

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

B719763098

FACILITY: ANR -- Rapid River Compressor Station		SRN / ID: B7197
LOCATION: 2170 Rabourn Rd. NE, KALKASKA		DISTRICT: Cadillac
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT:		ACTIVITY DATE: 05/10/2022
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-Site inspection component of FY 2022 FCE. Data evaluation/review will be completed and reported independently. sgl		
RESOLVED COMPLAINTS:		

On May 10, 2022, AQD District Staff conducted a site inspection of ANR Storage Company (ANR) – Rapid River Compressor Station (B7197) located at 2170 Rabourn Road NE, Rapid River Township, Kalkaska, Kalkaska County, Michigan, 49646. The purpose of the site inspection was to complete onsite observations as part of FY 2022 Full Compliance Evaluation (FCE). The last inspection was conducted on August 12, 2020. A record review will be completed independent of the site inspection and reported separately.

The Facility presently operates under Renewable Operating Permit (ROP) MI-ROP-B7197-2017. A renewal application was received and determined administratively complete on August 31, 2021. The application shield was issued on September 15, 2021.

Staff associated with the Facility and present at the time of the inspection included: Dan Hager, Eric Hunter and Benjamin Samuelkuty.

FACILITY DESCRIPTION

The Rapid River Compressor Station is an existing natural gas compression and storage facility located in an unpopulated area in Rapid River Township. The Facility is located near the intersection of Wheeler Lake Road and Rabourn Road, about 3.6 miles northeast of the Village of Kalkaska. The entrance to the facility is on Rabourn Road approximately 0.5 miles west of Wheeler Lake Road and 1.85 miles east of US 131.

Natural gas (NG) enters and leaves the station via pipeline and stored in natural porous rock formation reservoirs. Processes at the station include natural gas compression and glycol injection and dehydration. During the summer, NG is compressed and injected into the underground reservoirs for storage until needed. During the winter, the gas is withdrawn and transported by pipeline to customers for distribution.

Based on reported equipment installation dates, it appears that the Facility was constructed in 1979-1980. This was confirmed in readily available aerials, which indicated the Facility was constructed prior to 1985.

Before being sent off site, the natural NG is treated to remove moisture consisting of brine and liquid hydrocarbons. The liquid hydrocarbon is sold as a product and the brine is hauled to an injection well for disposal.

At the time of the May 10, 2022, site inspection, the Facility was compressing and injecting for storage. The glycol dehydration unit was not in operation and is not anticipated to be in operation until November 2022.

EQUIPMENT

Equipment at the facility includes two compression engines (FGRRCOMP), one emergency generator engine (EURRGEN-B), a NG-fired boiler (EURRBOILER), two NG-fired withdrawal heaters (EURRHTR-A and EURRHTR-B) , and a glycol dehydration unit (EURRGLYDEH) equipped with a thermal oxidizer for primary control and a condenser for secondary control in the event the thermal oxidizer fails.

Permitted equipment onsite include:

- EURRGEN-B

Waukesha F2895GU four-cycle/stroke (4S), Rich Burn (RB), Spark Ignition (SI), natural gas (NG)-fired Reciprocating Internal Combustion Engine, (RICE) rated at 302 HP used to power an emergency electricity generator. The engine's serial number is 336360.

Note- a second unit is present onsite, but was decommissioned in 2012. There is no intent to bring the unit back online.

- EURRGLYDEH

Glycol Dehydration Unit (dehy) with maximum process capacity of 11.458 MMscf/hr of natural gas. The dehy unit includes a natural gas fired reboiler with a heat input capacity of 0.5 MMBtu/hr and is equipped with a thermal oxidizer for primary pollution control. In the event the thermal oxidizer malfunctions, the dehy is equipped with a condenser for secondary pollution control. The condenser is also utilized during the startup of the facility's seasonal operations.

- FGRRCOMP (EURRCOMP-A and EURRCOMP-B)

This FG consists of two Ingersoll Rand, Model 410-KVR-TE, four-cycle, lean burn, spark ignition, NG-fired RICE engines rated at 3,750 HP each. EURRCOMP-B is currently in the process of a rebuild. The serial number of EURRCOMP-A and EURRCOMP-B are 410 KRV-153A and 410 KRV-152A, respectively.

At the time of the August 12, 2020, site inspection EURRCOMP-B was reported to be in the process of a rebuild. At the time of the May 10, 2022, the EU had been operated 784.1 hours since the rebuild was completed. EURRCOMP-A was not operating at the time of the May 10, 2022, site inspection.

