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Air Title V Operating Permit (AOP) - Renewal

version 2.8

(Submission #: HQN-5ZKD-3M9V4, version 1)

Details

Submission ID HQN-5ZKD-3M9V4

Status In Process

Form Input

Form Instructions

In accordance with 33.1-15-14-04.c. of the North Dakota Air Pollution Control Rules, a Title V permit renewal application must be submitted to the Department at least six months, but no more than eighteen months, prior to the expiration date. Permit renewal applications are incomplete unless all information requested in SFN 52824 is supplied. The current Title V permit will be the baseline reference for a renewal. The requirements (40 CFR 70.5(c) & NDAC 33.1-15-14-06.4.c) to include a citation and description of all applicable requirements and a description of or reference to any applicable test method for determining compliance with each applicable requirement may be met by accomplishing either or both of the following: 1) provide an annotated (red-lined) copy of the current permit indicating all changes needed to reflect the current facility configuration, applicable requirements and test methods; 2) provide a narrative that conveys all changes needed to the current permit to reflect the current facility configuration, all applicable requirements and test methods.

FOR ACID RAIN UNITS ONLY • Submit with the Title V permit renewal application all Acid Rain renewal applications (the Acid Rain Permit Application, the Phase II NOx Compliance Plan, and if applicable, the Phase II NOx Averaging Plan).

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

Section A - Permit Information

Permit Number
AOP-28404

Permit Version
1

Issue Date
11/16/2021

Expiration Date
11/16/2026

Permittee

Company Name
Andeavor Field Services LLC

Address

1515 Arapahoe Street, Tower 1, Suite 1600

Denver, CO 80202

United States

Responsible Official

Prefix
NONE PROVIDED

First Name	Last Name
Darren	Snow

Title
NG&NGL Operations Director

Phone Type	Number	Extension
Business	701-250-1960	

Email
DJSnow@marathonpetroleum.com

Address
1611 E Century Ave Ste 300
Bismarck, ND 58503
United States

Contact Person for Air Pollution Matters

Prefix
NONE PROVIDED

First Name	Last Name
Thomas	Gibbons

Title
Senior Environmental Specialist

Phone Type	Number	Extension
Business	303-454-6685	

Email
THGibbons@marathonpetroleum.com

Address
1515 Arapahoe Street, Tower 1, Suite 1600
Denver, CO 80202
United States

Section B (Part 1) - Facility Information

Facility Name
Andeavor Field Services LLC - Robinson Lake Gas Plant

Have you added, removed, or made any modifications to equipment since your last operating permit issuance?
No

Is this source subject to Title IV Acid Rain regulations?
No

Is this a portable source?
No

Facility Location
NW ◆, NW ◆, Section 23, T153N, R91W
SE Corner of Hwy 8 & 45th Street NW
Belden, ND 58784
United States

County
Mountrail

Click the link below to use Google Maps to find the lat/long for a given address

Google Maps

Facility Location:
48.06596500000000,-102.3509500000000

NW ◆, NW ◆, Section 23, T153N, R91W, Belden, ND

Section B (Part 2) - Additional Location Information

Legal Description of Facility Site

Qtr Qtr	Qtr	Section	Township	Range
NW	NW	23	153N	91W

Land area at facility site (indicate whether measurement is in acres or sq. ft.)
30

MSL elevation at facility
2195 ft

Section C - Nature of Business

General Nature of Business

Describe Nature of Business	NAICS Code	SIC Code
Natural Gas Processing	211130-Natural Gas Extraction	1321-Natural Gas Liquids

Actual Start of Construction Date
11/26/2007

Actual End of Construction Date
06/18/2008

Facility Startup Date
06/19/2008

Section D - Process Equipment Information (1 of 8)

Emission Unit - DEHY-1 & DEHY-2

Emission Unit ID
DEHY-1 & DEHY-2

Emission Unit Description
Two ethylene glycol (EG) dehydration units rated at 87.5 MMscfd each

Emission Point ID
FLARE-3 / FLARE-2

Emission Point Description
Flares

Emission Process Description
Gas dehydration

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18215 v1.0
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code

Applicable State Regulations

Regulation
33.1-15-07-02. Requirements for organic compounds gas disposal.

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form

NONE PROVIDED

Comment

No changes since the most recent PTC

Section D - Process Equipment Information (2 of 8)

Emission Unit - DEHY-3

Emission Unit ID
DEHY-3

Emission Unit Description
Triethylene glycol (TEG) dehydration unit rated at 60.0 MMscfd

Emission Point ID
FLARE-3 / FLARE-2

Emission Point Description
Flares

Emission Process Description
Gas dehydration

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18215 v1.0
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
40 CFR Part 63 Area Sources

Area Source MACT Air Program Subparts

Subpart
Subpart HH - OIL AND NATURAL GAS PRODUCTION FACILITIES

Applicable State Regulations

Regulation
33.1-15-22. Emissions Standards for Hazardous Air Pollutants for Source Categories.
33.1-15-07-02. Requirements for organic compounds gas disposal.

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

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EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form

NONE PROVIDED

Comment
No changes since the most recent PTC

Section D - Process Equipment Information (3 of 8)

Emission Unit - DIST-1, DIST-2, DIST-3, DIST-4

Emission Unit ID
DIST-1, DIST-2, DIST-3, DIST-4

Emission Unit Description
Deethanizer towers (T- 3510, T-7600), Depropanizer tower (T-600), Debutanizer tower (T-601)

Emission Point ID
FLARE-1

Emission Point Description
Facility process & emergency flare

Emission Process Description
Fractionation towers (4)

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
New Source Performance Standards

NSPS Air Program Subparts

Subpart
Subpart NNN - VOC EMISS FROM SOCMI DISTILLATION OPERATIONS

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form

NONE PROVIDED

Comment

No changes since the most recent PTC

Section D - Process Equipment Information (4 of 8)

Emission Unit - FLARE-1

Emission Unit ID
FLARE-1

Emission Unit Description
Facility process & emergency flare

Emission Point ID
FLARE-1

Emission Point Description
Flare

Emission Process Description
Facility process & emergency flare for DIST-1, DIST-2, DIST-3, DIST-4

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
New Source Performance Standards

NSPS Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart NNN - VOC EMISS FROM SOCMI DISTILLATION OPERATIONS

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form

NONE PROVIDED

Comment

Changes are highlighted in the PTE calculations sheet.

