

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

N615150847

FACILITY: Rivierside Energy Michigan, LLC - Sage Creek CPF		SRN / ID: N6151
LOCATION: SE4 NE4 NW4 T29N R2E SEC 13, ALBERT TWP		DISTRICT: Gaylord
CITY: ALBERT 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: unannounced, scheduled site inspection for fiscal year 2020.sgl		
RESOLVED COMPLAINTS:		

On Thursday, October 3, 2019, AQD District Staff mobilized to the Riverside Energy Michigan LLC – Sage Creek CPF (N6151), located in the SE1/4, NW ¼ Section 13, T29N, R2E, Albert Township, Montmorency County, Michigan to conduct a scheduled compliance inspection of the facility. Historically the Facility has also been referred to as the E Albert 13 CPF. The referenced facility presently operates under Permit to Install No. 710-96. A records request was made electronically on August 29, 2019. Records were provided electronically by the Facility on October 31st and November 12, 2019.

The most recent compliance inspection was October 12, 2015. No compliance issues noted at that time.

FACILITY

The Sage Creek CPF facility is a gated/fenced and unmanned CPF station operated by Riverside Energy Michigan LLC (AKA Riverside). Previously known as the Albert 13 CPF, the station is reported to service Antrim Formation wells in the area. Activities onsite include separation of gas and brine from the incoming gas stream and compression of the gas in the lines. One well is located onsite and is identified as State Albert A2-13.

To reach the facility Staff traveled north from the intersection of M-33 and CO-612 one-mile to Harwood Road. At Harwood Road, Staff turned to the west (left) and traveled approximately six miles to where Harwood Road ends at Sage Creek Road. Note that Harwood Road has a slight jog when it intersects with CO-487 and goes north on 487 less than ¼-mile, then heads west again. At Sage Creek Road the entrance drive to the CPF is immediately across the street, on the west side of the intersection.

An alternative route is to travel apx. 5.75 miles south on CO-487 from the intersection with M-32 in Atlanta, Michigan. At the intersection of CO-487 with Harwood Road, make a right, and travel approximately 1.4 miles to Sage Creek Road. The entrance drive to the CPF is immediately across the street, on the west side of the intersection.

Weather conditions at the time of the site inspection included overcast skies intermittent showers and temperatures of approximately 50 degrees. Visible emissions were limited to heat shimmers from the compressor stack. Readily available aerials indicate that the facility was present in 1992.

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 710-96, which was issued to Wolverine Environmental Production, Inc. in 1996. The PTI was issued as an opt-out permit, but not a Rule 201 permit and was issued around the same time as other Michigan Oil and Gas Association (MOGA) permits that did not undergo 201 reviews. The PTI conditions were generic and refer to the stationary source as a whole rather than conditions that address individual pieces of equipment.

Ownership/operation of the Facility has changed since permit issuance. District Files include the following references:

- Wolverine Environmental Production Inc. (1996 – August 2004 name change)
- Dominion Midwest Energy (2004 – August 2017 merge with HighMount Exploration and Production)
- HighMount Exploration and Production, LLC (AKA HighMount Midwest Energy LLC) (2007 - 2010)
- Linn Operating, Inc. (May 25, 2010)
- Linn Operating LLC (April 20, 2017) (name change only)
- Riviera Operating, LLC (March 4, 2019) (name change only)
- Riverside Energy Michigan, LLC (August 1, 2019)

At the time of permitting the facility consisted of two NG-fired compressor engines, one “burner” and one glycol dehydration unit (with reboiler) and was reported to have the potential to emit over 100 tons of NOx. The referenced permit limits the emissions to 89 tons per year for NOx, CO and VOCs. Per the permit application the Facility only handled natural gas from Antrim wells.

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, nor store them onsite and is therefore appears to 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, the existing engine(s) have installation dates no later than 1995, which would make them not subject to NSPS Subparts IIII and JJJJ for Compression Ignition (CI) RICE and Spark Ignition (SI) RICE, respectively.

Subpart OOOO would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. 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.

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 is believed to be the dehy unit. However, the facility may comply with the standard by demonstrating an average throughput is less than 85K cubic meters/day or average benzene emissions are less than 0.9 Mg/yr (approximately 1 ton/yr). Information provided indicated that the Daily averages for 2018 and 2019 were well below the 85K cubic meters/day. VOC emissions reported for 2015 -2018 calendar years ranged from 20.24 – 11.04 pounds.

Calendar Year	Daily Average NG Flow Rate (Mscf/day)	Daily Average NG Flow Rate (cubic meters/day)
2018	110.20	3120.86
2019	390.33	11054.14
Exemption Threshold	--	85,000 cubic meters/day

With respect to Subpart ZZZZ, the facility reports that the engines on site are remote and are subject maintenance requirements of the referenced subpart. A review of maintenance records provided appear to indicate general compliance with the Subpart maintenance requirements.

EQUIPMENT

At the time of the October 3, 2019, site visit AQD Staff identified one compressor, one glycol dehydrator, one brine tank and one slop tank (¾ size of brine tank) with secondary containment were present onsite. Each of the referenced pieces of equipment are housed separately in connected buildings. Due to the overcast conditions at the time of the site inspection, visible emissions were limited to heat shimmers were noted from exhaust stacks onsite.

Review of District Files and annual emissions reports submitted by the facility indicate that at the time of permitting, one compressor was permitted onsite. A review of MAERs submittals for the facility identified the following engine. No records indicating engine swap outs/changes were of record for the site. The facility reported no engine swaps since the 2014 site inspection, though one engine overhaul is of record for the site on August 27, 2015. No pollution control devices were identified with the referenced engines.