- FGMACT DDDDD (EURRBOILER, EURRHTR-A and EURRHTR-B)

Requirements for existing boilers and process heaters at a major source of HAPs per 40 CFR Subpart DDDDD (MACT DDDDD). The emission units in this flexible group are EURRBOILER, EURRHTR-A, and EURRHTR-B.

EURRBOILER is a 2.09 MMBtu/hr Cleaver Brooks NG-fired boiler built in 1979 with the model number CB700-50 and serial number L-66975. EURRHTR-A and EURRHTR-B are Sivalls NG- fired withdrawal heaters rated for 6.5 MMBtu/hr.

Exempt equipment onsite include the following:

Equipment	Description	Exemption
EURRTANKCB-A	10.8K gallon condensate/brine tank	R284(e)
EURRTANKCB-B	10.8K gallon condensate/brine tank	R284(e)
EURRTANK-EG	5515 gallon ethylene glycol storage tank	R284(i)
EURRTANK-DG-A	2300 gallon Glycol storage tank	R284(i)
EURRTANK-DG-B	2900 gallon Glycol storage tank	R284(i)
EURRHTR-1	Four 10K BTU/Hr, NG-fired heaters	R282(b)(i)
EURRHTR-2	One 12K BTU/Hr, NG-fired heater	R282(b)(i)
EURRWTRHTR-1	one <50K gallon, NG-fired water heater in aux. building	R282(b)(i)
EURRWTRHTR-2	One <50K gallon, NG-fired water heater in office building	R282(b)(i)
EURRTANK-LO-A	One 5515 gallon Lube Oil Tank	R284(c)
EURRTANK-LO-B	One 1130 gallon Lube Oil Tank	R284(c)
EURRTANK-LO-C	One 1420 gallon Lube Oil Tank	R284(c)
EURRTANK-WO		R284(c)

	One 16,800 gallon Waste Oil Tank	
EURRTANK-ME-B	Methanol Storage Tank	R284(n)
NA	6 micro lube oil, generator oil, used oil and mist oil tanks (157-295 gallon capacity)	R284(c)
NA	157 gallon Glycol overflow Tank	R284(i)

PERMITTING

District records indicate that three permits have been issued and incorporated into MI-ROP-B7197-2017. They include the following:

PTI No.	Approval Date	Voided
7-12	2/27/2012	6/28/2013
78-97	6/10/1998	10/20/1999
69-80	7/25/1980	10/20/1999

In addition to the referenced documents, the 2021 renewal application indicated that the Facility was issued a PSD permit by EPA on October 3, 1979 (EPA-S-A-79-34). The Facility at that time was identified as being a PSD source for NOx.

Applicable Federal Requirements:

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
EURRYDEH	40 CFR Part 63, Subpart HHH	Natural Gas Transmission and Storage Facilities (Major source of HAPs)

<p>EURRBOILER, EURRHTR-1, EURRHTR-2 EURRGLYDEH (reboiler only)**</p>	<p>40 CFR Part 63, Subpart DDDDD</p>	<p>Industrial, Commercial and Institutional Boilers and Process Heaters (BOILER MACT)</p>
<p>EURRGEN-B*</p>	<p>40 CFR Part 63, Subpart A and ZZZZ</p>	<p>National Emission Standards for HAPs for Stationary Reciprocating Internal Combustion Engines (RICE)</p>

* Note - the facility has two compressor engines (EURRCOMP-A and EURRCOMP-B) with SI RICE that meet exemption requirements under 40 CFR 63.6590(b)(3)(ii). which exempts existing spark ignition 4-stroke lean burn RICE with ratings of more than 500 HP located at a major source of HAPs emissions.

** EPA Applicability determinations by US EPA Region 6 dated February 4, 2015 and February 10, 2016, were reviewed during ROP Renewal working draft preparation. The referenced documents indicated that the reboiler for the glycol dehydration unit is also subject to Subpart DDDDD (Boiler MACT)

The 2021 ROP Renewal Application has identified the following Federal New Source Performance Standards (NSPS) and provided the following reasons for not being subject to the regulations within the referenced subpart:

<p>40 CFR SUBPART</p>	<p>COMMENT</p>
<p>40 CFR Part 60 Subpart DC – Small Steam Generating Units</p>	<p>Boiler onsite has a design heat input of less than 2.9 MW (10 MMBtu/hr)</p>
<p>40 CFR Part 60 Subpart K – Storage Vessels for Petroleum Liquids</p>	<p>Storage tanks at the facility have storage capacities below 40,000 gallons.</p>
<p>40 CFR Part 60 Subpart Ka – Storage Vessels for Petroleum Liquids</p>	<p>Storage tanks at the facility have storage capacities below 40,000 gallons.</p>