Section D - Process Equipment Information (5 of 8)

Emission Unit - FLARE-2

Emission Unit ID
FLARE-2

Emission Unit Description
TEG dehydrator (DEHY-3) flare

Emission Point ID
FLARE-2

Emission Point Description
Flare

Emission Process Description
Flare for DEHY-3 (and backup to FLARE-3)

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
40 CFR Part 63 Area Sources

Area Source MACT Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart HH - OIL AND NATURAL GAS PRODUCTION FACILITIES

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form

NONE PROVIDED

Comment

No changes since the most recent PTC

Section D - Process Equipment Information (6 of 8)

Emission Unit - FLARE-3

Emission Unit ID
FLARE-3

Emission Unit Description
Tanks & EG dehydrator flare

Emission Point ID
FLARE-3

Emission Point Description
Flare

Emission Process Description
Flare for Tanks & EG dehydrator (and backup to FLARE-2)

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
40 CFR Part 63 Area Sources

Area Source MACT Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart HH - OIL AND NATURAL GAS PRODUCTION FACILITIES

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form
NONE PROVIDED
Comment
No changes since the most recent PTC

Section D - Process Equipment Information (7 of 8)

Emission Unit - C-2700 through C-2713

Emission Unit ID
C-2700 through C-2713

Emission Unit Description
Reciprocating Compressors (14)

Emission Point ID
FUG-1

Emission Point Description
Fugitive emissions

Emission Process Description
Fugitive emissions from compressor leaks

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
New Source Performance Standards

NSPS Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart OOOOa - CRUDE OIL/NATURAL GAS PRODUCTION/TRANSMISSION & DISTRIBUTION (post 9/18/15)

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form
NONE PROVIDED
Comment
No changes since the most recent PTC

Section D - Process Equipment Information (8 of 8)

Emission Unit - FUG-1

Emission Unit ID
FUG-1

Emission Unit Description
Fugitive emissions

Emission Point ID
FUG-1

Emission Point Description
Fugitive emissions

Emission Process Description
Fugitive emissions from plant

Emission Unit Status
Existing, no change

Applicable PTCs

PTC Number
ACP-18309 v1.0

Applicable Federal Air Programs

Program Code
New Source Performance Standards

NSPS Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart OOOOa - CRUDE OIL/NATURAL GAS PRODUCTION/TRANSMISSION & DISTRIBUTION (post 9/18/15)

Applicable State Regulations

Regulation

Emission Unit form

Download the emission unit form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.
EMISSION UNIT FOR TITLE V PERMIT TO OPERATE (SFN61006)

Attach Emission Unit Form
NONE PROVIDED
Comment
No changes since the most recent PTC

Section F - Facility-Wide Applicable Regulations and Potential to Emit (PTE)

Applicable Federal Air Programs

Program Code
New Source Performance Standards
40 CFR Part 63 Area Sources
Title V Permits
Federally-Enforceable Requirement, Non Specified

NSPS Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart Dc - SMALL INDUS-COMMER-INSTITUTL STEAM GENERATING UNITS
Subpart NNN - VOC EMISS FROM SOCMI DISTILLATION OPERATIONS
Subpart IIII - STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES
Subpart OOOOa - CRUDE OIL/NATURAL GAS PRODUCTION/TRANSMISSION & DISTRIBUTION (post 9/18/15)

Area Source MACT Air Program Subparts

Subpart
Subpart A - GENERAL PROVISIONS
Subpart HH - OIL AND NATURAL GAS PRODUCTION FACILITIES
Subpart ZZZZ - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

Applicable State Regulations

Regulation

Potential to Emit (PTE)

Pollutant	Tons Per Year Without Fugitives	Tons Per Year With Fugitives
NOx	79.02	79.02
CO	202.30	202.30
VOCs	188.78	239.31
SO2	0.23	0.23
PM	3.02	3.02
PM10	3.02	3.02
PM2.5	3.02	3.02
Total HAPs	6.40	6.33

Emission Calculations Document Upload

Using the attachment control below, upload emission calculations documents.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

Attach Emission Calculations Documents

Robinson Lake Gas Plant-Title V Renewal Application_Emissions_2026-05-13.pdf - 05/13/2026 04:48 PM

Comment

These are the current PTE calculations. Updates were made to FLARE-1.

Section G - Compliance Schedule

Will your facility be in compliance with all applicable requirements effective at the time of permit issuance?

Yes

Will your facility be in compliance with all applicable requirements effective after the time of permit issuance?

Yes

Section H - Flexible Permits

Are you requesting a flexible permit?

Yes

Download the form linked here, complete it, and upload it to this application using the attachment control below.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

FLEXIBLE PERMITS TITLE V PERMIT TO OPERATE (SFN61007)

Attach completed form here

NONE PROVIDED

Comment

Flexible permit requirements already exist in current permit for engines.

Section I - Compliance Assurance Monitoring (CAM)

To determine if your facility is subject to CAM, review the information provided at the following link.
Compliance Assurance Monitoring (CAM) Guidance

Is the facility identified in this application in compliance with applicable monitoring and compliance certification requirements?
Compliance Assurance Monitoring (CAM) not applicable.

Section K - Redline Permit Upload

Use the attachment control below to upload a redline version of your existing permit document, showing any changes.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

Attach redline version of permit here

AOP28404v1_0_redline_2026-05-13.docx - 05/13/2026 05:04 PM
Comment
Please see attached redline of Permit AOP-28404 v1 .0

Section L - General Document Upload

File Upload

Use the attachment control below to upload any other information necessary for application review, such as plot plans, process diagrams, maps, etc.

When completing the online application, if uploaded files are provided in each section (when indicated), do not include those same files in the General Document Upload/File Upload section. If uploading the application files in the General Document Upload/File Upload section, only fill out the required (asterisked) sections of the online application.

Attachments

Robinson Lake_Cover Letter_Title V Renewal_2026-05-13.pdf - 05/13/2026 05:48 PM
Comment
Please see attached Title V permit renewal application cover letter.

Additional Forms

NONE PROVIDED

Attachments

Date	Attachment Name	Context	Confidential?	User
5/13/2026 5:48 PM	Robinson Lake_Cover Letter_Title V Renewal_2026-05-13.pdf	Attachment	No	Thomas Gibbons
5/13/2026 5:04 PM	AOP28404v1_0_redline_2026-05-13.docx	Attachment	No	Thomas Gibbons
5/13/2026 4:48 PM	Robinson Lake Gas Plant-Title V Renewal Application_Emissions_2026-05-13.pdf	Attachment	No	Thomas Gibbons

Status History

	User	Processing Status
4/29/2026 9:37:41 AM	Thomas Gibbons	Draft
5/13/2026 6:03:41 PM	Thomas Gibbons	Signing
5/13/2026 7:08:29 PM	Darren Snow	Submitting
5/13/2026 7:09:52 PM	Darren Snow	Submitted
5/13/2026 7:10:02 PM	Darren Snow	In Process

Agreements and Signature(s)

Certification Statement

I certify under penalty of law that the enclosed documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that the source(s) identified in this application is/are in compliance with all applicable requirements except those requirements for which a compliance schedule has been submitted in the Compliance Schedule Form or Compliance Schedule Section of the application . I understand that failure to comply with any term of a compliance schedule is considered to be a violation of regulation NDAC 33.1-15-14-06.1.e. The source will continue to comply with the current applicable requirements with which it is in compliance. The source will meet, on a timely basis, any applicable requirement, which becomes effective during the permit term. The source is properly implementing any required risk management plan in accordance with section 112(r) of the federal clean air act, if appropriate.

I certify, as the Responsible Official, that I have read and understood the above requirements and conditions applicable to my source/facility and that the information and attachments provided in this application are true, accurate, and complete to the best of my knowledge." Further, I agree to comply with the provisions of Chapter 23.1-06 of the North Dakota Century Code and all rules and regulations of the Department, or revisions thereof. I also understand a permit is nontransferable and, if granted a permit, I will promptly notify the Department upon sale or legal transfer of this permitted establishment.

Note: This certification must be signed by a “responsible official” as defined in NDAC 33.1-15-14-06.1.

Submission Agreements

- ☑ I am the owner of the account used to perform the electronic submission and signature.
- ☑ I have the authority to submit the data on behalf of the facility I am representing.
- ☑ I agree that providing the account credentials to sign the submission document constitutes an electronic signature equivalent to my written signature.
- ☑ I have reviewed the electronic form being submitted in its entirety, and agree to the validity and accuracy of the information contained within it to the best of my knowledge.

