

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N782650846

FACILITY: Riverside Energy Michigan, LLC - Webber Creek		SRN / ID: N7826
LOCATION: SE NW SEC 10, RUST TWP		DISTRICT: Gaylord
CITY: RUST TWP		COUNTY: MONTMORENCY
CONTACT: Natalie Schrader , Compliance Coordinator		ACTIVITY DATE: 10/03/2019
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: self initiated site inspection with records review for permitted facility. sgl		
RESOLVED COMPLAINTS:		

On October 3, 2019, AQD District Staff mobilized to the Riverside Energy Michigan, LLC (Riverside) – Webber Creek CPF (N7826), located at the SE ¼ of the NW ¼ of Section 10, T29N, R4E, Rust Township, Atlanta, Montmorency County, Hillman, Michigan to conduct an unannounced, scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install (PTI) No. 212-07. A records request was made electronically on August 28, 2019. Records were received electronically on November 1, 2019 and November 12, 2019.

The referenced site was permitted on July 12, 2007. The most recent site inspection of the Facility was conducted on June 7, 2016. The Facility was reported in compliance at that time.

FACILITY

The referenced facility is a gated/fenced and unmanned CPF operated by Riverside just west of the intersection of Webber Creek and Farrier Roads, Atlanta, Michigan. The station is reported to service Antrim Formation wells in the area. Activities onsite are limited to compression of NG, which pushes it through the pipeline to a dehydrator which removes water from the NG stream. The compressor is powered by a CAT 398TA Reciprocating Internal Combustion Engine (RICE) with 3-way catalyst and Air to Fuel Ratio Control (AFRC).

A review of historical site inspection reports indicates that the location also is the location with the Cattle Antrim CPF (N7454), though presently shut-in, the CPF was operated at one time by Terra Energy, Breitburn and presently is operated by Maverick. The Webber Creek CPF is reported to be the compressor building to the east (right when facing the buildings at the road/gate)

The Facility can be reached by traveling M-32 from Gaylord eastward toward Alpena to Farrier Road (approximately 44.2 miles to the east). At Farrier Road take a right and travel south for approximately seven miles to the intersection with Webber Creek Road. The Webber Creek CPF is located approximately 1/4 -mile to the west (a right-hand turn), on the right-hand side.

A review of readily available aerials appears to indicate that the compressor buildings were constructed between 1992 and 1998. Adjacent properties appear to be undeveloped large acreages.

Weather conditions at the time of the site visit included overcast skies, drizzle, and temperature of approximately 50 degrees Fahrenheit. Stack emissions were limited to heat waves off the compressor stack.

REGULATORY

Permitting -The referenced facility operates under PTI No. 212-07, which was issued to Dominion Midwest Energy on June 26, 2007. The PTI was issued as an opt-out permit. The referenced permit was issued for a 415 HP CAT 379 with a catalyst. A review of installation dates for equipment as part of the MAERS reporting program noted a 2007 installation date.

Information in District Files indicated that Dominion Midwest Energy, merged with HighMount Exploration to form HighMount Midwest Energy LLC, (August 2007). Documentation in the Files indicated that the Facility was later operated by Linn Energy LLC (AKA Linn Operating Inc.) (2010), Riviera Operating, LLC (March 2019) and more recently as Riverside Energy Michigan, LLC (2019)

Though not identified in the permit, the facility may be subject to Federal Regulation. Subparts frequently associated with oil and gas facilities are identified below. Note however, that compliance with these subparts has not been determined as part of this inspection.

Federal Regulations - The referenced facility does not process or store petroleum liquids and is therefore not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);
- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

In addition, based on information provided by the Facility for the permitted engine, EUENGINE1 is a 1981 vintage engine, and would exempt the existing RICE from NSPS Subparts JJJJ for Spark Ignition (SI) RICE.

District Files contained copies of a 2019 annual compliance report for NSPS Subpart OOOOa (finalized in 2016).

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

- Subpart HH (HAPS from Oil and NG Production Facilities)
- Subpart ZZZZ (RICE)

With respect to Subpart HH, the affected unit are dehy units. District files contain copies of January 12, 2012, Linn Energy correspondence indicating the Facility was one of many of the companies operating Facilities with average daily flow rates of <3MMcf/day, and exempt from 40 CFR Part 63, Subpart HH requirements. The facility has one dehydrator onsite, and is reported to have a daily average NG flowrate of 184.71 Mscf/day for 2019 to date, and 62.91 Mscf/day for 2018. Both of which are below the referenced threshold.

