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

N613665358

FACILITY: RIVERSIDE - FRED 10 CPF		**SRN / ID:** N6136
LOCATION: W2 NE4 T28N R4W SEC 10, FREDERIC		**DISTRICT:** Gaylord
CITY: FREDERIC		**COUNTY:** CRAWFORD
CONTACT: Natalie Schrader , Compliance Coordinator		**ACTIVITY DATE:** 10/05/2022
STAFF: Sharon LeBlanc	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Onsite inspection and records review as part of FY2023 FCE inspection.sgl		
RESOLVED COMPLAINTS:		

On October 5, 2022, AQD District Staff mobilized to the Riverside Energy of Michigan, LLC (AKA Riverside) – Fred 10 CPF (N6136), located in the W ½, NE ¼, T28N, R4W, Section 10, Frederic Township, Crawford County, Michigan to conduct an unannounced, scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 694-96. A records request was made electronically on September 8, 2022, and records were received on November 10, 2022. The review of which is incorporated into this document.

The most recent compliance inspection was October 29, 2018. At that time the Facility was being operated by Linn Operating LLC. No compliance issues noted at that time.

FACILITY

The referenced facility is a fenced and unmanned CPF station operated by Riverside and is located off Kolka Creek Road on Twin Peaks Road. 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.

To reach the Facility there are multiple options:

- Travel west on CR 612, from I-75 exit 264 (Frederic exit) until the intersection of Old 127 and CR 612. At the intersection you will make a left, followed by an immediate right on the first road on the fight hand side. From there you will travel approximately ½-mile, Kolka Creek Road will be on the right-hand side of the road, CR 612 curves to the left (south) just past Kolka Creek Road and you will have gone too far. Once you make the right-hand turn on Kolka Creek Road (north) you will travel approximately 3.5 miles on the dirt road, then the road turns into Twin Peaks Road. Stay to the left and travel approximately another half mile. You will see a paved road going up a hill on the right. The facility is at the top of the hill.

  Note you will see another other good-sized oil and gas Facility farther up Twin Peaks Road, however this is not the Riverside Fred 10 Facility, but the Lambda Fred 10 Facility (N7775 - exempt). The Facility of concern cannot be seen from the road.

- From the north, the site can be accessed by traveling south apx. 9-miles from the intersection of M-32 and Hayes Tower Road to Mancelona road (M-38). At Mancelona Road make a right turn and travel west apx. 1-mile to Mt Frederick Road, then make a left and travel south on Mt Frederick Road for apx. 2.5-miles to a fork in the road. Keep to the left at the fork and travel apx. 2 more miles to Lambda Fred 10 (N7775) where the road now is known as twin peaks road. The drive to the Facility will be just past the Lambda Facility, and a long, paved drive located to the left. The Facility is at the top of the hill.

The Facility has changed hands a number of times since permitting in 1996. Information in MAERS indicates that the Facility was in operation as early as 1993. Operators of record based on correspondence in District files include:

- Mercury Exploration Company, (Pre-1996 -1998)
- Quicksilver Resources, (approximately 1998 - 2007)
- Breitburn, (2007 - 2013)
- Linn (AKA Linn Energy, Linn Operating, Inc, Linn Operating LLC, Riviera Resources LLC and Riviera Operating LLC) (2013 - 2019)
- Riverside Energy Michigan LLC (2019-present)

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 694-96, which was issued to Mercury Exploration Company for the existing Facility 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.

At the time of permitting the facility consisted of one NG-fired compressor, one glycol dehydration unit with amine reboiler, two in-line heaters, three heater treaters, a flare, an unknown number of tanks 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.

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.

As part of the October 23, 2013, compliance determination activities, Previous operator Linn Energy LLC requested voidance of Permit No. 694-96. District Staff at that time indicated that though the current engine could be exempt from Rule 201 permitting requirements under R 285 (g) because it had both a heat input rating of less than 10 MMBTU/hr and a potential to emit less than thresholds, the existing tanks and glycol dehydrator are also covered by the PTI. The glycol dehydrator it was further indicated does not met the exemption requirements of R 288 because it processes Niagaran as well as Antrim formation gas. The tanks are less than 400 bbl in size and are not used for oil.

Federal Regulations - The referenced facility does not process or store petroleum liquids 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 JJJJ for 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. No determination has been made with respect to the various OOOO subparts which have come into effect since the initial Subpart OOOO regulations.

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 JJJJJJ (Boiler MACT) and
    - 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 actual annual average throughput is less than 85K cubic meters/day or actual annual average benzene emissions are less than 0.9 Mg/yr (approximately 1 ton/yr). Records provided by Riverside reported a 2021 annual average of 2,115 MCF/day. 2022 annual daily average of 2,071 MCF/day. Gly Calc emissions dated January 27, 2022, reported total VOCs of 0.3318 ton/yr.

NESHAP subparts JJJJJJ pertain to Industrial, Commercial and Institutional Boilers and Process Heaters for Area source of HAPS, respectively. At the time of the site inspection, it appears that the reboiler of the glycol dehydration process would not be subject to the subpart, as a process heater is not subject for area sources. No compliance determination has been made with reference to the subpart.

