

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

N709373009

<b>FACILITY:</b> RIVERSIDE - KEARNEY 9 CPF		<b>SRN / ID:</b> N7093
<b>LOCATION:</b> SW NW SEC 10 T30N R7W, BELLAIRE		<b>DISTRICT:</b> Cadillac
<b>CITY:</b> BELLAIRE		<b>COUNTY:</b> ANTRIM
<b>CONTACT:</b> Natalie Schrader , Environmental Technician		<b>ACTIVITY DATE:</b> 07/02/2024
<b>STAFF:</b> Lindsey Wells	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY2024 on-site inspection and records review, no further action recommended at this time -LW;		
<b>RESOLVED COMPLAINTS:</b>		

**Introduction**

On July 2, 2024, AQD District staff Lindsey Wells and Tammie Puite mobilized to the Kearney 9 Central Production Facility (CPF) to conduct an unannounced compliance inspection. This facility is identified as State Registration Number (SRN: N7093) and is located in the southwest quarter of the southwest quarter of the northwest quarter of Section 10 in Kearney Township of Antrim County (Township 30 north, range 7 west, T30N-R7W). The facility is currently operated by Riverside Energy.

The purpose of the on-site inspection was to determine compliance with permit to install (PTI) 327-06. Records review has been incorporated into this report.

**Summary**

Based on the evaluation it appears the facility operates in general compliance with PTI 327-06. No compliance issues were noted during the site visit or records review.

**Facility Information**

The facility is a CPF that dehydrates and compresses natural gas prior to transfer to a pipeline. Separators remove condensate and water from natural gas which is then compressed, dehydrated, and sent to a pipeline.

The referenced facility is classified as an opt-out source by virtue of the permit limiting emissions below major source thresholds.

**Permits of Record**

The current permit 327-06 appears to be the original and only permit of record. It was issued on December 13, 2006 and included (2) engines and a glycol dehydration system processing gas from the antrim zone. A construction waiver was requested but not approved on November 6, 2006. The evaluation notes that the facility had operated under exemptions since 2002 but the installation of a larger compressor required a permit to install. District files indicate a single operator of record that notified the department of the following company name changes. DTE Gas and Oil in 2007, Atlas Gas & Oil Company in 2009, Chevron Michigan in 2011, and Riverside Energy in 2016. It appears the SRN was briefly changed to N7717 upon issuance of PTI 327-06 however at some point AQD and the current operators reverted back to N7093.

**Equipment of Record**

The evaluation notes EUENGINE1 as a 1265 hp Caterpillar lean burn engine and EUENGINE2 as an 830 horsepower Caterpillar 399 rich burn engine. The evaluation also notes two 400 barrel (bbl) tanks in a tank battery for produced water and an iron sponge for removal of hydrogen sulfide.

**Facility Access**

A green address marker identifies the facility access drive as 1059 (Montgomery Road). The nearest east/westbound crossroads are Ritt road to the north and Kladder Road to the south.

At the time of inspection the property layout appeared as follows:

The site is gated and unmanned. Two small buildings are present on the west end near the gate, and two compressor buildings are present on the north side, the east building is larger. A standalone panel and well are visible on the south edge. What appears to be an iron sponge tower is located on the east side of the east compressor building. The engine stacks exhaust out the east side of the east building and the west side of the west building.

**On-Site Inspection Notes**

At the time of the 7/2/2024 inspection, the ambient temperature was 62 degrees (Fahrenheit), conditions were intermittent light winds and rain. No visible emissions were observed. Both compressor engines were operating at the time of inspection.

Staff started in the west building via the west pedestrian door. The engine was operating at the time of the inspection and the compressor skid was labeled 381. The engine appears to be equipped with an add-on catalyst. The engine-compressor is equipped with an altronic electronic air to fuel ratio control panel which read L/R auto. Also present was an altronic compressor panel with digital catalyst temperature readouts noted as channel 1 939 F and channel 2 1035 F. The altronic panel displayed 1033 rpm and operating status 01. Staff were unable to locate a nameplate on the engine. An operator's monthly log sheet where daily engine/compressor readings are recorded was present which also identifies the engine as a 399 TA. The building also includes what appears to be a fuel bottle, 2 small tanks on stilts, and a little red tank in the side portion of the building commonly referred to as the bear den.