ENGINE ID	ENGINE TYPE	INSTALLATION DATE	REMOVAL DATE
UNK	Ajax DCP	11/2/1993	2004

EUCAT3512 (MAERS)	CAT3512 TALE	1/15/1995	NA
EUENGINE #4030 (Riverside)	810 Hp No Control SN 7NJ00908		

Operational parameters for the referenced engines consists of the following:

ENGINE	RPMS	Oil Pressure	Oil Temperature
CAT	1123	60	175

The glycol dehydrator referred to as EUDEHYSTILL – is reported to be a Kimray 40/15 pump, was reported to have been installed on November 2, 1993.

COMPLIANCE

At the time of the October 3, 2019, site visit, no visible emissions were noted to be coming from onsite stacks, nor were there any liquids collected in the secondary containment of the brine tank.

MAERS- Reporting of actual emissions for CO, NOx, VOCs and HAPs is required under special condition 18 of the permit. A review of the most recent MAERS submittal for the facility (received on February 25, 2019 for emissions associated with the calendar year 2018) included emissions for three engines and one glycol dehydrator onsite.

Total emissions reported for the calendar years 2018, 2017 and 2016 for MAERS as well as random dates from data submitted as part of the information request to Riverside are summarized below:

CALENDAR YEAR	NOX (tpy)	CO (tpy)	VOC (tpy)	Single HAPs (tpy)*
2018	10.46	8.37	2.51	1.1
2017	10.87	8.7	2.61	1.1

2016	11.18	8.95	2.68	1.2
EMISSION LIMITs	89	89	89	9

*reflects AQD calculated formaldehyde emissions, which are the single highest HAP calculated as part of MAERS.

Permit Conditions -Special conditions associated with Permit No. 710-96 are limited to record keeping, reporting and emission limits. Emission limits for the facility are defined in special conditions 13 and 14. These two conditions limit CO, VOC and NOx emissions to 89 tons/year for each referenced parameter as well as individual HAPs to below 9 tons/year and total HAPs to below 22.5 tons/year.

Calculation of actual emissions on a monthly and 12-month rolling total for CO, NOx, VOC and HAPS are required under special condition 15. The PTI specifies that emissions will be determined using emission factors from Appendix A. NOx, CO and VOC emissions for the engine were calculated using engine specific/manufacturer emission factors. The emissions for the facility were calculated using EPA emission factors. 12-Month rolling totals are presented below:

Time Period	NOx Emissions (ton/year)	CO Emissions (ton/year)	VOC Emissions (ton/year)
October 2018 – September 2019	12.2	9.76	2.93

Special condition No. 16 and/or 17 require Monthly records of:

- Fuel consumption, in million cubic feet (MMcf)
- Crude/condensate throughput to the tank in barrels (bbls)
- Hydrocarbon liquid trucked offsite (bbls), and
- Oil and gas processed onsite

Records provided by the Facility indicate that fuel usage is monitored and recorded for the Facility. Records provided for EUENGINE1 indicated that monthly usage over the 12-month rolling time period from October 2018-September 2019 ranged from 3.1 to 3.7 MMscf/month. The Facility does not produce crude/condensate.

Special condition 19 requires the owner or operator of the source to conduct all necessary maintenance and make all necessary attempt to keep all components of the process equipment in proper working order and maintain a log of significant maintenance activities and all repairs made to the equipment. Records provided by Riverside indicate that maintenance activities are subcontracted to Natural Gas Compression Systems. Field maintenance reports. Reports

provided indicated a regular maintenance schedule, and general compliance with the permit condition.

Special condition 20 applies to crude oil or condensate storage tanks greater than or equal to 952 barrels, and the liquid having a true vapor pressure of greater than 1.5 psia. This condition is not applicable as the facility does not store crude or condensate onsite.

Special condition 21 applies to malfunction of a pollution control device and limits bypass of the control device for a period not to exceed 48 hours per event nor a total of 144 hours per calendar year. The referenced permit condition is not applicable as no pollution control devices are associated with the engines onsite.

Special condition 22 requires the owner or operator of an oil-gas facility constructed on or after January 20, 1984 to determine if they are subject to Federal standards in 40 CFR, Part 60, Subpart KKK. No hydrocarbon liquids are reported to be produced at the facility, so the facility is reported not to be subject to the referenced Subpart.

Special condition 23 refers to requirements associated with verification stack testing for CO, VOC, NOx or HAP. No request for verification testing was found in District Files, so the condition is not applicable at the time of the report preparation.

Special condition 24 requires the facility to only process sweet gas as defined in Rule 119. Records provided by Riverside were for gas samples collected from a port at the sales meter on September 12, 2019. Parameters analyzed totaled 100% molecular weight and weight percent. Though the parameters analyzed did not specifically include H₂S, the analysis did not indicate that other gas components not analyzed for were present. That information, as well as knowledge that the wells are Antrim wells and considered sweet wells would indicate that the facility is in compliance with the permit condition.

SUMMARY

On October 3, 2019 AQD District Staff mobilized to the Riverside Energy Michigan LLC – Sage Creek CPF (N6151), located in the SE1/4, NW ¼ Section 13, T29N, R2E, Albert Township, Montmorency County, Michigan to conduct a scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 710-96.

A records request was made electronically on August 29, 2019. Records requested were received on October 31 and November 12, 2019. Based on observations made at the time of the site inspection, as well as supplemental data received from the company it appears that the facility is operating in general compliance with its permit conditions.

NAME Sharon J. LeBlanc DATE 12/3/2019 SUPERVISOR SN