

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

N709458915

<b>FACILITY:</b> RIVERSIDE - CUSTER 33 CPF		<b>SRN / ID:</b> N7094
<b>LOCATION:</b> SECTION 33, CUSTER TWP		<b>DISTRICT:</b> Cadillac
<b>CITY:</b> CUSTER TWP		<b>COUNTY:</b> ANTRIM
<b>CONTACT:</b> Natalie Schrader , Technical Assistant		<b>ACTIVITY DATE:</b> 03/29/2021
<b>STAFF:</b> Jodi Lindgren	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY21 FCE Inspection		
<b>RESOLVED COMPLAINTS:</b>		

### FACILITY DESCRIPTION

On Monday, March 29, 2021, Jodi Lindgren of the Department of Environmental, Great Lakes, and Energy (EGLE) – Air Quality Division (AQD) conducted an unannounced field inspection of Riverside Energy Michigan, LLC (Riverside) – Custer 33 CPF (N7094) located off an access road 0.38 miles northeast of Ricksgers Road. The access road is approximately 0.12 miles west of the intersection of Innis Road and Ricksgers Road in section 33, T29N-R7W, Custer Township, Antrim County, Michigan, 49615. The facility was unmanned at the time of inspection.

The Custer 33 CPF is an opt-out facility with PTI 312-08A issued on October 29, 2015. The facility has two compressor buildings, a 400 bbl tank, and exempt hydrogen sulfide treatment equipment. Building No. 1 houses a compressor, compressor engine, an exempt glycol dehydrator (dehy), and process equipment. Building No. 2 houses a compressor, compressor engine, and process equipment. The dehy only processes natural gas from the Antrim zone therefore it is exempt from Rule 201 via Rule 336.1288(b)(ii). The facility is subject to 40 CFR Part 63 Subpart HH which the EGLE is not delegated to enforce. The hydrogen sulfide treatment equipment is considered gas odorizing equipment therefore exempt from Rule 201 via Rule 336.1288(a).

### SCHEDULED INSPECTION

**A. FGENGINES** – Two natural gas fired reciprocating engine with no emission control equipment designated as EUENGINE1 and EUENGINE2.

EUENGINE1 is a 1265 hp CAT G3516 lean burn engine with a serial number of 4EK01657, a rebuild date of January 5, 2018, a unit number of 1175, and located in Building No. 1. In Riverside's records, EUENGINE1 is referred to as Engine 2. At the time of the inspection, the engine was running with an RPM of 1226, engine oil temperature of 188°F, engine oil pressure of 69 psi, coolant system temperature of 204°F, a compressor oil temperature of 178°F, a compressor oil pressure of 65 psi, and 23,875.4 hours of operation. This was consistent with the records kept on site which indicated that on March 29, 2021, EUENGINE1 was running with an RPM of 1226, engine oil pressure 70 psi, coolant system temperature of 184°F, a compressor oil temperature of 169°F, and a compressor oil pressure of 64 psi.

EUENGINE2 is a 1085 hp CAT G3516 lean burn engine a manufactured date of January 24, 1996, a unit number of 1036, and located in Building No. 2. The serial number was not legible on the nameplate. In Riverside's records, EUENGINE2 is referred to as Engine 1. At the time of the inspection, the engine was running with an RPM of 1176, engine oil temperature of 211°F, engine

oil pressure of 55 psi, coolant system temperature of 249°F, a compressor oil temperature of 209°F, a compressor oil pressure of 60 psi, and 60,732.6 hours of operation. This was consistent with the records kept on site which indicated that on March 29, 2021, EUENGINE2 was running with an RPM of 1175, engine oil pressure 60 psi, coolant system temperature of 190°F, a compressor oil temperature of 200°F, and a compressor oil pressure of 59 psi.

**1. Emission Limits –** For EUENGINE1, PTI 312-08A established a NO<sub>x</sub> limit of 60 tons per year (tpy) and a CO limit of 30 tpy calculated at the end of each month using a 12-month rolling time period. Records provided by Riverside indicate 15.81 tpy of NO<sub>x</sub> emissions and 15.02 tpy CO emissions calculated for a 12-month rolling time period of March 2020 to February 2021. These records indicate compliance with the emission limits established in PTI 312-08A.