40 CFR Part 60 Subpart Kb – Volatile Organic Liquid Storage Vessels	Storage tanks at the facility have storage capacities below 75 cubic meters.
40 CFR Part 60 Subpart KKK – Equipment Leaks of VOC from Onshore NG Processing Plants	Facility is not a NG processing plant and does not engage in extraction of NG field liquids from field gas or fractionate mixed NG liquids to natural NG products.
40 CFR Part 60 Subpart LLL – Onshore NG Processing: SO2 Emissions.	Does not apply because the Facility does not have any gas sweetening or sulfur recovery equipment.
40 CFR Part 60 Subpart IIII – Compression Ignition Internal Combustion Engines (CIICE)	No diesel fired, stationary, CI ICE onsite.
40 CFR Part 60 Subpart JJJJ – Spark Ignition ICE	Reports that all SI ICE >25 HP EU were reported to have been installed prior to June 12, 2006.
40 CFR Part 60 Subpart OOOO – Crude Oil and NG Production, Transmission and Distribution	The Facility operates no compressors prior to the point of NG custody transfer
40 CFR Part 60 Subpart KKKK – Stationary Combustion Turbines	No Turbines in use at the Facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations promulgated pursuant to Section 112 of the Clean Air Act (CAA) are found in 40 CFR parts 61 and 63. NESHAP or Maximum Achievable Control Technology (MACT) standards apply to major source of Hazardous Air Pollutants (HAPs). Major sources of HAP are defined to have either > 10 tons/Year of any individual HAP, or >25 tons of combined HAPs.

40 CFR SUBPART	COMMENT
40 CFR Part 61, Subpart V, Standards for Equipment Leaks	Provisions of subpart apply to sources intended to operate in volatile hazardous air pollutant (VHAP) service. The facility does

	not have any sources that operate in VHAP service.
40 CFR Part 63, Subpart HH, NESHAP from Oil and Natural Gas Production Facilities	Facility reports being a transmission and storage Facility and is not an oil and gas production facility as defined in subpart.
40 CFR Part 63, Subpart HHH, NESHAP from NG Transmission and Storage Facilities	Facility is potentially subject to this subpart as the Facility is a major source of HAPs and operates a glycol dehydrator (affected source). Because benzene emissions do not exceed 0.90 megagrams/year (0.992 ton/yr) and compliance was demonstrated prior to October 15, 2015, and reports that they will continue to demonstrate compliance in the future.

COMPLIANCE EVALUATION

EURRGEN-B –

This EU consists of one Waukesha F2895GU 4SRB, SI RICE, rated at 302 HP used to power an emergency electricity generator. The unit appeared to be in good working order, with operational log sheets located at the EU. No emission limits, material limits, stack/vent restrictions or testing requirements are associated with the EU.

Facility Staff report that operation and maintenance activities are conducted via an automated work order system, which is reported to incorporate RICE MACT and ROP maintenance requirement and assure compliance. Maintenance records may be acquired electronically.

At the time of the May 10, 2022, site inspection, the operational log indicated that the unit had not operated under emergency conditions for 2022. The unit conducts monthly testing, the most recent being conducted May 9, 2022. Total hours of operation for 2022 at the time of the inspection was 5.9 hours. The EU totalizer reported 1984.7 hours of operation since installation.

Process/Operational Restrictions – EURRGEN-B is subject to the operational and maintenance requirements of the federal RICE MACT (40 CFR Part 63 Subpart ZZZZ). SC III.1-.3 limits the hours of operation for non-emergency situations (50 hours) and maintenance checks and readiness testing (100 hours).

As previously indicated, the operational and maintenance records for 2022 indicated that EURRGEN-B has only operated for monthly testing. Each month the engine is run for 1.1-1.3 hours for the required testing. During the timeframe reviewed for the inspection, no emergencies occurred requiring the use of EURRGEN-B. Based on the onsite log sheet and

information reported by Facility Staff, the unit has not exceeded operational limits for the 2021 or 2022 calendar years.

SC III.4 During the inspection, maintenance records were available documenting proper maintenance and operation according to their maintenance plan. In lieu of changing the oil annually (SC III.5), the Facility is using the option to conduct an oil analysis as stated in SC III.6 The most recent oil samples were taken on November 5, 2019, September 16, 2020, and November 3, 2021, and the analysis indicated the oil does not require a change.

Design/Equipment Parameters – EURRGEN-B is equipped with a non-resettable hour meter in compliance with SC IV.1 As previously indicated records indicate the last operation was a test run on May 10, 2020. The hour meter read 1984.7 hours of total operating time.

