

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

B648136905

FACILITY: MID MICHIGAN GAS STORAGE CO - CAPAC		SRN / ID: B6481
LOCATION: 4876 KETTLEHUT RD., CAPAC		DISTRICT: Southeast Michigan
CITY: CAPAC		COUNTY: SAINT CLAIR
CONTACT: Bruce Bendes, R.S., CHMM, Environmental Specialist		ACTIVITY DATE: 08/25/2016
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FCE: From the information collected during the inspection and records review, the facility appears to be in compliance with the ROP requirements and applicable State and Federal air rules and regulations evaluated.		
RESOLVED COMPLAINTS:		

On August 25, 2016, Tyler Salamasick and I (Kerry Kelly) conducted a targeted inspection at ANR Pipeline Company – Capac Compressor Station (Mid-Michigan Gas Storage Co.- Capac Compressor Station) located at 4876 Kettlehut, Capac, Michigan. The purpose of the inspection was to determine the facility's compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994 and the Renewable Operating Permit (ROP) No. MI-ROP-B6481-2016.

INSPECTION

We arrived at the site at about 10:05 AM. At the facility we met Mr. Paul Weinmann, Mechanic and Mr. Bruce Bendes, Environmental Specialist, introduced ourselves, presented our credentials and stated the purpose of our inspection, and provided the DEQ Environmental Inspections: Rights and Responsibilities brochure. Mr. Weinmann and Mr. Bendes answered questions, provided records, and escorted us during the facility walk through. Ms. Melinda Holdsworth, US Environmental – Air Permitting with TransCanada US Pipelines, provided records following the inspection but was not present at the facility during the inspection.

During the opening meeting, Mr. Bendes and Mr. Weinmann explained the operations of the facility. The facility withdraws natural gas stored from the storage field twenty-four hours a day, seven days a week. The gas injection was ceased since 2004 and withdrawal is performed year around. The storage field is located on TransCanada property and covers an area of approximately three miles by seven miles with a total capacity of approximately 32.5 billion cubic feet according to Mr. Weinmann. Mr. Weinmann and Mr. Bendes are unsure how long the field will continue to produce. There is typically one operator during the usual work hours. Two 4830 HP, natural gas-fired internal combustion engines were previously used to drive the natural gas compressors. The two 4830 HP have been decommissioned and are disconnected from the field line and the suction and discharge. The engines are not included in MI-ROP-B6481-2016. In March 2007, the facility installed an electric motor driven reciprocating compressor (700 HP) to compress the gas. The compressor pressurizes the natural gas to allow it to continue to flow to the pipeline. When natural gas is taken out of storage at a higher pressure than the pipeline pressure the water in the gas can freeze and damage the process equipment. Three 10 MMBtu/hr natural gas fired indirect heaters were previously used to prevent the water in the gas from freezing. The three heaters are no longer used because the field pressure is lower (approximately 100 psi) than the pipeline pressure (approximately 700-900 psi) and therefore there is no pressure cut that would cause the moisture in the gas to freeze. I inspected the heaters in the field and observed they had been locked out. Before natural gas is sent to the pipeline, it goes through a glycol dehydration system for the removal of moisture and hydrocarbons (EUCP003 and EUCPO03-HHH). In the dehydration process the wet natural gas is contacted with Triethylene Glycol (TEG) in an absorber (glycol contractor or contact tower) to remove moisture. The dry gas is withdrawn to the pipeline for customers. The water rich glycol (wet glycol) flows through a three phase separator (flash tank) to remove heavy hydrocarbons (gravity separation). Excess overhead, if high pressure, would go to the BTEX tank. The wet glycol is filtered through a carbon filter and passed through a reboiler (still column), heated at 400°F, to drive off water in the glycol. Recovered glycol is stored in a glycol surge tank. The vapors from the still column are passed through either a finned tube condenser (more cooling, used in summer) or a straight pipe condenser (less cooling, used in winter). The condensed vapors from the condensers are stored in the BTEX tank. The exhaust from the BTEX tank is incinerated using a thermal oxidizer (TO). If the thermal oxidizer is not operating properly, the emissions from the BTEX tank exhaust to the atmosphere. If the exhaust is directly vented to the atmosphere from the condenser, its temperature is monitored and recorded. The condenser is continuously monitored, but not recorded continuously. The ROP requires permittee to keep records of the TO malfunctions. If the oxidizer shuts down (malfunction) while the dehydrator is operating, the exhaust gas will be vented through the condenser stack. The temperature of the condenser will be monitored and maintained below 140°F. Usually the condenser stack is closed, but opens when the condenser is used. The dehydration system is used continuously during the withdrawal process. The equipment at Capac Compressor Station can be operated remotely from Texas. Mr. Weinmann and Mr. Bendes stated that they did not have any modifications to the plant since last targeted inspection in 2013.

