

Michigan Department of Environmental Quality
Air Quality Division

INSPECTION REPORT

B739048100

Facility Name: ANR Pipeline - Central Charlton Compres

SRN/ID: B7390

Address: 14490 Beckett Road

Source Class: MAJOR

City: JOHANNESBURG

County: OTSEGO

Staff: LEBLANCS

District: Gaylord

Inspection Date: 3/14/2019

Inspection Type: SCHED INSP

Compliance Status: COMP

Inspection Comment: Unannounced, scheduled site inspection of Major Source for 2019 fiscal year. sgl

Inspection Remarks

see attached inspection report - Sgl & Pere
3/28/2019



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

B739048100

FACILITY: ANR Pipeline - Central Charlton Compressor Station		SRN / ID: B7390
LOCATION: 14490 Beckett Road, JOHANNESBURG		DISTRICT: Gaylord
CITY: JOHANNESBURG		COUNTY: OTSEGO
CONTACT: Bruce Bendes , Environmental Specialist		ACTIVITY DATE: 03/14/2019
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled site inspection of Major Source for 2019 fiscal Inspection report as word document may be found in District Files. sgl		
RESOLVED COMPLAINTS:		

INTRODUCTION

On March 14, 2019, AQD District was onsite conduct an unannounced, scheduled site inspection at the ANR Pipeline – Central Charlton Compressor Station located at 14490 Beckett Road, Johannesburg, Michigan. (B7390)

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N7390-2012a. On December 28, 2016, Transcanada submitted a ROP Renewal for their Central Charlton Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7390-2012a) expired on July 10, 2017.

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance at the time of the inspection.

Transcanada Staff onsite at the time of the site inspection included:

- Dave Cookingham, onsite operational staff

FACILITY

The referenced facility is located at 14490 Beckett Road, Johannesburg, Charlton Township, Otsego County. More specifically, the facility is located north of Vienna Corners (intersection of Meridian Line Road and M-32). From M-32 turn north on Meridian Line Road and travel about 3.5 miles, turn left/west on Beckett Road and travel approximately ¼ mile. The facility will be located on the north side of the road.

The facility is a manned, fenced facility, with access obtainable at the main gate on Beckett Road. Visitors are required to listen to an onsite safety training, and sign-in and out.

Permitted in 1980 and constructed in 1981, the Facility operates as both Natural Gas (NG) storage and transmission facility. The Facility functions to maintain pressure in pipelines transporting NG to other ANR facilities and end users. The Facility injects into and withdraws NG from an underground storage reservoir consisting of a natural, porous rock formation. During the spring and summer seasons, the compressor engines are used to compress and inject the NG into the underground reservoir. Past descriptions of the facility included compression of NG, however despite having the word compressor in the Facility name, it is felt by more experienced staff that storage and transmission more accurately reflects the Facility activities.

During the winter season, NG is withdrawn from the underground reservoir. During withdrawal, NG free flows out of the reservoirs. If reservoir pressure is not sufficient for the gas to free flow, one or more compressor engine is brought online to compress the gas and continue flow to the pipeline. During withdrawal, the field gases are conditioned by cooling and glycol dehydration to meet pipeline quality. NG heaters are used to heat the gas as necessary.

No changes at the facility in the way of new processes or process changes since the last inspection. Some personnel changes have occurred as a result of retirements and career changes. However, these are previously documented. No equipment changes are of record for the Facility.

At the time of the inspection, onsite staff reported that neither of the compressors nor the glycol dehydrator were in operation. Should temperatures drop in the coming days there may be some additional activities. It was also reported that equipment was active the prior week due to the colder weather. Weather conditions at the time of the inspection were overcast, with temperatures in the low 40's with occasional drizzle and winds of 5-10 mph. No VEs were noted

PERMITTING

The Facility is a major source, with a potential to emit NOx and HAPS (formaldehyde) of 232 tpy (based on the 53 pph limit) and >10 tpy, respectively. The existing ROP (MI-ROP-B7390-2012a) is presently under renewal. The application shield was issued on January 5, 2017.

As previously indicated, the referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-B7390-2012a. On December 28, 2016, TransCanada submitted a ROP Renewal for their South Chester Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7390-2012a) expired on July 10, 2017. All previously issued Permits to Install (PTIs) have been rolled into the ROP.

