

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

B648151547

<b>FACILITY:</b> ANR Pipeline Company - Capac Compressor Station		<b>SRN / ID:</b> B6481
<b>LOCATION:</b> 4876 KETTLEHUT RD., CAPAC		<b>DISTRICT:</b> Southeast Michigan
<b>CITY:</b> CAPAC		<b>COUNTY:</b> SAINT CLAIR
<b>CONTACT:</b> Chris Waltman , Senior Environmental Specialist		<b>ACTIVITY DATE:</b> 11/06/2019
<b>STAFF:</b> Shamim Ahammod	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Conducted a scheduled inspection of ANR Pipeline Company-Capac Compressor Station (SRN: B6481) to determine the company's compliance with the requirements of the Air Pollution Control Rules.		
<b>RESOLVED COMPLAINTS:</b>		

On Wednesday, November 06, 2019, Michigan Department of Environment, Great Lakes and Energy-Air Quality Division (EGLE-AQD) staff, I (Shamim Ahammod) conducted a scheduled inspection of ANR Pipeline Company-Capac Compressor Station (SRN: B6481) located at 4876 Kettlehut RD, CAPAC, MI 48014. The purpose of the inspection was to determine the company's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and the conditions of Renewable Operating Permit (ROP) No. MI-ROP-B648-2016.

### SOURCE DESCRIPTION

ANR Pipeline Company-Capac Compressor Station is a natural gas compression and transmission station. The facility stopped injecting gas into the field since 2004. Capac Compressor Station withdraws natural gas from the storage field twenty-four hours a day, seven days a week using a 700 HP electric motor reciprocating compressor to compress the gas prior to the dehydration system. In addition to the 700 HP electric motor, this facility has seven storage tanks, two furnaces, one diesel-fired emergency generator, one glycol dehydrator system. There are a total of 20 gas-fired heaters/water heaters. All are exempt sources. There were an additional 8 heaters in the unit building that were taken out of the service when the compressor engines were retired. The facility operates the glycol dehydration system (EUCP003) to remove moisture and hydrocarbons from the natural gas. The system consists of a flash vessel, heat exchanger and filters, distillation column, and a reboiler/surge tank. The emissions to the atmosphere from the glycol dehydration unit (EUP003) are destroyed by a thermal oxidizer. A condenser is used as a back up to the thermal oxidizer. Capac Compressor Station operates a diesel fuel-fired emergency electricity generator on-site for interruptions in power supply to the facility.

### INSPECTION

At 9:10 AM, I arrived at the facility and greeted by Mr. Bruce Bendes, Environmental Specialist. Then at the conference room, I met with Nicholas Rudolph, Team Lead and Mr. Mark Ogden, field staff. I introduced myself, provided credentials and stated the purpose of the inspection. During the pre-inspection meeting, I discussed the Renewable Operating Permit conditions and requested the record and monitoring information. Then Mr. Bendes, Mr. Rudolph, Mr. Ogden, and I toured the facility.

### REGULATORY ANALYSIS

#### EUCP003

#### Emission Unit Conditions

The purpose of the glycol dehydration unit (EUCP003) is to remove excess moisture from natural gas when it is withdrawn from the storage field at reduced pressure. Natural gas was being withdrawn from the storage field at the time of the inspection and EUCP003 was in operation. EUCP003 is subject to

comply with all applicable requirements of 40 CFR Part 63, Subpart HHH-National Emission Standards for Hazardous Air Pollutants from National Gas Transmission and Storage Facilities. Pollution Control Equipment: thermal oxidizer and condenser

### Emission Limits

Per SC I.1-2, I reviewed the VOC emission records for EUCP003 from January 2018 through September 2019. Following is the summary of the records.

