

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

N818154022

FACILITY: Riverside Energy Michigan, LLC - North Bay CPF		SRN / ID: N8181
LOCATION: SE 1/4 SW 1/4 SW 1/4 SEC 6, CALEDONIA TWP		DISTRICT: Gaylord
CITY: CALEDONIA TWP		COUNTY: ALCONA
CONTACT: Natalie Schrader, Compliance Coordinator		ACTIVITY DATE: 06/11/2020
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Self-initiated site inspection of minor source with Opt-out conditions for engine swaps. No compliance issues noted. sgl		
RESOLVED COMPLAINTS:		

INTRODUCTION

On June 11, 2020, Gaylord District Staff conducted a self-initiated site inspection of the Riverside Energy Michigan, LLC (Riverside) North Bay Central Processing Facility (CPF) (N8181). The referenced Facility is located in the SE ¼, SW ¼, SW ¼ of Section 6, T28N, R7E, Caledonia Township, Alcona County, Michigan.

The Facility operates under Permit to Install (PTI) 344-08A issued on August 18, 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 a self-initiated site inspection conducted September 1, 2016. No violations were noted at that time, and no FCE is of record for the Facility.

At the time of the site inspection, the skies were mostly cloudy, with light winds, and temperatures of approximately 54 degrees Fahrenheit. The only visible emissions were noted from the glycol dehydrator stack which appeared to puff intermittently.

At the time of the inspection "Greg" the operator was onsite awaiting a tanker to pump out water that had collected in the lined secondary containment. Greg indicated that he was not familiar with the site, having only recently started working for Riverside, and having been assigned to multiple locations over the past 4 months.

FACILITY

The North Bay CPF (formerly known as C Caledonia D3-6) is an unmanned Facility located at 2627 Hubbard Lake Trail, in the SE ¼, SW ¼, SW ¼ of Section 6, T28N, R7E, amongst mixed agricultural and various sized residential properties just NW of Hubbard Lake. Natural Gas (NG) collected from Antrim Formation NG wells in the area is dehydrated and compressed at the Facility prior to flowing to sales points.

Records indicate that the Facility though it reported annual emissions in March 2010 for the 2009 calendar year does not presently report to MAERS. The referenced MAERS reports the equipment being installed in November 2006.

Readily available aerials indicate that the site was constructed between April 1993 and April 1998. 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 at the northern end of Hubbard Lake, Alcona County, Michigan. To get to the Facility, District Staff traveled south on M-65 from it's intersection with M-32 to Werth Road. At Werth Road, turn east (to the left) and travel to its intersection with Wolf Creek Road (approximately 4-mile). Turn south (right) and travel approximately 8.5-miles you will just pass the intersection with Hubbard Road, and the road curves to the right and turns into Hubbard Lake Trail. At the curve you will see a residential drive on the left, then the entrance to the North Bay CPF there is a sign.

Draeger tube testing conducted on June 22, 2020, reported H2S as non-detect for incoming gases.

The facility is a gated, unmanned Facility.

EQUIPMENT

At the time of the June 11, 2020 site inspection, the Facility was operating and consisted of two existing NG-fired compressor engines (EUENGINE1 and EUENGINE2), glycol dehydrator (EUDEHY) with process heater, a brine well, one 400-barrel tank for mung oil, and another decommissioned 400-barrel tank (both within a lined- secondary containment berm) onsite and assorted smaller oil/glycol/etal tanks. The site was tidy and well maintained.

The September 1, 2016, site inspection report indicated that the two engines present onsite consisted of a CAT 3526 lean burn, and a CAT 3306 rich burn.

EU	Equipment Description
EUENGINE1 Unit 4228	CAT 3516 TALE 1085 Hp No Catalyst DOB: 7/8/1996
EUENGINE2 Unit 49 Booster	CAT 3306 NA 145 Hp No Catalyst DOB: suspect 1996 as well
EUDEHY	Glycol Dehydrator (Tri Ethylene Glycol) (TEG) Antrim Formation

The stack for the compressor engines were noted to be over 1.5 times the building height. Operational parameters for EUENGINE1 (Unit 4228) include:

- RPM-1178
- Compressor Pressure - 65
- Compressor Oil Temperature – 171 degrees F
- Engine Oil Pressure – 63
- Engine Oil temperature -192 degrees

Operational parameters for EUENGINE2 (Unit 049) at the time of the inspection included:

- RPM – 1175
- Compressor Oil Temp – 161 degrees F
- Compressor Oil Pressure – 45
- Engine Oil Pressure – 65
- Engine Oil temperature – 175 degrees

PERMITTING

As previously indicated, the Facility operates under PTI 344-08A, issued on August 18, 2009, to Highmount Exploration & Production LLC. Included in the permit were conditions for the TEG glycol dehydrator (EUDEHY) and two compressor engines under FGENGINES.