For EUENGINE2, PTI 312-08A established a NO<sub>x</sub> limit of 27 tons per year (tpy) and a CO limit of 23 tpy calculated at the end of each month using a 12-month rolling time period. Records provided by Riverside indicate 18.38 tpy of NO<sub>x</sub> emissions and 16.55 tpy CO emissions calculated for a 12-month rolling time period of March 2020 to February 2021. These records indicate compliance with the emission limits established in PTI 312-08A.

**2. Material Limits –** PTI 312-08A prohibits the burning of sour natural gas, which is defined as more than one grain of hydrogen sulfide or more than ten grains of total sulfur per 100 standard cubic feet. An iron sponge system is utilized at the facility to reduce hydrogen sulfide. Riverside provided AQD staff with hydrogen sulfide monitoring data post iron sponge. The data indicated compliance with the sour gas restrictions defined in PTI 312-08A.

**3. Process/Operational Restrictions –** PTI 312-08A requires an AQD approve preventative maintenance/malfunction abatement plan (PM/MAP). A PM/MAP was submitted on November 9, 2015 and approved by AQD. The PM/MAP dictates the engine shall receive routine monitoring and maintenance including, daily performance monitoring, basic service checks every 60 to 90 days, motor oil and filter changes every 3,000 operation hours, and an engine rebuild or replacement every 85,000 operation hours. Monitoring records provided by Riverside demonstrate daily monitoring of the various system parameters necessary to ensure the engine is functioning within safe operational constraints. A provided maintenance log for EUENGINE1 indicates the performance of routine maintenance including four basic service checks and two engine oil and filter changes in the time period of March 2020 to February 2021. At the time of the inspection, the engine did not require a rebuild or replacement having 23,875.4 operation hours. A provided maintenance log for EUENGINE2 indicates the performance of routine maintenance including five basic service checks and two engine oil and filter changes in the time period of March 2020 to February 2021. At the time of the inspection, the engine did not require a rebuild or replacement having 60,732.6 operation hours. These records indicate compliance with the AQD approved PM/MAP. PTI 312-08A states any engine equipped with an add-on control device shall not operate for more than 200 hours per engine per year without that control device consistent with the PM/MAP. Neither EUENGINE1 nor EUENGINE2 are equipped with an add-on control device thus compliant with PTI 312-08A.

**4. Design/Equipment Parameters –** PTI 312-08A dictates the proper installation, maintenance, and operation of any add-on engine control device. Neither EUENGINE1 nor EUENGINE2 are equipped with an add-on control device thus compliant with PTI 312-08A. In addition, PTI 312-08A requires the installation, calibration, maintenance, and operation of a monitoring devices to

measure natural gas usage of FGENGINES on a continuous basis. Riverside demonstrated compliance by provided AQD staff with a calibration and maintenance record as well as a natural gas usage report for the time period March 2020 to February 2021.

5. Testing/Sampling – PTI 312-08A dictates that the AQD District Supervisor may request testing for NOx and CO emission verification. No testing has been requested by the AQD District Supervisor during the time constraints of this compliance evaluation.

6. Monitoring/Recordkeeping – Riverside demonstrated compliance with monitoring and recordkeeping requirements of PTI 312-08A to document natural gas usage and calculate NOx and CO emission for FGENGINES. A maintenance log conducted according to the approved PM/MAP is mandated in the PTI 312-08A as well. Riverside provided AQD staff the required documentation upon request.

7. Reporting – Riverside must notify the AQD District Supervisor if any engine included in FGENGINES is replaced with an equivalent-emitting or lower-emitting engine. Neither EUENGINE1 nor EUENGINE2 have been replaced.

8. Stack/Vent Restrictions – PTI 312-08A requires EUENGINE1 and EUENGINE2 to have a stack with a maximum diameter of twelve inches and a minimum height above ground level of 60 feet. Both SVENGINE1 and SVENGINE2 appeared to meet these requirements during the inspection.

9. Other Requirements – There are no other requirements associated with this emission unit; therefore, this section is not applicable.

#### EVALUATION SUMMARY

Conclusion – Based upon the Full Compliance Evaluation, it appears the source was in compliance with PTI 312-08A at the time of the evaluation.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

SUPERVISOR \_\_\_\_\_