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

N/45/70905		
FACILITY: RIVERSIDE - MANCELONA 8 CPF		SRN / ID: N7457
LOCATION: MANCELONA TWP SEC 8 T29N R5W NW NE NW, MANCELONA		DISTRICT: Gaylord
CITY: MANCELONA		COUNTY: ANTRIM
CONTACT: Natalie Schrader, Compliance Coordinator		ACTIVITY DATE: 10/10/2023
STAFF: Lindsey Wells	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: on-site inspection and records review for fiscal year 2024		
RESOLVED COMPLAINTS:		

### Introduction

On October 10, 2023, AQD District staff Lindsey Wells and Sharon LeBlanc mobilized to the Mancelona 8 central production facility (CPF) to conduct a compliance inspection of the facility. This facility is identified as State Registration Number (SRN: N7457) and is located in the northeast quarter of the northwest quarter of Section 8 in Mancelona Township of Antrim County (Township 29 north, range 5 west, T29N R5W). The facility is currently operated by Riverside Energy.

The purpose of the on-site inspection and records review were to determine compliance with PTI 233-05.

## Summary

Based on the evaluation it appears the facility operates in general compliance with PTI 233-05. 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 natural gas which is then compressed, dehydrated, and sent to a pipeline. The referenced facility is classified as a synthetic minor Title 5 opt-out source by virtue of the permit limiting emissions below major source thresholds.

## Permits of Record

District records indicate that a single well was visible in 1993 aerial photos, followed by buildings in 1998, and a tank farm along with major site changes in 2016. The facility operates under PTI 233-05, which was issued on April 3, 2006 to Quicksilver Resources. The issued permit included 3 engines (EUENGINE1,2, and 3, which make up FGENGINES), a glycol dehydrator (EUDEHY), methanol storage equipment (FGMETHANOL), and FGFACILITY. The permit evaluation notes that Engines 1 and 2 were both listed as Caterpillar 3516 TALE lean burn engines rated at 1150 and 1085 horsepower, respectively. The facility's current malfunction abatement plan (MAP) lists EUENGINE1 as

Unit 3953 and EUENGINE2 as Unit 3954. The third engine, listed as a Caterpillar 399 TA rich burn rated at 830 horsepower with catalytic control was removed on 2/12/2012. Installation dates for all 3 engines were noted as 1/1/1998. A fourth engine was included in the application but ultimately not permitted. Subsequent operators of record are Breitburn as of 11/1/2007, Linn Operating as of 6/1/2013, and Riverside Energy as of August 2019.

On 6/14/2023 the district received an engine swing notification that Engine 2 serial number 3RC00814 was being replaced with a like make and model engine on 6/19/2023, new serial number 3RC00281, model 3516 LE.

The permit engineer's evaluation notes detailed that the glycol dehydrator was not exempt at the time of permitting but that because the facility was evaluated to process Antrim formation gas which is low in VOC, no modelling/permit conditions were required provided it was operated properly. The dehydrator's glycol pump (a Kimray 9015) was evaluated at its rated capacity of 1.50 gpm and 40 strokes per minute.

The evaluation also noted that the flexible group FGMETHANOL was included in the permit in lieu of monthly Rule 290 recordkeeping. The evaluation notes that the applicant demonstrated to AQD's satisfaction that the methanol storage tanks would satisfy Rule 290 criteria assuming continuous throughput, provided the total storage capacity of the tanks remains less than or equal to 5000 gallons. District records note two high pressure iron sponges present at the site in 2013.

The last compliance inspection of record was conducted on 11/5/2019. At that time no compliance issues were noted.

# Facility Access

At the time of inspection, navigation was successful using the address 7270 Whispering Pines Drive, Mancelona MI 49659. Staff accessed the facility from I-75 via Mancelona Road (west), Bocook Road (north), Whispering Pines Road

(east). Note that this section of Bocook is unpaved and rough, and that Whispering Pines is a seasonal road west of Bocook.

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

The site is gated and unmanned. The north section contains two processed water tanks and a slop oil tank, all labeled. A smaller tank to the east has a painted label that reads "unused". There are 2 small outbuildings and miscellaneous equipment located in this area between the tanks and the main compressor building. The engine stacks exit the south side of the building. A tower presumed to be an iron sponge is present behind the compressor building. Two wellheads are visible in the southern section behind the compressor building, which is located in the southeast section. The farthest well had a pumpjack. Another well-head is visible in the northeastern section. Provided records note these to be a natural gas well, and two SWD wells (salt water disposal wells).