The permit was preceded by 344-08, issued on December 8, 2008 and revised on January 14, 2009.

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 both engines have DOB dates of 1996, or that same period, and would not be 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. Riverside staff report that the Facility is not subject to Subpart HH as the flowrate to the dehy is under 85,000MMcf/day and provided data sufficient to verify that status.

With respect to Subpart ZZZZ, the Facility RICE are subject to 40 CFR Part 63, Subpart ZZZZ. Riverside Staff have indicated that they are in the process of updating existing Site Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) to incorporate the requirements. The most recent PM/MAP of record consists of a submittal by a previous owner approved by District Staff on September 1, 2016.

COMPLIANCE

No complaints, Notices of Violation, or enforcement activities are of record for the North Bay CPF.

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

EUDEHY- The referenced EU consists of one glycol dehydrator and associated reboiler. As previously noted, the EU processes Antrim Formation gas.

Permit conditions associated with the EU consist of a high-level citation to 40 CFR Part 63, Subpart HH (S.C. III.1). Determination as to whether EUDEHY meets the exemption criteria in 40 CFR 63.764(e)(1)(i) or (ii) shall be determined based on monitoring and recordkeeping requirements under S.C. VI.1 and VI.2 or VI.3 and reporting requirements under S.C. VII.1. As previously indicated, the Facility indicates that it's flowrate is below the 85K MMcf/day applicability threshold and is not subject at this time. In addition, Riverside Staff reported that sampling was conducted by a consultant in 2015 indicated that benzene/HAP concentrations were non-existent.

No Stack height requirements/restrictions for EUDEHY are specified in PTI 344-08A.

FGENGINES - The referenced FG consists of two NG-fired, RICE (EUENGINE1 and EUENGINE2) without catalysts. No material limits are associated with FGENGINES, however S.C. IV.2, VI.2, VI.3 and VI.6 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.

FGENGINES at the time of permitting no pollution control devices/catalysts were reported to be associated with the engines. The September 1, 2016, site inspection report also indicated that no catalysts were associated with FGENGINES. 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.5)

OPERATION LIMITS – No later than 60 days after the issuance of Permit 344-08A 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 in a timely manner 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 is considered to have met the permit condition.

Electronic communications with Riverside indicate that the company is in the process of completing updates to existing PM/MAPs for their recently purchased properties and will incorporate appropriate Subpart ZZZZ requirements into the document.

review of maintenance records provided by Riverside for the period of August 2019 through May 2020 appears to indicate general compliance with the MAP. The most recent maintenance activities been June 4, 2020 for EUENGINE2 (#49 booster) and April 20, 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	22.53	23.11 (S.C. I.1)	20.28	20.8 (S.C. I.2)
EUENGINE2	31.13	35 (S.C. I.3)	2.45	3.0 (S.C. I.4)

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.

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.6)
- Maintain a log of all maintenance activities conducted according to the PM/MAP (SC VI.4) and
- Monthly and 12-month rolling time period NOx and CO emission calculation records for EUENGINE1 and EUENGINE2 as required by SC I.1 through SC I.4 and Appendix A. (SC VI.7 and SC VI.8)

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	12-inch	12-inch Maximum (SC VIII.1)	31 feet	30-foot Minimum (SC VIII.1)
EUENGINE2	4-inch	4-inch Maximum (SC VIII.2)	45 feet	45-foot Minimum (SC VIII.2)

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.

It was noted that EUENGINE02 had the following notes written on the control panel:

- New Head 12/19/18 Hrs 53533
- New Head 5/24/19 Hrs 57228

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No complaints, Notices of Violation, or enforcement activities are of record for the North Bay CPF. Records provided by Riverside were sufficient to indicate general compliance with the referenced permit, and applicable Subpart ZZZZ, requirements.

NAME _____

DATE _____

SUPERVISOR _____

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LeBlanc

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