MDEQ AQD Permits rolled into the ROP include the following:

PTI NO.	ISSUED	VOIDED	EMISSION UNITS
9-05	March 1, 2005	November 13, 2006	EUCTGDS001
5-01A	March 26, 2012	July 10, 2012	EUCTGDS001, FGTREC
5-01	February 1, 2001	March 1, 2005	EUCTGDS001
321-00	March 5, 2001	November 13, 2006	EUCTCOMPENG001 EUCTCOMPENG002, FGTREC
576-96	October 24, 1997	October 20, 1999	EUCTGDS001
660-80	November 18, 1980	October 20, 1999	EUCTCOMPENG001 EUCTCOMPENG002, FGTREC

Note: Permit 660-80 was issued to the Michigan-Wisconsin Pipeline Company and was identified as a Major Source of NOx and a PSD source at the time of permitting.

The 2012 version of the staff report indicated that the facility was a synthetic minor with respect to PSD and had accepted permit limits to the PTE of NOx to less than 250 tons per year. A review of Permit 660-80 indicated that NOx emissions for the two engines were determined to be over 600 tons per year.

REGULATORY

- classifications based on Potential to Emit (PTE) and other significant comments:

PARAMETER	CLASSIFICATION	COMMENT
NOx	Major	PSD review for 660-80
SO2	Minor	
CO	Major	
Pb	Minor	
PM	Minor	
VOC	Major	
HAPs	Major	Formaldehyde > 10 tpy

Source Wide Emissions reported by the Facility as part of the Michigan Annual Emissions Reporting for the 2018 calendar year included:

CONTAMINANT	EMISSIONS (TPY)
CO	26.81
NOx	21.01
SO2	0.03
VOC	7.08

• **Applicable Federal Requirements:**

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
EUCTGDS001	40 CFR Part 63, Subpart HHH	Natural Gas Transmission and Storage Facilities (Major source of HAPs)
EUCTHTR001 – EUCTHTR004 EUCTBOILER001 EUCTGDS001 (reboiler only)**	40 CFR Part 63, Subpart DDDDD	Industrial, Commercial and Institutional Boilers and Process Heaters (BOILER MACT)
EUCTGEN001*	40 CFR Part 63, Subpart A and ZZZZ	National Emission Standards for HAPs for Stationary Reciprocating Internal Combustion Engines (RICE)

* Note - the facility has two compressor engines (EUSCENG002 and EUSCENG003) with SI RICE that meet exemption requirements under 40 CFR 63.6590(b)(3)(i). which exempts existing spark ignition 2-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). It is the company's belief that clear language exists which would indicate that the reboiler would not be subject to the Boiler MACT and references EPA's 2011 responses to Public Comments.

The Facility reports two tanks for Volatile Organic Liquid storage that are above 40 cubic meters (10,567 gallons). These tanks include a condensate storage tank (T7) and a lube oil tank (T4). The referenced storage tanks were installed prior to July 23, 1984 and have not been reconstructed or modified since that time. Based on the installation date, the referenced tanks are not subject to 40 CFR, Part 60, Subpart KB.

For a similar reason, none of the RICE on site are subject to 40 CFR Part 60, Subpart JJJJ. Spark Ignition RICE onsite were installed prior to the applicability dates.

No EUs are subject to the Federal Compliance Assurance Monitoring rule under 40 CFR, Part 64 because all emission units either do not have a control device or those with a control device do not have potential pre-control emissions over major source thresholds.

EQUIPMENT

The Facility is operated and monitored through a control room in the main building. The computer and associated controls are linked with the corporate offices in Houston, Texas. No Malfunction Abatement Plans (MAPs) are required by permit for any Emission units (EUs) associated with the Facility. These EUs include the following:

- Ethylene Glycol Dehydrator with condenser control (EUCTGDS001) (MAERS ID EUCT010)

Installed in 1981, the company reported that the referenced unit is considered a small, existing (pre-August 23, 2011), dehydrating unit as defined in 40 CFR 63.1271 and is subject to 40 CFR Part 63

Subpart HHH. Which is a unit at a major source with an actual annual average NG flowrate of less than 283K scm/day (reports 225 MMSCF/day) or actual annual average benzene emissions of less than 0.90 Mg/yr determined according to 63.1282(a).

The glycol dehydration system consists of both a two-phase and three-phase separator and glycol reboiler (AKA regenerator) with a natural gas-fired heater. The exhaust vents associated with the system includes one that transfers gases to the regenerator reboiler burner vent, and the other that transfers gases from the regenerator still column to the condenser. Information from the permit 5-01 file indicates that glycol regenerator emissions are controlled by a condenser and the flash tank emissions are burned in the reboiler burner. The system is a closed vent system with a continuous parameter monitoring system.

