

State Registration Number
B8337

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B8337-
2020

ANR Pipeline Company - Muttonville Compressor Station

State Registration Number (SRN): B8337

Located at

36555 29 Mile Road, Lenox Township, Macomb County, Michigan 48050

Permit Number: MI-ROP-B8337-2020

Staff Report Date: June 15, 2020

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

TABLE OF CONTENTS

JUNE 15, 2020 - STAFF REPORT	3
JULY 29, 2020 - STAFF REPORT ADDENDUM	9

Michigan Department of
Environment, Great Lakes, and Energy
Air Quality Division

State Registration Number

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RENEWABLE OPERATING PERMIT

JUNE 15, 2020 - STAFF REPORT

ROP Number

MI-ROP-B8337-2020

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	ANR Pipeline Company - Muttonville Compressor Station 36555 29 Mile Road Lenox Township, Michigan 48050
Source Registration Number (SRN):	B8337
North American Industry Classification System (NAICS) Code:	486210
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	2019000172
Responsible Official:	W. Craig Rundle, Director US Pipeline Operations - Great Lakes Region 231-587-2142
AQD Contact:	Kerry Kelly, Senior Environmental Quality Analyst 586-506-9817
Date Application Received:	October 11, 2019
Date Application Was Administratively Complete:	October 11, 2019
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	June 15, 2020
Deadline for Public Comment:	July 15, 2020

Source Description

The ANR Pipeline Company - Muttonville Compressor Station is a natural gas storage and transmission facility located in eastern Macomb County Michigan. Based on public information available, Michigan Wisconsin Pipeline Company began operation of the Muttonville Station in 1975 and all permitted equipment, except the reboiler, is reported as being installed between 1974 and 1975. The reboiler, according to the ROP, was installed in 1981. The ROP contains requirements for the glycol dehydration unit (EU-GLYCDEHYDE), two compressor engines (EU-COMPENGINE1 and EU-COMPENGINE2), one boiler (EU-MVBOILER1), three line heaters (EU-MVHEATERS), one process heater (EU-MVREBOILER), and one emergency generator engine (EU-MVGENERATOR). Other processes at the facility that are not subject to any process-specific emission limits or standards in any applicable requirement are listed in the "Processes in Application Not Identified in Draft ROP" section of this Staff Report. The area surrounding Muttonville Compressor Station is rural and the nearest residence is located approximately a half of a mile south of the station.

EU-COMPENGINE1 and EU-COMPENGINE2 are both 3,200 horsepower (HP), 2-stroke lean burn, natural gas-fired reciprocating internal combustion engines that drive compressors to pump natural gas into and out of the underground rock formations. Normally natural gas is pumped into the storage field during the summer months and is typically ready for withdrawal starting November 1 each year. Natural gas will free flow early in the withdrawal season when the storage field pressure is greater than the pipeline pressure. The gas needs to be pumped out, using compressors powered by two natural gas-fired internal combustion engines, later in the season as the pressure decreases within the storage field.

During the storage period, the natural gas absorbs hydrocarbons and moisture while in the formation. The facility has installed a glycol dehydration system with two dehydration contact towers to remove moisture and hydrocarbons from the gas before sending it to the pipeline system. When natural gas is taken out of storage at a higher pressure than the pipeline pressure the water in the gas can freeze in the pipeline. The three natural gas-fired indirect heaters (EU-MVHEATERS) are used to prevent the water in the gas from freezing. The gas from the field goes through two parallel scrubbers where some of the liquids fall out of the gas. Next the gas goes through glycol dehydration process (EU-GLYCDEHYDE).

In the glycol dehydration process, natural gas is pumped into one of two contact towers where it crosses a series of glycol trays. The glycol in these trays absorbs moisture and hydrocarbons in the natural gas and the dry gas is then sent to a pipeline. The rich glycol, containing moisture and hydrocarbons, accumulates at the bottom of each tower and is sent to a 3-Phase separator, also referred to as the flash tank, to remove entrained gas and hydrocarbon liquid. From the 3-Phase separator, the resulting glycol is sent through a particulate filter, a charcoal filter, and another particulate filter before being sent to the reboiler unit. The reboiler drives off moisture from the glycol at 375 to 385 degrees Fahrenheit. The resulting lean glycol is recirculated back to a surge tank and then to the glycol contact towers.

EU-GLYCDEHYDE contains two process vents, the flash tank vent and the vent from the reboiler still. Emissions from the flash tank can be directed to the reboiler burner (EU-MVREBOILER) for fuel or to a thermal oxidizer or condenser. ANR has indicated that they stopped burning emissions from the flash tank in the reboiler and currently send all flash tank emissions to the thermal oxidizer. Emissions from the reboiler go through the reboiler still. From the still, vapors go through a series of tubes, condense, and are collected in the condensate tank (also called the BTEX tank). Condensate is pumped out of the condensate tanks and into one of two brine tanks when necessary. Vapors from the condensate tank are sent to the thermal oxidizer for VOC destruction. In the event of a thermal oxidizer malfunction, the condensate tank vapors are released from the "condenser stack".