Pollutant	Emission	Limit	Time period	Equipment
1. VOC	19.7 lbs for 12 months	a. 45.5 pounds	a. Per day (Jan. through Dec. 2018)	Glycol dehydration unit and associated equipment
	19.7 lbs or 0.0098-ton	b. 8.3 tons	b. Per year based on a 12-month rolling time period as determined at the end of each calendar month (Jan. through Dec. 2018)	
2. Benzene	1.678 lb	1 ton (0.9 megagrams)	Per 12-month rolling time periods as determined at the end of each calendar month	Glycol dehydration unit and associated equipment

VOC and Benzene emissions from glycol dehydration system were far below the permit limits. This satisfies the permit conditions set forth in SC I.1 and SC I.2.

### Material Limits

Per SC II.1, the permittee shall not use stripping gas in EUCP003. According to Mr. Bendes, the permittee uses only pipeline-quality natural gas in EUCP003.

### Process/operational Restrictions

Per SC III.1, at the time of inspection, I observed the thermal oxidizer temperature was 1493°F, above the minimum operating temperature of 1400°F. I reviewed the thermal oxidizer temperature record from January 2018 through September 2019 and found thermal oxidizer operating temperature was always above the minimum operating temperature of 1400°F.

Per SC III.1, since there was no thermal oxidizer malfunction during the period of January 2018 through September 2019, the permittee did not use the condenser.

### Design/Equipment parameters:

Per SC IV.1, during the inspection, I observed a flash tank and a reboiler system. These appear to be properly installed and maintained. Per SC IV.2, the glycol dehydration unit is equipped with the thermal oxidizer. Per SC IV.3, the glycol dehydration unit is equipped with condenser, it is operated in the event of a thermal oxidizer malfunction.

### Testing/sampling

As specified in SC V.1, the permittee shall determine the composition, including VOC and benzene content of the natural gas processed in the glycol dehydration system at least once every five years. The most recent gas analyses were conducted on February 12, 2019, and before that the gas analysis was conducted in March 2014.

### Monitoring/Recordkeeping

Per SC VI.1, I observed the thermal oxidizer is equipped and maintained with a temperature monitoring device. Per SC VI.2, the condenser is equipped and maintained with a temperature monitoring device

and controlled remotely according to Mr. Bendes. Per VI.3, I was provided the thermal oxidizer operating temperature record for the last 12 months. I reviewed the records and found thermal oxidizer operating temperature was always above the minimum operating temperature of 1400°F. Per VI.4, since there was no thermal oxidizer malfunction during the period of January 2018 through September 2019, the permittee did not use the condenser.

Per SC VI.5 and SC VI.6, I was provided the record of the total hours of operation of the glycol dehydration unit and thermal oxidizer for each day. Per SC VI.7 and SC VI.8, I was provided the record of the total amount of natural gas processed through the glycol dehydration unit and the total amount of VOC emissions from glycol dehydration unit for each day.

Per SC VI.8, I was provided the record of the total amount of VOC and benzene emissions from the glycol dehydration unit for each calendar month for the last 12 months.

Per SC VI.10, the permittee shall determine the actual average VOC and benzene emissions from the glycol dehydration unit process using an emission factor calculated with the GRI\_GLYCalcTM computer model, version 3.0 or higher. I was provided the report of the actual average VOC and benzene emissions from the glycol dehydration unit process using an emission factor calculated with the GRI\_GLYCalcTM computer model, version 4.0 dated April 3, 2019.

### **Reporting**

Per SC VII.2 and SC VII.3, semiannual and annual reports were received by AQD District Office on time. No deviations were recorded.

### **Stack/vent restrictions**

I observed the exhaust stacks appeared vertical and unobstructed. SVCP007 (oxidizer) and SVCP003 (condenser) stack appeared to be at least 16 feet above ground in height.

## **EUCP003-HHH**

### **Emission Unit Conditions**

EUCP003-HHH includes the glycol Dehydration system used for removing moisture from natural gas withdrawn from the storage field. The system equipment consists of a flash vessel, heat exchangers and filters, a distillation column, and a reboiler/surge tank. The emissions to the atmosphere from the system are destroyed initially by a thermal oxidizer. A condenser is used as a backup to the thermal oxidizer. It is defined as an existing small glycol dehydration unit constructed prior to August 23, 2011, in 40 CFR, 63.1271 and must attain compliance with the applicable requirements of 40 CFR Part 63, Subpart HHH by October 15, 2015.

