

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

N747034691

FACILITY: Merit - Caledonia 10 & 11 CPF		SRN / ID: N7470
LOCATION: SW SW NW, T28N-R6E, Section 10, CALEDONIA TWP		DISTRICT: Gaylord
CITY: CALEDONIA TWP		COUNTY: ALCONA
CONTACT:		ACTIVITY DATE: 05/24/2016
STAFF: Bill Rogers	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection and Records Review for FCE		
RESOLVED COMPLAINTS:		

On May 24, 2016, I inspected the Caledonia 10 & 11 CPF. I had also requested records for this facility as required in their Permit 109-05. Copies of the records Merit sent me are attached.

In Permit 109-05, the Emission Unit Description Table lists SV-DEHY01 and SV-DEHY02 as having 125,000 BTU per hour heat input burners. The dehydrator burners I saw on site were labeled as 200,000 BTU per hour heat input. The burners did not appear to have been changed recently; one was part of a dehydrator marked as manufactured in 1997 and both were weathered and rusted into place, which made it appear they had been where they were for many years. It is likely the 125,000 BTU per hour rating was a mistake at some point in the permit application process.

I contacted Merit Energy to ask about this. Mr. Sean Craven reported that the monthly emission sheets for this facility "have 0.4 MMBTU/hr - which would be 200,000 BTU/hr each since 2010." He also believes the rating of 125,000 BTU per hour was a mistake in the permit application.

Permit 109-05, Special Condition 1.1, limits fuel gas usage to 254 million standard cubic feet per 12 month rolling time period. The facility includes four Caterpillar engines, all Model 3516LE lean burn engines without catalytic oxidizers. Fuel use data, attached, indicates usage in the four engines as 45.6 MMCF in Caledonia 10 West, 0 in Caledonia 10 East, 56.0 MMCF in Caledonia 11 West, and 0 in Caledonia 11 East, for a total of 101.6 MMCF for all four engines. This complies with the permit condition.

Special Condition 1.2 requires a Malfunction Abatement Plan. AQD has a MAP on file for this facility. AQD approved the most recent update to this plan on August 17, 2011. This complies with the permit condition.

Special Condition 1.3 requires monitoring the natural gas usage for each compressor engine. Fuel consumption data, attached, indicates fuel consumption is being monitored. This complies with the permit condition.

Special Condition 1.4 requires a maintenance log. A sample sheet of the maintenance log is attached. This complies with the permit condition.

Special Condition 1.5 requires keeping records of engine fuel consumption. Example fuel consumption records are attached. This complies with the permit condition.

Special Conditions 1.6a, b, c, and d require engine stacks to have a maximum diameter of 12 inches and a minimum exhaust height of 22 feet, discharging unobstructed vertically upward. The four engine stacks I observed during my inspection appeared to comply with this permit condition. They appeared to be about 12 inches in diameter and exhausted above the roofs of the compressor shed at an elevation of what appeared to be twenty-some feet.

Special Condition 2.1 sets a facility-wide NOX limit of 89 tons per year. Emission data, attached, indicates NOx emissions of 27.85 tons per 12 month period, for the complete facility, for the 12 month period ending in March 2016. This complies with the permit condition.

Special Condition 2.2 prohibits burning sour gas. I didn't see or smell any evidence of sour gas at the facility.

Special Condition 2.3 requires records to be kept and provided. The company is keeping required records and provided them to us upon request, in compliance with the permit condition.

Special Condition 2.4 requires monthly and 12 month rolling period NOx emission records. These are part of the example records, attached. This complies with the permit condition.

In addition to permit conditions, the facility must comply with the Glycol Dehydrator MACT, Subpart HH. Glycol dehydrators are exempt from the more stringent control requirements of the MACT if they can demonstrate that their actual annual flow rate of natural gas is less than 85,000 cubic meters per day, which is about 3 MMCF/D. Gas production data, attached, indicates production from the facility is about 0.25 MMCF/D. This is low enough to show exemption from the more stringent control provisions of Subpart HH.

COMMENTS:

Approach the facility from the east by taking Hubbard Lake Road to Fruhey Ranch Road. Although that road is indicated on maps as existing much further west, maps show that a creek and swamp cut the road in between. Also, road signs on the approach from the east warn that this is a dead end road with no outlet.