EU-MVBOILER1 is used for space heating and EU-MVGENERATOR is used for power generation in the event of a power outage.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2018**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	10.2
Lead (Pb)	NA
Nitrogen Oxides (NO _x)	78.1
Particulate Matter (PM)	1.2
Sulfur Dioxide (SO ₂)	0.02
Volatile Organic Compounds (VOCs)	3.4

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2019 by ANR Pipeline Company:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
Benzene	0.017
Total Hazardous Air Pollutants (HAPs)	0.017

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

Macomb County is currently designated by the United States Environmental Protection Agency (USEPA) as a non-attainment area with respect to the eight-hour ozone standard.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of carbon monoxide and nitrogen oxides exceeds 100 tons per year and the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality or 40 CFR 52.21 because the process equipment was constructed/installed prior to June 19, 1978, the promulgation date of the PSD regulations.

The NSR permit evaluation from October 22, 1997 for the glycol dehydration unit indicated the following regarding PSD: The facility was a major PSD source of NO_x at the time the dehydrator was installed and the dehydrator VOC PTE was 28.2 tons per year, indicating the dehydrator was not a major PSD modification to a major PSD source.

Although EU-COMPENGINE1 and EU-COMPENGINE2 were installed after August 15, 1967, this equipment was exempt from New Source Review (NSR) permitting requirements at the time it was installed. However, future modifications of this equipment may be subject to NSR.

EU-GLYCDEHYDE at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities promulgated in 40 CFR Part 63, Subparts A and HHH.

EU-COMPENGINE1, EU-COMPENGINE2, and EU-MVGENERATOR at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ. Per 40 CFR 63.6590(b)(3)(i), EU-COMPENGINE1 and EU-COMPENGINE2 do not have to meet the requirements of 40 CFR Part 63, Subparts A and ZZZZ including the initial notification requirements because they are existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions.

Though EU-MVGENERATOR was installed prior to the compliance date in 40 CFR Part 63, Subpart ZZZZ (June 15, 2007), it was not included in MI-ROP-B8337-2010. EU-MVGENERATOR was added to MI-ROP-B8337-2015 with a stated HP rating of 700. MI-ROP-B8337-2015 includes requirements for EU-MVGENERATOR from 40 CFR Part 63, Subpart ZZZZ for existing engines greater than 500 HP located at a major source of HAPs. The horsepower rating of EU-MVGENERATOR, based on the kilowatt rating listed on the generator (300kW), is actually 402 making it subject to work practice standards and other requirements in 40 CFR Part 63, Subpart ZZZZ that were not included in MI-ROP-B8337-2015. 40 CFR Part 63, Subpart ZZZZ requirements for emergency engines less than 500 located at a major source of HAPs were added to the ROP during this renewal. On February 13, 2020, ANR provided records indicating that they have been operating EU-MVGENERATOR in compliance with the requirements in 40 CFR Part 63, Subpart ZZZZ for existing emergency engines less than 500 horsepower located at major sources of HAPs even though the conditions were not included in MI-ROP-B8337-2015.

EUMVBOILER1, EU-MVREBOILER, and EU-MVHEATERS at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

The NSR permit evaluation from October 22, 1997 and January 1, 2001 for the glycol dehydration unit indicated the following regarding BACT: The thermal oxidizer operated at 1400 degrees Fahrenheit or higher and/or condenser with a maximum exhaust gas temperature of 140 degrees Fahrenheit on the regenerator still are BACT for VOC. The burning of the flash tank off-gas is also considered BACT for VOC.

EU-GLYCDEHYDE does not have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the unit does not have potential pre-control emissions over the major source thresholds. EU-GLYCDEHYDE is subject to the following emission limits: 65 pounds/day and 12.0 tons/year VOC, 0.9 megagrams/year benzene, and a BTEX limit from 40 CFR 63 Subpart HHH. Based on GRI-GlyCalc data submitted with the ROP application, the potential pre-control VOC emissions are less than 100 tons per year (33 tons/year) and the potential pre-control benzene emissions are less 10 tons/year (2.4 tons/year).

The emission limitation for BTEX at the stationary source with the underlying applicable requirement of 40 CFR 63.1275(b)(1)(iii) from EU-GLYCDEHYDE is exempt from the federal Compliance Assurance Monitoring (CAM) regulation pursuant to 40 CFR 64.2(b)(1)(i) because the BTEX limit meets the CAM exemption for NSPS or MACT proposed after November 15, 1990.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-Wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B8337-2015 are identified in Appendix 6 of the ROP.