Monitoring/Recordkeeping –MI-ROP-B7197-2017 includes a number of monitoring and recordkeeping requirements. Records for EURRENG-B may be found on the handwritten logsheet located on the EU or will be part of the electronic records available on request from Facility staff. Facility staff indicated that though hardcopy records are maintained onsite, the most complete record source is the electronic database maintained by the company, and available upon request.

Reporting –

All reporting submitted pursuant to conditions of the ROP (SC VII.2 and VIII.3) and SC IX.1 (RICE MACT) were previously reviewed and documented by AQD staff.

Stack/Vent Restrictions –

No stack or vent requirements are associated with EURRGEN-B.

Other Requirements –

SC IX.1 consists of a high-level citation for 40 CFR Part 63, Subpart A and ZZZZ (RICE MACT). Based on the limited information obtained it appears that the Facility is in general compliance with requirements under subpart.

EURRGLYDEH –

Glycol Dehydration Unit (dehy) with maximum process capacity of 11.458 MMscf/hr of natural gas. The dehy includes a NG- fired reboiler with a heat input capacity of 0.5 MMBtu/hr. The unit is considered a Closed Vent System (CVS). No modifications to the system have been made since the previous site inspection.

The dehy is equipped with a thermal oxidizer for primary pollution control. In the event the thermal oxidizer malfunctions, the dehy is equipped with a condenser for secondary pollution control. Note that this combination of control devices meets the requirements of SC III.7. The units and associated RTO are reported to be operated to show compliance with BTEX reduction as outlined in compliance with SC III.10. The condenser is also reported to be utilized during the startup of the facility's seasonal operations.

EURRGLYDEH was not in operation at the time of the May 10, 2022, site inspection. Facility staff report that the system operates during the withdrawal season and is anticipated to start back up again in November 2022.

Material Limits – SC II.1 limits the amount of NG processed to 275 MMcf/day. Based on the reported maximum process capacity of EURRGLYDEH of 11.458 MMscf/Hr, the unit would process 274.992 MMcf/day, in compliance with the permit limit.

Process/Operational Restrictions – The ROP establishes several process and operational restrictions which are listed below;

- The natural gas fuel for the dehy shall not contain more than 20 grains of total sulfur per 100 cubic feet of natural gas [SC III.1].

The most recent gas analysis of record was collected on January 31, 2017. Analytical reports indicated H₂S concentrations below the detection level of 0.1 ppm (0.006 grains) indicating that total sulfur content would be in compliance with the limit.

- The dehy shall not be operated unless the glycol separator is installed and operating properly and routes VOCs to the thermal oxidizer [SC III.2].

At the time of the May 10, 2022, inspection, a glycol separator was installed, connected to a thermal oxidizer for control, and the equipment appeared to be in good condition. Facility staff indicated that at no time has the thermal oxidizer been shut down or bypassed during the previous operational season.

- The dehy shall not operate while the thermal oxidizer is malfunctioning for more than 4500 hours per 12-month rolling time period [SC III.3].

The hours of operation for thermal oxidizer and condenser are constantly monitored using a specialized computer software system. If the thermal oxidizer malfunctions, the emissions are automatically routed to the condenser. Facility staff reported that no malfunctions of the thermal oxidizer occurred during the previous operational season.

- Stripping gas shall not be used in the dehy unit [SC III.4].

No stripping gas is utilized at the facility.

- The control device(s) shall be a thermal oxidizer, a condenser, or combination [SC III.7 and 8]. The facility shall not operate the dehy unit unless the thermal oxidizer is operating at a temperature of at least 760 °C (1400 °F) [SC III.5], including demonstration of continuous compliance [SC III.12], and the VOC destruction efficiency is at least 95% by weight [SC III.5].

The facility uses a thermal oxidizer as the primary source of air pollution control. The thermal oxidizer operational data is continuously monitored by a specialized computer software system. Facility Staff report that the thermal oxidizer operates at approximately 1450 °F, and that there are alarms at select temperatures below that temperature so corrective actions can be taken prior to 1400 °F and below, when the unit would be in noncompliance. Demonstration of continuous compliance would be met by providing documentation of thermal oxidizer temperatures for periods of operation.

Facility Staff report that the GLYCalc data has indicated a 95% VOC destruction efficiency for the thermal oxidizer and meets the requirements of SC III.5. GLYCalc data dated February 24, 2017 was provided to verify destruction efficiencies.

- The control device(s) shall be a thermal oxidizer, a condenser, or combination (SC III.7 and 8). The facility shall not operate the dehy unit during a thermal oxidizer malfunction event unless the condenser exhaust temperature is 48.9 °C (120 °F) or less [SC III.6].