To meet Leak Detection and Repair (LDAR) requirements, LDAR testing was conducted by the Facility on February 24, 2015. A review of the documentation indicated that no leaks were detected for the 21 components evaluated as part of the test. A copy of the document may be found in District Files.

The most recent capture efficiency testing of the regenerator still condenser was conducted by the Facility using GlyCalc and was last updated on March 5, 2018 using a wet gas sample from February 23, 2017.

Federally enforceable benzene emission limit of 1 ton/year to exempt the glycol regeneration system from Part 63. Subpart HHH (Transport and Storage MACT) Standards was incorporated into PTI 5-01 (February 1, 2001).

The Facility reports that the system is operated primarily in the winter when gases are extracted from storage underground, but that it is held on an operational standby during the calendar year. Potential emissions generated during operation of the system are controlled by venting into the burner of the glycol regenerator. During standby periods potential emissions are controlled by the condenser.

It should be noted that in addition to the condenser, the Facility pipes gases from the separator to the reboiler, prior to the condenser. The condenser addresses exhaust from the reboiler still vent.

- 2 NG Compressors equipped with Reciprocating Internal Combustion Engines (RICE) EUCTCOMPENG001 and EUCTCOMPENG002 (MAERS IDs EUCT001 and EUCT002) (FGCTREC)

RICE associated with the NG-fired compressors consist of Cooper Bessemer Model 12Q145H2 4000 HP, 32.74 MMBTU/hr heat input, 2 cycle, lean-burn units. The referenced units are used to inject NG into the storage field. It should also be commented that based on the age of the engines, they are operated at a slightly lower than they are rated for. It should be noted that the December 14, 2016, site inspection report incorrectly identified the engines on site as Cooper Bessemer Model 12Q145LM, 3600 HP engines.

The following summarizes the compressor engine IDs:

ROP ID	MAERS ID	FACILITY ID
EUCTCOMPENG001	EUCT001	Unit 1
EUCTCOMPENG002	EUCT002	Unit 2

Under PTI 321-00, the Facility was approved to install pre-combustion chambers on the two engines onsite. The changes were anticipated to reduce NOx emission. The changes were proposed in anticipation of Michigan's NOx Reasonably Available Control Technology (NOx RACT) regulations. The modifications were reported to be completed in 2001,

These two NG compressors are not subject to the RICE MACT (Subpart ZZZZ) based on 63.6590 (b)(3)(i). With respect to the NSPS requirements of subpart JJJJ (Spark Ignition RICE), EUSCENG002 and EUSCENG003 were reported exempt from the referenced subpart based on the installation date. More specifically, the referenced units as >500 HP, lean burn engines they were ordered, manufactured, modified or reconstructed before June 12, 2006. The existing units were identified as having been installed in 1981.

- **Emergency Generator** used for emergency backup power. (EUCTGEN001) (MAERS ID EUCTGEN001)

This EU consists of one Waukesha Model F2859GSIU 694 HP, 4.21 MMTU/hr heat input, 4 cycle, rich-burn NG-fired RICE. Note: that the emergency generator was exempt from Rule 201 permitting in 1981, as Rule 285 (vi)(c) exempted internal combustion engines of less than 10,000,000 BTU/hr heat input. (effective 1/18/1980) Under the recently re-vised exemptions, the referenced emergency generator would be exempt under Rule 285 (2)(g). The EU is included in the ROP based on applicability of the RICE MACT to emergency generators. MI-ROP-B7219-2012A contains only a high-level citation to the RICE MACT. (SC IX.1)

Rule 201 Exempt EUs-

- 4 NG-fired **withdrawal gas heaters** (EUCTHTR001 - 004)

The referenced process heaters (10 million BTU/Hr C.E. Natco heaters) will be added to the renewed ROP as they have been identified as being subject to the boiler MACT (subpart DDDDD). These processes were reported to be exempt from Rule 201 permitting based on Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used in oil and gas production. Staff indicated that the units onsite are the same units installed in the 1980s.

Previous reference to these units clumped them all under the same EU (EUSCHTR001). Discussions with onsite staff indicate that the units have undergone the required inspections and tune-ups to meet the referenced MACT standards. Discussions also confirmed that each heater is a separate unit, though the logic is such that they tend to act as in unison and that any one of the heaters could be replaced.