REGULATORY ANALYSIS

The glycol dehydration system is subject to 40 CFR 63, Subpart HHH for Natural Gas

Transmission and Storage. The system was previously operating under 40 CFR 63.1274(d)(2) which exempted affected sources emitting less than 0.9 megagrams of benzene per year from 40 CFR 63.1274(c). 40 CFR 63.1274(c) requires pollution control devices to be installed on a glycol dehydration system's process vents and establishes other monitoring, recordkeeping, and reporting requirements. In 2012 40 CFR 63.1274(d)(2) was rescinded and appeared to be moved to 40 CFR 63.1275 (b)(1)(ii). The language in 40 CFR 63.(b)(1)(ii) reads "the owner or operator of a large glycol dehydration unit shall connect the process vent to a control device or a combination of control devices through a closed-vent system and the outlet benzene emissions from the control device(s) shall be less than 0.90 megagrams per year. The closed-vent system shall be designed and operated in accordance with the requirements of §63.1281(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(d), except that the performance requirements specified in §63.1281(d)(1)(i) and (ii) do not apply. The definition of large glycol dehydration unit includes "a glycol dehydration unit complying with the 0.9 Mg/yr control option under 63.1275(b)(1)(ii)". An issue with using 40 CFR 63.1275 (b)(1)(ii) is 40 CFR 63.1275 (b)(1)(ii) does not give the option to use 40 CFR 63.1275 (b)(1)(i). 40 CFR 63.1275 (b)(1) states "for each glycol dehydration unit process vent, the owner or operator shall control air emissions by either paragraph (b)(1)(i) or (iii) of this section. This appears to be a typo and was brought to the attention of the USEPA by the AQD. The EPA responded that they were aware of the issue in the regulatory text and are working on addressing it. During the ROP renewal in 2015, ANR chose to comply with the BTEX limit in 40 CFR 63.1275 (b)(1)(iii) and also keep the 0.9 benzene limit previously established to comply with 40 CFR 63.1274(d)(2).

The Caterpillar, diesel fuel-fired, compressor ignition, standby emergency electricity generator (300 bhp, 4 stroke), Stationary Reciprocating Internal Combustion engine (RICE) is subject to the applicable requirements of 40 CFR 63 Subpart ZZZZ for existing RICE, less than 500 HP, located at a major HAP source.

Compliance and regulatory analysis was not evaluated for the two 4830 HP, natural gas-fired internal combustion engines at the site because the engines have been decommissioned and are no longer connected to the field and suction and discharge.

Compliance and regulatory analysis was not conducted for the three 10 MMBtu/hr natural gas fired indirect heaters because they are no longer in use and are locked out.

EUCP003 (Glycol Dehydration System)

There is one glycol dehydration unit (EUCP003), to remove moisture from natural gas during withdrawal, at this facility. The dehydrator is used continuously during gas withdrawal from the storage field. At the time of my inspection the dehydrator and the control equipment (Thermal Oxidizer and Condenser) were operating.

Condition I.1.a. sets a daily VOC emission limit of 45.5 pounds per day. Daily records from August 2015 through July 2016 (attachment 1), provided by Ms. Holdsworth, indicate that the highest daily emission of VOCs was 0.1 lbs.