### **Process/operational restrictions**

Per SC III.1, the process vents from EUCP003 appears to be connected to thermal oxidizer and condenser through a closed vent system.

Per SC III.2, the control device(s) must be either a thermal oxidizer that reduces the concentration of BTEX to meet the emission limit in SC I.1, or the TOC or total HAP concentration in the exhaust gases at the outlet of the incinerator is reduced to a level equal to or less than 20 ppmv on a dry basis corrected to 3% oxygen. Stack test was conducted on the Capac glycol dehydration unit to evaluate compliance with the emission limit of the thermal oxidizer, which control air emissions from the glycol dehydration system. The stack test conducted on September 15, 2015 showed the mass rate of BTEX was less than 0.0060 Mg/yr that was below the permit limit of 1.49 Mg/yr.

### Design/Equipment parameters

Per SC IV.1, on September 15, 2015, a leak detection test was performed on the equipment on EUCP003-HHH and the test report indicates no leaks were detected.

Per SC IV.2, AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications. The certification report also includes a CPMS plan which defines the daily averages consisting of a single valid hourly average and hourly averages consisting of two valid 15-minute readings.

Per SC IV.3, AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications.

### Testing/Sampling

Per SC V.1, the facility has installed a monitor to measure the natural gas flow rate to EUCP003. I was provided daily and monthly dehydration system monitoring reports.

Per SC V.2, the determination of the actual average BTEX emissions from EUCP003-HHH with the thermal oxidizer control device and/or condenser shall be made using GRI-GLYCalc™, Version 3.0 or higher. Inputs to the model shall be representative of the actual operating conditions of each glycol dehydration unit. Mr. Waltman provided the GRI-GLYCalc™, Version 4.0 report determining the actual average BTEX emissions from EUCP003-HHH.

Per SC V.4, the permittee shall conduct performance tests according to the following schedule:

- a. An initial performance test shall be conducted no later than October 15, 2015.
- b. The first periodic performance test shall be conducted not later than 60 months after the initial performance test. Subsequent periodic performance tests shall be conducted at intervals no longer than 60 months following the previous periodic performance test or whenever a source desires to establish a new operating limit. Combustion control devices meeting either of the following criteria are not required to conduct periodic performance tests:
  - i. A combustion control device whose model is tested under and meets the criteria of manufacturers' performance test in 40 CFR 63.1282(g). **(40 CFR 63.1282 (d)(3)(vi)(A))**
  - ii. A combustion control device demonstrating during the performance test that combustion zone temperature is an indicator of destruction efficiency and operates at a minimum temperature of 1400°F. **(40 CFR 63.1282 (d)(3)(vi)(B))**

Per V.4.a, On September 15, 2015, ANR Pipeline Company conducted a stack test to determine compliance with the BTEX limit and submitted a stack test report.

Per V.4.b, the permittee is not required to conduct a periodic performance test because the thermal oxidizer operates at a minimum temperature of 1400°F.

Per SC V. 5, the permittee shall perform "no detectable emissions" testing for closed vent systems using the test methods and procedures specified in 40 CFR 63.1282(b). An LDAR test was conducted on September 15, 2015. The report for this test indicates no leaks were detected.

**Monitoring/Recordkeeping**

Per SC VI.1, I was provided a record specifying a site-specific maximum (condenser) and minimum (thermal oxidizer) temperature and the daily average temperature for each operating day for the thermal oxidizer and condenser from January 2018 through October 2019. I reviewed the records and it appears the thermal oxidizer operating temperature was always above the minimum operating temperature of 1400°F. Since there was no thermal oxidizer malfunction during the period of January 2018 through October 2019, the permittee did not use the condenser.