The facility uses a condenser as a secondary source of air pollution control in the event of a thermal oxidizer malfunction and for additional control during the startup of facility operations. The condenser is reported to be operating at all times EURRGLYDEH operates, and is maintained at an operating temperature below 120 °F. The condenser operational data is continuously monitored by a specialized computer software system. The resulting condenser exhaust temperature data would be used to demonstrate compliance with SC III.6 and III.12.

- The process vents from the dehy shall be vented to a control device or combination of control devices through a CVS (SC III.7). The facility shall control HAP emissions from the gas-condensate-glycol (GCG) separator vent unless BTEX emissions from the reboiler vent and the CGC separator are reduced to levels below emission limit thresholds (SC III.9).

During the field inspection, the dehy unit and all process vents including the reboiler vent and CGC vent were connected to a thermal oxidizer and condenser for emission control via a closed vent system (CVS). All the standards required to be a control vent system including proper lockout of bypass valves have been verified.

- The facility shall operate and maintain the dehy unit and associated air pollution control equipment in a manner consistent with safety and good air pollution control practices (SC III.10). The control equipment must be operated and monitored in accordance with NESHAP HHH (SC III.11).

Facility staff report that records demonstrating proper operation, maintenance and compliance are available electronically. No equipment malfunctions or repairs were reported to have occurred during the recent operating season.

The CVS is current with Leak Detection And Repair (LDAR) requirements. The LDAR monitoring required is a No Detectable Emission (NDE) test procedure. Records of NDE testing for the CVS include the following reports:

Report Type	Report Date	Comments
LDAR	3/14/2020	No Leaks > 500 ppm
LDAR	12/16/2021	No leaks > 500 ppm

The referenced documents include regular audio, visual, olfactory (AVO) inspections completed.

Certification of the continuous monitoring system for the control parameters (CPMS) for the RTO and condenser were certified on:

Report Type	Report Date	Comments
CPMS certification	December 17, 2019	None
CPMS certification	November 16, 2020	None
CPMS certification	March 18, 2021	None
CPMS certification	March 9, 2022	None

Design/Equipment Parameters –

The ROP required design and equipment parameters are reviewed below.

- The dehy unit shall be equipped with any combination of glycol pump(s) with a combined capacity no greater than 12.8 gpm (SC IV.1.)

The facility reports use of two 6 gpm glycol pumps for a total of 12 gpm which meets the ROP restriction.

- The facility shall not operate the dehy unit unless the glycol regenerator still is equipped with a properly installed and operated thermal oxidizer (SC IV.2). The thermal oxidizer shall be designed to maintain a minimum retention time of 0.5 seconds [SC IV.3].

All emissions from the dehy unit and associated process equipment is connected via a CVS to a thermal oxidizer for primary control and to a condenser for secondary control in the event of a thermal oxidizer malfunction. The thermal oxidizer was designed by the manufacturer with a minimum retention time of 0.5 seconds if operated and maintained properly.

- The facility shall install a monitoring device equipped with a continuous recorder to measure the operating parameters (SC IV.6). The continuous parameter monitoring system shall measure and record monitoring parameters at least once per hour or at shorter intervals that are used to determine an hourly average (SC IV.5).

The operating parameters of the thermal oxidizer and condenser are constantly monitored by a specialized computer software system. The continuous parameter monitoring system (CPMS) was last certified March 9, 2022. The CPMS logs data for an hourly average.

- The CVS shall be designed and operated to route all gases, vapors, and fumes to a control device (SC IV.4a). The CVS shall operate with no detectable emissions (SC IV.4b).

As previously indicated, the CVS is designed to route all gases, vapor and fumes to the thermal oxidizer. During the facility inspection, bypass valves were properly locked. LDAR inspections/reporting (SC VI.11) was previously summarized in this document.

Monitoring/Recordkeeping – The ROP establishes numerous monitoring and recordkeeping requirements which are listed below. The CPMS and associate specialized computer software system is utilized to monitor and record these parameters. Verification shall be completed as part of the data review and reported independently.

- The Facility reports monitoring and recording the following parameters on a daily basis in compliance with permit conditions:
 - thermal oxidizer operating temperature (SC VI.),
 - the condenser exhaust gas temperature (SC VI.2),
 - The amount of NG processed by the EURRGLYDEH (note that annual NG processed is also monitored and recorded) (SC VI.5)

At the time of the May 10, 2022, site inspection AQD staff observed operational screens to confirm monitoring of above referenced data was occurring. As previously indicated the Facility makes use of a software data program to monitor, record and compile data required under state and Federal requirements onsite.