Condition I.1.b. sets a 12-month rolling VOC emission limit of 8.3 tons. Ms. Holdsworth provided 12-month rolling VOC emission records from May 2014 through July 2016 (attachment 2). The highest 12-month rolling VOC emissions reported was 0.023 tons.

Condition I.2. sets a 12-month rolling benzene emission limit of 1 ton (0.9 mega grams). Ms. Holdsworth provided 12-month rolling benzene emission records from May 2014 through July 2016 (attachment 2). The highest 12-month rolling benzene emissions reported was 0 tons.

Condition II.1. The permittee shall not use stripping gas in EUCP003. To Mr. Weinmann's knowledge stripping gas is not used and he is unaware of the capability to use stripping gas.

Condition III.1 requires that the thermal oxidizer be operated at or above 760 degrees Celsius (1400 degrees Fahrenheit), with a minimum residence time of 0.5 seconds, and with a VOC destruction efficiency of 95%. Records provided by Ms. Holdsworth (Attachment 1) indicate that the oxidizer has been operated at a temperature greater than 1400 degrees Fahrenheit between August 2015 through July 2016. The residence time and destruction efficiency requirements are met per manufacturer's specifications.

Condition III.2 requires that the glycol dehydration system shall not be operated during a thermal oxidizer malfunction unless the condenser exhaust temperature is lower than 140 degrees Fahrenheit. The submitted records for August 2015 through July 2016 (attachment 1) indicate that the thermal oxidizer temperatures were above 1400 degrees Fahrenheit when operating and the condenser was not used.

Condition IV.1 requires that the glycol dehydration system not be used unless a properly operating flash tank which removes VOCs from the glycol stream and routes them to the reboiler is installed and operated properly. I observed the flash tank (three phase separator) connected to the system near the reboiler during the August 25, 2016

inspection. A diagram of the process flow, including the flash tank, was provided by Mr. Weinmann (attachment 3).

Condition IV.2 says the permittee shall not operate the glycol dehydration system unless the glycol regenerator still is equipped with a properly installed and operating thermal oxidizer except as specified in Condition IV.3. The glycol regenerator still is equipped with a thermal oxidizer and a condenser.

Condition IV.3: This condition states that the glycol dehydration system may be operated in the event of a thermal oxidizer malfunction if the condenser is installed and operated properly. The system is designed such that the condenser operates at all times while the dehydration unit is operating.

Condition V.1 requires that the chemical composition of the natural gas processed by the glycol dehydration system be determined at least once every five years. Ms. Holdsworth sent the gas analysis performed for samples collected in March 2014. The chemical analytical results are attached to this report (attachment 4).

Condition VI.1 requires a temperature monitor for the thermal oxidizer be maintained. 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.

Condition VI.2 requires a temperature monitor be maintained to monitor the condenser exhaust temperature. 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.

Condition VI.3 requires the thermal oxidizer temperature be recorded daily (except in the event of a thermal oxidizer malfunction). Ms. Holdsworth provided daily records of the thermal oxidizer temperature from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.4 requires the condenser exhaust system temperature be recorded daily when the glycol dehydration system is operating. Ms. Holdsworth provided daily records of the condenser exhaust temperature from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.5 requires that the total hours of operation of the glycol dehydrator shall be recorded daily. Ms. Holdsworth provided daily records of the daily operating hours of the thermal oxidizer and condenser from August 2015 through July 2016 (attachment 1). The sum of the thermal oxidizer and condenser daily operating hours is equal to the hours of operation of the glycol dehydration unit.

Condition VI.6 mandates that the total hours of operation for the thermal oxidizer shall be recorded daily. Ms. Holdsworth provided daily records of the thermal oxidizer daily operating hours from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.7 requires the amount of natural gas processed through the glycol dehydrator be recorded daily. Ms. Holdsworth provided daily records of the amount of natural gas processed in the glycol dehydrator and whether the thermal oxidizer and/or condenser were operating for August 2015 through July 2016 (attachment 1). The sum of the gas processed when the thermal oxidizer (Therm Ox Thruput) and condenser (Condenser Thruput) is equal to the glycol dehydration unit throughput.