### **On-Site Inspection Notes**

At the time of the 10/10/2023 inspection, the ambient temperature was 42 degrees (Fahrenheit), conditions were calm with a steady drizzle of rain. Slight ambient odor was noticeable on the property.

Staff accessed the main compressor building via the northwest pedestrian door which is closest to the glycol dehydrator. A triethylene glycol tank is located near the glycol dehydrator.

Gas inlet and separator vessels near the compressor skids were labeled as west and east with paint marker. Both engines were operating at the time of inspection. No catalyst and no air to fuel controls were readily visible on either engine, consistent with the MAP. The following information was read from the Altronic control panel associated with each engine.

The Engine 2 west skid # 3954 was operating at 1186 RPM, oil pressure 49 PSI, and a high RPM warning was displayed. The altronic panel displayed 156897 hours, and a paintmarker notation reads "new engine 155128". The hour meter on the engine block read 1579.9. An Correct Compression nameplate tag, located on the left side of the skid reads DOB 11/2/90, Model CAT 3516, Serial # 3RC00281, rebuilt 5/31/2023. This information is consistent with the facility's June 2023 swing notification.

Engine 1 east skid # 3953 read 1194 RPM, oil pressure 60 psi, the altronic displayed 21461, engine block hours 91,226.5. A paintmarker notation reads new oil 88,571. A Michigan CAT rebuilt nameplate tag reads date 6/30/2009, part 3516MAG, serial number 3RC01000, WO number KL22520.

Located at each control panel was the operator's monthly log noting each engine as a Caterpillar 3516. The operators note engine oil pressure, engine speed in RPM, downtime hours, as well as various parameters associated with the compressor on a daily basis.

# **COMPLIANCE EVALUATION PTI 233-05**

Requested records were received electronically on November 14, 2023. The records review has been incorporated into this report.

Note that no special conditions apply to EUDEHY or FGMETHANOL beyond those that apply by virtue of their inclusion in FGFACILITY.

# **FGENGINES Emission Limits**

**Special Conditions SC 1.1a and b** establish Engine 1 emission limits of 24.5 tons per year (TPY) nitrogen oxides (NOx) and 21.5 tons per year (TPY) carbon monoxide (CO) based on a 12-month rolling time period determined at the end of each calendar month. Requested records report 12 month maximum rolling emissions of 14.5 tons NOx and 13.1 tons CO for the evaluation period. These records also include monthly and 12-month rolling fuel usage records. Emissions are calculated using manufacturer specific engine factors of pound pollutant per MMCF fuel usage, and engine fuel usage.

**Special Conditions 1.1c and d** establish Engine 2 emission limits of 23.0 TPY NOx and 20.7 TPY CO based on a 12month rolling time period determined at the end of each calendar month. Requested records report 12-month maximum rolling emissions of 14.93 tons NOx and 12.54 tons CO for the evaluation period. These records also include monthly and 12-month rolling fuel usage records.

**Special Conditions 1.1e and f** associated with Engine 3 are not applicable as Engine 3 was removed from the site in 2012.

# **FGENGINES Process/Operational Limits**

https://intranet.egle.state.mi.us/maces/webpages/ViewActivityReport.aspx?ActivityID=248... 4/9/2024

**SC 1.2** requires the permittee to implement an AQD approved malfunction abatement plan (MAP). District records indicate that the current MAP was approved in 2020. The MAP indicates that offline checks are performed every 60-90 days, and oil changes are performed approximately every 2160 hours of operation, which roughly corresponds to a quarterly basis. Records provided indicate that the facility performs service in 60-90 day intervals in accordance with the MAP. The operators record operational parameters for the compressor and engine on a daily log, and record scheduled service and repairs on a maintenance log.

**SC 1.3** limits operation of the engine without the control device consistent with the MAP to 200 hours per engine per year. This SC is not applicable as Engines 1 and 2 are not equipped with add-on controls.

#### **FGENGINES Equipment**

**SC 1.4** prohibits operation of the engines without proper maintenance of the control device is not applicable as Engines 1 and 2 are not equipped with add-on controls.

#### **FGENGINES** Testing

**SC 1.5** requires verification by stack testing of NOx and CO emission factors used to calculate emissions from one or more engines in FGENGINES upon request. To date no testing has been requested.

