

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

B719633489

|  |                               |                           |
|--|-------------------------------|---------------------------|
| FACILITY: ANR Storage Company - Excelsior Compressor Station |                               | SRN / ID: B7196           |
| LOCATION: 4936 State 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 – Excelsior Compressor Station (ANR Excelsior) is a natural gas storage facility. There are two distinct operating seasons for the ANR Excelsior 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. J.R. Givens 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 At the time of the inspection the plant was not withdrawing gas and had not withdrawn any this season. Demand has been low this season and gas has not been required from this storage facility. Additionally an over pressure event on the heat exchanger occurred in October 2015 requiring various repairs to the system. As a result the entire plant is currently blown down (no gas in the system). Equipment in the plant is being maintained in operational condition and to prevent freezing. The glycol dehydrator (dehy) was circulating glycol and the thermal oxidizer temperature was being maintained at 150 degrees according to Mr. Givens. Due to the plant blowdown 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) has not been conducted yet this withdrawal season and likely will not be since the process is unlikely to operate.

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 (engine A retired) and a gas fired boiler for building heat. The compressor engines do not operate during withdrawal season, the generators are for emergency power.

## EU EXGLYDEH

### I. Emission Limits

1. VOC 108 lbs/day: Monthly emissions when operating were below the daily limit. See attached "Dehydration System Rolling Total Monitoring Report".

2. VOC 18.3 TPY: 2015 VOC emissions were 0.039 tons.

3. Benzene Less than 0.90 Mg (0.992 TPY): 2015 Benzene emissions were 4.409 lbs.

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

### II. Material Use Limits

No material use limits.

### III. Process/Operational

1. The dehy is equipped with both a condenser and Thermal Oxidizer.

2. The dehy was not processing natural gas.

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 being maintained around 150 degrees (127 observed) to prevent snow and ice build-up.
5. Dehy fuel gas total sulfur content is less 20 grains per 100 cubic feet based on 3/17/2014 certificate of analysis indicating H<sub>2</sub>S as non-detectable, 0.1 ppm detection limit.
6. According to ANR "Monthly Dehydration System Monitoring Report" stripping gas is not used in the dehy.

#### IV Design/Equipment

1. Mr. Givens stated that the total capacity of the two glycol pumps is 12 gpm (6gpm each). Which is less than the 12.8 gpm limit. He also stated that only one pump runs at a time with the other in reserve.
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. Alarm log includes incidents where the alarm was triggered but the temperatures were in compliance. No exceedences of temperature limits during operation.
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).
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 EXGEN**

Two 490 hp. Caterpillar G399 four-cycle, rich burn, spark ignition natural gas fired reciprocating internal combustion engines for emergency electrical generation. As previously mentioned, EU EXGEN-A has been decommissioned.

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

There is no applicable emission or material limits.

#### **III. Process/Operational**

1. FG EXGEN has not operated for emergencies in the last year.
2. EU EXGEN-B has been operated once per month for maintenance checks.
3. FG EXGEN 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.
6. Oil analysis has been used and indicated oil met specifications but requires re-evaluation at next monitoring event due to low cleanliness score.
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 EXGEN in a manner consistent with safety and good air pollution control practices for minimizing emissions. Maintenance records indicate FG EXGEN has been properly operated and maintained.

#### **IV. Design/Equipment**

1. EU EXGEN-A and EU EXGEN-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.
  - e. Maintenance records.

MACES- Activity Report

f. Hours of operation. Generator B ran 13.2 hours during 2015. Generator A has remained out of service since June 2012.

2. Oil analysis records are maintained and were provided.

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 Excelsior facility is in compliance with EUEXGLYDEH and FG EXGEN of MI-ROP-B7196-2012a 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 FGEXCOMP.

NAME



DATE

3-10-2016

SUPERVISOR