Condition VI.8 mandates VOC emissions in pounds shall be calculated daily. Ms. Holdsworth provided daily records of the VOC emissions for the glycol dehydration system from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.9. requires the 12-month rolling emission records be calculated for benzene and VOCs at the conclusion of each month. Ms. Holdsworth provided 12-month rolling records of the benzene and VOC emissions for the glycol dehydration system from May 2014 through July 2016 (attachment 2). These records indicate compliance with this condition.

Condition VI.10. necessitates for condenser control devices, the permittee use the procedures documented in the GRI report entitled "Atmospheric Rich/Lean method for Determining Glycol Dehydrator Emissions". (GRI-95/0368.1) as inputs for the model GRI-GLYCalc™, version 3.0 or higher, to generate a condenser performance curve as an alternative to the performance testing required in V.4. ANR used GRI-GLYCalc™, Version 3.0 or higher report (attachment 5) to make a condenser curve.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for EUCP003 in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUCP003.

Conditions VIII.1 and Condition VIII.2 mandate that the condenser and thermal oxidizer stacks discharge unobstructed vertically 16 feet above ground level. The condenser stack will be 2 inches in diameter. Based on my observations at the facility, the stacks appear to meet this requirement.

EUCP003-HHH

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, 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.

Condition III.1 requires the process vents from EUGLYCDEHYDE be vented to a control device or a combination of control devices through a closed-vent system. I inspected the glycol dehydration system. The system appears to be a closed vent system. The process vents (reboiler still) are directed first to a condenser. From the condenser the liquid condensate and vapors travel to the condensate tank. The condensate tank has a two inch diameter stack that can be opened to release emissions directly from the condensate tank. The temperature sensor for the condenser is located on the condensate tank stack. When the condensate tank stack is closed, emissions will travel to the thermal oxidizer.

Condition III. 2. requires the control device(s) must be either a thermal oxidizer that reduces the concentration of BTEX to meet the emission limit in SC I.4, 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 or a condenser or other non-destructive control device that is designed and operated to reduce the mass content of BTEX in the gases vented by 95%. The thermal oxidizer stack test results report, for the stack test conducted on September 15, 2015, indicates the BTEX emissions from the thermal oxidizer are less than the limit in SC I.4. The condenser curve provided by Ms. Holdsworth (attachment 6) appears to demonstrate the condenser reduces the BTEX emissions in the gases vented by 95%.

Condition III.3. requires the permittee control HAP emissions from each GCG separator (flash tank) vent unless BTEX emissions from the reboiler vent and the flash tank are reduced to a level less than the limit in condition I.4. The thermal oxidizer stack test results report (attachment 7), for the stack test conducted September 15, 2015, indicates the BTEX emissions from the thermal oxidizer are less than the limit calculated in SC I.4. The calculated BTEX emission limit was 1.49 Mg/year and the stack test BTEX emissions reported were <0.0060 Mg/year.

According to Condition III.4, the permittee shall operate and maintain EUCP003-HHH, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Records and documents submitted by ANR indicate the pollution control equipment is operated within the specified maximum and minimum temperatures that have demonstrated emission reductions and that the temperature monitors are calibrated and maintained according to manufacturer's recommendations.

Condition III.7. states each control device shall be operating at all times and demonstrate compliance according to Condition VI.13. Records indicate the control devices are operating when the glycol dehydration unit is in use.

When using a condenser to demonstrate continuous compliance with emission limits the control device shall be operated at a maximum operating temperature established in accordance with the requirements of VI.17. When using a thermal oxidizer to demonstrate continuous compliance with emission limits the control device shall be operated at the minimum operating temperature established in accordance with the requirements of VI.17 or a minimum of 1400°F. The submitted records for August 2015 through July 2016 (attachment 1) indicate that the thermal oxidizer temperatures were above 1400 degrees Fahrenheit when operating and the condenser exhaust temperature was below the maximum temperature of 140 degrees Fahrenheit.