PTI Number			
198-14	306-00	579-96	

Streamlined/Subsumed Requirements

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-MVSPACEHEATER1	Three 0.01 MMBtu/hour natural gas-fired Bruest space heaters	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU-MVSPACEHEATER2	0.024 MMBtu/hour natural gas-fired Bruest space heater	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU-MVSPACEHEATER3	0.025 MMBtu/hour natural gas-fired Bruest space heater	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU-MVHEATER1	0.05 MMBtu/hour natural gas-fired water heater	R 336.1212(4)(c)	R 336.1282(2)(b)(i)
EU-MVAMBITROL	4,700 gallon Ambitrol Tank, T-1	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-MVTEGMAINT	3,700 gallon Maintenance Glycol Tank, T-11	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-MVTEG	9,000 gallon Triethylene Glycol Tank, T-12	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-MVBRINETANKS	Two 8,820 gallon Brine Storage Tanks, T-5 and T-6	R 336.1212(4)(d)	R 336.1284(2)(e)
EU-LUBE	9,200 gallon Lube Oil Tank, T-7	R 336.1212(3)(e)	R 336.1284(2)(c)

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-LUBEMAIN	1,000 gallon Maintenance Oil Tank, T-8	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-USED OIL	1,000 gallon Used Oil Tank, T-9	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-MVCONDENSATE	1,100 gallon Condensate Tank, T-10	R 336.1212(4)(d)	R 336.1284(2)(e)
EU-LUBEOIL	Two 100 gallon Lube Oil Tanks	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-MVTEMP TANK	4,368 gallon Temporary Tank	R 336.1212(3)(e)	R 336.1284(2)(c)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by EGLE, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD’s proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Joyce Zhu, Warren District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

State Registration Number
B8337

RENEWABLE OPERATING PERMIT
JULY 29, 2020 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-B8337-2020

Purpose

A Staff Report dated June 15, 2020, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	W. Craig Rundle, Director US Pipeline Operations - Great Lakes Region 231-587-2142
AQD Contact:	Kerry Kelly, Senior Environmental Quality Analyst 586-506-9817

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period, however, following the public comment period, EGLE-AQD staff identified several cross-references in the draft ROP were incorrect.

Changes to the June 15, 2020 Draft ROP

Corrected the cross-references in the following conditions of the Draft ROP:

FG-MACTHHH description: Changed "40 C63.1275" in the Draft ROP to "40 CFR 63.1271" in the Proposed ROP.

FG-MACTHHH SC I.1: Changed the Monitoring/Testing Method references from "SC V.1 though V.5, SC VI.5 through VI.7" in the Draft ROP to "SC V.1 though V.4, SC VI.5 through VI.7" in the Proposed ROP because there are only four conditions in Section V.

FG-MACTHHH SC VI.5: Corrected the special condition reference in the leading sentence, the reference was "SC IV.a." in the Draft ROP, changed it to "SC IV.2.a" in the Proposed ROP.

FG-MACTHHH SC VI.11.b: Corrected the special condition reference, the reference was "SC VI.8.d." in the Draft ROP, changed it to "SC VI.6.d." in the Proposed ROP.

FG-MACTHHH SC VI.15.a: Corrected the special condition references, the references were "SC VI.20 and SC VI.21" in the Draft ROP, changed them to "SC VI.18 and SC VI.19" in the Proposed ROP.

FG-MACTHHH SC VI.15.b: Corrected the special condition reference, the reference was "SC VI.17" in the Draft ROP, changed it to "SC VI.15" in the Proposed ROP.

FG-MACTHHH SC VI.16: Corrected the special condition reference, the reference was “SC VI.19” in the Draft ROP, changed it to “SC VI.17” in the Proposed ROP.

FG-MACTHHH SC VI.18 through VI.23: Corrected the special condition references as follows:

- SC VI.17 changed to SC VI.15
- SC VI.20 changed to SC VI.18
- SC VI.21 changed to SC VI.19

FG-MACTHHH SC VI.24: Corrected the special condition references as follows:

- SC VI.6 changed to SC IV.3 in 24.a.
- SC VI.6.a to SC VI.5.b and SC VI.6.b in 24.b.
- SC VI.8.d. changed to SC VI.6.d in 24.c.

FG-MACTHHH SC VI.27: Corrected the special condition reference, the reference was “SC VI.28” in the Draft ROP, changed it to “SC VI.26” in the Proposed ROP.

FG-MACTHHH SC VII.7: Corrected the special condition references as follows:

- SC VI.18-21 changed to SC VI.11 in 7.b.ii.
- SC VI.13 changed to SC VI.15 and SC VI.26 changed to SC VI. 23 in 7.b.iii.
- SC VI.23.e and f. changed to SC VI.24.e and f in VI.b.iv.

FG-MACTDDDDD SC III.1: Corrected the special condition reference, the reference was “SC III.5” in the Draft ROP, changed it to “SC III.4” in the Proposed ROP.

FG-MACTZZZZ EMERGENCY SC VI.1.d: Corrected the special condition reference, the reference was “SC III.3” in the Draft ROP, changed it to “SC III.5” in the Proposed ROP.

Appendix 7: Corrected special condition reference: the reference was “FG-MACTHHH SC III.1” in the Draft ROP, changed it to “FG-MACTHHH SC I.1” in the Proposed ROP.

Removed the following statement from FGCOMPENGINES, FG-MACTHHH, and FG-MACTZZZZ EMERGENCY Stack/Vent Restrictions: “The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:”