Signed By Darren Snow on 05/13/2026 at 7:08 PM

b+d/n0efGHr3ltNvacPT4Qv89qsWQlZKw1qVWyLthN78h9WU99Kz0Y1gFHPz0pSabP1clFWZsbPu1H2kXzS6oA==

MPLX LP
1515 Arapahoe Street
Tower 1, Suite 1600
Denver, CO 80202

May 13, 2026

Kyla Schneider
North Dakota Department of Environmental Quality
Air Quality Division
4201 Normandy Street
Bismarck, ND 58503-1324

Submitted via CERIS-ND

Re: Andeavor Field Services LLC
Robinson Lake Gas Plant (AOP-28404 v1 .0)
Title V Operating Permit Renewal Application

Dear Mr. Schneider:

On behalf of Andeavor Field Services LLC (Andeavor), MPLX L.P. (MPLX) is submitting, via CERIS-ND, the Title V operating permit renewal application for the Robinson Lake Gas Plant (facility) located in Mountrail County, North Dakota, in accordance with NDAC 33.1-15-14-06.4.a.1.c. The facility currently operates under Permit AOP-28404 v1.0 issued November 16, 2021. This permit expires on November 16, 2026.

All processes at the facility will remain as described in the current Permit AOP-28404 v1.0 and the facility modifications described in Permit to Construct (PTC) ACP-18215 v1.0 issued May 28, 2024, and ACP-18309 v1.0 issued April 14, 2026.

Andeavor made the following updates to the emission calculations for gas sent to FLARE-1 to correct historic submittals:

- Volumes for inlet, residue, and distillation tower overheads (Trains 1 & 2: NGL1, NGL2) were updated to better represent amounts flared by these streams; note that distillation tower overhead streams were unintentionally omitted in previous submittals
- Gas heat contents were updated based on recent analyses
- GHG emissions were updated for current 40 CFR 98, Subpart C, emission factors and 40 CFR 98, Subpart A, Global Warming Potential (GWP) for methane of 28

These emissions updates affect NO_x, CO, VOC, and GHG emissions from FLARE-1; however, they do not represent changes to the facility's processes or triggers for NSPS.

This application includes the Potential to Emit (PTE) calculations for significant sources.

If you have any questions regarding this submittal, please contact me at (303) 454-6685 or THGibbons@marathonpetroleum.com.

Sincerely,

Thomas H. Gibbons
Senior Environmental Specialist

Attachments (in CERIS-ND): AOP-28404 v1 .0 Redline, PTE Calculations

cc: U.S. EPA Region 8, Air Program (8P-AR): R8airpermitting@epa.gov, CEDRI (https://cdx.epa.gov)

Robinson Lake Gas Plant
Andeavor Field Services LLC
Emission Summary

CONTROLLED POTENTIAL TO EMIT				Emission Rates (tpy)							
Source ID	NDDH EU#	NDDH EP#	Equipment Description	PM_{10}	$PM_{2.5}$	NOx	CO	VOC	SO_2	HAP	CO_2e
DEHY-1	2	27	87.5-MMscfd EG Dehydration Unit	--	--	--	--	1.29	--	1.03	0.70
DEHY-2	3	27	87.5-MMscfd EG Dehydration Unit	--	--	--	--	1.29	--	1.03	0.70
DEHY-3	13	27	60.0-MMscfd TEG Dehydration Unit	--	--	--	--	0.58	--	0.02	0.94
HTR-1	6	6	43.64 MMBtu/hr Hot Oil Heater	1.42	1.42	18.74	15.74	1.03	0.11	0.35	22,323.04
HTR-2	15	15	43.64 MMBtu/hr Hot Oil Heater	1.42	1.42	18.74	15.74	1.03	0.11	0.35	22,323.04
RBLR-3	14	14	0.75 MMBtu/hr TEG Reboiler	0.02	0.02	0.32	0.27	0.02	<0.01	<0.01	383.65
GB-1	7	27	(1) 400-bbl Gunbarrel Tank	--	--	--	--	4.60	--	0.42	6.19
TANKS	8	27	(3) 400-bbl Condensate Tanks	--	--	--	--	0.30	--	0.03	0.40
PW-TANKS	9	27	(3) 400-bbl Produced Water Storage Tanks	--	--	--	--	<0.01	--	<0.01	0.00
MT-1	25	27	(1) 400-bbl Methanol Storage Tank	--	--	--	--	<0.01	--	<0.01	--
STABTANKS	18-21	27	(8) 400-bbl Natural Gasoline Tanks	--	--	--	--	0.93	--	0.05	--
TL-1	10	10	Condensate Loadout	--	--	--	--	0.40	--	<0.01	--
TL-1 FUG	10	10	Condensate Loadout Fugitives	--	--	--	--	8.50	--	0.03	--
TL-2	11	11	NGL Loadout	--	--	--	--	0.03	--	--	--
TL-3	26	26	Produced Water Loadout	--	--	--	--	0.02	--	--	--
TL-4	28	28	Natural Gasoline Loadout	--	--	--	--	1.79	--	--	--
TL-4 FUG	28	28	Natural Gasoline Loadout Fugitives	--	--	--	--	38.35	--	--	--
FLARE-1	12	12	Facility Process and Emergency Flare	--	--	36.26	165.32	175.11	--	3.04	62,283.23
FLARE-2	22	22	DEHY-3 and Back-up to FLARE-3	--	--	0.06	0.28	0.01	--	0.00	107.23
FLARE-3	27	27	Tanks and DEHY-1 & DEHY-2 Flare	--	--	0.53	2.43	0.07	--	<0.01	914.51
GEN-1	16	16	Cummins 755 bhp Diesel Generator	0.06	0.06	1.99	1.09	0.12	<0.01	<0.01	196.88
GEN-2	17	17	Caterpillar 230 bhp Diesel Generator	0.02	0.02	0.38	0.33	0.04	<0.01	<0.01	65.72
GEN-3	24	24	Cummins 755 bhp Diesel Generator	0.06	0.06	1.99	1.09	0.12	<0.01	<0.01	196.88
FUG-1	F1	F1	Fugitives	--	--	--	--	3.67	--	0.04	47.48
Total Facility Controlled Emissions				3.02	3.02	79.02	202.30	239.31	0.23	6.40	108,851
Total Facility Controlled Emissions (without fugitives)				3.02	3.02	79.02	202.30	188.78	0.23	6.33	108,803

Robinson Lake Gas Plant
Andeavor Field Services LLC
87.5-MMscfd EG Dehydration Unit Emission Calculations

Equipment Information
Source ID Number: DEHY-1
Description: 87.5-MMscfd EG Dehydration Unit

GRI-GLYCalc Version 4.0 Inputs:
Emission Controls: Flash Tank Emissions Recycled, Regenerator Emissions with FLARE-3 (FLARE-2 as backup). Once emissions reach a specific pressure level at FLARE-3, additional emissions are routed to FLARE-2 to be burned.