Condition IV.1. says the closed vent system shall route all gases, vapors, and fumes emitted from the material in an emission unit to a control device that meets the requirements specified in condition III.4. The closed-vent system must be designed and operated with no detectable emissions. Any bypass devices in the closed-vent system that could divert emissions from entering the control device shall be equipped with a flow indicator at the inlet to the bypass device that takes readings every 15 minutes, and that sounds an alarm when the bypass device is open; or the bypass device valve at the inlet to the bypass device shall be secured using a car-seal or lock and key. I

inspected the glycol dehydration system at Capac Compressor Station. I observed a bypass on the flash tank. Mr. Weinmann immediately placed a lock on the bypass. A leak detection test was done on the equipment on EUCP003-HHH and the test report indicates no leaks were detected (attachment 7).

Condition IV.2 requires each continuous parameter monitoring system (CPMS) measure data values at least once every hour and record either each block average value for each 1-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values. 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

The thermal oxidizer continuous recorder measures the temperature with a minimum accuracy of ± 2 percent of the temperature being monitored in $^{\circ}\text{C}$, or $\pm 2.5^{\circ}\text{C}$, whichever value is greater. The temperature sensor shall be installed at a location representative of the combustion zone temperature. 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.

Condition V.1. requires the determination of the actual flow rate of natural gas to EUCP003-HHH shall be made by either installing and operating a monitoring instrument that directly measures natural gas flowrate to EUCP003-HHH with an accuracy of ± 2 percent or better. The annual natural gas flowrate shall be converted to a daily average by dividing the annual flowrate by the number of days per year. ANR has installed a monitor to measure the natural gas flow rate to the thermal oxidizer and condenser.

Condition V.2. states the determination of the actual average BTEX emissions from EUCP003-HHH with 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 actual operating conditions of each glycol dehydration unit. ANR submitted the GRI-GLYCalc™, Version 3.0 or higher report (attachment 5).

Condition V.4. states if the permittee chooses to conduct a performance test to demonstrate that a control device meets the requirements of III.4 (40 CFR 1281(f)(1)) the permittee shall conduct emissions testing for compliance with the BTEX emission limit calculated using Equation 1 by October 15, 2015 in accordance with the appropriate Federal test method. ANR Pipeline Company conducted a stack test to determine compliance with the BTEX limit and submitted a stack test report. The results of the stack test were provided and are attached (attachment 7).

Condition V. 5. 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.

Condition V.6. says for condenser control devices, the permittee may use the procedures documented in the GRI report entitled "Atmospheric Rich/Lean method for Determining Glycol Dehydrator Emissions". (GRI-95/0368.1) as inputs for the model GRI-GLYCalc™, version 3.0 or higher, to generate a condenser performance curve as an alternative to the performance testing required in V.4. ANR used GRI-GLYCalc™, Version 3.0 or higher report (attachment 5) to make a condenser curve.

Condition VI.1 requires a temperature monitor for the thermal oxidizer be maintained. 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.

Condition VI.2 requires a temperature monitor be maintained to monitor the condenser exhaust temperature. 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.

Condition VI.2. indicates the permittee may demonstrate compliance with BTEX emission limit for the condenser by establishing a site-specific condenser performance curve, recording the daily average condenser outlet temperature, determining the condenser efficiency for the current operating day, and calculating the 30-day average BTEX emission reduction. Compliance is achieved if the average BTEX emission reduction is equal to or greater than the minimum percent reduction established in the performance curve. Ms. Holdsworth provided records of the performance curve (attachment 6), the daily average condenser exhaust temperature (attachment 1), and the 30-day BTEX emission reduction from the condenser (attachment 8). The lowest 12-month rolling BTEX emissions reduction efficiency reported was 97.46, which is below the minimum percent reduction in the performance curve (95%).

Condition VI.3. requires each closed-vent system and each bypass device be inspected, except for parts of the closed-vent system that are designated unsafe to inspect or difficult to inspect. A copy of the LDAR test conducted is on file at the DEQ-AQD Southeast Michigan District Office.

Condition VI.4. states any parts of the closed-vent system that are designated unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger and a the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times is in place are exempt from the inspection requirements of Condition VI.3. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). This report does not indicate any areas as unsafe to inspect.

