

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

B719733490

FACILITY: ANR -- Rapid River Compressor Station		SRN / ID: B7197
LOCATION: 2170 Rabourn Rd. NE, KALKASKA		DISTRICT: Cadillac
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT: Brad Stermer, Sr. Environmental Specialist		ACTIVITY DATE: 02/17/2016
STAFF: Kurt Childs	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: 2016 FCE Site inspection and records review.		
RESOLVED COMPLAINTS:		

The ANR Storage Company – Rapid River Compressor Station (ANR Rapid River) is a natural gas storage facility. There are two distinct operating seasons for the ANR Rapid River facility, Injection (usually April through October) and withdrawal (usually November through March). Different equipment is in operation at the facility during each season. As a result, the FCE for this facility is being conducted in two stages to observe representative operation under both operating conditions. This PCE was conducted during the withdrawal season. On 2/17/2016 I conducted the site inspection portion of the withdrawal season PCE. From off-site I did not observe any visible emissions or detect any odors. This facility is remotely located and surrounded by forest. The weather was mostly cloudy with temperatures in the 20's and light North winds.

I met with Mr. Bill Stevens who answered my questions and showed me around the facility. At the time of the inspection the plant was not withdrawing gas and had not withdrawn any this season except during annual testing to comply with 40 CFR 63 Subpart HHH (emissions test of the thermal oxidizer and Leak Detection testing of the closed vent system). Demand has been low this season and gas has not been required from this storage facility. The glycol dehydrator (dehy) was circulating glycol and the thermal oxidizer temperature was being maintained above its operating temperature of 1400 degrees F (1479 degrees F observed).

Mr. Stevens showed me around the facility focusing on equipment that emits air contaminants including two heaters, the dehy, two compressor engines and two generator engines. The compressor engines do not operate during withdrawal season, the generators are for emergency power. EU RRCOMP-A is scheduled for an overhaul this year; EU RRCOMP-B will be the primary engine operating in 2016. EU RRGEN-A has been decommissioned so only EUGEN-B is currently functional.

## EU RRGLYDEH

### I. Emission Limits

1. VOC 113.3 lbs/day: Monthly emissions when operating were below the daily limit. See attached "Dehydration System Rolling Total Monitoring Report".
2. VOC 20.7 TPY: 2015 VOC emissions were 0.078 tons.
3. Benzene Less than 0.90 Mg (0.992 TPY): 2015 Benzene emissions were 2.087 lbs.

Also, must comply with the 40 CFR 63, Subpart HHH BTEX emission limits as demonstrated through required stack testing.

### II. Material Use Limits

1. Natural Gas 275 MMcf/d: Daily natural gas throughput reported on the "Monthly Dehydration System Monitoring Report" under the "ThermOx Thruput" column was below the limit.

### III. Process/Operational

1. The dehy is equipped with both a condenser and Thermal Oxidizer.
2. The dehy was not processing natural gas but the dehy condenser temp was below the 120 degree F limit (50.4 degrees F).

3. The dehy utilizes a closed vent system; all gasses are directed to the thermal oxidizer.
4. The dehy was not processing natural gas but the Thermal Oxidizer temp was greater than the 1400 degree F minimum temperature (1479 degrees F).
5. Dehy fuel gas total sulfur content is less 20 grains per 100 cubic feet based on 2/19/2015 certificate of analysis indicating H2S as non-detectable, 0.1 ppm detection limit.
6. According to ANR "Monthly Dehydration System Monitoring Report" stripping gas is not used at this facility.

#### IV Design/Equipment

1. Mr. Stevens stated that the total capacity of the two glycol pumps is 12 gpm (6gpm each). This is less than the 12.8 gpm limit.
2. The thermal oxidizer is equipped with a temperature monitor and alarm system.
3. The condenser is equipped with a temperature monitor and alarm system.
4. Thermal oxidizer minimum retention time requirement is a Mfg. design parameter, not auditable.

#### V. Testing

1. The most recent calendar year (2015) gas analysis is attached.
2. 40 CFR 63, Subpart HHH closed vent (no detectable emission) and thermal oxidizer BTEX emission testing were conducted on 2/18/2015 and indicated Compliance with Subpart HHH.

