

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

B719745241

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: 07/10/2018
STAFF: Chance Collins	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection for FCE		
RESOLVED COMPLAINTS:		

On July 10, 2018 AQD staff traveled to Kalkaska County to perform an inspection of the ANR Storage Company – Rapid River Compressor Station. The purpose of the inspection was to determine the facility's compliance with MI-ROP-B7197-2017 and applicable state and federal air pollution control regulations 40 CFR part 63 Subpart HHH and 40 CFR part 63 Subpart DDDDD. The facility is also subject to 40 CFR Part 63 Subpart ZZZZ which the DEQ is not delegated to enforce. AQD staff noted that the facility consists of two Ingersoll Rand 3750 hp compressor engines, a glycol dehydration unit, a Cleaver Brooks natural gas boiler, an emergency generator, withdrawal heaters, and numerous gas separating equipment devices (PTI exempt).

ANR Storage Company – Rapid River Compressor Station is a natural gas storage facility. There are two distinct operating seasons for the facility. Injection (usually April through October) and Withdrawal (usually November through March). Different equipment is in operation at the facility depending on season. While this full compliance evaluation is being conducted during the injection season, the records for each season are being reviewed to determine compliance.

AQD staff arrived on site at 10:15 a.m. to sunny conditions with a temperature of 73°F, and a N wind at 3 mph. There were no noticeable odors upon arrival.

AQD staff met with Mr. Jim Gelinias who answered all questions and escorted staff around the site. At time of inspection the Glycol Dehydration system was offline due to the facility being in the injection season. The Glycol Dehydration system is only online during the withdrawal season. The Thermal Oxidizer BTEX are also offline during the injection season.

At the time of inspection EUEXCOMP-A was offline. A major overhaul of EUEXCOMP-A has just been completed and is in the process of being put back in operation. EUEXCOMP-B was online at 329 rpm producing 2,929 hp at a Torque set point of 90.7%.

The following discusses the review of records supplied by ANR Storage Company – Rapid River Compressor Station.

FGRRCOMP

I. Emission Limits

NOx 99.2 lbs./hr per engine: Compliance has been demonstrated by stack testing.

EUEXCOMP-A stack test (6/22/2015) measured at 68.61 lb/hr (passed).

EUEXCOMP-B stack test (6/22/2015) measured at 72.71 lb/hr (passed).

II. Material Use Limits

No material use limits

III. Process/Operational

Compressor engine fuel gas total sulfur content is less than 20 grains per 100 cubic feet based on 3/17/2014 certificate of analysis indicating H₂S as non-detectable, 0.1 ppm detection limit.

IV. Design/Equipment Parameter

Each compressor engine is demonstrated to have been designed not to emit more than 12 grams of NO_x per brake horsepower hour at 100% speed and 100% torque by compliance with the 99.2 lb/hr limit is based on the original PTI limit of 12 grams/hp-hr x 3750 hp per engine.

V. Testing/Sampling

NO_x emission testing required every five years. This condition is being met. Latest stack test dates/results are listed in Special Conditions I.1

Permittee shall determine the composition, including total sulfur, of the natural gas burned in the compressor engines at least once every five calendar years. This condition is being met. The composition of compressor engine fuel gas total sulfur content is listed in Special Condition III.1.

VI. Monitoring/Recordkeeping

Preventative maintenance records are recorded and logged. Maintenance records were reviewed on site and were acceptable.

VII. Reporting

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.

Stack test protocol reporting. Test results were provided in a timely manner and were complete. The reports were reviewed at the time they were received.

VIII. Stacks

There have been no changes to the compressor engine stacks and they appeared to meet the minimum height and maximum diameter requirements.

Boiler

The ANR Rapid River facility has one natural gas fired boiler that is used to heat the generator and compressor buildings as well as heating the compressor engine fuel. The following is the nameplate data from the boiler:

Boiler Mfg.	Cleaver-Brooks
Serial Number	L66975
Model	CB 00-60
Date	5-25-79
Heat Input Rating	2,511,000 Btu

The boiler is PTI exempt but is subject to 40 CFR 63 Subpart DDDDD. The compliance date for this boiler was December 31, 2017. 40 CFR Part 63 / Subpart DDDDD compliance certification reports were received on time. The most recent tune-up was 3/19/2017 (no emissions or operating parameter limitations).