Condition VI.5. requires records of any parts of the closed-vent system that are designated difficult to inspect because the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface and the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times is in place are exempt from the inspection requirements of Condition VI.13. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). There are 42 inspection points identified in this report, 37 of which were designated as difficult to inspect. An inspection plan and the reason the areas were identified as difficult to inspect (attachment 10) were also provided by Ms. Holdsworth. According to the document provided by Ms. Holdsworth the areas were considered difficult to inspect because they couldn't be inspected without elevating the inspecting personnel more than 2 meters about a support surface.

Condition VI. 6. requires the permittee calculate the daily average value for each monitored operating parameter for each operating day, except for inlet gas flowrate. Compliance with these requirements were assessed in Condition IV.1., Condition VI.3. and Condition VI.4.

Condition VI.7. mandates that the permittee establish a minimum operating parameter value or a maximum operating parameter value, as appropriate for the control device, to define the conditions at which the control device must be operated to continuously achieve the emission limits in Section I of EUCP003-HHH for control devices used to comply with 40 CFR, Part 63 Subpart HHH. The minimum operating parameter of 1400 degrees Fahrenheit for the thermal oxidizer was established by ANR through stack testing conducted on March 4, 2015. The maximum condenser operating parameter of 140 degrees Fahrenheit was established by a condenser performance curve using the procedures in "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1) as inputs for the model GRI-GLYCalctm, Version 3.0.

Conditions VI.8. through VI.11. explain deviations of the control devices. ANR submitted an annual and semi-annual deviation report on time on February 22, 2016 and July 26, 2016. No deviations were reported in either of these reports.

Condition VI.12. requires maintenance of records specified in 40 CFR 63.10(b)(2). Recordkeeping addressed in 40 CFR 63.10 pertains to maintenance, startup, shutdown, and malfunctions with regards to control equipment. Ms. Holdsworth provided glycol dehydration system maintenance records (attachment 11).

Condition VI.13. mandates the permittee keep continuous and daily records of operating parameters, condenser efficiency, hours vent stream was diverted from the control, and visual inspections of bypasses when closure mechanism is used as a bypass. Each record required in SC VI. 13. was evaluated in previous conditions.

Condition VI.14. requires the permittee maintain records identifying all parts of the closed-vent system that are designated as unsafe to inspect in accordance with condition VI.4, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). This report does not indicate any areas as unsafe to inspect.

Condition VI.15. requires records of any parts of the closed-vent system that are designated difficult to inspect because the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface and the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times is in place are exempt from the inspection requirements of Condition VI.3. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). There are 42 inspection points identified in this report, 37 of which were designated as difficult to inspect. An inspection plan and the reason the areas were identified as difficult to inspect (attachment 10) were also provided by Ms. Holdsworth. According to the document provided by Ms. Holdsworth, the areas were considered difficult to inspect because they couldn't be inspected without elevating the inspecting personnel more than 2 meters above a support surface.

Condition VI.16. mandates the permittee maintain the following records for each inspection conducted during which a leak or defect is detected. The results of the LDAR assessment conducted on September 15, 2015 indicate no leaks were detected (attachment 7).

Condition VI.17. requires the permittee maintain a record that the LDAR inspection was performed, the date of the inspection, and a statement that no leaks or defects were detected for each inspection during which no leaks or defects are detected. The results of the LDAR assessment conducted on September 15, 2015 indicate no leaks were detected (attachment 7).

Condition VI.18. requires the permittee maintain records of the occurrence and duration of each malfunction of process equipment or the air pollution control equipment and monitoring equipment. The permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with condition III.4 including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. Ms. Holdsworth indicated that if any malfunctions occurred they would be reported in the semi-annual and annual deviation reports. No deviations were reported for EUCP003-HHH in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for EUCP003-HHH in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUCP003-HHH.

Condition VII.4. requires the permittee 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.

Condition VII.5. requires the permittee submit a Notification of Compliance Status Report as required under 40 CFR 63.9(h) within 180 days after October 15, 2015. ANR submitted a Notification of Compliance Status Report on April 13, 2016 which appears to include the applicable information required in Condition VII.5.