**Reporting**

As specified in SC VII.2 and VI.3, semi-annual and annual deviation reports were received by AQD District Office in a timely manner. No deviations were reported for EUCP003-HHH.

Per SC VII.4, the permittee shall submit the notification of the planned date of a performance test and site-specific test plan at least 60 days before the test. ANR submitted a stack test plan and notification of the planned date of the test on August 10, 2015, for the test conducted on September 15, 2015.

Per SC VII.5, the permittee shall submit a Notification of Compliance Status Report as required under 40 CFR 63.9(h) within 180 days after October 15, 2015. The permittee submitted a Notification of Compliance Status Report on April 13, 2016.

**Stack/vent Restrictions**

As required in SC VIII.1 and VIII.2, it appears that the condenser and thermal oxidizer stacks discharge unobstructed vertically approximately 16 feet above ground level and the condenser stack has a 2-inch diameter.

**Other requirements**

Per IX.1, the permittee shall comply with all applicable requirements of 40 CFR 63, Subpart A and Subpart HHH-National Emission Standards for Hazardous Air Pollutants (NESHAP) from Natural Gas Transmission and Storage Facilities. ANR- Capac Compressor Station appears to be in compliance with the applicable requirements in 40 CFR 63, Subpart A and Subpart HHH.

Per SC IX.2, the permittee shall determine major source status using the maximum annual facility natural gas throughput calculated according to 40 CFR 63.1270(a)(1)(i) through (a)(1)(iv). As an alternative to calculating the maximum natural gas throughput, the owner or operator of a new or existing source may use the facility design maximum natural gas throughput to estimate the maximum potential emissions. ANR Pipeline Company determined Capac Compressor Station's major source status using the maximum annual facility natural gas throughput.

**EUCPGENERATOR**

The facility operates a diesel fuel-fired standby emergency engine to generate electricity during emergencies.

**Process/Operational restrictions**

Per SC III.1 of EUCPGENERATOR, I was provided a RICE MACT maintenance record sheet. On 4/8/2019, the permittee conducted a RICE MACT maintenance check on EUCPGENERATOR. Mr.

Paul Weinmann, Technician inspected the engine's belts and hoses, air cleaner and changed oil and filter.

Per SC III.3, the EUCPGENERATOR was operated for 12 hours for maintenance and readiness testing

in 2018, which was below permit limit of 50 hours per year in emergency situations. Per SC III.3, the EUCPGENERATOR was operated for 13 hours for emergency situations and 12 hours for maintenance and readiness testing in 2018, which was below permit limit of 100 hours per year.

**Design/Equipment Parameters**

Per IV.1, I observed a non-resettable hour meter was installed on the engine and the total operation time of the emergency generator was 547.6 hours on November 6, 2019. The engine has been operated since 2013.

**Testing/Sampling NA****Monitoring/recordkeeping**

As required in SC VI.2, the permittee kept records of the hour of operation of the EUCPGENERATOR. Based on the record, the total operation time of the emergency generator was 25 hours in 2018. The total 13 hours were spent for emergency operation and 12 hours were spent for non-emergency operation.

Per SC VI.3, the emergency generator at Capac is not used for a demand response program. This unit is only operated during interrupted line service and for maintenance and readiness testing. Per SC VI.4, the generator at Capac is a Caterpillar 3406DI and is a 305 HP compressor ignition engine. It was installed in 1978.

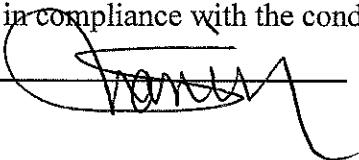
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ANR did not report any natural gas release because there were no blowdowns exceeding 1 MMSCF since 2016.

**Conclusion**

Based on an onsite inspection, review of records, and discussion with facility staff, the facility appears to be in compliance with the conditions of ROP No. MI-ROP-B6480-2018.

NAME



DATE

2/7/2020

SUPERVISOR