EURRGLYDEH

I. Emission Limits

VOC limit 113.3 lb/day: Monthly emissions when operating were below the daily limit. December 2017 (10.109 lbs.), January 2018 (29.887 lbs.), February 2018 (33.526 lbs.), March 2018 (33.883 lbs.), April 2018 (56.237 lbs.). See attached "Dehydration System Rolling Total Monitoring Report".

VOC 20.7 tpy: 12 month rolling time period VOC emissions were 0.082 tons.

Benzene Less than 0.9 megagrams (0.992 tpy): Benzene emissions were 1.851 lbs.

Also, must comply with the 40 CFR 63, Subpart HHH BTEX emission limits as demonstrated through required stack testing. 40 CFR Part 63 Subpart HHH compliance certification reports were received on time, testing has been completed (4/14/15) and operating parameters are specified. No equipment leaks, or operating parameter exceedances occurred.

II. Material Limits

Natural Gas Processed 275 MMCF per day. Daily natural gas throughput reported on the "Dehydration System Rolling Total Monitoring Report" under the "ThermOx Thruput" column was below the limit

III. Process/Operational

A glycol separator is installed and operating properly.

Glycol dehydration unit shall not be operated during thermal oxidizer malfunction for more than 4,500 hours per 12 month rolling time period. Condition is being met. No deviations reported.

Stripping gas is not used in the glycol dehydration unit.

Permittee shall not operate the glycol dehydration system unless the thermal oxidizer is operating at a temperature of at least 760°C (1400°F), and the VOC destruction efficiency is at least 95% by weight, except during a thermal oxidizer malfunction event. Condition is being met. No deviations reported.

The permittee shall not operate the glycol dehydration system during a thermal oxidizer malfunction event. Condition is being met. No deviations reported.

Glycol dehydration unit utilized a closed vent system. All gases are directed to the thermal oxidizer.

The glycol dehydrator is equipped with both a condenser and thermal oxidizer.

IV. Design/Equipment Parameter

There are two glycol pumps totaling 12 gallons per minute (6 gpm each). This is less than the 12.8 gpm limit.

The thermal oxidizer is equipped with a temperature monitor and alarm system. No deviations reported.

Thermal oxidizer minimum retention time requirement is a Mfg. design parameter and is not auditable.

Glycol dehydration unit utilizes a closed vent system. All gases are directed to the thermal oxidizer.

V. Testing/Sampling

Annual natural gas flowrate to EURRGLYDEH: 11,008.9 mmscf.

VI. Monitoring/Recordkeeping

Condenser and Thermal Oxidizer alarm event log. Alarm log includes incidents where the alarm was triggered but the temperatures were in compliance. No deviations reported.

Dehydrator hours of operation, monthly and 12-mos rolling time period. Glycol dehydrator hours of operation are tracked in the Thermal Oxidizer Operating Hours column of the "Dehydration System Rolling Total Monitoring Report" attached.

VII. Reporting

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.

EURRGEN-B

I. Emission Limit

No applicable emission limit.

II. Material Limit

No applicable material limit.

III. Process/Operational Restriction

EURRGEN-B may operate during emergencies.

EURRGEN-B is operated once monthly for maintenance checks.

EURRGEN-B is not operated in non-emergency situations other than maintenance checks

EURRGEN-B is operated and maintained per manufacturer's emission related written instructions and site-specific maintenance plan. Maintenance records were reviewed on site and were acceptable.

Oil filter, spark plugs, hoses and belts have been inspected and replaced as required.

Oil changes have been performed as specified in Special Condition III.5.

Engine idle time is minimized per normal operational procedures.

There are no applicable emission limits for EURRGEN-B.

Maintenance records reviewed on site indicate EURRGEN-B has been properly operated and maintained.

IV. Design/Equipment Parameters

EURRGEN-B is equipped with a non-resettable hour meter.

V. Testing/Sampling

Not applicable.

VI. Monitoring/Recordkeeping

ZZZZ notifications were reviewed as received.

Maintenance records were reviewed on site and were acceptable.

Oil analysis records are maintained. Records were reviewed on site and were acceptable.

VII. Reporting

ROP reporting was received timely and with proper certification. Reports were reviewed as they were received.

VIII. Stack/Vent Restrictions

Not applicable.

Conclusion

As a result of this inspection and records review AQD staff finds the ANR Storage Company – Rapid River Compressor Station facility in compliance with MI-ROP-B7197-2017.

NAME 

DATE 07/20/2018

SUPERVISOR  _____