Semi-annual and annual deviation reports, required in Condition VII. 6. were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUCP003-HHH.

Condition VII.7. requires a period report or notification submitted whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report. Mr. Bendes and Mr. Weinmann indicated there were no changes to EUCP003-HHH and no changes were reported in the February 22, 2016 and July 26, 2016 periodic reports.

Condition VII.8. requires a performance test results report be submitted within 60 days after completing a performance test. AQD received the stack test report with results included on November 2, 2015 for the stack test conducted on September 15, 2015.

Conditions VIII.1 and Condition VIII.2 mandate that the condenser and thermal oxidizer stacks discharge unobstructed vertically 16 feet above ground level and the condenser stack have a 2 inch diameter. Based on my observations at the facility, the stacks appear to meet this requirement.

Condition IX.1 requires the permittee 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.

Condition IX.2. mandates the permittee 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 major source status using the maximum annual facility natural gas throughput.

Condition IX.3. refers to applicability and designation of affected source. ANR has determined Capac Compressor Station is a major source subject to 40 CFR 63 Subpart HHH.

Condition IX.4. requires that a site-specific monitoring plan be prepared that addresses the monitoring system design, data collection, and the quality assurance and quality control elements. ANR submitted a Notification of Compliance Status Report on April 13, 2016 which contains information required in Condition IX.4.

EUCPGENERATOR (Emergency Generator)

I inspected the emergency generator which is located in the Aux Room. The diesel fuel-fired generator Caterpillar Model 3406 DI manufactured September 1, 1978 according to the name plate. This unit is exempt from Rule 201 requirements pursuant to Rule 285(g). EUCPGENERATOR is currently subject to specific requirements in the 40 CFR 60 Subpart ZZZZ. .

Condition III.1. requires the permittee change the oil and filter every 500 hours of operation or annually, whichever comes first, inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and inspect all hoses and belts every 500 hours of operation or annually whichever comes first, and replace as necessary, except during periods of startup. Mr. Weinmann answered maintenance questions about the generator and provided the preventative maintenance record for the generator (attachment 12). According to Mr. Weinmann he checks the engine monthly and yearly. The yearly inspection is more thorough than the monthly inspections. Ms. Holdsworth provided a copy of the yearly inspection log (attachment 13). A copy of the inspection protocol, which includes oil analysis, air cleaner inspection, and hose inspection was provided by Ms. Holdsworth (attachment 14). According to Mr. Bendes and Mr. Weinmann the oil is only changed if the oil test reveals if any of the condemning limits are exceeded. This is permitted in 40 CFR 63.6225(i). The oil analysis report provided by Ms. Holdsworth indicated condemning limits were exceeded (attachment 16). Ms. Holdsworth indicated an oil change was performed as a result (attachment 17)

Condition III.2. requires the permittee must minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. Mr. Weinmann stated the engine does not spend any time at idle and is not loaded.

Condition III.3. mandates EUCPGENERATOR not operate for any purpose other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year. Mr. Weinmann provided records of the engine run times and the reason for operation for November 11, 2015 through August 5, 2016 (attachment 14). According to these records the engine ran for 9 hours for maintenance and testing and 2.5 hours for power outage.

Condition III.4. requires the permittee limit the maintenance checks and readiness testing, which are recommended by Federal, State, or Local government, the manufacturer, the vendor, or the insurance company associated with EUCPGENERATOR, to 100 hours per year including the maximum 50 hours per year non-emergency operations. Mr. Weinmann provided records of the engine run hours and the reason for operation for November 11, 2015 through August 5, 2016(attachment 14). According to these records the engine ran for 9 hours for maintenance and testing and 2.5 hours for power outage.

Condition IV.1. mandates the permittee install a non-resettable hour meter, if one is not already installed, on EUCPGENERATOR to record the hours of operation. I inspected the emergency generator and observed a non-resettable hours meter which read 478. 0 hours.

