

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

P000673007

FACILITY: RIVERSIDE - CENTRAL LAKE 15 CPF		SRN / ID: P0006
LOCATION: Central Lake 15 CPF, CENTRAL LAKE		DISTRICT: Cadillac
CITY: CENTRAL LAKE		COUNTY: ANTRIM
CONTACT: Natalie Schrader ,		ACTIVITY DATE: 07/02/2024
STAFF: Lindsey Wells	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2024 on-site inspection and records review; no further action recommended -LW;		
RESOLVED COMPLAINTS:		

Introduction

On July 2, 2024, AQD District staff Lindsey Wells and Tammie Puite mobilized to the Central Lake 15 Central Production Facility (CPF) to conduct an unannounced compliance inspection. This facility is identified as State Registration Number (SRN: P0006) and is located in the southwest quarter of the northwest quarter of Section 15 in Central Lake Township of Antrim County (Township 31 north, range 8 west, T31N-R8W). The facility is currently operated by Riverside Energy.

The purpose of the on-site inspection and subsequent records review was to determine compliance with permit to install (PTI) 254-09B.

Summary

Based on the evaluation it appears the facility operates in general compliance with PTI 254-09B. No compliance issues were noted during the site visit or records review.

Facility Information

The facility is a CPF that compresses and dehydrates natural gas prior to transfer to a pipeline. Separators remove condensate and water from field 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 facility was originally permitted under PTI 254-09, which was issued on November 30, 2009, for a Caterpillar 3516 lean burn engine (EUENGINE1) rated at 1265 horsepower (hp) and a Caterpillar G3304NA booster engine rated at 95 hp. The engines were listed as not equipped with add-on controls in the permit file. The booster engine was permanently removed in September 2014 and PTI 254-09B was issued to reflect this change as well as a minor increase in emission limits to reflect consistency with like-engines at other CPFs. The evaluation also noted a 400 bbl produced water tank and a glycol dehydrator processing gas from Antrim wells. 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.

Equipment of Record

There are no notifications of engine change-outs with regard to EUENGINE1, which is the only piece of equipment referenced in PTI 254-09B. At the time of inspection the compressor skid number was 139, consistent the last inspection of record on January 24, 2020. Previous correspondence from the facility claims PTI exemption 288(b)(ii) for the dehydrator. A review of available aerial photographs indicates the land site was first cleared by August 2005. A building and tank battery are present in the August 2006 aerials.

Facility Access

Staff accessed the facility via M-88 south from Eastport. There are two entrances to the facility. The north access road is through a large elk farm on the east side of the road (between Youngdyke and Kiessel roads), use the north farm driveway marked 3920 (M-88 Central Lake). The CPF also has a south entrance with a sign that may be accessible via the Central Lake Township recycling center, located just south of the farm on M-88 (between Kiessel and Meggison roads), although at the time of inspection this track was overgrown. The gate to the recycling center was open. The two-track is the first on the left at the top of the hill past the gate, goes down the hill and then north along the west side of an agricultural field. A review of aerials is recommended.

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

The site is unmanned, although a Riverside operator was also on-site at the time of inspection. A single building is present and includes safety lights that were illuminated green at the time of inspection. On the east side of the property is a secondary containment area that includes (1) tank, which is noted as a 400 barrel (bbl) in the file. There is also a brine

disposal (SWD) well located at the north end of the property. What appear to be (2) iron sponge towers are located on the east side of the compressor building. The engine stack exhausts out the east side of the building also.

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.

Staff first accessed the building via the east pedestrian door which is closest to the iron sponges. The engine was operating at the time of the inspection and the compressor skid is labeled 139. The engine appears to be equipped with an add-on catalyst. The engine-compressor is equipped with a Caterpillar electronic control panel and an Altronic compressor panel. Staff noted the following readings from the caterpillar panels. Engine hours 63460, Oil pressure 60 psi, engine speed 1203 rpm. The current hours align with those noted in the 2020 inspection, assuming 8760 hours of operation per year. Staff were unable to locate a nameplate on the engine. The operator's monthly log sheet where daily engine/compressor readings are recorded was located near the Altronic panel at the front of skid. The building also includes 2 contactor towers, labeled 28 water and 28 gas respectively, a glycol dehydrator with a reboiler still-drip bottle, a fuel bottle, and a sales meter that displayed 0.15 parts per million (ppm) O₂.

COMPLIANCE EVALUATION: PTI 254-09B

Requested records were received electronically on July 10, 2024. The records review has been incorporated into this report. All permit conditions discussed refer to EUENGINE1 which is the only piece of equipment with permit conditions.

Emission Limits

Engine emissions are limited to 60.0 tons per year of nitrogen oxides (NO_x) and 30.0 tons per year of carbon monoxide (CO) based on a 12-month rolling time period. Federal rules require non-remote engines of this size and type to be equipped with oxidation catalysts. Periodic testing is performed to demonstrate acceptable catalyst activity. The facility reports both uncontrolled and controlled emissions. The uncontrolled emissions for the evaluation period of May 2024 – June 2023 were 15.15 tpy NO_x and 14.40 tpy CO. The controlled emissions were reported as 16.65 tpy NO_x and 0.01 tpy CO, based on control efficiency determined during the 2/3/23 catalyst test. The application of the AQD default CO control efficiency of 80% results in calculated CO emissions of 6.15. Permittees can claim AQD default control efficiencies for those control devices that are required to meet the emission limit in a permit, or devices required by a federal rule, provided they can also demonstrate via recordkeeping that the devices are operated and maintained in accordance with an approved malfunction abatement plan (MAP), including annual testing to verify acceptable catalyst activity.