Located in the east building is engine compressor skid 1244. The skid is equipped with a caterpillar electronic engine supervisory system that displayed 1 11048 hours, 1291 rpm, and 58 psi. The digital meter on the engine block read 57039.6. Staff located a Michigan CAT rebuild tag that listed serial number 4EK03785 with a rebuild date of 11/17/15. This serial number is identified as lean burn Engine 1 in previous reports. The east building contains separator towers, a glycol dehydrator, and sales metering equipment which read 0.19 O2 during the inspection.

#### **COMPLIANCE EVALUATION: PTI 327-06**

Requested records were received electronically on July 12, 2024. The records review has been incorporated into this report.

Submitted records and inspection reports identify the engines as follows:

- EUENGINE1, Unit 1244, SN 4EK03785, Lean Burn CAT 3615, 1265 hp, no control; east building
- EUENGINE2, Unit 388, SN 49C01121 Rich Burn CAT 399 TA, 830 hp, equipped with 3-way catalytic converter; west building

#### **Emission Limits FGENGINEs**

Engine 1 has a nitrogen oxides (NOx) limit of 49.4 tons per year (tpy) and reported maximum emissions were 15.64 tpy NOx for the evaluation period. Engine 1 has a carbon monoxide (CO) limit of 23.2 tpy and reported maximum emissions were 14.48 tpy CO. Engine 2 has a NOx limit of 16.5 tpy and reported maximum emissions were 2.58 tpy NOx. Engine 2 has a CO limit of 13.0 tpy and reported maximum emissions were 7.33 tpy CO. Emissions are calculated on a 12-month rolling time period determined at the end of each calendar month. Although the permittee uses measured control efficiencies for Engine 2 rather than AQD defaults, the difference does not impact compliance status. The permittee is eligible to claim AQD default control efficiencies for Engine 2 because the catalyst is required to meet the emissions limit in PTI 327-06, provided that the catalyst is operated at all times and maintained in accordance with the malfunction abatement plan (MAP) discussed below.

#### **Process and Operational Limits FGENGINEs**

Both engines are subject to Process and Operational limits that require the permittee to implement an AQD approved MAP. The most recent MAP on file was approved on May 29, 2007. The MAP indicates the following maintenance activities:

- offline checks are performed every 60-90 days
- oil changes are performed approximately every 3000 hours of operation, which roughly corresponds to 3 times per year.
- monthly catalyst checks including a minimum catalyst temperature inlet of 750 degrees Fahrenheit (F) and a maximum outlet temperature of 1350 F.
- The catalyst is washed or replaced every 12-18 months
- The catalyst is tested on a 5-year frequency

Records provided indicate that the facility performs service consistent with the MAP. The operators record engine and compressor parameters for on a daily log and scheduled service and repair details on a maintenance log. Monthly catalyst readings were provided in the records submission and are generally noted on the daily logs. Although the MAP specifies catalyst testing every 5 years, records provided for the evaluation period indicate this occurred at least annually. The report of an 11/30/23 test demonstrated acceptable catalyst activity in order to claim AQD default control efficiencies.

The permit limits operating the engine without the add-on control device to 200 hours per year for those engines so equipped. Records indicate that Engine 2 did not operate without control during the evaluation period.

#### **Testing, FGENGINEs**

Both engines are subject to testing upon request of the AQD district supervisor in order to verify emission rates of nitrogen oxides and carbon monoxide. To date, no testing has been requested.

### **Monitoring, FGENGINEs**

The permittee is required to monitor, in a satisfactory manner, the natural gas usage from each engine on a continuous basis. At the time of inspection a monthly production log including compressor fuel usage was located with unit 1244. Monthly fuel usage for both compressors was also included in the submitted records for 12-month rolling emissions. The most recent calibration record for each fuel meter was provided in the records submission.