- **Boiler** (EUCTBOILER001)

EUCTBOILER001 is a Kewanee, NG-fired, 3.72 MMBTU/hr maximum firing rate, hot water heater. The unit was reported in previous site inspection reports to be exempt from permitting under Rule 282 (2)(b) (i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for service water heating.

Under the Boiler MACT, hot water heaters are defined as a tankless unit which provides hot water on demand; a closed vessel with a capacity of less than or equal to 120 US gallons in which water is heated and withdrawn for use external of the vessel; or hot water boilers with a heat input of less than 1.6 million BTU/hr. Previously the Facility reported that the Cleaver brooks EU was insignificant, and not subject to the boiler MACT, more recently the Facility has indicated that EUSCBOILER002 is not exempt from the Boiler MACT (Subpart DDDDD). The EU will be added to the renewed ROP.

Readily available records of Boiler MACT reporting for the Facility included the following documents:

Date	Report Type	Reported Compliance
1/23/2019	Annual Compliance Report - 2018	Y
1/25/2018	Annual Compliance Report - 2017	Y
1/27/2017	Annual Compliance report - 2016	Y
1/21/2016	Notification of Compliance Statue	Y
6/5/2013	Notice of Applicability	NA

- 13 **Space Heaters** (EUCTHTR002)

The referenced NG-fired furnaces/ space heaters are reported to have a rated capacity of <100,000 BTU/hr each and are reported exempt under Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for space heating. The referenced units are reported to be exempt under 40 CFR Part 63 Subpart A and DDDDD because they are used for space heat and do not meet the definition of process heater as defined in the subpart. They are not included in the ROP.

- NG-fired Water Heater (EUCTHTR003)

The EU is reported to be rated a 75,000 BTU/hr, 50-gallon, water heater and is reported by the company to be exempt under Subpart DDDDD. The unit is reported to be exempt from permitting under Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for service water heating. This EU is not included in the ROP.

- Tanks

The following table summarizes tanks associated with the facility. None are included in the ROP.

ROP ID	Tank IDs	Content	Total Capacity (gallons)	Exemption Claimed
EUCTTNK001	T7	Condensate	16,800 gal	Rule 284 (2)(e)
	T8	Condensate	5,140 gal	Rule 284 (2)(e)
EUCTTNK002	T1	Ambitrol	4,888 gal	Rule 284 (2)(i)
	T2	Ethylene Glycol	2,490 gal	Rule 284 (2)(i)
	T10	Wastewater	5,000 gal	Rule 284 (2)(i)
	T21	Glycol Overfill	300 gal	Rule 284 (2)(i)
EUCTTNK003	T4	Lubricating Oil (New)	10,700 gal	Rule 284 (2)(c)
	T5	Lubricating Oil Maintenance	1,833 gal	Rule 284 (2)(c)
	T6	Lubricating Oil (used)	1,833 gal	Rule 284 (2)(c)
EUCTTNK019	T19	Condensate	660 gal	Rule 284 (2)(e)
EUCTTNK020	T20	Condensate Slop Tank	300 gal	Rule 284 (2)(e)
NR	NR	Condensate Tank (Outlet Separator Safety Tank)	150 gal	Rule 284 (2)(e)

COMPLIANCE

District Files contain a copy of final consent order No. 11-1998. The referenced document was terminated effective March 15, 2000.

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance with permit requirements. No complaints, Violation Notices, Consent Orders or other compliance issues are of record for the Facility since the November 10, 2016, site inspection. Compliance will be determined based on conditions of MI-ROP-N7219-2012A.

It should be noted that per the ROP, the Facility is required to promptly report deviations pursuant to General Conditions 21 and 22 of Part A of the ROP. The Facility is also required to report semiannual and annual deviations (SC VII.1, 2 & 3) for EUCTGDS001, EUCTGEN001 and FCTREC. A review of records indicate that the Facility has submitted the required semiannual and annual reports in a timely manner and in compliance with permit requirements.

EUCTGDS001 – Glycol Dehydrator

The glycol dehydration system consists of both a two-phase and three-phase separator and glycol reboiler (AKA regenerator) with a natural gas-fired heater. The exhaust vents associated with the system includes one that transfers gases from the flash tank to the regenerator reboiler burner vent, and the other that transfers gases from the regenerator still column to the condenser.