Condition IV.2. requires the permittee operate and maintain the stationary RICE, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction. Records indicate yearly and monthly tests and inspections are conducted on the engine to ensure minimization of emissions.

Condition IV.3. requires EUCPGENERATOR be operated and maintained according to the manufacturer's emission-related operation and maintenance related written instructions; or develop and follow permittee's own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. Mr. Weinmann showed me the manufacturer's operation and maintenance written instructions used.

Condition VI.1. requires records be kept of the maintenance conducted on the stationary RICE in order to demonstrate that EUCPGENERATOR and after-treatment control device (if any) was operated and maintained according to the permittee's own maintenance plan . Mr. Weinmann provided the preventative maintenance record for the generator (attachment 12)

Condition VI.2. requires records be kept of the hours of operation of the EUCPGENERATOR, including how many hours are spent for emergency operation and how many hours are spent for non-emergency operation. Mr. Weinmann provided records of the engine run hours and the reason for operation for November 11, 2015 through August 5, 2016(attachment 14). According to these records the engine ran for 9 hours for maintenance and testing and 2.5 hours for power outage.

Condition VI.3. mandates that if EUCPGENERATOR was used for demand response, the permittee must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand

response. The records provided by Mr. Weinmann indicate the engine was not run for demand response between November 11, 2015 through August 5, 2016 (attachment 14).

Condition VI.4. requires the permittee maintain a record of the size (BHP), installation date, and type of operation (lean burn/rich burn, 2 stroke/4 stroke) of EUCPGENERATOR. The size, installation date, and type of operation are included in EUGENERATOR description in MI-ROP-B6481-2016.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for EUCPGENERATOR in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016.). No deviations were reported for EUCPGENERATOR.

Condition IX.1. The permittee shall comply with all applicable requirements of 40 CFR Part 63, Subpart ZZZZ- National Emission Standards for Hazardous Air Pollutants from Reciprocating Internal Combustion Engines (RICE). Capac Compressor Station appears to be in compliance with the applicable requirements in 40 CFR Part 63 Subpart ZZZZ.

Condition IX.2. The permittee shall comply with all the operating limitations and other requirements, specified in 40 CFR Part 63, Subpart ZZZZ, for an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions. Capac Compressor Station appears to be in compliance with the applicable requirements in 40 CFR Part 63 Subpart ZZZZ.

STORAGE TANKS

Any tanks associated with the engines operations at this facility were not evaluated for compliance with the ROP or Federal Regulations because the engines and associated tanks are no longer in use. The tanks associated with the glycol dehydrator operations facility are a triethylene glycol storage tank (8225 gal), a glycol maintenance storage tank (2200 gal), and a condensate storage tank (900 gal). In addition, the facility also has an above ground level fuel storage tank (1000 gal), two brine storage tanks (16500 gal each) and a empty methanol storage tank (8825 gal). The methanol is used to clear up "frozen" wellheads in winter months. All tanks containing petroleum liquids are less than 40,000 gallons, thus not subject to the NSPS, Subpart K, for petroleum liquid storage. The records for the tanks were not verified at the time of the inspection.

HEATERS

Facility also has three 10 MMBTU natural gas powered heaters used to keep the pipeline from freezing during the withdrawal season. These heaters are exempt from permit to install requirements pursuant to Rule 282(b) (i). These heaters are currently not operated.

BOILER

In the ROP application the 2 MMBTU/hr natural gas-fired boiler are not subject to 40 CFR 60 Subpart DDDDD because Capac Compressor Station is not a major source of hazardous air pollutants. The boiler, according the MI-ROP-B6481-2016, is not subject to Subpart JJJJJ per 40 CFR 63.11195(e) because it is classified as a gas-fired boiler because it burns only natural gas not combined with any solid fuels as defined in 40 CFR 63.11237. The boiler appears to be exempt from the requirement to obtain a permit to install under Rule 285(b)(i).

CONCLUSION

From the information collected during the inspection and records review, the facility appears to be in compliance with the ROP requirements and applicable State and Federal air rules and regulations evaluated.

NAME K. Kelly

DATE 10/3/16

SUPERVISOR SK