Potential Operation (hr/yr): 8760

GLYCalc Inputs
Wet gas composition: inlet gas, sampled 3/18/2021
Wet Gas: 510 psig, 90°F; saturated
Dry Gas: 87.5 MMscf/day
Glycol circ. rate: 13 gpm
Cold Separator: 22°F, 485 psig
Flash Tank: 100 °F, 55 psig, recycle
Regenerator controlled with Condenser and Flare
Condenser: 130°F and 14.7 psia

GLYCalc Version 4.0 Output [1]

Component	lb/hr	lb/day	tpy
Methane	0.0064	0.153	0.0279
Ethane	0.0193	0.463	0.0844
Propane	0.0365	0.877	0.16
Isobutane	0.0033	0.079	0.0144
n-Butane	0.0141	0.338	0.0617
Isopentane	0.0014	0.034	0.0063
n-Pentane	0.002	0.048	0.0088
Cyclopentane	0.0004	0.01	0.0018
n-Hexane	0.0001	0.004	0.0006
Cyclohexane	0.0003	0.006	0.0011
Other Hexanes	0.0002	0.006	0.001
Heptanes	0.0002	0.004	0.0007
Methylcyclohexane	0	0	0
2,2,4-TMP	0	0	0
Benzene	0.0008	0.02	0.0037
Toluene	0	0	0
Ethylbenzene	0.0009	0.021	0.0039
Xylenes	0.0015	0.036	0.0066
C8+ Heavies	0.0004	0.01	0.0017
Total NMNE VOC Emissions	0.0621	1.4930	**0.2723**
Total HAP Emissions [2]	0.0033	0.0810	0.0148
Total CO2e Emissions [3]	0.1600	3.825	0.6975

[1] Emissions based on GLYCalc version 4.0 run performed on 7/17/2023 (Controlled Regenerator Emissions).

[2] The total HAP emissions displayed in the overall controlled emissions summary table includes the total HAP emissions calculated by GLYCalc (above) plus the methanol emissions calculated from the VMG model run.

[3] CO2e is based on methane GWP of 25, per Table A–1 to Subpart A of Part 98 - Global Warming Potentials (12/11/2014)

Robinson Lake Gas Plant
Andeavor Field Services LLC
87.5-MMscfd EG Dehydration Unit Emission Calculations

Equipment Information
Source ID Number: DEHY-2
Description: 87.5-MMscfd EG Dehydration Unit

GRI-GLYCalc Version 4.0 Inputs:
Emission Controls: Flash Tank Emissions Recycled, Regenerator Emissions with FLARE-3 (FLARE-2 as backup). Once emissions reach a specific pressure level at FLARE-3, additional emissions are routed to FLARE-2 to be burned.

Potential Operation (hr/yr): 8760

GLYCalc Inputs
Wet gas composition: inlet gas, sampled 3/18/2021
Wet Gas: 510 psig, 90°F; saturated
Dry Gas: 87.5 MMscf/day
Glycol circ. rate: 13 gpm
Cold Separator: 22°F, 485 psig
Flash Tank: 100 °F, 55 psig, recycle
Regenerator controlled with Condenser and Flare
Condenser: 130°F and 14.7 psia

GRI-GLYCalc Version 4.0 Output [1]

Component	lb/hr	lb/day	tpy
Methane	0.0064	0.153	0.0279
Ethane	0.0193	0.463	0.0844
Propane	0.0365	0.877	0.16
Isobutane	0.0033	0.079	0.0144
n-Butane	0.0141	0.338	0.0617
Isopentane	0.0014	0.034	0.0063
n-Pentane	0.002	0.048	0.0088
Cyclopentane	0.0004	0.01	0.0018
n-Hexane	0.0001	0.004	0.0006
Cyclohexane	0.0003	0.006	0.0011
Other Hexanes	0.0002	0.006	0.001
Heptanes	0.0002	0.004	0.0007
Methylcyclohexane	0	0	0
2,2,4-TMP	0	0	0
Benzene	0.0008	0.02	0.0037
Toluene	0	0	0
Ethylbenzene	0.0009	0.021	0.0039
Xylenes	0.0015	0.036	0.0066
C8+ Heavies	0.0004	0.01	0.0017
Total NMNE VOC Emissions	0.0621	1.4930	**0.2723**
Total HAP Emissions [2]	0.0033	0.0810	0.0148
Total CO2e Emissions [3]	0.1600	3.825	0.6975

[1] Emissions based on GLYCalc version 4.0 run performed on 7/17/2023 (Controlled Regenerator Emissions).

[2] The total HAP emissions displayed in the overall controlled emissions summary table includes the total HAP emissions calculated by GLYCalc (above) plus the methanol emissions calculated from the VMG model run.

[3] CO2e is based on methane GWP of 25, per Table A–1 to Subpart A of Part 98 - Global Warming Potentials (12/11/2014)

Robinson Lake Gas Plant
Andeavor Field Services LLC
60.0-MMscfd TEG Dehydration Unit Emission Calculations

Equipment Information
Source ID Number: DEHY-3
Description: 60-MMscfd TEG Dehydration Unit

GRI-GLYCalc Version 4.0 Inputs:
Emission Controls: Flash Tank Emissions Recycled, Regenerator Emissions with FLARE-2 (FLARE-3 as backup). Once emissions reach a specific pressure level at FLARE-2, additional emissions are routed to FLARE-3 to be burned.

Potential Operation (hr/yr): 8760

GLYCalc Inputs
Wet gas composition: inlet gas, sampled 3/18/2021
Wet Gas: 381 psig, 81°F; saturated
Dry Gas: 60 MMscf/day, 2.2 lb H2O/MMscf
Glycol circulation rate: 10 gpm, 1% water lean glycol, electric pump
Flash Tank: 180°F, 50 psig, recycle gas
Regenerator controlled with Condenser and Flare
Condenser: 130°F, 14.7 psia

GRI-GLYCalc Version 4.0 Output [1]

Component	lb/hr	lb/day	tpy	
Methane	0.0085	0.205	0.0374	
Ethane	0.0506	1.214	0.2215	
Propane	0.0799	1.917	0.3498	
Isobutane	0.0078	0.188	0.0343	
n-Butane	0.0278	0.668	0.1218	
Isopentane	0.0028	0.068	0.0124	
n-Pentane	0.0043	0.104	0.019	
Cyclopentane	0.0007	0.017	0.0031	
n-Hexane	0.0007	0.017	0.0031	
Cyclohexane	0.0007	0.017	0.0031	
Other Hexanes	0.001	0.024	0.0044	
Heptanes	0.0012	0.03	0.0054	
Methylcyclohexane	0	0	0	
2,2,4-TMP	0	0	0	
Benzene	0	0	0	
Toluene	0	0	0	
Ethylbenzene	0	0	0	
Xylenes	0.0047	0.114	0.0208	Largest HAP from DEHY-3
C8+ Heavies	0.0008	0.019	0.0035	
Total NMNE VOC Emissions	0.1324	3.1830	0.5807	
Total HAP Emissions	0.0054	0.1310	0.0239	
Total CO_2e Emissions [2]	0.2125	5.125	0.9350	

[1] Emissions based on GRI-GLYCalc version 4.0 run performed on 7/17/2023 (Controlled Regenerator Emissions).