With respect to Subpart ZZZZ, the permit application reports that the Facility RICE are subject to 40 CFR Part 63, Subpart ZZZZ, maintenance plan requirements for engines ≤500 hp. These requirements appear to have been incorporated into the Site Preventative Maintenance/Malfunction Abatement Plan (PM/MAP).

EQUIPMENT

The October 3, 2019, site visit identified only one compressor engine, with add on control device (catalyst). Review of District Files indicates that the following compressor engines are of record for the site.

ENGINE ID	ENGINE TYPE	INSTALLATION DATE	REMOVAL DATE	COMMENT
EUCAT3304 (MAERS Id) skid no "054"	CAT 3304 95 HP Booster	9/23/2016	NA	Rule 285(g) exempt engine notification of installation was received by District Office. Backup documentation was included in the November 1, 2019 information package.
EUENGINE1 EUCOMP-CAT379 (MAERS Id) Unit 147 SN 72B1255	CAT 379 415 HP (3-way catalyst with AFRC)	2007	NA	Permitted

Engine ID plates were not readily visible on the engines. Maintenance records provided by Riverside reference Unit 2143, with respect to the catalyst. Operational parameters at the time of the October 3, 2019, site visit included:

ENGINE	RPMs	OIL PRESSURE	OIL TEMP	CATALYST TEMP IN	CATALYST TEMP OUT
EUENGINE1	1048	55	170	860	960
BOOSTER	1570	159	159-160	NA	NA

Maintenance activities for EUENGINE1 are presently contracted through Natural Gas Compression Systems. Contractor service logs for the referenced engine for 2019, indicated that the emission unit is receiving regularly scheduled maintenance in the form of “1440 hour” and “2160” service calls. In addition, documentation of monthly catalyst operating reports as well as documentation of annual cleaning and emissions testing (via gas analyzer) were completed in March 2019.

Documentation provided by the Facility indicated that the Sulfur content of the NG fuel for the EUs have contents that meet the sweet gas requirement of NG with hydrogen sulfide contents of less than 1 grain (16.5 ppm) or a maximum of 10 grains of total sulfur per 100 standard cubic feet. September 23, 2019, laboratory analysis indicated that no sulfur components were present in gas samples associated with the Facility.

COMPLIANCE

At the time of the October 3, 2019, site visit, no visible emissions were noted to be coming from onsite stacks.

MAERS- The Facility submits annual reporting of actual emissions for the facility under the MAERS reporting system for two engines and one glycol dehydrator. Emission reports received to date appear to be complete and reported in a timely manner. The most recent submittal was dated February 28, 2019.

EUENGINE1- The referenced EU consists of one NG-fired, CAT 379 TA, 415 Hp, RICE (EUENGINE1). The referenced EU is equipped with a pollution control device (3-way catalyst and AFRC). No material limits are associated with EUENGINE, however S.C. 1.6 and 1.9 requires that the permittee installs, calibrates, maintains and operates in a satisfactory manner a device to continuously record the NG usage for each engine. Records provided were sufficient to confirm compliance with permit conditions.

As EUENGINE1 is equipped with an add-on control device the following special conditions are applicable at this time:

- Operational limit of 200 hours per year for engine without it’s control device. (SC 1.3)
- Proper installation, operation and maintenance of the add-on control device (SC 1.4)
- Documentation of the hours of engine operation without it’s control device (SC 1.10)

Records provided by Riverside reported that from October 18 through September 2019, that the unit was not operated without it’s control, and is in compliance with the referenced permit conditions for the period.

OPERATION LIMITS – No later than 60 days after the issuance of Permit 212-07 the permittee is required to submit for review and approval a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP). Records indicate that the required document was submitted in a timely manner in compliance with the permit condition. (SC 1.2) Documents contained in District files are summarized below:

PM/MAP Submittal Date	Approval Date	Engines included
UNK*	August 6, 2007	EUENGINE1
April 27, 2018	May 14, 2018	EUENGINE1
October 12, 2018	October 16, 2018	EUENGINE1

* Submittal documented in site inspection reports, copy of document not found on file.

Per the PM/MAP, the Facility conducts the following Subpart ZZZZ maintenance requirements for EUENGINE (Non-emergency, non-black start, 4SRB, stationary RICE >25 Hp and <500 Hp):

- Inspection of spark plugs, hoses and belts, and replacement as necessary.
- Oil and oil filter changes.
- Hose and belt inspection, and replacement as necessary.