- The Facility reports monitoring and recording the following parameters on a monthly and 12-month rolling time period in compliance with permit conditions:
 - The total hours of operation of the dehy (SC VI.3), and
 - The total hours of operation of the dehy when the thermal oxidizer is malfunctioning (SC VI.4).
 - The facility shall calculate, record and retain the following:
 - Daily VOC emissions (SC VI.6),
 - Monthly and 12-month rolling time period VOC and benzene emissions (SC VI.7),
 - Verification of a 95% VOC destruction efficiency by the thermal oxidizer (SC VI.8),
 - Average daily temperature of the thermal oxidizer greater than the established minimum (SC VI.9),
 - Average daily temperature of the condenser less than the established maximum (SC VI.9), and
 - verification of BTEX emission reduction by the condenser (SC VI.1).

Records from the CPMS and subsequent calculations demonstrating compliance will be reviewed and reportedly independently.

- The facility shall conduct initial and continuing (every 5 years) NDE inspections, annual AVO inspections, and LDAR protocol of the CVS according to NESHAP HHH requirements (SC VI.11).

Reports submitted were previously summarized, and appear to be in general compliance with permit conditions.

- NESHAP HHH required written LDAR inspection plans and plan dictated NDE inspections shall be completed for any difficult to inspect (SC VI.13) and unsafe to inspect (SC VI.12) components of the CVS.

The facility has a LDAR plan dated October 15, 2015, that identifies all LDAR tag locations and numbers, list no components as difficult nor unsafe to inspect, and established protocol for delay of repair leaks. The last LDAR NDE testing of the CVS was last performed December 16, 2021, with no leaks above 500 ppm detected.

During the August 12, 2020, field inspection, LDAR tags were present, easily visible, and appeared in good condition, no open-ended lines were noted, and proper seal or closure mechanisms appeared to be properly installed to satisfy the lock-out procedure requirements for bypass valves. No changes to the system were reported since the August 12, 2020, site inspection.

Facility staff reported compliance with the following conditions:

- Data recorded with the CPMS shall be used to calculate daily averages of each performance parameter (SC VI.14).
- The minimum and/or maximum performance parameters chosen to indicate the control device(s) achieves emission limits shall be established via facility performance testing, manufactures performance testing, and/or manufacture design analysis (SC VI.15).
- A control device deviation is determined to have occurred when the monitoring data is insufficient, the device operates outside of established performance parameters, and/or the emission reduction efficiency does not meet the requirement (SC VI.16).
- A CVS deviation is determined to have occurred when a flow indicator indicates stream flow has been diverted away from the control device, a bypass valve position has changed, and/or a bypass valve seal or closure has been broken, removed, or the lock-out key has been moved (SC VI.17).
- A deviation shall be deemed a violation if the facility fails to properly apply control to achieve the required operating parameter limits (SC VI.18).
- The facility shall maintain records in accordance with NESHAP HHH [SC VI.20] including:
 - CPMS monitoring data [SC VI.21a],
 - Daily average value of each performance parameters [SC VI.21b],
 - 30 Day rolling average of condenser efficiency [SC VI.21c],
 - Compliance determination calculations and hourly records [SC VI.21d],
 - Hourly records of the duration that stream flow is diverted away from the control device or that the control device is not working [SC VI.21e],
 - Records of the monthly visual inspection of the bypass valves seals or mechanical closures [SC VI.21f], and
 - Records of bypass valve position change and/or seal breaks [SC VI.21f].

The above records will be requested for review independent of the onsite inspection.

- The facility shall maintain records identifying all parts of the CVS designated as unsafe to inspect (SC VI.22) or difficult to inspect (SC VI.2) as well as an explanation validating the designation and an inspection plan.

Previous reports and confirmation during the site visit indicated no CVS components at the facility are designated as unsafe nor difficult to inspect.

- The facility shall maintain detailed records of LDAR inspections resulting in:
 - Leaks detected including instrumentation and operator information (SC VI.24a),
 - Dates of leaks identified and repair attempts (SC VI.24b),
 - Maximum instrument reading after the leak is repaired or deemed unreparable via a method 21 inspection (SC VI.24c),
 - Delay of repair data (SC VI.24d),
 - Facility official which authorized the delay of repair (SC VI.24e),
 - Expected date of repair for components on the delay of repair list (SC VI.24f),
 - Dates and duration of shutdowns that occurred but repairs were not completed (SC VI.24g), and
 - The date of final repair (SC VI.24h).
 - The facility shall keep records indicating the date of NDE LDAR inspections in which no leaks were detected (SC VI.25).

The facility maintains records of all NDE LDAR inspections and submits the information with the semi-annual reports. No leaks have been reported to have been detected. Therefore the above referenced data is not applicable at this time.