#### VI. Monitoring/Recordkeeping

1. Condenser and Thermal Oxidizer alarm event log (December 2015 attached). Alarm log includes incidents where the alarm was triggered but the temperatures were in compliance as well as incidents where the condenser temperature exceeded the 120 degree limit. Condenser temperature exceedences occurred over a 1 1/2 day period when the TO was down for repairs. This event must be reported as a deviation in the semi-annual report. ANR has indicated this will be included in the semi-annual report.
2. VOC destruction efficiency calculations were not requested. VOC emissions are well below limits.
3. Dehy hours of operation, monthly and 12-mos rolling. Glycol dehydrator hours of operation are tracked in the "Thermal Oxidizer Operating Hours" column of the "Monthly Dehydration System Monitoring Report".
4. Daily records indicating primary emission control device (condenser/thermal oxidizer). The "Monthly Dehydration System Monitoring Report" contains this information.
5. Daily records of the amount of natural gas processed through the dehy. Daily natural gas throughput is reported on the "Monthly Dehydration System Monitoring Report" under the "ThermOx Thruput" column.
6. Daily records of VOC emissions. The "Monthly Dehydration System Monitoring Report" contains this information.
7. Annual records of Benzene emissions. The "Monthly Dehydration System Monitoring Report" contains this information.

#### VII. Reporting

- 1., 2., 3., ROP deviation, semiannual and annual reporting. All reports have been submitted in a timely manner and with proper certification. Reports were reviewed as they were received.
4. The semi-annual report included the control equipment alarm events and response.

### VIII. Stacks

1., 2., 3., The glycol regenerator, condenser and thermal oxidizer stacks appeared to meet the minimum 20 ft. height requirement.

### FG RRGEN

Two 302 hp. Waukesha F2895GU four-cycle, rich burn, spark ignition natural gas fired reciprocating internal combustion engines for emergency electrical generation. As previously mentioned, EU RRGEN-A has been decommissioned.

### I. and II Emissions and Material Limits.

There are no applicable emission or material limits.

### III. Process/Operational

1. FG RRGEN has not operated for emergencies in the last year.
2. EU RRGEN-B has been operated once per month for maintenance checks.
3. FG RRGEN is not operated in non-emergency situations other than maintenance and readiness testing.
4. Operate and maintained per manufacturer's emission related written instructions or site specific maintenance plan. Maintenance records (attached) indicate the required maintenance has been performed.
5. Engine maintenance is conducted more often than the frequency specified in 40 CFR 63, Subpart ZZZZ due to the limited amount of time the engine(s) are operated (about 1.1 hours per month according to Mr. Stevens).
6. Oil analysis has been used and indicated oil met specifications.
7. Engine idle time is minimized per normal operational procedures. Engines were run for maintenance only.
8. There are no applicable emission limits, this source complies with the applicable (engine maintenance) operating limits.
9. Operate and maintain FG RRGEN in a manner consistent with safety and good air pollution control practices for minimizing emissions. Maintenance records indicate FG RRGEN has been properly operated and maintained.

### IV. Design/Equipment

1. EU RRGEN-A and EU RRGEN-B are both equipped with non-resettable hour meters.

### V. Testing

No testing requirements

### VI. Monitoring/Recordkeeping

1. Following the inspection I requested and received the following records;
  - a. ZZZZ notifications. On file, not requested.
  - b. Malfunctions. There were no malfunctions of the generator engines.
  - c. Malfunction response actions. There were no malfunctions.
  - d. Compliance with Mfg. or site-specific maintenance plan for minimizing emissions. Maintenance is

performed as required.

e. Maintenance records. Maintenance records are maintained and were provided.

f. Hours of operation. Generator B ran 18.4 hours during 2015. Generator A has remained out of service since June 2012.

2. Oil analysis records are maintained and were provided. The records indicate the oil met specification.

VII. Reporting.

1.,2.,3., ROP reporting was received timely and with proper certification. Reports were reviewed as they were received.

As a result of the inspection and records review it appears that the ANR Rapid River facility is in compliance with EURRGLYDEH and FG RRGGEN of MI-ROP-B7197-2012a as best can be determined given the source is not withdrawing gas this season. An additional PCE will be conducted during the injection season focusing on FGRRCOMP.

NAME  DATE 3/10/2016 SUPERVISOR 