

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

N821654029

FACILITY: Riverside Energy Michigan, LLC - Unit 154 Booster		SRN / ID: N8216
LOCATION: NW 1/4 NW 1/4 SEC 23 T29N R03E, LOUD TWP		DISTRICT: Gaylord
CITY: LOUD TWP		COUNTY: MONTMORENCY
CONTACT: Natlie Schrader , Compliance Coordinator		ACTIVITY DATE: 06/23/2020
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: self-initiated site inspection of O&G booster Facility for Fiscal Year 2020. sgl		
RESOLVED COMPLAINTS:		

INTRODUCTION

On June 23, 2020, Gaylord District Staff conducted a self-initiated site inspection of the Riverside Energy Michigan, LLC (Riverside) Unit 154 Booster (N8216) AKA the Zilka A1-23 booster. The referenced Facility is located in the NW ¼, NW ¼ of Section 23, T29N, R3E, Loud Township, Montmorency County, Michigan.

The Facility operates under Permit to Install (PTI) 399-08 issued on February 9, 2009. The referenced permit is an opt-out permit and allows for engine replacement and/or swings under FGENGINES Special Condition VII.1. The most recent site inspection was conducted April 2, 2015, (records review on May 18, 2015) No violations were noted at that time.

At the time of the site inspection, the skies were overcast, with light winds, and temperatures of approximately 67 degrees Fahrenheit. Only one building was present and only a few assorted small tanks were onsite. Also present on site was MPSC well no. 4879. No visible emissions were noted.

The purpose of the site visit was verification of compliance with the referenced permit.

FACILITY

The Unit 154 is an unmanned booster station located in the NW ¼, NW ¼ of Section 23, T29N, R3E, Loud Township, Montmorency County, amongst State of Michigan Forest and various sized residential properties. Natural Gas (NG) collected from Antrim Formation NG wells in the area is compressed at the station to improve flow in the lines.

At the time of the initial permit issuance, the Facility was owned and operated by Highmount Exploration & Production, LLC. Documentation available indicates that the Facility was operated by Linn Operating LLC (2017), Linn Energy LLC (2018) and in 2019, the Facility was purchased by Riverside.

The Facility is located approximately 0.9-miles west of the intersection of M-33 and CO 612 (12miles east of the light in Lewiston) on the south side of CO 612. Note that the booster building (dark green) can be easily seen from the road. The Facility is unmanned, fenced and gated. The sign at the gate says "Zilka A1-23".

EQUIPMENT

Consistent with the April 2, 2015 site inspection, the Facility was reported operating and consisted of one existing NG-fired compressor engine (EUENGINE1):

EU	Equipment Description
EUENGINE1	CAT 3408 TA 400 Hp No Catalyst

The site was tidy and well maintained. Though it appeared there had been some issues with oil leaks for

the associated engine as a good number of fresh oil absorbent pads were located under the engine.

The stack for the compressor engine was noted to be located on the south side of the building, had a muffler associated with it and was over 1.5 times the building height. Operational parameters for EUENGINE1 include:

- RPM-1520
- Compressor Pressure - 26
- Compressor Oil Temperature – 220 degrees F
- Engine Oil Pressure – 70

PERMITTING

As previously indicated, the Facility operates under PTI 399-08, issued on February 9, 2009, to Highmount Exploration & Production LLC. Included in the permit were conditions for one compressor engine (EUENGINE1).

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);

With respect to NSPS (40 CFR Part 60) Subpart JJJJ, as applicable Reciprocating Internal Combustion Engines (RICE) were reported to commence construction after June 12, 2006. Recent communications with Riverside staff indicated that the engine onsite is not subject to the NSPS requirements.

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 dehy units. No dehy unit exists on the site, therefore the subpart is not applicable to this Facility at this time.

With respect to Subpart ZZZZ, the Facility RICE are subject to 40 CFR Part 63, Subpart ZZZZ. Riverside Staff have updated existing Site Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) to incorporate the requirements.

COMPLIANCE

No complaints, Notices of Violation, or enforcement activities are of record for the Unit 154 booster station.

MAERS- Annual reporting of actual emissions for the facility under the MAERS program appears to not have been required of the site. Though MACES indicated that annual emissions for 2009 were reported by the Facility in March 2010 through the MAERS program.

EUENGINE1 - The referenced EU consists of one NG-fired, RICE without catalyst. Material limits for the referenced EU do not permit the burning of sour gas (special condition II.1(S.C. II.1)), which is defined as greater than 1 grain of hydrogen sulfide or 10 grains of total sulfur per 100 standard cubic feet of NG. July 1, 2020, Drager tube analysis of the influent gas stream reported hydrogen sulfide concentrations below detection levels, and in compliance with permit conditions.

