

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

N605837306

FACILITY: RIVERSIDE ENERGY MICHIGAN, LLC - WARNER 10 CPF		SRN / ID: N6058
LOCATION: NE NE NE SEC 16 WARNER TOWNSHIP, WARNER TWP		DISTRICT: Gaylord
CITY: WARNER TWP		COUNTY: ANTRIM
CONTACT: Natalie Schrader,		ACTIVITY DATE: 10/25/2016
STAFF: Gloria Torello	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: 2017 FCE		
RESOLVED COMPLAINTS:		

SRN: N6058. Name: Riverside Energy, Michigan LLC (Riverside). Warner 10.

Directions: The facility is located in Antrim County, Warner Township. From US-131, turn west on M-32 and travel approximately one mile. The facility access road is on the north side of M-32, look for the gate. The gate may be locked; the facility is approximately a half mile north of M-32.

Application: This is an Antrim gas facility. The application included:

- One Cat 3516 LE engine equipped with AFRC,
- One low emission Cummins GTA 855 engine equipped with AFRC,
- Glycol Dehydrator.

Permit. On May 22, 2009, the AQD issued permit to install (PTI) 70-09. The permit includes:

- Two natural gas fired reciprocating engines,
- One glycol dehydrator.

This facility is considered an opt-out source due to the PTI FGENGINES Condition VII.1 which allows changing out the engine at the facility.

Malfunction Abatement Plan (MAP): On July 15, 2010, the AQD approved the MAP. The MAP includes:

- EUENGINE1, Caterpillar G3516 LB,
- EUENGINE2, Cummins GTA 855 LB.
- Page 3 of the MAP includes: "There are no engines presently on site equipped with a catalytic convert."
- With this full compliance evaluation, Riverside submitted a record for the Warner 10 Unit 8302 (booster) called "Catalytic Converter Testing Data Sheet". Per Natalie Schrader of Riverside, the Cummins 855 engine is an *experimental engine* with a built in Oxidation Catalyst. Permit application 70-90 included a Cummins 855 engine and associated PTE emissions.
- The 2013 MAERS included control on the Cummins engine.
- On 10/28/16 Torello sent Natalie an email including:
 - Please double check and let me know if the Cummins 855 is a Rich Burn or Lean Burn engine. If the Cummins 855 is Rich Burn, then please send me information to update the malfunction abatement plan. Below is a screenshot from the 2013 MAERS which identifies the GTA 855 Booster as "4-cycle Rich Burn." If the Cummins 855 is truly lean burn, then when you submit the MAERS for this facility the SCC Code needs to be updated.
- On 11/3/16 Natalie sent Torello an email including:
 - Cummins 855 is indeed a lean burn engine. I will make a note to update MAERS when we file for 2016. I checked our database and we've been using manufacture's emission data for emission calculations, so no corrections needed there. Thank you for bringing this to my attention.

MAERS: Recently, the facility was added back onto the MAERS reporting list. 2013 is the last year N6058 reported to MAERS. This facility is on AQD's opt-out list, therefore should be on the MAERS reporting list. It is assumed the facility was taken off the MAERS list because there may have been confusion this was a minor facility.

With the Cummins 855 being a lean burn, then in MAERS Cummins 855 SCC Code needs to be updated to lean burn (not Rich Burn).

MACTS:

The facility's HAP PTE is below 10/25 tpy for individual/total HAPs making the facility a true minor for HAPs and making the facility an area source for the MACT listed below. The EPA has not delegated this Subpart to MI AQD and the Subpart was not reviewed.

- 40 CFR Part 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.

MACES:

- Facility Information was reviewed. *Antrim gas* was added to Description.
- Regulatory Info was reviewed. CMS is checked as this facility is considered an opt-out source. The following change was made:
 - Subject To was updated to include 40 CFR Part 63 Subpart HH.

Compliance: A review of AQD files and MACES report generator show no outstanding violation.

