.

EUENGINE1 (CAT 3406TA)

Emission Limits - SC 2.1 limits NOx emissions from the engine to 64 tons per 12 month rolling time period. Emissions reported by the Facility is summarized below:

DATE	NOX Emissions (TPY) for 12-month rolling time period	CO Emissions (TPY) for 12-month rolling time period	Fuel Usage (MMcf/Year)
2020	14.64	0.09	4.86
2021	36.78	2.17	12.21
2022 to date*	29.05	1.73	9.646
Limit	64 TPY (SC 2.1)	NA	NA

*to date is for the period ending July 2022.

Operational Limits – SC 2.2 requires a Malfunction Abatement Plan. A revised MAP was submitted for review on October 21, 2022, to reflect changes in the contracted maintenance activities onsite. The discrepancy in schedules was noted during a review of the MAP and readily available maintenance logs for the Facility. The previous version was approved by AQD approved on December 17, 2007.

Under the referenced MAP the Facility reports the following inspection/maintenance activities for EUENGINE1:

- Documentation of operational conditions daily by pumper
- Documentation of operating conditions every 2160 hours by engine/compressor service company
- Oil Change/oil sampling, air filter, ignition timing, spark plugs, valves etal every 2160 Hours

A review of maintenance records provided indicated the Facility is operating per their approved MAP (revised as part of this compliance evaluation). The Facility operator reports that the schedule meets RICE MACT requirements for the engine onsite.

SC 2.3, 2.4, and 2.9 apply to operation of the engine with an add-on control device. EUENGINE1 onsite has no pollution control device, therefore the conditions are not applicable.

Testing – SC 2.5 requires the Facility upon request of the District Supervisor to conduct verification testing activities for NOx emissions associated with EUENGINE1. A review of District

Files did not identify a request, therefore it appears that the requirement is not applicable at this time.

Monitoring – EUENGINE1 is required under SC 2.6 to install, calibrate, maintain and operate in a satisfactory manner a device to monitor NG usage on a continuous basis. Records provided as part of the records request indicates that a NG/Fuel usage monitor has been installed and operates on a continuous basis.

Recordkeeping/Reporting/Notification Requirements -Recordkeeping requirements under 228-07 include:

- Maintenance Records to show compliance with the MAP (SC 2.8)
- Monthly and 12-month rolling total fuel usage records (SC 2.10)
- Monthly and 12 month rolling time period NOx calculations (SC 2.11)

Records provided as part of the September 6, 2022, request indicated that the appropriate records are being maintained. The required information being presented earlier in this document.

Stack Requirements - Condition 2.12 sets engine stack dimensions as a maximum diameter of 12 inches at a minimum height of 35 feet above ground level, exhausting unobstructed vertically upward. Dimensions noted at the time of the site inspection using a Nikon range finder indicated that the stack height was approximately 35.6 feet above ground level. The same instrument indicated that the rook peak for the compressor building was approximately 15 feet, and that visually the stack height was just over twice the building height.

The stack pipe diameter appeared to be in compliance with the maximum diameter limit of 12-inches.

FGFACILITY

Permit conditions associated with FGFACILITY limit H2S emissions. SC 3.1 prohibits burning sour gas in the equipment at any concentration that would produce more than 1 pound of sulfur dioxide (SO₂) per hour. SC 3.2 indicates that verification of H2S would be required upon request of the AQD District Superior.

Drager tube data provided by the Operator dated September 28, 2022, indicated H2S content below detection limits (<5ppm). A review of the engineer eval form for PTI 228-07 indicated that at the time of permitting that H2S concentrations of 2200 ppm would be required to result in SO₂ emissions of 1 lb/hr. Therefore the concentrations reported on September 28, 2022, are in compliance with permit conditions.

SUMMARY

On October 13, 2022, AQD District Staff conducted an unannounced scheduled site inspection of the Muskegon Development Otsego Lake 6 Facility (N7834). The referenced Facility is located in the SW ¼, NE ¼, SW ¼ of Section 6, T29N-R3W, Otsego Lake Township, Otsego County, Michigan.

The Facility operates under Permit to Install (PTI) 228-07, issued on November 13, 2007. The most recent site inspection was conducted on July 21, 2020.

A records request was submitted to the facility electronically on September 6, 2022, with the response received electronically on October 5 and October 21, 2022. Review of the documents submitted has been incorporated into this document. A review of documents determined that a revision of the MAP for the Facility was required to address a change in maintenance schedule by the Facility. This document was received on October 21, 2022.

The Facility is described by the permittee as a NG compression and conditioning facility. NG produced at remote wells is transported to the site at low pressure by pipeline. Per the permit application, the equipment had been installed onsite in 1987 and 2002.

Based on observations made at the time of the October 13, 2022, site inspection and subsequent records provided it appears that the Facility is in general compliance with permit conditions.

NAME Sharon J. LeBlanc

DATE 11-3-22

SUPERVISOR Shane Nixon