#### **FGENGINES Monitoring**

**SC 1.6** requires the permittee to install, calibrate, maintain and operate in a satisfactory manner a device to monitor the natural gas fuel usage for each engine on a continuous basis. Records provided by the facility included the most recent fuel meter calibration record.

#### FGENGINES Recordkeeping/Notification

**SC 1.7** requires the permittee to complete and make available in an acceptable format all required records and/or calculations by the last day of the calendar month for the previous calendar month unless otherwise noted. Records are required to be maintained at an AQD approved location for a period of at least 5 years. The required records include:

- (SC 1.8) a log of all maintenance activities conducted according to the MAP. This SC also requires notification to
  the department if the engine is replaced with an equivalent and/or lower emitting engine, except as provided in
  Rule 285. The June 2023 Engine 2 swing notification conformed to this requirement. Records also noted a
  7/28/23 Engine 2 swing. Riverside clarified via email that the Engine 2 installed in June failed, required offsite
  rebuild, and was re-installed on 7/28/23. During that repair period, the facility operated only 1 compressor.
- (SC 1.9) requiring records of time periods of engine operation without the control device is not applicable as the engines are not equipped with add-on controls.
- (SC 1.10 and 1.11) monthly fuel use records, monthly and 12-month rolling time period NOx and CO calculation records. These records were evaluated in previous discussion of the Emissions limit section.

#### **FGENGINES Stack/Vent Restrictions**

The permittee is required to discharge all exhaust gases from the engine vertically without obstruction. Additionally, SCs 1.12a and b, restrict the maximum exhaust diameter of the stack vents for Engines 1 and 2 to 16 inches and require a minimum height of 36 feet above ground level. Each engine exhaust is ducted through the rear of the building through a muffler, after which the exhaust stack is oriented vertically upward. Riverside reports that stack heights were physically measured upon their acquisition of the site, and that each is at least 18 inches taller than the required minimum height.

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

### FGFACILITY Emission Limits

**Special Conditions 2.1a and b** establish facility-wide emission limits of 89 tons per year (TPY) nitrogen oxides (NOx) and 89 tons per year (TPY) carbon monoxide (CO) based on a 12-month rolling time period determined at the end of each calendar month. Requested records report 12-month maximum rolling emissions of 31 tons NOx and 26 tons CO for the evaluation period.

#### **FGFACILITY Material Limits**

SC 2.2 permits only sweet natural gas to be burned in FGFACILITY. Sour gas is defined as 1 grain hydrogen sulfide (H2S) or 16 ppm. The facility reports that the iron sponge observed during the site inspection is in operation. The facility also provided the operator's field gas sample log for May 2022. The highest reading noted was 20 ppm on the inlet and 0.8 ppm on the outlet. The concentration of gas that is burned at the facility meets the definition of sweet gas. The facility clarified via email correspondence that H2S readings are obtained via weekly Drager tube sampling on the inlet and outlet of the sponge, and that an outlet concentration greater than or equal to 4 ppm triggers sponge media changeout.

Riverside reports that this facility is also equipped with an AMI unit on the sales line that monitors H2S concentrations 24/7.

### **Compliance Evaluation Other Requirements**

This section addresses the applicability of requirements not listed in PTI 233-05 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 2022 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 This section addresses the applicability of requirements not listed in 233-05 that may apply to the facility. The facility is required to report annual emissions to the air quality division. The 2023 calendar year emission report is due March 15, 2024.

Although not identified in PTI 233-05, 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 Glycalc software is used for federal greenhouse gas reporting requirements and that the data indicate the facility is currently exempt due to gas throughput of less than 3 million standard cubic feet per day (MMSCF). The provided Glycalc report indicated a throughput of 2.9576 MMSCF per day.

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. Provided records included an aerial map with a quarter mile radius overlay to indicate remote status.

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). Records from a 2013 ownership transfer list the tanks on-site as 400 bbl.
- NSPS Subpart KKK (Equipment Leaks of VOC from onshore NG Processing Plants); The facility does not appear to process (extract or fractionate) natural gas liquids from field gas.
- NSPS Subpart OOOO (Standards of Performance for Crude Oil an 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. Based on information in district files, the engines predate the applicability of JJJJ by virtue of pre 2006 manufacture dates.

Based on observations at the time of the October 10, 2023 site inspection and review of records provided by facility staff, the facility appears to be operating in general compliance with PTI 233-05.

julsey wells

<sub>DATE</sub> 7-30-24

SUPERVISOR