- The facility shall maintain records of any process equipment, control devices, or monitoring equipment malfunctions including dates, duration, and corrective actions taken. The facility includes this information with the semi-annual reports.

No malfunctions were reported by Facility staff for the previous operating season. The Facility maintains records electronically.

Reporting – All reports submitted pursuant to the ROP (SC VII.2 and VII.3) and federal air regulations (SC IX.1) were reported at the time of receipt to be timely and previously reviewed and documented.

Stack/Vent Restrictions – There are three stacks associated with EUEXGLYDEH and include SVRR008 (glycol regenerator), SVRR009 (condenser) and SVRR010 (thermal oxidizer stack) all of which by visual observation appeared to be installed in accordance with the specifications contained in the ROP.

Other Requirements – Other requirements associated with EUEXGLYDEH as outlined in SC IX.1 through 3 shall be addressed as part of the data review for the FCE completion.

SC IX.4, requires preparation of a site-specific monitoring plan to address the monitoring system design, data collection and the QA/QC elements for the CPMS. The referenced document identified as the Subpart HHH Site Monitoring Plan, version 01, effective date December 21, 2015, is of record for the Facility and appears in general compliance with the permit condition. No more recent version was identified in electronic record/submittals for the Facility.

FGRRCOMP (EURRCOMP-A and EURRCOMP-B) –

Two Ingersoll Rand, Model 410-KVR-TE, four-cycle, lean burn, spark ignition, NG-fired RICE rated at 3,750 HP each.

ENGINE	Serial No.	Hours of Operation
EURRCOMP-A	410 KRV-153A	10354.3
EURRCOMP-B*	410 KRV-152A	784.1

*During the August 12, 2020, site inspection EURRCOMP-B was in the process of a rebuild. Hours reported during the May 10, 2022, site inspection reflect the hours since last rebuild.

At the time of the May 10, 2022, site inspection, EURRCOMP-B was not operating. Operational parameters noted for EURRCOMP-A during the referenced site inspection included :

Parameter	Rate
Engine Speed	341
Turbo Speed	1375
HP	3358
Torque act.	91

Note that no material limits are associated with the FG.

Emission Limits –

The ROP identifies NOX emission limits for each engine in FGRRCOMP of 99.2 lbs/hr (SC I.1). To demonstrate compliance with the emission limits, the Facility is required to conduct stack testing per SC V.1. The most recent verification testing is summarized below:

Engine	Test Date	NOx Emissions	Next Test Date (SC V.1)
EURRCOMP-A	4/14/2020	59.79	4/14/2025
EURRCOMP-A	6/22/2015	68.61	6/22/2020

EURRCOMP-B*	9/30/2021	79.89	9/30/2026
EURRCOMP-B	6/22/2015	72.71	6/22/2020
Limits	NA	99.2	NA

*The ROP requires stack tests every five years as such the facility reported a deviation for not completing a stack test on EURRCOMP-B within the required timeframe. The facility was required to complete a stack test of EURRCOMP-B prior to it being used. During August 12, 2020, inspection, EURRCOMP-B was still in the process of being rebuilt.

Process/Operational Restrictions –

Process/Operational restrictions for the engines of FGRRCOMP consist of a restriction that NG fuel for the compressor engines to no more than 20 grains of total sulfur per 100 cubic feet of natural gas (SC II.1). The most recent gas sampling conducted January 31, 2017, reported H₂S concentrations of below 0.1 ppm (0.006 grains) detection levels, which would indicate total sulfur concentrations would be in compliance with permit conditions.

In addition, the facility is required to maintain an AQD approved Preventive Maintenance Plan. (SC II.2) The most recent version of the approved plan was submitted as part of the August 30, 2021, ROP renewal application package. The referenced document appears to meet the general requirements of the condition. The document reports that the plan is reviewed annually by Facility personnel.

Design/Equipment Parameters –

SC IV.1 limits the compressor engines such that each engine does not emit more than 12 grams of NO_x per brake horsepower hour at 100% speed and 100 % torque. As indicated in the August 12, 2020, site inspection report, each compressor engine is rated for 3,750 hp resulting in 12 grams/hp-hr equaling 99.2 lbs NO_x/hr. The stack test results previously presented demonstrate compliance with this parameter.

Testing/Sampling –

Stack testing is required every five years to demonstrate compliance with the NO_x emission limits (SC V.1). A stack test on EURRCOMP-A was completed on April 14, 2020. EURRCOMP-B was tested on September 30, 2021, following completion of the rebuild and prior to bringing the engine back online.

An analysis of the natural gas burned in the compressor is required every five years per SC V.2. As previously indicated, the most recent gas sampling event was conducted on January 31, 2017.