The facility consists of two compressor sheds with a small tank farm between. I did not see any labels on the sheds but based on engine unit numbers observed in the field and included on an emissions calculation sheet, attached, Caledonia 10 (Units 16 and 17) is the east shed and Caledonia 11 is the west shed.

Caledonia 11, the west shed, contains one glycol dehydrator with a flame arrested burner. According to its tag, the burner was rated at 200,000 btu. The regenerator shell was labeled as having been built in 1997, although it was rusty and hard to read. The dehydrator was operating at the time I inspected. Estimating heights by the length of the stack shadows, the burner stack appeared to be six inches diameter with a discharge height of about 14 feet. It is covered by a flat cap. The still vent looked like it was two inches diameter, discharging unobstructed vertically upward at about 20 feet above ground level. I didn't smell any glycol odors near the dehydrator.

Inside the shed were two Caterpillar natural gas-fired compressor engines without catalytic oxidizers. Neither was operating at the time of my inspection. The engine to the east, labeled #18 in marker, had an operator's clipboard marked showing it had operated on the day of my inspection, although it wasn't at the time I was there. I didn't find a clipboard for the other engine, which was marked #19 in marker.

According to the company fuel use documentation, attached, Caledonia 11 East is Unit 18. It is a Caterpillar 3516 LE with no catalytic oxidizer. Mr. Sean Craven of Merit reports it is a lean burn engine. It is rated at 1265 HP and 9.55 MMBTU/hr heat input. Caledonia 11 West is Unit 19. It is also a Caterpillar 3516LE lean burn engine with no catalytic oxidizer, but rated at 1305 HP and 9.85 MMBTU/hr.

The engine exhaust stacks appeared to be 12 inches diameter and something over 20 feet in height.

The shed included two drum on stilt tanks near the dehy, one labeled triethylene glycol, one labeled methyl alcohol. Inside the shed were two more drum on stilt tanks, one labeled ISO 100 oil and, in marker, "comp oil," the other labeled HDAX Low Ash Engine Oil and, in marker, Eng Oil. There were also several 55 gallon drums labeled as antifreeze.

Between the two compressor sheds, the tank farm consisted of two tanks labeled as "brine water" and one labeled as "waste oil," all three inside a concrete berm. The brine tanks were shorter than the common 400 barrel size and the waste oil tank was smaller still.

Equipment in Caledonia 10, the east shed, was similar to that in the west shed.

There was a glycol dehydrator with a flame arrested burner labeled as 200,000 BTU. I didn't find a construction date on this dehydrator. The burner stack was 6 inches diameter and looked to discharge at about 14 feet, with a flat cap. The still vent was about 2 inches diameter exhausting unobstructed vertically upward at perhaps 20 feet above ground level.

Inside the shed were two Caterpillar natural gas-fired compressor engines without catalytic oxidizers. The one to the east, labeled in marker #17, was labeled in marker "Do not operate, unit preserved for long term storage." According to engine emission calculation sheet, attached, and information from Mr. Sean Craven of Merit, Caledonia 10 East is Unit 17. It is a Caterpillar 3516LE lean burn engine without catalytic oxidizer, rated at 1085 HP and 8.08 MMBTU/hr.

The engine to the west, labeled #16 in marker, was operating. According to its digital engine display it had 48,888 hours, operating at 1114 RPM, 27 volts, 55 PSI (engine oil pressure presumably,) 197 degrees f (Coolant temperature, presumably). According to engine emission calculation sheet, attached, and information from Mr. Sean Craven of Merit, Caledonia 10 West is Unit 16. It is a Caterpillar 3516LE lean burn engine without catalytic oxidizer, rated at 1085 HP and 8.08 MMBTU/hr.

Stacks for the two engines appeared to be about 12 inches diameter exhausting at something over 20 feet.

The facility contained two drum on stilts tanks, one labeled as ISO 100 Oil, one as HDAX low ash gas engine oil.

Facility maintenance appeared good. The only opacity I saw was "steam" from the dehydrator still vents. I did not notice any odors. I didn't notice any leaks. I didn't see any stained soils which might indicate leaks or spills.

NAME William J Rogers Jr

DATE 9/28/2016

SUPERVISOR 