Material Limits

The permittee is prohibited from burning any sour natural gas in the engine. The definition included in the permit of more than 1 grain of hydrogen sulfide (H₂S) or 10 grains of total sulfur per 100 standard cubic feet (scf) is approximately equivalent to 16 ppm H₂S. The facility reports that any gas sent to sales pipelines is limited to a maximum H₂S concentration of 4ppm in order to meet the definition of sales quality pipeline natural gas. Operators perform periodic sampling using Drager tubes to check that H₂S levels are below the 4ppm maximum.

Process and Operational Restrictions, Design and Equipment Parameters

The permit requires the facility to implement an AQD approved malfunction abatement plan (MAP). The most recent MAP on file was approved 11/16/2015. 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 changes per year.
- the temperature range for the oxidation catalyst is 750-1350 degrees Fahrenheit. An operator will investigate if the temperature is below 750 or if the outlet is higher than the inlet, and the engine will be shut down if it is above 1350.

The facility provided a 2/3/23 catalyst test record that reports acceptable catalyst activity. Provided records showed monthly catalyst temperature readings as within the specified range. The catalyst log also includes entries of catalyst activity testing that occurs on an approximately annual basis. Additional service records provided were consistent with the MAP. The operators record engine and compressor parameters on a daily log and scheduled service and repair details on a maintenance log.

The engine is limited to 200 hours of operation without the add-on control device and must keep records on a 12-month rolling time period basis when this occurs. At all other times the permittee must operate an engine with the add-on control device installed, operated, and maintained in a satisfactory manner. Satisfactory manner is further defined as performing

the manufacturer's recommended maintenance and operating in accordance with the MAP referenced above. The facility reports no time periods where the engine operated without the control device.

The permittee is required to install, calibrate, maintain and operate in a satisfactory manner, a device to monitor the natural gas usage from the engine on a continuous basis. The permittee provided a calibration record detailing that meter 84168-F assigned to COMP FUEL #139 was calibrated on 4/4/24.

Testing and Sampling

The engine is subject to testing upon request of the AQD district supervisor in order to verify emission rates of nitrogen oxides and carbon monoxide from the engine, and verification of H₂S and/or sulfur content of the natural gas burned in the engine. To date, no testing has been requested.

Monitoring and Recordkeeping

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:

- Natural gas fuel usage for the engine on a monthly basis.
- A log of all maintenance activities conducted in accordance with the MAP.
- Monthly and 12-month rolling time period records of hours when the engine is operated without with add-on control device, for engines so equipped.
- Monthly and 12-month rolling time period NO_x and CO emissions calculations

The provided records conformed to the above requirements.

Reporting

The permittee is required to notify the AQD district supervisor if the engine is changed-out to an equivalent and/or less emitting engine, including the submission of acceptable emissions data to demonstrate that emissions meet the above criteria.

Riverside reports no engine swaps or changeouts since they took over operations of the site in 2016. They noted that the database listed the most recent changeout as July 2015. Engine 1 current serial number of 4EK05040 was provided in response to staff records request.

Stack/Vent Restrictions

The permittee is required to discharge all exhaust gases from the engine vertically without obstruction. The maximum exhaust diameter of the stack is restricted to 12 inches and the minimum required stack height is 50 feet above ground level. The stack height is listed as 50' in the permit application package.

Compliance Evaluation: Other Requirements

This section addresses the applicability of requirements not listed in PTI 254-09B 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 utilizes the same method of emission calculation for annual reporting as is used for demonstrating compliance with PTI 254-09B. The 2023 calendar year emission report was submitted timely and staff review determined the calculations were acceptable.

The facility may be subject to federal regulations. 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 Subpart HH 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 900 MSCF per day, which is 0.9 MMSCF.

The facility also reports in the email response to staff records request that only Antrim formation projects are processed at the facility, specifically the Central Lake 15 and Central Lake 28 projects. The facility also notes that production from the Central Lake 28 project can also be routed to the Forest Home 10 CPF, and this reflects current permitting with EGLE's Oil, Gas, and Minerals Division (OGMD). A well list was provided.

There is no record of subpart ZZZZ notification to EPA in the district files from the previous operators. The facility's current MAP does not identify subpart ZZZZ requirements. Submitted records included an aerial map with a quarter mile radius overlay to indicate non-remote status for ZZZZ purposes. The facility also reports the engine to be equipped with the required oxidation catalyst and to performing the annual catalyst activity test and remote status determinations required by the rule.

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); At the time of the inspection the storage tanks present appear to be smaller than the lowest threshold of approximately 19,815 gallons or 471 barrels (bbl). Historic records provided by the facility list (1) 400 bbl tank on-site. The tank present at the time of inspection appears to be the size listed.
- 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 available in district files.

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 be operating in general compliance with PTI 254-09B.

NAME Lindsey Wells

DATE 9-23-24

SUPERVISOR Shane Nixon