Monitoring/Recordkeeping –

The facility shall retain maintenance records per the AQD approved Preventative Maintenance Plan. Maintenance for the engines in FGRRCOMP is conducted using an electronic work order

system to ensure compliance with ROP and Federal requirements and in general compliance with the preventative maintenance plan included with the August 30, 2021, ROP application package.

Reporting –

The facility is required to submit an annual certification (SC VII.3), semiannual certification (SC VII.2), and testing protocol and reports (SC VII.4-6). All reporting submitted pursuant to conditions of the ROP were reviewed at the time of receipt and documented by AQD staff.

Stack/Vent Restrictions –

There are two stacks (SVRR001 and SVR002) associated with this flexible group which visually appeared to be installed in accordance with the specifications contained in the ROP.

Other Requirements –

The facility shall maintain the engines per the AQD approved Preventative Maintenance Plan. (SC IX.1) Thorough maintenance records were available during the field inspection demonstrating compliance.

FGMACT DDDDD –

Requirements under FGMACT DDDDD are for existing boilers and process heaters at a major source of HAPs per 40 CFR Subpart DDDDD (MACT DDDDD) (BOILER MACT). The emission units in this flexible group are EURRBOILER, EURRHTR-A, and EURRHTR-B. It should be noted that in addition to the referenced EUs, per EPA Applicability determinations by US EPA Region 6 dated February 4, 2015, and February 10, 2016, the reboiler for EURRGLYDEH is also subject to the FG requirements. These requirements will be incorporated into the ROP Renewal.

EURRBOILER is a 2.09 MMBtu/hr Cleaver Brooks natural gas boiler built in 1979 with the model number CB700-50 and serial number L-66975.

EURRHTR-A and EURRHTR-B are Sivalls natural gas fired withdrawal heaters rated for 6.5 MMBtu/hr.

EURRGLYDEH (reboiler only) NG-fired process heater rated with a heat input capacity of 0.5 MMBtu/Hr.

This FG contains no emission limits, no design parameters, no testing/sampling conditions or stack requirements.

Material Limits –

The facility shall only burn natural gas (SC II.1). Records available during the field inspections demonstrate compliance.

Process/Operational Restrictions –

The facility shall maintain equipment including air pollution control equipment and monitor equipment in a manner consistent with safety and good air pollution control practices (SC III.2). to meet this requirement, the facility follows a maintenance and inspection schedule.

A complete tune-up every 5 years for the EURRBOILER (SC III.4a) and a complete tune-up for the EURRHTR-A and EURRHTR-B every 2 years (SC III.4b). The referenced tune-up requirements shall include an inspection and maintenance of the burners, flame pattern, and the air-to-fuel ratio controllers, optimization of emission reduction, and effluent stream concentration measurements. Compliance with the referenced requirements were met with the following events:

Event	EU	Date	Next Event
Boiler MACT Tune -Up	EURRHTR-A & EURRHTR-B	March 18, 2019	March 18, 2021
Boiler MACT Tune -Up	EURRHTR-A & EURRHTR-B	February 3, 2021	February 3, 2023
Boiler MACT Tune -Up	EURRBOILER	August 9, 2019	March 18, 2024
Boiler MACT Tune -Up	EURRBOILER	March 3, 2021	March 3, 2026
Boiler MACT Tune -Up	EURRGLYDEH (reboiler only)	February 3, 2021	February 23, 2026

Testing/Sampling –

No testing or sampling requirements are associated with this FG.

Monitoring/Recordkeeping –

In compliance from SC VI.1 and VI.2, the facility shall keep all annual and semiannual reports as well as all notifications and maintenance records on site or accessible from the site. The facility reports that recordkeeping has become electronic and are available electronically upon request.

Reporting –

All reporting submitted pursuant to conditions of the ROP VII.2 and 3 (annual and semiannual compliance reporting) as well as Federal requirements (SC VII.4 and SC VII.5) were reviewed at the time of receipt and documented by AQD staff.

Other Requirements –

ROP conditions IX.1 and IX.2 include a high-level citation indicating that the Facility is required to meet all applicable requirements of 40 CFR Part 63, Subpart DDDDD no later than January 31, 2016, and that the permittee must be in compliance with all applicable work practice standards.

Based on available information it appears that the Facility is in general compliance with the permit and subpart conditions.

EVALUATION SUMMARY

With the exception of conditions requiring data review to determine compliance, it appears that the Facility is in general compliance with ROP No. MI-ROP-B7197-2017 and applicable Federal requirements as documented at the time of the evaluation.

NAME _____

DATE _____

SUPERVISOR _____