Records: The AQD requested and the permittee provided records for the permit and MAP recordkeeping requirements. Specifics on the records are incorporated into the Permit Conditions below. The records sometimes referred to the engines by their Unit #, or Engine Model. For clarity this information is added:

Facility	AQD	Unit #	HP	AFRC Yes/No	Engine Model	Rich or Lean Burn
Warner 10	EUENGINE1	1243	1265	No	Caterpillar G3516	Lean Burn
Warner 10	EUENGINE2	8302	256	Yes (Built in)	Cummins GTA 855	Lean Burn

A review of records shows the reported emissions are below the permitted limits.

The permittee demonstrated ongoing compliance with the permit's record keeping requirements and makes records available to AQD upon request. The Cummins 855 engine is a lean burn engine. MAERS 2013 record describes it as rich burn, the MAP describes the Cummins engine as lean burn. See comments above under MAP.

Inspection: On October 25, 2016, AQD staff visited the facility. During the site visit both engines operated. Heat shimmers were present but no visible emissions were observed from either engine stack. The engines do not have catalytic converters. The site was tidy.

The engines are in separate buildings. The north building is labeled Building #1 and houses the larger Caterpillar G3516 engine. The clipboard has records of engine information including engine RPM, and oil pressure. Based on a visual assessment, the stack meets the permitted limits of 10 inches diameter max and 41 feet minimum height.

The south building is labeled Building #2 and houses the smaller Cummins GTA 855 engine. Based on a visual assessment, the stack meets the permitted limits of 6 inches diameter max and 39 feet minimum height.

Permit Conditions:

EUDEHY1

VI. MONITORING/RECORDKEEPING

1. If EUDEHY1 meets the exemption criteria in 40 CFR 63.764l(1)(i) for glycol dehydrators with actual annual average flow rate of natural gas less than 85,000 cubic meters per day...

- In Natalie Schrader's email of 10/12/16, she wrote: "Dehy meets exemption criteria for average flow rate of natural gas of less than 85,000 cu. meters/day (3,001 MCFD)."

2. If EUDEHY1 complies with ...actual annual average flow rate of natural gas less than 85,000 cubic meters per day, the permittee shall keep records...

- Record shows, for example, the August 2016 daily average natural gas throughput was 1047 Mcf, which converts to 29,647.74 cubic meters. <http://www.theunitconverter.com/cubic-foot-to-cubic-meter-conversion/1047-cubic-foot-to-cubic-meter.html>

FGENGINES

I. EMISSION LIMITS

POLLUTION CONTROL EQUIPMENT: NA

- The record "Throughput and emissions for Warner 10 cpf" does not calculate NOx and CO emissions using control.

Pollutant	Limit	Time Period / Operating Scenario	Equipment	The "Throughput and emissions for Warner 10 CPF" Record Shows 12 month rolling in tpy:
1. NO _x	55 tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE1	Cat 3516 LE, July 2016, 15.62 tons NOx
2. CO	28 tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE1	Cat 3516 LE, July 2016, 14.84 tons CO
3. NO _x	5.7 tpy	12-month rolling	EUENGINE2	GTA 855 Booster,

		time period as determined at the end of each calendar month.		July 2016, 4.19 tons NOx
4. CO	11 tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE2	GTA 855 Booster, July 2016, 8.39 tons CO

II. MATERIAL LIMITS
NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. No later than 120 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a MAP...
 - The AQD approved the MAP On July 15, 2010.
2. The permittee shall not operate any engine equipped with an add-on control device for more than 200 hours per engine per year without that control device consistent with the MAP...
 - See the MAP discussion above. Emissions are calculated without control.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any engine that contains an add-on control device unless that device is installed, maintained, and operated in a satisfactory manner...
 - See the MAP discussion above.
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas usage for each engine included in FGENGINES on a continuous basis.
 - The permittee provided a record of the fuel usage, see "Throughput and emissions", thus demonstrating monitoring and recordkeeping of the natural gas usage.
 - The permit does not include limit fuel usage in II. MATERIAL LIMITS.