The frequency of the referenced activities are based on the “remote” status of the Facility. Non-remote stationary RICE are required to conduct the referenced maintenance activities every 1,440 hours of operation or annually, whichever comes first. Remote locations require the referenced activities to be completed every 2,160 hours of operation or annually, whichever comes first. Records provided indicate that for 2019 EUENGINE1 maintenance activities were conducted on approximately bi-monthly schedule, and in addition to “call outs”, the EU received “1440 hour” and “2160” service calls. The two later types of calls appear to meet the subpart requirements.

Operating parameters for the Catalyst are reported per the PM/MAP to be monitored on a daily (pre and post-catalyst temperatures) and monthly (differential pressure across the catalyst) are collected per the PM/MAP. District Staff noted at the time of the October 3, 2019, site inspection that the operator was completing daily reporting of the pre and post catalyst temperatures. The Facility provided a copy of a monthly Catalyst operating report, for September 23, 2019. The data is reported below:

DATE	Pre-Catalyst Temperature	Post-Catalyst Temperature	Differential Pressure Across Catalyst
10/2/2019	860	960	not recorded
9/23/2019	857	955	0.33 inches WC
ACCEPTABLE RANGE	> 700 °F	>700°F & <1350°F	0-2 inches above established baseline* (2.1)

*Established 5/9/2018.

Per the PM/MAP within 5 days of an operating parameter being reported out of range the Facility will confirm NOx and CO control efficiencies with a portable analyzer. Should control efficiencies not be within the manufacturer’s specs, the catalyst will within an additional 5 days be cleaned, and the catalyst gasket replaced. Should supplemental work be required, a replacement catalyst will be installed while the catalyst is sent to vendor. Records provided for the CAT 379, indicated that the catalyst was cleaned on March 11, 2019.

The AFRC O2 sensor per the PM/MAP will be replaced either when the emission checks are conducted or when engine operation determines that sensor failure has occurred. Emission checks are conducted using a portable emissions analyzer and are conducted approximately every 12-18 months unless the catalyst operating variable go out of range. Riverside reports that the AFRC O2 indicator is a MECR, which has a life indicator. Riverside will replace the sensor when indicated by the MECR. The Facility has indicated that the PM/MAP will be revised to reflect this change.

EMISSION LIMITS

Emissions for RICE associated with the Facility are calculated using emission factors from Manufacturer Spec sheets (SC 1.11, 1.12 and Appendix A) when available and are based on NG usage documented (SC 1.10). Emissions reported for EUENGINE are summarized below:

Emission Unit	NOx Emissions (TPY)	CO Emissions (TPY)	Reporting Period
EUENGINE1	2.56	5.59	2016
EUENGINE1	2.44	5.32	2017
EUENGINE1	2.38	5.2	2018
EUENGINE1	3.1	6.7	August 2018 – Sept. 2019

LIMIT	4.6 (SC 1.1a)	9.9 (SC 1.1b)	12-month rolling
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TESTING ACTIVITIES – Under the present permit verification of NOx and CO emissions are required upon request of the AQD District Supervisor. (SC 1.5) District files contain no copies of written requests for verification testing, and the permit condition not applicable at the time of report preparation.

MONITORING/RECORDKEEPING –Permit requirements for monitoring and recordkeeping include the following:

- Completion of all required calculations by the last day of the calendar month for the month prior and made available to AQD staff upon request, (SC 1.7)
- Monitor and record NG usage for EUENGINE on a continuous basis (SC 1.6 and 1.10)
- Maintain a log of all maintenance activities conducted according to the PM/MAP (SC 1.8) and
- Monthly and 12-month rolling time period NOx and CO emission calculation records for EUENGINE as required by SC 1.1a and SC 1.1b and Appendix A. (SC 1.11 and 1.12)

Records provided by the Facility were sufficient to indicate compliance with the above referenced permit conditions. These records with respect to emission calculations and NG usage are summarized on a spreadsheet generated monthly, which summarizes all the required information, as well as equipment descriptions and emission factor sources.

STACK/VENT - Permit 212-07 (SC 1.13) limits the exhaust dimensions for the stack associated with EUENGINE1 to:

Emission Unit	Exhaust Diameter (inches)	Minimum Height Above Land Surface (feet)	Source
EUENGINE	10-inch	30 feet	Facility Operator
LIMIT	10-inch Maximum	30-feet Minimum	

SUMMARY

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Based on information obtained during the site inspection, as well as supplemental data provided by the

MACES- Activity Report

Facility it appears that the Facility is operating in general compliance with their permit and PM/MAP. The Facility operators have reported that they will be modifying the PM/MAP for this and other Riverside sites for consistency.

NAME Sharon LeBlanc

DATE 12/4/2019

SUPERVISOR SN