Conditions S.C. IV.2, VI.2, VI.3 and VI.5 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.

At the time of permitting no pollution control devices/catalysts were reported to be associated with the engines. The April 2, 2015 and June 23, 2020, site inspections indicated that no catalysts was associated with EUENGINE1. Based on the lack of a control device the following special conditions are not applicable:

- Operational limit of 200 hours per year for engine without it's control device. (SC III.2)
- Proper installation, operation and maintenance of the add-on control device (SC IV.1 and VI.3)
- Documentation of the hours of engine operation without it's control device (SC VI.4)

OPERATION LIMITS – No later than 60 days after the issuance of Permit 399-08 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 by the permittee on March 30, 2009, and approved on 10/26/2009 in compliance with the permit condition. (SC III.1) As previously indicated the required document has been submitted and was considered to have met the permit condition.

As part of the records request Riverside, has updated the PM/MAP to incorporate appropriate Subpart ZZZZ requirements into the document. The updated PM/MAP (June 12, 2020) was received electronically and has been found to meet the requirements of SC III.1 on July 1, 2020. A PM/MAP approval letter will be issued for the document.

The PM/MAP includes the following engine maintenance activities:

Every 60-90 days of operation:

- Check and adjust valves
- Check engine compression
- Check timing, fuel pressure and all kill devices, and
- Check air filter and change pre-air filter.

Every 2160 hours of engine operation motor oil and filter change outs will occur. Engine swing/overhaul activities will occur approximately every 85,000 hours of engine operation or as needed. A review of maintenance logs provided appears to confirm that maintenance activities are occurring onsite. Though no major activities (engine swings or overhauls) were reported for the site since Riverside has acquired the Facility.

A review of maintenance records provided by Riverside appears to indicate general compliance with the MAP. The most recent maintenance activities was June 2, 2020 for EUENGINE1.

EMISSION LIMITS

Emissions for RICE associated with the Facility are calculated using emission factors from Manufacturer Spec sheets (SC VI.7, VI.8 and Appendix A) when available and are based on NG usage documented (SC IV.2, SC VI.2 and SC VI.3). The 12-month rolling total emissions for the period ending May 2020 and their respective limits are summarized below:

Emission Unit	NOx Emissions (TPY)	NOx 12-month Rolling Limit (TPY)	CO Emissions (TPY)	CO 12-month Rolling Limit (TPY)
EUENGINE1	70.90	83 (S.C. I.1)	5.33	7 (S.C. I.2)

TESTING ACTIVITIES – Under the present permit verification of NOx and CO emissions may be required at owners expense. (SC V.1) No request for testing is of record for the Facility, thereby the condition is

not applicable at this time.

S.C. V.2 requires verification of testing for H₂S upon request to show compliance with material limits associated with PTI 399-08. As previously reported Drager tube testing of the influent gas stream was conducted on July 1, 2020, and reported hydrogen sulfide concentrations below detection levels.

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 VI.1)
- Monitor and record NG usage for EUENGINE1 on a continuous basis (SC IV.2, VI.2 and VI.5)
- Maintain a log of all maintenance activities conducted according to the PM/MAP (SC VI.3) and
- Monthly and 12-month rolling time period NO_x and CO emission calculation records for EUENGINE1 as required by SC I.1, SC I.2 and Appendix A. (SC VI.6 and SC VI.7)

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 spreadsheets generated monthly, which summarizes all the required information, as well as equipment descriptions and emission factor sources.

STACK/VENT - Communications with Riverside Staff, indicate that the existing stacks meet SC VIII.1, which limits the exhaust dimensions for the stack associated with FGENGINES to:

Emission Unit	Exhaust Diameter (inches)	Diameter Limit (inches)	Minimum Height Above Land Surface (feet)	Height Limit (ft above land surface)
EUENGINE1	6-inch	6-inch Maximum (SC VIII.1)	37 feet	37-foot Minimum (SC VIII.1)

OTHER- S.C. VII.1 allows for the swap out or exchange of an engine included in FGENGINES with an engine of equivalent or lower emissions. Documentation of the activity and emissions for the engine to be provided within 30-days of the change. The Facility reports that no change out or engine swings have occurred since ownership/operation of the Facility by Riverside in August 2019.

SUMMARY

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The purpose of the site visit was verification of compliance with the referenced permit. Based on observations made and information provided by Riverside, the Facility appears to be operating in

general compliance with permit conditions and applicable Subpart ZZZZ conditions.

Sharon LeBlanc Digitally signed by Sharon LeBlanc
Date: 2020.07.08 15:18:07 -04'00'

Shane Nixon Digitally signed by Shane Nixon
Date: 2020.07.08 15:18:48 -04'00'

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SUPERVISOR _____