At the time of the site visit, EUCTGDS001 was not operating. The unit had been reported to have been operating the previous week due to the colder temperatures but had not been operating with the warmer temperatures.

OPERATION LIMITS - EUCTGDS001 is limited to operation under the following conditions for the system condenser:

- The glycol regenerator still is equipped with a condenser and the condenser including any associated monitoring equipment, is installed and operating properly. (SC III.1)
- The condenser shall be equipped with a maintained exhaust gas temperature monitor (SC IV.1)
- exhaust gas temperatures of 140 degrees Fahrenheit or less. (SC III.2)
- The condenser shall be equipped with a maintained alarm that activates when the exhaust gas temperature exceeds 140 degrees Fahrenheit (SV IV.2)

At the time of the site inspection, the dehy system included a condenser with a temperature monitor and alarm. The system and it's monitors appear to be operating properly. Facility staff report that maintenance activities are tracked via work order. Thermo couples are tested annually for calibration.

The ROP limits the maximum operating temperature of the condenser to less than 140 degrees Fahrenheit. But the Facility uses an equipment high setpoint 130 degrees and a high-high setpoint of 135 degrees which triggers shut down of flow to the condenser. This prevents violation of the maximum operational temperature limit.

The Facility reported that the only temperature alarms were reported to have occurred during 2019. These totaled 18 occurrences over 6 dates (January 22nd & 23rd, February 1st, 2nd, 9th and 20th, 2019) in which the station reported that the system self-corrected. None of the alarms were reported to be long enough in duration to cause an exceedance of the condenser temperature limit. Discussions with Facility staff indicated that the alarms are often the result of getting some slugs of water in the system.

Records reviewed were found to be consistent with the requirements of SC VI.1.

- NG used as fuel for the glycol dehydrator contains no more than 20 grains of total sulfur per 100 cubic feet. (SC III.3)

During discussions during the November 19, 2018, site inspection at the ANR South Chester Facility (B7219). It was indicated that the Facility is limited to no greater than 20 grains of total sulfur per 100 scf by the ANR Pipeline Company FERC Gas Tariff agreement. The Facility provided a copy of sample analysis for a gas sample collected for analysis on February 21, 2017. The referenced laboratory analytical report indicated hydrogen sulfide concentrations of 0.26 ppm (<1/10th grain), and in compliance with the permit condition.

- Emissions from the 2-phase and 3-phase separators will be incinerated in the burner of the glycol regenerator reboiler. (SC III.3)

Facility staff confirmed that the gaseous emissions from both separators are piped to the burner of the glycol regenerator/reboiler for destruction in compliance with the permit conditions. They also report that this incineration represents the primary pollution control for the system, as the greater volume of emissions is generated from the separators and the dehy itself.

- The glycol circulation rate shall not exceed 6.0 gpm. Compliance ensured by only two of three recirculation pumps being in operation at any time. (SC III.4)
- Fixed circulation rate of 3 gpm for each recirculation pump. (SC IV.3)

With respect to the glycol recirculation pumps, the Facility reports that only one pump is operated at a time, and at a fixed rate of 3 gpm. The system logic controlling the pumps is for operation of two pumps, with the second pump reported to operate only on rare occasions. The third pump being a redundant pump, only used should one of the other two fail.

- The Permittee shall not use stripping gas in the glycol regenerator still (SC III.5)

No stripping gas is reported to be used in the glycol regenerator still.

- EUCTGDS001 shall be operated with no detectable emissions except from it's designed process vents (SC III.6)

The dehydrator was not operating at the time of the site visit, so verification of visible emissions was not possible at that time. Facility staff report that process vents are hard-piped and should show no detectable emissions.

MATERIAL LIMITS - EUCTGDS001 is limited to a limit of 225 million scf/day, as determined by the end of the calendar month (SC II.1). Use of the EU is limited to periods of withdrawal. TransCanada staff report that the gas flow is monitored using a flow meter and that TransCanada Gas Control has established a setpoint limit of 225 million scf/day limiting the actual volume through the plant to below the limit. A review of records provided by the Facility for the period of January 2017 through February 2019 indicated the highest daily during the period was 217.5 million scf/day reported on January 4, 2018.