V. TESTING/SAMPLING

1. Upon request by the AQD District Supervisor, the permittee shall verify NO_x and CO emission factors...
 - AQD has not requested testing.

VI. MONITORING/RECORDKEEPING

1. The permittee shall complete all required calculations in a format acceptable to the AQD...
 - The permittee provided requested records in a timely fashion. Calculations are in an acceptable format.
2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for each engine in FGENGINES on a continuous basis.
 - The permittee provided a record of the fuel usage, see "Throughput and emissions".
 - The gas monitoring device is in place.
3. The permittee shall maintain a log of all maintenance activities conducted according to the PM / MAP (pursuant to SC III.1). The permittee shall keep this log on file at a location approved by the AQD District Supervisor and make it available to the Department upon request.
 - Per the MAP, the permittee provided Monthly Operating Reports for both engines.
 - The MAP records include dates of AFRC replacement.
4. The permittee shall keep, in a satisfactory manner, for any engine equipped with an add-on control device...
 - See the MAP discussion above
5. The permittee shall keep, in a satisfactory manner, monthly fuel use records for each engine included in FGENGINES...
 - See the record "Throughput and emissions for Warner 10 CPF". The permit does not include limit fuel usage in II. MATERIAL LIMITS.
6. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period NO_x emission calculation records for each engine included in FGENGINES...
 - See the record "Throughput and emissions for Warner 10 CPF", and see I.1 and 3 above.
7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO emission calculation records for each engine included in FGENGINES...
 - See the record "Throughput and emissions for Warner 10 CPF", and see I.2 and 4 above.

VII. REPORTING

1. Except as provided in R 336.1285, if any engine included in FGENGINES is replaced with an equivalent-emitting or lower-emitting engine, the permittee shall notify the AQD District Supervisor of such change-out and submit acceptable emissions

data to show that the alternate engine is equivalent-emitting or lower-emitting.

- After reviewing of the files, no information was found documenting an engine change out.
- Per conversation with Natalie, there was not an engine changed out.

VIII. STACK/VENT RESTRICTIONS

Based on a visual assessment, the stacks meets the permitted limits of 10 inch diameter max and 41 feet minimum height, and 6 inch diameter max and 39 feet minimum height.

FGFACILITY

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	The "Throughput and emissions for Warner 10 CPF" Record Shows 12 month rolling in tpy:
1. NO _x	72 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	July 2016 NO _x FGFACILITY emissions were 20.61 tons
2. CO	46 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	July 2016 CO FGFACILITY emissions were 23.43 tons

II. MATERIAL LIMITS

- The permittee shall not burn any sour natural gas in FGFACILITY. Sour gas is defined as any gas containing more than 1 grain of hydrogen sulfide or more than 10 grains of total sulfur per 100 standard cubic feet.
 - A copy of record "August 2016 H2S READING" shows LAG SPONGE In/Out, zero. Per conversation with Natalie, this represents zero hydrogen sulfide in the gas.

III. PROCESS/OPERATIONAL RESTRICTIONS

- The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart HH, as they apply to FGFACILITY.
 - The EPA has not delegated this Subpart to MI AQD and the Subpart was not reviewed.

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

- Verification of H₂S and/or sulfur content of the natural gas burned in FGFACILITY may be required...
 - See II.1.

VI. MONITORING/RECORDKEEPING

- See I above.

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Conclusions:

The Cummins 855 is a lean burn engine. The Cummins 855 engine's MAERS SCC Code needs to be updated to lean burn.

Via onsite inspection, review of records, and discussion with Natalie Schrader of Riverside, the permittee demonstrated compliance with the conditions of permit 70-90 and the MAP.

NAME Gloria Iacello

DATE 11-3-16

SUPERVISOR 