

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

B916540262

|                                                      |                               |                           |
|------------------------------------------------------|-------------------------------|---------------------------|
| FACILITY: Merit Energy Company - Rapid River 24      |                               | SRN / ID: B9165           |
| LOCATION: WOOD RD, KALKASKA                          |                               | DISTRICT: Cadillac        |
| CITY: KALKASKA                                       |                               | COUNTY: KALKASKA          |
| CONTACT: Vicki Kniss , Environmental Affairs Manager |                               | ACTIVITY DATE: 06/07/2017 |
| STAFF: Caryn Owens                                   | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT  |
| SUBJECT: Scheduled Inspection and Records Review     |                               |                           |
| RESOLVED COMPLAINTS:                                 |                               |                           |

On Thursday, June 7, 2017, Caryn Owens of the DEQ-AQD conducted a scheduled field inspection and records review of Merit Energy Company (Merit) – Rapid River 24 facility (B9165) located on Wood Road NE in Rapid River Township, Kalkaska County, Michigan. More specifically, the site is located on the north side of Wood Road NE, approximately 0.4 miles west of Priest Road NE and Wood Road NE intersection. The site access is approximately 0.2 miles north on a gravel drive. The purpose of this inspection was to determine the facility's compliance with permit to install (PTI) 629-96. 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. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) for 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 629-96. 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 mostly sunny with calm winds from the west-northwest, approximately 5 miles per hour, and 75 degrees Fahrenheit. Fuel enters the facility via pipeline on the northeastern portion of the site. The facility consisted of: two process heaters to keep the fuel and fuel lines heated throughout the processing activities; a separator building on the northwestern portion of the site; a heater treater and glycol dehydrator system along the western portion of the site, a tank battery with eight approximate 400 barrel above ground storage tanks controlled by a vapor recovery unit on the eastern portion of the site; and a compressor building with one engine on the southern portion of the site. An aerial photograph of the facility is attached.

The fuel flows via pipeline through the process heaters, then to the separator building on the northwestern 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 and condensate are routed to the tank battery area. Natural gas is dried using the glycol dehydrator system and compressed by the compressor engine located in the southern building. The compressor engine is a 500 horsepower Caterpillar G398NA natural gas-fired reciprocating internal combustion engine, listed as Unit #618 on the log sheet at the facility. The engine was operating at 645 revolutions per minute (RPM), 175 degrees Fahrenheit, and 70 pounds per square inch (psi) of pressure during the inspection. The stack on the compressor engine was approximately 16 feet above ground surface, and contained a muffler. Heat shimmers were observed from the compressor stack.

#### **PTI Compliance Evaluation:**

**Emission Limits:** Individual Carbon monoxide (CO), volatile organic compounds (VOCs) and nitrogen oxides (NOx) emissions shall not exceed 99 tons per year based on a 12-month rolling time period. Based on the records reviewed, the highest CO emissions from February 2016 through January 2017 were 49.37 tons per 12-month rolling time period, the highest NOx emissions were 45.77 tons per 12-month rolling time period, and the highest VOC emissions were 7.21 tons per 12-month rolling time period.

The individual hazardous air pollutant (HAP) emissions shall be below 10 tons per year and total HAPs shall be below 25 tons per year based on a 12-month rolling time period. Based on the records reviewed, the individual and total HAPs are below the emission limits.

The facility records monthly and 12-month rolling time period calculations for NO<sub>x</sub>, CO, VOCs, and HAPs. As of the date of this inspection report, the facility has not completed a stack test on the engine.

**Materials/Fuels:** The facility shall only process sweet natural gas, which is defined as any gas that is not sour. Sour natural gas is defined as "any gas containing more than 1 grain of hydrogen sulfide or more than 10 grains of total sulfur per 100 standard cubic feet. Based on a gas analysis, the analytical data indicated a concentration of 7ppm hydrogen sulfide in the gas stream, which is 0.14 grain of hydrogen sulfide per 100 standard cubic feet.

**Process/Operational Parameters:** The facility provided maintenance records for the facility. The engine was shut down while performing routine maintenance such as, oil and filter changes. The records did not show maintenance concerns with the engine, and the engine did not have control, so there were no bypass records within the maintenance records.

The crude oil and condensate storage tank battery area are connected to a vapor recovery system for control.

**Testing:** The facility used specific emission factors to calculate the emissions for NO<sub>x</sub>, CO, VOCs, and HAPs. Performance testing has not been completed at this facility.

**Monitoring/Recordkeeping:** The facility monitors and records monthly fuel consumption, monthly crude/condensate throughput to the ASTs, amount of hydrocarbons trucked, and the glycol circulated through the dehydrator. Additionally, the facility keeps monthly records of the amount of oil and gas processed at the facility.

**Reporting:** The facility completes all calculations in formats acceptable by the DEQ, and the records are properly maintained. Additionally, the facility reports to the Michigan Air Emissions Reporting System (MAERS) on an annual basis, and the facility is in compliance with their MAERS reporting.

**Stack/Vent Restrictions:** There are no stack/vent restrictions applicable for the engine at the facility.

**Other Requirements:** The facility is not subject to 40 CFR Part 60, Subpart KKK since the gas is not fractionated at the facility.

NAME

Amy Owens

DATE

6/17/17

SUPERVISOR

SN