[2] CO2e is based on methane GWP of 25, per Table A–1 to Subpart A of Part 98 - Global Warming Potentials (12/11/2014)

Robinson Lake Gas Plant
Andeavor Field Services LLC
Heater 1 Emission Calculations

Equipment Information

Source ID Number:	HTR-1		
Description:	Hot Oil Heater		
Status:	Active	Heat Input Fuel (MMBtu/hr):	43.64
Ext. Comb.Type:	Heaters	Fuel Heat Value (Btu/scf):	1192
Fuel Type:	Natural Gas	Potential fuel usage (MMscf/yr):	320.71

Stack Parameters

Height (ft):	86.3	Stack Outlet Orientation:	Vertical
Diameter (ft):	5	Raincap:	No
Temperature (^{o}F):	725		
Flow (ACFM):	18390		
Velocity (ft/s):	15.6		

Emission Controls:	N/A	
Potential operation:	8760	hr/yr

Potential Crietera/GHG Emissions

Pollutant	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/hr)	(tpy)	Controlled Emissions EF (lb/MMscf)	(lb/hr)	(tpy)	Source of Emission Factor
Nitrogen Oxides	100	lb/MMscf	43.64	8760	4.28	18.74	---	---	---	AP42
Carbon Monoxide	84	lb/MMscf	43.64	8760	3.59	15.74	---	---	---	AP42
VOC	5.5	lb/MMscf	43.64	8760	0.24	1.03	---	---	---	AP42
PM_{10}	7.6	lb/MMscf	43.64	8760	0.33	1.42	---	---	---	AP42
SO_2	0.6	lb/MMscf	43.64	8760	0.03	0.11	---	---	---	AP42
Carbon Dioxide	116.7	lb/MMBtu	43.64	8760	5094	22312.53	---	---	---	Subpart C Default
Methane	0.0022	lb/MMBtu	43.64	8760	0.10	0.42	---	---	---	Subpart C Default

Potential HAP Emissions

Pollutant	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/yr)	(tpy)	Controlled Emissions (lb/yr)	(tpy)	Reporting Bin	Source of Emission Factor
Formaldehyde	0.0750	lb/MMscf	43.64	8760	28.11	0.014	---	---	A	AP42
Benzene	0.0021	lb/MMscf	43.64	8760	0.79	0.000	---	---	A	AP42
Toluene	0.0034	lb/MMscf	43.64	8760	1.27	0.001	---	---	C	AP42
n-Hexane	1.8000	lb/MMscf	43.64	8760	674.62	0.337	---	---	C	AP42
Total HAPs					704.794	0.35				

Sample Calculations:

lb/MMscf Emission Factor: (84 lb/MMscf CO) / (1020 Btu/scf) x (43.64 MMBtu/hr) x (8760 hr/yr) / (2000 lb/ton)

= 15.74 tpy CO

Robinson Lake Gas Plant
Andeavor Field Services LLC
Heater 2 Emission Calculations

Equipment Information

Source ID Number:	HTR-2		
Description:	Hot Oil Heater		
Status:	Active	Heat Input Fuel (MMBtu/hr):	43.64
Ext. Comb.Type:	Heaters	Fuel Heat Value (Btu/scf):	1192
Fuel Type:	Natural Gas	Potential fuel usage (MMscf/yr):	320.71

Stack Parameters

Height (ft):	86.3	Stack Outlet Orientation:	Vertical
Diameter (ft):	5	Raincap:	No
Temperature (^{o}F):	725		
Flow (ACFM):	18390		
Velocity (ft/s):	15.6		

Emission Controls:	N/A	
Potential operation:	8760	hr/yr

Potential Crietera/GHG Emissions

Pollutant	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/hr)	(tpy)	Controlled Emissions EF (lb/MMscf)	(lb/hr)	(tpy)	Source of Emission Factor
Nitrogen Oxides	100	lb/MMscf	43.64	8760	4.28	18.74	---	---	---	AP42
Carbon Monoxide	84	lb/MMscf	43.64	8760	3.59	15.74	---	---	---	AP42
VOC	5.5	lb/MMscf	43.64	8760	0.24	1.03	---	---	---	AP42
PM_{10}	7.6	lb/MMscf	43.64	8760	0.33	1.42	---	---	---	AP42
SO_2	0.6	lb/MMscf	43.64	8760	0.03	0.11	---	---	---	AP42
Carbon Dioxide	116.7	lb/MMBtu	43.64	8760	5094	22312.53	---	---	---	Subpart C Default
Methane	0.0022	lb/MMBtu	43.64	8760	0.10	0.42	---	---	---	Subpart C Default

Potential HAP Emissions

Pollutant	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/yr)	(tpy)	Controlled Emissions (lb/yr)	(tpy)	Reporting Bin	Source of Emission Factor
Formaldehyde	0.0750	lb/MMscf	43.64	8760	28.11	0.014	---	---	A	AP42
Benzene	0.0021	lb/MMscf	43.64	8760	0.79	0.000	---	---	A	AP42
Toluene	0.0034	lb/MMscf	43.64	8760	1.27	0.001	---	---	C	AP42
n-Hexane	1.8000	lb/MMscf	43.64	8760	674.62	0.337	---	---	C	AP42
Total HAPs					704.794	0.35				

Sample Calculations:

lb/MMscf Emission Factor: (84 lb/MMscf CO) / (1020 Btu/scf) x (43.64 MMBtu/hr) x (8760 hr/yr) / (2000 lb/ton)

= 15.74 tpy CO

Robinson Lake Gas Plant
Andeavor Field Services LLC
Reboiler 3 Emission Calculations

Equipment Information
Source ID Number: RBLR-3
Description: TEG Reboiler

Status: Active
Ext. Comb.Type: Reboilers
Fuel Type: Natural Gas
Heat Input Fuel (mmbtu/hr): 0.75
Fuel Heat Value (btu/scf): 1192
Potential fuel usage (MMscf/yr): 5.51

Stack Parameters
Height (ft): 20
Diameter (ft): 0.66
Temperature (^{o}F): 500
Flow (ACFM): 400
Velocity (ft/s): 19.5
Stack Outlet Orientation: Vertical
Raincap: No

Emission Controls: N/A
Potential operation: 8760 hr/yr

Potential Criteria/GHG Emissions

Pollutant	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/hr)	(tpy)	Controlled Emissions EF (lb/MMscf)	(lb/hr)	(tpy)	Source of Emission Factor
Nitrogen Oxides	100	lb/MMscf	0.75	8760	0.07	0.32	---	---	---	AP42
Carbon Monoxide	84	lb/MMscf	0.75	8760	0.06	0.27	---	---	---	AP42
VOC	5.5	lb/MMscf	0.75	8760	0.00	0.02	---	---	---	AP42
PM_{10}	7.6	lb/MMscf	0.75	8760	0.01	0.02	---	---	---	AP42
SO_2	0.6	lb/MMscf	0.75	8760	0.00	0.00	---	---	---	AP42
Carbon Dioxide	116.7	lb/MMbtu	0.75	8760	87.5	383.46	---	---	---	Subpart C Default
Methane	0.0022	lb/MMbtu	0.75	8760	0.00	0.01	---	---	---	Subpart C Default

Potential HAP Emissions

HAP	Uncontrolled Emission Factor EF	Units	Nominal Rating (MMBtu/hr)	Hrs of Operation (hrs/yr)	Uncontrolled Emissions (lb/yr)	(tpy)	Controlled Emissions (lb/yr)	(tpy)	Reporting Bin	Source of Emission Factor
Formaldehyde	0.0750	lb/MMscf	0.75	8760	0.48	0.000	---	---	A	AP42
Benzene	0.0021	lb/MMscf	0.75	8760	0.01	0.000	---	---	A	AP42
Toluene	0.0034	lb/MMscf	0.75	8760	0.02	0.000	---	---	C	AP42
n-Hexane	1.8000	lb/MMscf	0.75	8760	11.59	0.006	---	---	C	AP42
Total HAPs						0.01				

Sample Calculations:

lb/MMscf Emission Factor: *(84 lb/MMscf CO) / (1020 Btu/scf) x (0.75 MMBtu/hr) x (8760 hr/yr) / (2000 lb/ton)*
= *0.27* *tpy CO*