With respect to Subpart ZZZZ, the facility in re-notification correspondence dated October 18, 2013 reports that the engine(s) associated with the site at that time were existing, stationary spark ignition (SI) RICE with a site rating of greater than 500 brake Hp located at a remote, area source of HAPs subject to the referenced subpart. At the time of report preparation, AQD has been delegated authority to implement and enforce the subpart. However, at this time compliance determinations for Federal requirements under Subpart ZZZZ for Area Sources have not been made. Riverside has indicated that requirements under the subpart have been incorporated into the MAP for the Facility. Compliance with the MAP may indicate compliance with the referenced subpart.

EQUIPMENT

Previous site visits have identified up to three compressors, one glycol dehydrator, one brine tank and one slop tank present onsite. The October 23, 2013, site report identified only one compressor engine, with no add on control device. It should be noted that at the time of the October 5, 2022, site visit that most of the Facility has been cleaned up, and it appears that the space is being used not only for storage of snowmobiles and trailers used by the company. But the northern portion is being used for other activities.

At the time of the October 5, 2022, site inspection, no Visible Emissions (VEs) were or heat shimmers were noted from exhaust stacks onsite. Temps were approximately 46 degrees, with mostly cloudy skies and very light to no winds.

Review of District Files and annual emissions reports submitted by the facility indicate that at the time of permitting, one CAT G399 TA compressor engine was permitted onsite. No records indicating engine swap outs/changes were of record for the site. No pollution control devices were identified with the referenced engines.

ENGINE ID	ENGINE TYPE	INSTALLATION DATE	REMOVAL DATE	COMPANY OPERATING EU
UNK	CAT G399 TA with Catalyst	1996	UNK	Mercury Exploration
UNK	AJAX DCP360 346 Hp	apx. 1998	Post-2005	Quicksilver
UNK	CAT 3512	apx. 1998	Pre 2007	Quicksilver
UNK	CAT 3306 Booster 170.3 HP with Catalyst	Feb 2006 (R 285(g) exempt)	Pre- August 2008	Quicksilver
EUENGINE-1 (formerly in MAERS as EUENGINE-LE2) (Unit 4226) JGK-44EK496 S/N 4EK00496	CAT 3516 TALE AFRC 1085 HP	1/8/2007	NA	Riverside

Existing stack heights for EUENGINE1 appear to be approximately 16 ft above land surface. Note that no stack restrictions exist under PTI 694-96.

Operational parameters for the referenced engine consists of the following:

EUENGINE1, Caterpillar 3516 LB, Unit 4226

Date	RPMS	Engine Oil Pressure	Hours

10/5/2022 1015 53 psi 123245

A comparison with engine hours reported as part of the October 29, 2018, site visit with the most recent data indicated an additional 3.9 years of operation had occurred which is consistent with the time passed.

The glycol dehydrator and associated reboiler referred to as EUGLYCOLDEHY a Kimray 4015, with a reported glycol flowrate of 0.0.07 to 0.10 gpm. Tri-Ethylene Glycol (TEG) is stored onsite. The installation date for the unit is reported to be January 1, 1993.

COMPLIANCE

At the time of the October 29, 2018, site visit, no visible emissions were noted to be coming from onsite stacks.

MAP – No Malfunction Abatement Plan (MAP) is required under the existing permit. However, Riverside prepared a MAP dated August 12, 2020 (Received by AQD December 1, 2020) and approved on December 3, 2020. The referenced document outlines engine maintenance activities to be conducted under the RICE MACT.

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 January 24, 2022 for emissions associated with the calendar year 2021) included emissions for one engine and one glycol dehydrator onsite.

Total emissions reported for the calendar years 2020 and 2021 for MAERS as well as "to date" from data submitted as part of the information request to Riverside are summarized below:

CALENDAR YEAR	NOX (tpy)	CO (tpy)	VOC (tpy)
2020	19.14	17.23	3.89
2021	18.03	16.23	3.67
2022 **	17.37	15.63	0.34
EMISSION LIMITs	89	89	89

****12-month rolling total emissions reported as part of post inspection data submittal by Riverside.**

Permit Conditions -Special conditions associated with Permit No. 694-96 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. Except for NOx and CO emissions for the two engines, the emissions for the facility were calculated using EPA emission factors.

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

With respect to fuel consumption, records provided for EUENGINE, the main fuel gas consumer reported the following:

Reporting Period	Fuel Consumption (MMcf)
2020	64.17
2021	60.48
2022 (to date)	43.28
Limit	NA

No crude or condensate is produced at the site, nor hydrocarbon liquids trucked offsite. In addition, the Facility is not an oil or gas processing Facility. As previously stated, activities onsite are limited to removal of water via the dehydrator and NG compression.

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 indicated a scheduled quarterly 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 in 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 indicated that hydrogen sulfide concentrations for gas samples collected on August 22, 2022 (1.25 ppm H2S) were incompliance with the permit condition.

SUMMARY

On October 5, 2022, AQD District Staff mobilized to the Riverside Energy Michigan, LLC (formerly operated by Riviera Operating LLC) – Fred 10 CPF (N6136), located in the W ½, NE ¼, T28N, R4W, Section 10, Frederic Township, Crawford County, Michigan to conduct an unannounced, scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 694-96.

The most recent compliance inspection were conducted on October 23, 2013 and October 29, 2018. No compliance issues noted in association with the referenced inspections.

A records request was made electronically on September 8, 2022. A records request was made electronically on September 8, 2022, and records were received on November 10, 2022. The review of which is incorporated into this document.

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 it's permit conditions.

NAME Shawn G LeBlanc DATE 2-8-23 SUPERVISOR Shane Nixon