

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

N600533815

FACILITY: Merit Energy Company - Blue Lake 17		SRN / ID: N6005
LOCATION: TWIN LAKE RD, KALKASKA		DISTRICT: Gaylord
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT:		ACTIVITY DATE: 03/09/2016
STAFF: Gloria Torello	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: 2016 FCE.		
RESOLVED COMPLAINTS:		

**SRN: N6005 Name: Merit, Blue Lake 17**

**Directions:** The facility is located in Kalkaska County, Blue Lake Township. See the inside cover of the blue permit file for maps to the facility.

**Application/Permit:** This Antrim gas CPF was originally permitted in 1996 for one 500 HP engine without control. The 2008 permit modification included adding another 500 HP Caterpillar G398NA naturally aspirated compressor engine with catalytic converter for control. On January 14, 2008 the AQD issued permit 638-96A. The permit includes one controlled and one uncontrolled compressor engines and a glycol dehydrator. The permit allows FGFACILITY emission limits of NOx 89 tpy, and CO 89 tpy.

**Malfunction Abatement Plan (MAP):** On September 29, 2011 the AQD approved the MAP. The MAP includes two rich burn Cat G398NA engines, one engine has 3-way catalyst control.

**MAERS:** The 2016 MAERS Source Total emissions reported 48 tons NOx and 54 tons CO. Both pollutants are limited to 89 tpy.

**Records:** The permittee provided records including:

- Monthly and 12-month rolling NOx, CO VOC, SO2 and PM10 emissions calculations.
- Maintenance records.
- Gas analytical data.
- Monthly gas production.
- Monthly and 12-month rolling time when engine ran with and without the catalyst.
- MAP record including catalyst inlet and outlet temperatures.

**MACTS:**

The facility's HAP PTE is below 10/25 tpy for individual/total HAPs making the facility a true minor for HAPs and making the facility an area source for these MACTs:

- 40 CFR, Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines for Area Sources.
- 40 CFR Part 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.

The EPA has not delegated these Subparts to MI AQD and the Subparts were not reviewed.

made.

**Brochure:** The inspection brochure will be forwarded to the permittee via email with the site inspection notes.

**Compliance:** A review of AQD files and MACES report generator show no outstanding violation.

**Inspection:** Two engines are found onsite. One engine has a catalytic converter and one does not. Four heater treaters were observed. Five large tanks are onsite in an unlined retaining area. The tanks have VRU. "Crude" and "Water" identify tanks. Various buildings are onsite and are white or green in color.

Both engines operated during the site visit. The engine with control has this identification on the skid: NGCS-209. The associated clip boards include paper records for March 3 and 8, 2016 of engine RPM, oil temperature, oil level, suction pressure. A second clip board has paper records for March 7, 8, 9 of Engine VAC Pressure, Eng Speed, Eng Water TEMP Deg F. No catalytic converter inlet and outlet temperature record was observed.

The engine without control also operated. This engine is much smaller than the controlled engine.

**Permit Conditions:**

**EUDEHY**

- 1.1, 1.5, 1.7, 1.8, 1.9 The EPA has not delegated 40 CFR Part 63, Subpart HH to MI AQD and the Subpart was not reviewed.
- 1.2 The glycol re-circulation rate for EUDEHY shall not exceed a maximum of 0.7 gallons per minute. This is limited by equipment design.
- 1.3 Tanks are installed and have VRU.
- 1.4, 1.6 The permittee provided a record of the gas Certificate of Analysis from July 2015 which includes results of the wet gas stream analysis for nitrogen, carbon dioxide, hydrogen sulfide, C1 through C6 series hydrocarbons, benzene, toluene, xylene, ethylbenzene, and heptanes plus. There are no permit limits on these pollutants.

**FGENGINES**

	Pollutant	Limit	Equipment	August 2015 12-Month Rolling Records from Permittee, in tons
2.1a, 2.12, 2.13	NO <sub>x</sub>	5.2 tpy	EUBL17- CM1ENG (with control)	3.1
2.1b, 2.12, 2.13	CO	10.3 tpy	EUBL17- CM1ENG (with control)	6.2
2.1c,		67.1 tpy	EUBL17-	46.5

2.12, 2.13	NO <sub>x</sub>		CM2ENG	
2.1D, 2.12, 2.13	CO	72.8 tpy	EUBL17- CM2ENG	51.2

2.2, 2.7, 2.11 The permit limits natural gas usage for each engine to 28.3 million cubic feet per 12-month rolling time period. The permittee monitors and records the natural gas usage for each engine. Records show the natural gas usage for each engine included in FGENGINEs did not exceed the permitted 28.3 million cubic feet per 12-month rolling time period.

2.3, 2.4, 2.5, 2.9, 2.10. On September 29, 2011 the AQD approved the MAP. The MAP includes two rich burn Cat G398NA engines; one engine has 3-way catalyst control. The permittee provided records of MAP related maintenance activities. There is no record in the file indicating engine change-out. Records of catalyst inlet and outlet temps were provided. On August 30, 2015 the catalyst outlet temperature was less than the inlet temperature. Records show on September 2, 2015 maintenance included "check catalyst." The record forms include "...amount of time that catalyst is not operating" and the records include no text describing hours the catalyst did not operate. One engine has control. Maintenance records from August 2015 include changing the catalyst O2 sensor.

2.6 The AQD has not requested verification of NO<sub>x</sub> and CO emission factors by testing.

2.8 The permittee provided records in a timely manner.

2.14 Via visual assessment the stacks on the site meet the permitted diameters and heights.

FGFACILITY

	Pollutant	Limit	Equipment	August 2015 12-Month Rolling Records from Permittee, in tons
3.1a, 3.6, 3.7	NO <sub>x</sub>	89 tpy	FGFACILITY	50.3
3.1b, 3.6, 3.7	CO	89 tpy	FGFACILITY	56.9

3.2 The permittee burns Antrim gas at the facility.

3.3 The EPA has not delegated 40 CFR Part 63, Subpart HH to MI AQD and the Subpart was not reviewed.

3.4 The AQD has not requested verification of H<sub>2</sub>S and/or sulfur content of the natural gas burned in FGFACILITY. However, the permittee provided a 7/2/15 Certificate of Analysis including: Hydrogen Sulfide ND (not detected).

3.5 The permittee provided records in a timely manner.

**Conclusions:**

Via onsite inspection and review of records, the permittee demonstrates compliance with the conditions of permit 636-96A.

NAME *Gianni Inello*

DATE *6-6-16*

SUPERVISOR 