Robinson Lake Gas Plant
Andeavor Field Services LLC
Condensate Tanks Emission Calculations-Based on Site-Specific Sampling & Controlled Emissions

Source ID Number	GB-1		Potential Operation	8760	hr/yr
Tank Description	(1)-400 bbl Gunbarrel Tank		Max Potential PW Production	330.0	bbl/day
Tank Capacity	400	bbl	Max Potential Condensate Production	880.0	bbl/day
			Annual PW Production	120,450	bbl/yr
Tank Contents	Condensate & PW		Annual Condensate Production	321,200	bbl/yr
Emission Controls	FLARE-3		Total Liquids Production	441,650	bbl/yr
Tank Orientation	Vertical, above ground		Annual PW Production	5,058,900	gal/yr
Shell Height / Length	20	ft	Annual Condensate Production	13,490,400	gal/yr
Shell Diameter	12	ft	Annual Avg PW Production Per Tank	5,058,900	gal/yr/tank
Roof Slope	0.0625	ft/ft	Annual Avg Condensate Production Per Tank	13,490,400	gal/yr/tank
Roof Type	Cone		Total Annual Avg Liquids Per Tank	18,549,300	gal/yr/tank
Roof Height	0	ft			
Tank Construction	Welded				
Roof color & condition	Tan, Good				
Shell color & condition	Tan, Good				
Vent pressure setting	0.03	+/- psig			

Potential Emissions

Pollutant	Operating Hours (hrs/yr)	Estimated Emissions (lb/hr)	(tpy)	(lb/yr)	Source of Emission Factor	
VOC-Uncontrolled	8760	52.49	229.90	459790.15	GOR + TANKS 4.0.9d	
VOC-Controlled	8760	1.05	4.60	9195.80	GOR + TANKS 4.0.9d	*Emissions routed for combustion in the flare (FLARE-3)*
HAPs-Uncontrolled	8760	4.80	21.03	42057.83	Flash Gas Analysis	
HAPs-Controlled	8760	0.10	0.42	841.16	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*
CO_2e-Uncontrolled	8760	70.71	309.71	619416.03	Flash Gas Analysis	
CO_2e-Controlled	8760	1.41	6.19	12388.32	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*

Destruction Efficiency	98.0%
Gas Sent to Flare (scf/hr)	570.680

* Estimated PTE includes a margin to provide operational flexibility:

Flash Emissions

GOR	15.5	scf/bbl	All flash occurs at Gunbarrel
Tanks 4.0.9.d Working VOC Losses	1202.97	lb/yr	Tanks run dated 10/30/2019
Tanks 4.0.9.d Breathing VOC Losses	82.4	lb/yr	Tanks run dated 10/30/2020
Tanks 4.0.9.d WB VOC Losses	1285.37	lb/yr	
Total Vent Gas Losses	1631.22	lb/yr	
Working and Breathing Gas Volume	13975.4	scf/yr	
Flash Gas HC Volume	4985183.1	scf/yr	
Total Vent Gas Volume	4999158.5	scf/yr	

GOR Calculation		
309	cc gas/100 gr oil	From attached analysis
0.895	gr oil/cc oil	Density of sample from lab
2.76555	cc gas/cc oil	
3.53E-05	scf/cc gas	
6.29E-06	cc oil/bbl	
15.5	GOR (scf gas/bbl)	

COMPONENT	MOL %	MW	lb/lb-mol	wt %	VOC wt %	WB VOC lb/yr	Total WB lb/yr	Flash Emissions SCF/yr	lb-mol/yr	lb/yr	ton/yr	Total Gas Emissions lb/yr	ton/yr
Methane (C1)	11.562%	16.00	1.85	4.1818%			68.21	576386.87	1520.81	24332.95	12.17	24401.17	12.20
Ethane (C2)	22.560%	30.00	6.77	15.2994%			249.57	1124657.30	2967.43	89023.01	44.51	89272.57	44.64
Propane (C3)	33.222%	44.00	14.62	33.0440%	41.9%	539.02	539.02	1656177.52	4369.86	192273.91	96.14	192812.93	96.41
Nitrogen (N2)	0.000%	28.00	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iso-Butane (IC4)	4.425%	58.00	2.57	5.8017%	7.4%	94.64	94.64	220594.35	582.04	33758.50	16.88	33853.14	16.93
Nor-Butane (NC4)	15.333%	58.00	8.89	20.1034%	25.5%	327.93	327.93	764378.12	2016.83	116976.07	58.49	117304.00	58.65
Iso-Pentane (IC5)	2.721%	72.00	1.96	4.4287%	5.6%	72.24	72.24	135646.83	357.91	25769.32	12.88	25841.56	12.92
Nor-Pentane (NC5)	3.825%	72.00	2.75	6.2255%	7.9%	101.55	101.55	190683.25	503.12	36224.79	18.11	36326.34	18.16
Hexane (C6)	3.66300%	86.00	3.15	7.1211%	9.0%	116.16	116.16	182607.26	481.81	41435.95	20.72	41552.11	20.78
Hexanes Plus (C6+)		86.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes (C7)		100.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes Plus (C7+)	0.87900%	100.00	0.88	1.9870%	2.5%	32.41	32.41	43819.76	115.62	11561.94	5.78	11594.35	5.80
Carbon Dioxide (CO2)	1.730%	44.00	0.76	1.7207%			28.07	86243.67	227.56	10012.46	5.01	10040.53	5.02
Hydrogen Sulfide (H2S)	0.000%	34.08	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	0.000%	78.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	0.029%	92.00	0.03	0.0603%	0.1%	0.98	0.98	1445.70	3.81	350.94	0.18	351.92	0.18
Ethylbenzene	0.000%	106.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylene	0.011%	106.00	0.01	0.0264%	0.0%	0.43	0.43	548.37	1.45	153.37	0.08	153.80	0.08
Others (VOC) [1]	0.000%	72.20	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Gas (HC + H2S)	100.0%		44.24	100.0%			1631.22	4983188.99	13148.26	581873.20	290.94	583504.42	291.75
Total VOC Portion	64.1%		34.86	78.8%	100.0%	1285.37	1285.37	3195901.16	8432.46	458504.78	229.25	459790.15	229.90
Total HAP Portion			3.19					184601.33	487.07	41940.25	20.97	42057.83	21.03
Total H2S Portion								0.00	0.00	0.00	0.00	0.00	0.00

Heating Value of Flash Gas: 2284.12 btu/scf

[1] Molecular Weight based on 2,2 dimethylpropane in accordance with lab analysis

Condensate/Water Distribution Calculation

	wt%	lb/gal[1]	wt%/lb/gal	vol%	bbl/yr	gal/yr
Condensate	21.3%	5.6	0.038	28.68%	126,674	5,320,301
Water	78.7%	8.3372	0.094	71.32%	314,976	13,228,999
Total	100%	13.9372	0.132	100%	441,650	18,549,300

[1] density based on TANKS 4.09d internal database @ 60 deg F.