EMISSION LIMITS - EUCTGDS001 is limited to daily emissions of VOCs and 12-month rolling total VOC and benzene emissions. VOC emissions are reported annually and in a timely manner as part of the MAERS Program. MAERS emissions for 2016, 2017 and 2018 are summarized below:

Calendar Year	Total VOC (tons/year)	Benzene (tons/year)
2016	0.19	NR
2017	0.12	NR
2018	0.004	NR
Limits	6 tons/year (SC I.2)	0.992 tons/year (SC I.3)

12-month Daily VOC emissions are limited to 33 lbs/day (SC I.1) A review of records for the period of January 2017 through February 2019 indicated that the highest VOC emissions for the period was 21.8 lb/day reported on January 4, 2018. Records were also noted to be consistent with understood operation of the system, which was reported to be limited to winter months (October through April).

End of 12-Month Rolling Period	Total VOC (tons/year)	Benzene (tons/year)
November 2017	0.21	0.03
January 2018	0.31	0.04
March 2018	0.50	0.06
February 2019	0.57	0.07
Limits	6 tons/year (SC I.2)	0.992 tons/year (SC I.3)

TESTING ACTIVITIES – EUCTGDS001 is required by permit to sample and analyze the wet gas stream every five years for constituent components (SC V.1). The SPL analytical report provided by the company as a result of the initial request failed to address all parameters required by permit specifically sulfur component(s). Supplemental information was provided on February 21, 2017, showing compliance the 20 grain/100scf sulfur limit.

In addition, the Facility is required to test the regenerator still condenser for capture efficiency once every five years. (SC V.2) This condition was met by the facility completing an efficiency calculation using procedures documented in “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” as inputs for the model GRI-GLYCalc version 3.0 or higher. The required document was submitted as part of the April 22, 2015, LDAR Assessment Report for the Facility. An updated capture efficiency was reported to be completed on March 5, 2018.

MONITORING/RECORDKEEPING –Per the ROP the permittee is required to monitor and record the following parameters:

- Total amount of NG processed through EUCTGDS001 per calendar day. (SC VI.3)
- Maximum annual NG throughput, and records of it's calculation. (SC VI.6 & 7)
- Total hours of operation of dehy system on a monthly and 12-month-rolling time period. (SC VI.2)

As previously reported the Facility monitors and records NG-flow using a meter to determine the volume processed per day, month and year in compliance with the above referenced permit conditions. Random winter dates are reflected below:

Date	NG processed per calendar day	NG processed per calendar Month	Hours of Operation per day	Hours of Operation per Month
November 30, 2017	0	1136.0	0	150.2
January 31, 2018	163.5	3495.0	24	487.7
March 31, 2018	0	879.3	0	154.1
February 28, 2019	125.8	3235.2	24	579.9

The Permittee is required to monitor/ calculate and record the following on a daily, monthly and 12-month rolling basis:

- VOC emissions (SC VI.4)
- Benzene emissions (SC VI.5)

VOC and Benzene emissions are based on EFs determined using GRI-GLYCalc Version 3.0 or higher and the volume of NG being processed. Records provided indicated that calculations were conducted in compliance with permit conditions. Records provided by the Facility indicated that the required records are maintained, and that the required calculations are completed in compliance with the permit. Select Dates from records provided are presented below:

Date	VOC Emissions per Day (lbs)	VOC Emissions per Month (lbs)	VOC Emissions 12-Month Rolling Total (lbs)
November 30, 2017	0	113.602	410.7
January 31, 2018	16.3	349.496	626.7
March 31, 2018	0	87.931	991.0
February 28, 2019	12.6	323.521	1149.1

Date	Benzene Emissions per Day (lbs)	Benzene Emissions per Month (lbs)	Benzene Emissions 12-Month Rolling Total (lbs)
November 30, 2017	0	13.632	49.3
January 31, 2018	2.0	41.94	75.2
March 31, 2018	0	10.552	118.9
February 28, 2019	1.5	38.82	137.9

REPORTING - The Facility is required by permit to report any stack tests conducted to satisfy the requirements of Subpart HHH. (SC VII.4), and to submit a report of all test results within 60-days of the

last day of testing. (SC VII.4 & 5) District Files do not contain copies of any stack testing for the dehydrator.

STACK/VENT RESTRICTIONS - Per Permit, Stack restrictions are limited to the regenerator still column which vents through the condenser. SC VIII.1 restricts the referenced stack to a maximum diameter of 2-inches and minimum height of 25 ft above land surface. Based on information provided the stack is in compliance with permit conditions.