### **Recordkeeping and Reporting, FGENGINEs**

The permittee is required to complete, make available in an acceptable format, and maintain for at least 5 years in an approved location, all required records. The required records include:

- A log of all significant maintenance activities conducted and all repairs made to each engine and any associated control device.
- Monthly and 12-month rolling time periods of engine hours when operated without control, if equipped with an add-on control device
- Fuel usage
- Monthly and 12-month rolling time period NOx and CO emission calculations

The provided records conformed to the above requirements. Riverside reports no engine swaps or changeouts for the evaluation period.

### **Stack/Vent Restrictions, FGENGINEs**

The permittee is required to discharge all exhaust gases from the engine vertically without obstruction, and the maximum exhaust diameter of each vent is restricted to 8 inches. Minimum stack heights above ground level are 36 feet. The stack exits extend beyond the roofline, indicating likely conformance with the minimum above ground height requirement.

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

### **Material Limits, FGFACILITY**

The facility is limited to burning only sweet natural gas in FGFACILITY. Riverside reports that hydrogen sulfide (H<sub>2</sub>S) readings are taken weekly on the outlet of the H<sub>2</sub>S sponges, and an outlet concentration greater than or equal to 4 ppm triggers sponge media changeout. The records submission included a sample log. The facility also reports that only Antrim wells are processed at the facility and provided a well log in the records submission.

### **Testing, FGFACILITY**

Verification of H<sub>2</sub>S and/or sulfur content of the natural gas burned in the facility is required upon request of the AQD district supervisor. No verification was requested during the evaluation period.

### **Compliance Evaluation: Other Requirements**

This section addresses the applicability of requirements not listed in PTI 327-06 that may apply to the facility. The facility is required to report annual emissions to the air emissions reporting system. Records indicate that emissions were reported for the 2023 calendar year in a timely and appropriate manner. The facility appears to utilize the same method of emission calculation for annual reporting as is used for demonstrating compliance with PTI 327-06. The 2023 calendar year emission report was submitted timely and noted to be acceptable.

The facility may be subject to federal regulations not noted in the PTI. Subparts frequently associated with this source category are identified below. Note however that compliance with these subparts has not been determined as part of this evaluation.

With respect to Maximum Achievable Control Technology Standards (MACT 40 CFR 63) the following subparts may apply:

- MACT Subpart HH (Hazardous Air Pollutants (HAPs) from oil and natural gas production facilities
- MACT Subpart ZZZZ (HAPS from Stationary Engines)

The facility has one dehydrator on-site that may be subject to MACT Subpart HH. The facility reports that they meet the exemption due to gas throughput of less than 3 million standard cubic feet per day (MMSCF). The provided records indicated an average throughput of less than 1299 MSCF per day, which is 1.29 MMSCF.

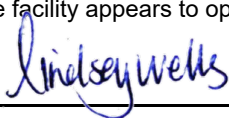
District files include a subpart ZZZZ notification to EPA that the engines are greater than 500 horsepower, 4-stroke, remote engines. The facility's MAP does not identify subpart ZZZZ requirements. A review of readily available aerials indicates that the facility continues to qualify as remote.

With respect to New Source Performance Standards (40 CFR Part 60 NSPS) commonly associated with this source category are discussed below. Note that no compliance determinations have been made with respect to the following subparts.

- NSPS Subparts K, Ka or Kb (Storage vessels for Petroleum Liquids); The lowest threshold for these rules is approximately 19,815 gallons or 471 barrels (bbl). No tank battery was present at the time of the 7/2/2024 inspection. A review of aerials shows the tank battery last present in 2013, and no longer present in 2016.
- NSPS Subpart KKK (Equipment Leaks of VOC from onshore natural gas processing plants); The facility does not appear to currently process (extract or fractionate) natural gas liquids (hydrocarbons) from field gas.
- NSPS Subpart OOOO (Standards of Performance for Crude Oil and NG Production, Transmission and Distribution) and Subpart OOOOa would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011, and September 18, 2015, respectively. 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
- NSPS Subpart JJJJ for Spark Ignition (SI) Reciprocating Internal Combustion Engines (RICE) may apply in the future for subsequent/additional engines. No manufacture dates are noted in district files to assess applicability.

Based on observations at the time of the July 2, 2024 site inspection and review of records provided by facility staff, the facility appears to operate in general compliance with PTI 327-06.

NAME

DATE 11-26-24

SUPERVISOR

