

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

B566835477

FACILITY: MERIT ENERGY CO. - FREDERIC 20		SRN / ID: B5668
LOCATION: 0000 CAMERON BRIDGE RD, FREDERIC		DISTRICT: Cadillac
CITY: FREDERIC		COUNTY: CRAWFORD
CONTACT: Vicki Kniss , Environmental Affairs Manager		ACTIVITY DATE: 06/16/2016
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Thursday, June 16, 2016, Caryn Owens of the DEQ-AQD conducted a scheduled field inspection and records review of Merit Energy Company (Merit) – Frederic 20 facility (B5668) located on Cameron Bridge Road in Frederic Township, Crawford County, Michigan. More specifically, the site is located on the north side of Cameron Bridge Road, approximately 3 miles west of North Kolka Creek Road and Cameron Bridge Road intersection. The site access is approximately ½ mile north on a two-track. The purpose of this inspection was to determine the facility's compliance with permit to install (PTI) 54-04A. Merit has opted out of major source applicability by limiting operational and/or production limits potential to emit (PTE) to be below major source thresholds. DEQ was unaccompanied during the field inspection, an inspection brochure was not given to anyone during the inspection, but a brochure will be emailed to the company with this inspection report. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) from Oil and Natural Gas Production facilities (40 CFR, Part 63, Subpart HH), and NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR, Part 63, Subpart ZZZZ). The State of Michigan does not have delegated authority of the area source NESHAPs, and thus these areas were not reviewed by the DEQ at this time.

#### Evaluation Summary

Based on the activities covered during this field inspection, the facility appears to be in compliance with PTI 54-04A. Review of the records for the facility indicates the facility was in compliance with emission limits in accordance with the current PTI. No further actions are necessary at this time. Specific permit conditions that were reviewed are discussed below.

#### On-site Inspection:

During the field inspection, the weather conditions were cloudy, with winds from the northeast, approximately 5 miles per hour, and 60 degrees Fahrenheit. Fuel enters the facility via pipeline on the northern portion of the site. The facility consisted of: eight process heaters to keep the fuel and fuel lines heated throughout the processing activities; a separator building on the eastern portion of the site; a tank battery with two approximate 400 barrel above ground storage tanks controlled by a vapor recovery unit; two iron sponges, and a compressor building with one engine; a former amine plant building (which is no longer in operation); and a glycol dehydrator system (which is also no longer in operation).

As previously stated the fuel flows via pipeline through the process heaters, then to the separator building on the eastern portion of the site, which separates the crude oil, natural gas, and condensate. The separators direct the fuel to specific areas of the site. The Crude oil is routed to the tank battery area, and the condensate is routed to the Merit Frederic 2 facility for further processing if necessary, and then connected to the MichCon pipeline. Natural gas is routed through the iron sponges, and the gas used as fuel to operate the facility is sweetened by the sponges, and the remaining gas is compressed by the compressor engine located in the southeastern building on the property. The compressor engine is a 550 horsepower (hp) Waukesha rich burn engine, with no control. The engine is identified on the logs at the facility as Unit #3, and operating at 652 revolutions per minute (RPM), 140 degrees Fahrenheit, and 40 pounds per square inch (psi) of pressure during the inspection. The stack on the compressor engine was approximately 20 feet above ground surface, and contained a muffler. Heat shimmers were noticed from the compressor stack. Once the natural gas is compressed it is sent via pipeline to the Merit Frederic 2 facility to be further processed for sales.

A flare, approximately 50 feet above ground surface, was located on the southwestern portion of the site with a flare eye stack (approximately 30 feet above ground surface) located next to it. The flare appeared to have a clean burning flame.

The site contained a building that housed a former amine plant to sweeten the gas, but the plant is no longer in use. There is also another building on the southwestern portion of the site which was vacant and stored minor

equipment for maintenance.

**PTI Compliance Evaluation:**

**EUFD20CMPENG1:** A natural gas fired reciprocating engine. As previously stated, during the on-site inspection, the engine was a 550 horsepower (hp) Waukesha rich burn engine, with no control.

- **Emission Limits:** EUFD20CMPENG1 is limited to 86 tons of NOx per 12-month rolling time period. Based on the records reviewed from May 2015 through May 2016, the highest emissions for EUFD20CMPENG1 were 61.06 tons of NOx per 12-month rolling time period. EUFD20CMPENG1 was within the permitted emission limits.
- **Materials/Fuels:** No material limits were applicable for EUFD20CMPENG1.
- **Process/Operational Parameters:** The facility submitted a Malfunction Abatement Plan (MAP) on September 19, 2007 and was approved by the DEQ on January 17, 2008. Based on review of the maintenance records, the engine was generally inspected on a daily basis. The engine was shut down while performing routine maintenance such as, oil and filters and change spark plugs. The records did not show maintenance concerns with the engine, and Merit appears to be following the MAP for the facility. EUFD20CMPENG1 is not equipped with a control device.
- **Design/Equipment Parameters:** EUFD20CMPENG1 is uncontrolled, and appeared to be operating and maintained in accordance with the MAP.
- **Testing:** The facility used engine specific emission factors to calculate the emissions for NOx. Performance testing has not been completed at this facility.
- **Monitoring:** The facility monitors the natural gas usage for EUFD20CMPENG1 on a continuous basis.
- **Recordkeeping/Reporting:** The facility has not swapped out an engine at the facility since the PTI was issued. The maintenance logs for EUFD20CMPENG1 are attached. The facility records monthly and 12-month rolling time period calculations for NOx. The 12-month rolling time period emissions are discussed above under emission limits. The natural gas usage, and monthly and 12-month rolling time period emissions records are attached.
- **Stack/Vent Restrictions:** Based on visible observations during the field inspection, the stack of EUFD20CMPENG1 appeared to be in compliance with permitted limits of 7 inches diameter and 17 feet above ground surface.

**FGFACILITY:** All process equipment at the facility including equipment covered by other permits, grandfathered equipment and exempt equipment.

- **Emission Limits:** FGFACILITY is limited to 89 tons of NOx per 12-month rolling time period, and 40 tons of volatile organic compounds (VOCs) per 12-month rolling time period. Based on the records reviewed from May 2015 through May 2016, the highest emissions for FGFACILITY were 61.11 tons of NOx per 12-month rolling time period, and 0.70 tons of VOCs per 12-month rolling time period. FGFACILITY was within the permitted emission limits.
- **Materials/Fuels:** According to Merit, sour gas is not burned at the facility. Additionally, the facility is limited to only burning 25,500,000 standard cubic feet (scf) of natural gas for EUFD20CMPENG1 and 67,700,000 scf of natural gas per 12-month rolling time period for FGFACILITY. Based on the records reviewed, the facility was within the material limits for EUFD20CMPENG1 and FGFACILITY.
- **Process/Operational Parameters:** There are no Process/Operational Parameters for FGFACILITY.
- **Design/Equipment Parameters:** There are no Design/Equipment Parameters for FGFACILITY.

- **Testing:** There are no Testing requirements for FGFACILITY.
- **Monitoring:** There are no Process/Operational Parameters for FGFACILITY.
- **Recordkeeping/Reporting:** The facility records monthly and 12-month rolling time period calculations for NOx and VOCs. The 12-month rolling time period emissions are discussed above under emission limits. The natural gas usage, and monthly and 12-month rolling time period emissions records are attached.
- **Stack/Vent Restrictions:** No Stack/Vent Restrictions were applicable for FGFACILITY.

NAME Caryn Owens DATE 6/16/16 SUPERVISOR 