OTHER REQUIREMENTS- Include a high level citation of 40 CFR Subpart A and HHH as they apply to EUCTGDS001 (SC IX.1). Per the February 14, 2019, Notice of Compliance Status for the referenced subpart, the Facility reports being in compliance with all applicable requirements. Submittals in District Files for the referenced subpart include:

Date Received	Report Type	Reported Compliance
2/14/2019	semiannual compliance report 2018	Y
8/23/2018	semiannual compliance report 2018	Y
2/23/2018	periodic compliance report 2017	Y
3/6/2017	periodic compliance report 2016	Y
4/13/2016	Compliance Status Report	Y

EUCTGEN001- Emergency Generator Engine

The referenced EU as already indicated consists of a Waukesha 694 Hp, 4-cycle rich burn, NG-fired engine which powers the emergency electricity generator. No pollution control device is associated with the EU. MI-ROP-B7390-2012A contains no emission limits, material limits, testing requirements or stack restrictions.

OPERATION LIMITS - EUCTGEN001 is limited to the following operational restrictions:

- Operation as necessary during emergencies (SC III.1)
- Operation of the engine for the purpose of maintenance checks and readiness testing recommended by Federal, State or local Government, engine manufacturer, vendor or insurance company associated with the engine (SC III.2)
- Operation of engine for up to 50 hours per year for non-emergency situations (SC III.3)

EUCTGEN001 is equipped with a non-resettable hour meter in compliance with SC IV.1. Records provided by the Facility indicated that for the 2017 and 2018 calendar years, as well as January and February 2019. EUCTGEN001 reported operation is presented below:

Calendar Year	Hours of Emergency Operation	Hours of Maintenance Operation
2017	8.2	13.1
2018	7.8	13.7
2019 (through February 2019)	0	1.4
Limit	NA	50

MONITORING/RECORDKEEPING – Requirements for EUCTGEN001, are limited to recording of the hours of operation for the EU per calendar year. (SC VI.1) The referenced records were provided by the Facility upon request and confirm that appropriate levels of documentation for the hours of operation and reason for operation is documented.

OTHER REQUIREMENTS- The ROP contains a high-level citation requiring compliance with 40 CFR Part 63, Subpart A and ZZZZ (RICE MACT) as they apply to EUCTGEN001. Requirements for emergency generators have been previously added to the ROP, therefore compliance with permit conditions would indicate general compliance with the subpart.

It should be noted that in addition to required information per MI-ROP-B7390-2012A, the Facility provided a summary of engine maintenance, oil sample collection as well as any additional testing.

FGCTREC – Compressor Engines

This flexible group consists of two Cooper Bessemer model 12Q145H2, 4000 HP, NG-fired RICE (EUCTCOMPENG001 and EUCTCOMPENG002). No controls are associated with the EUs. No material limits or equipment design conditions are provided for the EU.

OPERATION LIMITS – EUCTCOMPENG001 and EUCTCOMPENG002 (FGCTREC) are limited to the following operational limits.

- NG used as fuel for EUSCENG002 and EUSCENG003 contains no more than 20 grains of total sulfur per 100 cubic feet. (SC III.1)

As previously indicated, the Facility is limited to no greater than 20 grains of total sulfur per 100 scf by the ANR Pipeline Company FERC Gas Tariff agreement. Verification of the total sulfur content was provided in SPL analytical reports for samples collected on February 21, 2017.

EMISSION LIMITS – Nox limits in lb/hour (SC I.1) and grams per Hp (SC I.2), are required by permit. Verification is required by permit and is discussed below. Testing to date has verified that engine emissions are below permit limits for NOx.

The ROP does not contain a ton per year NOx limit. NOx emissions for FGSCENG for 2017 and 2018 are summarized below.

Emission Unit	NOx Emissions 2017	NOx Emissions 2018
EUCTCOMPENG001	7.75	14.78
EUCTCOMPENG002	0.74	6.03

TESTING ACTIVITIES –FGSCENG is required to be tested every 5 years for the nitrogen oxide emissions (SC V.1). A review of District Files appears to indicate that timely submittal of test protocols (SC VII.4), 7-day notifications and test reports (SC VII.5) were being conducted in a timely manner.

At the time of March 14, 2019, site inspection, neither of the two engines were operating, though both were of a status that they could be brought into operation if required. Review of test reports in District Files appears to indicate that EUCTCOMPENG001 was not tested in 2011.