Robinson Lake Gas Plant
Andeavor Field Services LLC
Condensate Tanks Emission Calculations-Based on Site-Specific Sampling & Controlled Emissions

Source ID Number	TANKS		Potential Operation	8760	hr/yr	
Tank Description	(3)-400 bbl Condensate Tanks		Max Potential Production	880.0	bbl/day	
Tank Capacity	400	bbl	Annual Production	321,200	bbl/yr	
			Annual Production	13,490,400	gal/yr	176
Tank Contents	Condensate		Annual Avg PW Production Per Tank	4,496,800	gal/yr/tank	293.33333
Emission Controls	FLARE-3					
Tank Orientation	Vertical, above ground					
Shell Height / Length	20	ft				
Shell Diameter	12	ft				
Roof Slope	0.0625	ft/ft				
Roof Type	Cone					
Roof Height	0	ft				
Tank Construction	Welded					
Roof color & condition	Tan, Good					
Shell color & condition	Tan, Good					
Vent pressure setting	0.03	+/- psig				

Potential Emissions

Pollutant	Operating Hours (hrs/yr)	Estimated Emissions (lb/hr)	(tpy)	(lb/yr)	Source of Emission Factor	
VOC-Uncontrolled	8760	3.43	15.02	30033.66	GOR + TANKS 4.0.9d	
VOC-Controlled	8760	0.07	0.30	600.67	GOR + TANKS 4.0.9d	*Emissions routed for combustion in the flare (FLARE-3)*
HAPs-Uncontrolled	8760	0.31	1.37	2747.23	Flash Gas Analysis	
HAPs-Controlled	8760	0.01	0.03	54.94	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*
CO_2e-Uncontrolled	8760	4.62	20.23	40460.48	Flash Gas Analysis	
CO_2e-Controlled	8760	0.09	0.40	809.21	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*

Destruction Efficiency 98.0%
Gas Sent to Flare (scf/hr) 37.277
* Estimated PTE includes a margin to provide operational flexibility:

Flash Emissions

GOR	0.0	scf/bbl	Zero flash emissions; all flash at Gunbarrel
Tanks 4.0.9.d Working VOC Losses	24991.05	lb/yr	Tanks run dated 10/30/2019
Tanks 4.0.9.d Breathing VOC Losses	5042.61	lb/yr	Tanks run dated 10/30/2020
Tanks 4.0.9.d WB VOC Losses	30033.66	lb/yr	
Total Vent Gas Losses	38114.72	lb/yr	
Working and Breathing Gas Volume	326546.9	scf/yr	
Flash Gas HC Volume	0.0	scf/yr	
Total Vent Gas Volume	326546.9	scf/yr	

GOR Calculation		
309	cc gas/100 gr oil	From attached analysis
0.895	gr oil/cc oil	Density of sample from lab
2.76555	cc gas/cc oil	
3.53E-05	scf/cc gas	
6.29E-06	cc oil/bbl	
15.5	GOR (scf gas/bbl)	

COMPONENT	MOL %	MW	lb/lb-mol	wt %	VOC wt %	WB VOC lb/yr	Total WB lb/yr	Flash Emissions SCF/yr	lb-mol/yr	lb/yr	ton/yr	Total Gas Emissions lb/yr	ton/yr
Methane (C1)	11.562%	16.00	1.85	4.1818%			1593.89	0.00	0.00	0.00	0.00	1593.89	0.80
Ethane (C2)	22.560%	30.00	6.77	15.2994%			5831.32	0.00	0.00	0.00	0.00	5831.32	2.92
Propane (C3)	33.222%	44.00	14.62	33.0440%	41.9%	12594.61	12594.61	0.00	0.00	0.00	0.00	12594.61	6.30
Nitrogen (N2)	0.000%	28.00	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iso-Butane (IC4)	4.425%	58.00	2.57	5.8017%	7.4%	2211.30	2211.30	0.00	0.00	0.00	0.00	2211.30	1.11
Nor-Butane (NC4)	15.333%	58.00	8.89	20.1034%	25.5%	7662.34	7662.34	0.00	0.00	0.00	0.00	7662.34	3.83
Iso-Pentane (IC5)	2.721%	72.00	1.96	4.4287%	5.6%	1687.98	1687.98	0.00	0.00	0.00	0.00	1687.98	0.84
Nor-Pentane (NC5)	3.825%	72.00	2.75	6.2255%	7.9%	2372.85	2372.85	0.00	0.00	0.00	0.00	2372.85	1.19
Hexane (C6)	3.66300%	86.00	3.15	7.1211%	9.0%	2714.20	2714.20	0.00	0.00	0.00	0.00	2714.20	1.36
Hexanes Plus (C6+)		86.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes (C7)		100.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes Plus (C7+)	0.87900%	100.00	0.88	1.9870%	2.5%	757.35	757.35	0.00	0.00	0.00	0.00	757.35	0.38
Carbon Dioxide (CO2)	1.730%	44.00	0.76	1.7207%			655.85	0.00	0.00	0.00	0.00	655.85	0.33
Hydrogen Sulfide (H2S)	0.000%	34.08	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	0.000%	78.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	0.029%	92.00	0.03	0.0603%	0.1%	22.99	22.99	0.00	0.00	0.00	0.00	22.99	0.01
Ethylbenzene	0.000%	106.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylene	0.011%	106.00	0.01	0.0264%	0.0%	10.05	10.05	0.00	0.00	0.00	0.00	10.05	0.01
Others (VOC) [1]	0.000%	72.20	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Gas (HC + H2S)	100.0%		44.24	100.0%			38114.72	0.00	0.00	0.00	0.00	38114.72	19.06
Total VOC Portion	64.1%		34.86	78.8%	100.0%	30033.66	30033.66	0.00	0.00	0.00	0.00	30033.66	15.02
Total HAP Portion			3.19					0.00	0.00	0.00	0.00	2747.23	1.37
Total H2S Portion								0.00	0.00	0.00	0.00	0.00	0.00

Heating Value of Flash Gas: 2284.12 btu/scf

[1] Molecular Weight based on 2,2 dimethylpropane in accordance with lab analysis

Robinson Lake Gas Plant
Andeavor Field Services LLC
Produced Water Tank Emission Calculations-Based on Site-Specific Sampling & Controlled Emissions

Source ID Number	PW-TANKS		Potential Operation	8760	hr/yr
Tank Description	(3)-400 bbl PW Tanks		Max Potential PW Production	330.0	bbl/day
Tank Capacity	400	bbl	Max Potential Condensate Portion	24.0	bbl/day
			Annual PW Production	120,450	bbl/yr
Tank Contents	Produced Water		Annual Condensate Portion	8,752	bbl/yr
Emission Controls	FLARE-3		Annual PW Production	5,058,900	gal/yr
Tank Orientation	Vertical, above ground		Annual Condensate Portion	367,597	gal/yr
Shell Height / Length	20	ft	Annual Average Production Per Tank	1,686,300	gal/yr/tank
Shell Diameter	12	ft	Annual Average Condensate Portion Per Tank	122,532	gal/yr/tank
Roof Slope	0.0625	ft/ft			
Roof Type	Cone				
Roof Height	0	ft			
Tank Construction	Welded				
Roof color & condition	Tan, Good				
Shell color & condition	Tan, Good				
Vent pressure setting	0.03	+/- psig			

Potential Emissions

Pollutant	Operating Hours (hrs/yr)	Estimated Emissions (lb/hr)	(tpy)	(lb/yr)	Source of Emission Factor	
VOC-Uncontrolled	8760	0.02	0.11	210.87	GOR + TANKS 4.0.9d	
VOC-Controlled	8760	0.00	0.00	4.22	GOR + TANKS 4.0.9d	*Emissions routed for combustion in the flare (FLARE-3)*
HAPs-Uncontrolled	8760	<0.01	0.00	0.19	Flash Gas Analysis	
HAPs-Controlled	8760	0.00	0.00	0.00	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*
CO_2e-Uncontrolled	8760	0.03	0.14	284.08	Flash Gas Analysis	
CO_2e-Controlled	8760	0.00	0.00	5.68	Flash Gas Analysis	*Emissions routed for combustion in the flare (FLARE-3)*