Engine Testing Data for the compressor engines onsite is summarized below:

TEST DATE	NOx EMISSIONS (g/bhp/hr)	NOx EMISSIONS (lb/hr)	ENGINE TESTED
October 12, 2017	0.57	4.37	EUCTCOMPENG002
July 12, 2016	2.618	20.88	EUCTCOMPENG001
September 9, 2011	1.690	13.16	EUCTCOMPENG002
June 15, 2006	4.64	40.43	EUCTCOMPENG001
June 15, 2006	4.45	39.47	EUCTCOMPENG002
August 3, 2004	6.06*	54.89*	EUCTCOMPENG002
April 19, 2000	8.49*	70.7*	EUCTCOMPENG001
April 18, 2000	2.62**	20.2**	EUCTCOMPENG002
NOx LIMIT	6	53	NA

* NOx permit limit reported to be 108.4 lb/hr and 12.3 g/hp-hr (at rated capacity).

** NOx permit limit reported to be 72.9 lb/hr and 9.2 g/bhp-hr (at rated capacity).

Stack test data is used by the Facility to recalculate the emission factor to be used to determine emissions in compliance with permit conditions. (SC VI.4).

MONITORING/RECORDKEEPING – Under MI-ROP-B7390-2012A, the permittee is required to complete the following for each engine on a calendar month basis:

- Record fuel consumption (SC VI.1)
- Record hours of operation (SC VI.2), and
- Calculate the nitrogen oxide emissions in lb/hr. (SC VI.3)

The Facility reports metered fuel usage, and hours of operation. The records provided were complete with respect to permit requirements and appear to be accurate. Neither engine is reported to have operated yet in 2019. Data for selected dates is presented for EUCOMPENG001 below:

Calendar Month	Fuel Consumption (mmscf)	Hours of Operation	NOx Emissions (lb/hr)
April 2017	13.6531	579	20.5
August 2017	0	0	0
June 2018	0	0	0
September 2018	16.3273	663.6670	21.3

Data for selected dates is presented for EUCOMPENG002 below:

Calendar Month	Fuel Consumption (mmscf)	Hours of Operation	NOx Emissions (lb/hr)
April 2017	0	0	0
August 2017	1.2323	58.333	11.7
June 2018	13.3296	559.0	4.5
September 2018	11.9072	592.5	4.5

REPORTING – In addition to semi-annual and annual compliance reporting, the Facility is required to submit a copy of a complete test protocol 30-days prior to testing (SC VII.4) and submit a report of all test results within 60-days following the last day of testing (SC VII.5). A review of the AQD database indicates that the test protocol, 7-day notification and test report for the October 12, 2017 test activities were received in a timely manner.

STACK/VENT RESTRICTIONS - No stack restrictions exist for the engines of FGCTREC.

SUMMARY

On March 14, 2019, AQD District was onsite conduct an unannounced, scheduled site inspection at the ANR Pipeline – Central Charlton Compressor Station located at 14490 Beckett Road, Johannesburg, Michigan. (B7390)

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N7390-2012a. On December 28, 2016, Transcanada submitted a ROP Renewal for their Central Charlton Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7390-2012a) expired on July 10, 2017.

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance at the time of the inspection.

Transcanada Staff onsite at the time of the site inspection included:

- Dave Cookingham, onsite operational staff

MACES- Activity Report

During the winter season, NG is withdrawn from the underground reservoir. During withdrawal, NG free flows out of the reservoirs. If reservoir pressure is not sufficient for the gas to free flow, one or more compressor engine is brought online to compress the gas and continue flow to the pipeline. During withdrawal, the field gases are conditioned by cooling and glycol dehydration to meet pipeline quality. NG heaters are used to heat the gas as necessary.

No changes at the facility in the way of new processes or process changes since the last inspection. Some personnel changes have occurred as a result of retirements and career changes. However, these are previously documented. No equipment changes are of record for the Facility.

At the time of the inspection, onsite staff reported that neither of the compressors nor the glycol dehydrator were in operation. Should temperatures drop in the coming days there may be some additional activities. It was also reported that equipment was active the prior week due to the colder weather. Weather conditions at the time of the inspection were overcast, with temperatures in the low 40's with occasional drizzle and winds of 5-10 mph. No VEs were noted.

Based on information obtained onsite, as well as supplemental records obtained in response to a written request, the Facility appears to be operating in general compliance with the their ROP.

NAME Shawn LeBlanc DATE _____ SUPERVISOR _____