Destruction Efficiency 98.0%
Gas Sent to Flare (scf/hr) 0.262
* Estimated PTE includes a margin to provide operational flexibility:

Flash Emissions

GOR	0.0	scf/bbl	Zero flash emissions; all flash at Gunbarrel
Tanks 4.0.9.d Working VOC Losses	159.72	lb/yr	Tanks run dated 10/30/2019
Tanks 4.0.9.d Breathing VOC Losses	51.15	lb/yr	Tanks run dated 10/30/2020
Tanks 4.0.9.d WB VOC Losses	210.87	lb/yr	
Total Vent Gas Losses	267.61	lb/yr	
Working and Breathing Gas Volume	2292.7	scf/yr	
Flash Gas HC Volume	0.0	scf/yr	
Total Vent Gas Volume	2292.7	scf/yr	

GOR Calculation		
309	cc gas/100 gr oil	From attached analysis
0.895	gr oil/cc oil	Density of sample from lab
2.76555	cc gas/cc oil	
3.53E-05	scf/cc gas	
6.29E-06	cc oil/bbl	
15.5	GOR (scf gas/bbl)	

COMPONENT	MOL %	MW	lb/lb-mol	wt %	VOC wt %	WB VOC lb/yr	Total WB lb/yr	Flash Emissions SCF/yr	lb-mol/yr	lb/yr	ton/yr	Total Gas Emissions lb/yr	ton/yr
Methane (C1)	11.562%	16.00	1.85	4.1818%			11.19	0.00	0.00	0.00	0.00	11.19	0.01
Ethane (C2)	22.560%	30.00	6.77	15.2994%			40.94	0.00	0.00	0.00	0.00	40.94	0.02
Propane (C3)	33.222%	44.00	14.62	33.0440%	41.9%	88.43	88.43	0.00	0.00	0.00	0.00	88.43	0.04
Nitrogen (N2)	0.000%	28.00	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iso-Butane (IC4)	4.425%	58.00	2.57	5.8017%	7.4%	15.53	15.53	0.00	0.00	0.00	0.00	15.53	0.01
Nor-Butane (NC4)	15.333%	58.00	8.89	20.1034%	25.5%	53.80	53.80	0.00	0.00	0.00	0.00	53.80	0.03
Iso-Pentane (IC5)	2.721%	72.00	1.96	4.4287%	5.6%	11.85	11.85	0.00	0.00	0.00	0.00	11.85	0.01
Nor-Pentane (NC5)	3.825%	72.00	2.75	6.2255%	7.9%	16.66	16.66	0.00	0.00	0.00	0.00	16.66	0.01
Hexane (C6)	3.66300%	86.00	3.15	7.1211%	9.0%	19.06	19.06	0.00	0.00	0.00	0.00	19.06	0.01
Hexanes Plus (C6+)		86.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes (C7)		100.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heptanes Plus (C7+)	0.87900%	100.00	0.88	1.9870%	2.5%	5.32	5.32	0.00	0.00	0.00	0.00	5.32	0.00
Carbon Dioxide (CO2)	1.730%	44.00	0.76	1.7207%			4.60	0.00	0.00	0.00	0.00	4.60	0.00
Hydrogen Sulfide (H2S)	0.000%	34.08	0.00	0.0000%			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	0.000%	78.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	0.029%	92.00	0.03	0.0603%	0.1%	0.16	0.16	0.00	0.00	0.00	0.00	0.16	0.00
Ethylbenzene	0.000%	106.00	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Xylene	0.011%	106.00	0.01	0.0264%	0.0%	0.07	0.07	0.00	0.00	0.00	0.00	0.07	0.00
Others (VOC) [1]	0.000%	72.20	0.00	0.0000%	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Gas (HC + H2S)	100.0%		44.24	100.0%			267.61	0.00	0.00	0.00	0.00	267.61	0.13
Total VOC Portion	64.1%		34.86	78.8%	100.0%	210.87	210.87	0.00	0.00	0.00	0.00	210.87	0.11
Total HAP Portion			3.19					0.00	0.00	0.00	0.00	19.29	0.01
Total H2S Portion								0.00	0.00	0.00	0.00	0.00	0.00

Heating Value of Flash Gas: 2284.12 btu/scf

[1] Molecular Weight based on 2,2 dimethylpropane in accordance with lab analysis

Condensate/Water Distribution Calculation

	wt%	lb/gal[1]	wt%/lb/gal	vol%	bbl/yr	gal/yr
Condensate	5.0%	5.6	0.009	7.27%	8,752	367,597
Water	95.0%	8.3372	0.114	92.73%	111,698	4,691,303
Total	100%	13.9372	0.123	100%	120,450	5,058,900

[1] density based on TANKS 4.09d internal database @ 60 deg F.

Robinson Lake Gas Plant
Andeavor Field Services LLC
Natural Gasoline Tank Emission Calculations

Source ID Number	STABTANKS				
Tank Description	(8)-400 bbl Natural Gasoline Tanks				
Tank Usage	Natural Gasoline Storage				
Tank Capacity	400 bbl		Potential Operation	8760	hr/yr
Serial Number	N/A		Max Permitted Production:	3095	bopd
Tank Installation	Mar. 2011		Annual Permitted Throughput	1,129,675	bbl/yr
Tank Contents	Gasoline (RVP - 10)			5,930,794	gal/yr/tank
Emission Controls	FLARE-3				
Shell Height / Length	20 ft		VOC Emission Factor	0.082	lb/bbl
Shell Diameter	12 ft				

Emissions Controlled by Flare -3, Destruction Efficiency 98%

Potential Emissions - All 4 Tanks Combined

Pollutant	Oper. Hrs (hrs/yr)	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (tpy)	Uncontrolled Emissions (lb/yr)	Controlled Emissions (lb/hr)	Controlled Emissions (tpy)	Controlled Emissions (lb/yr)	Source of Emission Factor
VOC*	8760	10.59	46.40	92796.6	0.21	0.93	1855.93	EPA Tanks 4.09
HAPs	8760	0.53	2.32	4639.8	0.01	0.05	92.80	~Assumed 5% of VOC

** Product is stabilized so only working/breathing losses; no flash losses are anticipated.*

Gas Sent to Flare (scf/hr) 59.766

Robinson Lake Gas Plant
Andeavor Field Services LLC
Methanol Tank Emission Calculations

Source ID Number	MT-1		Potential Operation	8760	hr/yr
Tank Description	(1)-400 bbl Methanol Tank		Max Potential Throughput	11.2	bbl/day
Tank Capacity	400	bbl	Annual Throughput	4,103	bbl/yr
	Working/Breathing Losses Only		Annual Throughput	172,341	gal/yr
Tank Contents	Methanol				
Emission Controls	FLARE-3				
Tank Orientation	Vertical, above ground				
Shell Height / Length	20.0	ft			
Shell Diameter	12.0	ft			
Roof Slope	0.8	ft/ft			
Roof Type	Cone				
Roof Height	0.5	ft			
Tank Construction	Welded				
Roof color & condition	Gray/Medium				
Shell color & condition	Gray/Medium				
Vent pressure setting	0	+/- psig			
Emissions Controlled by Flare -3, Destruction Efficiency	98%				

Potential Emissions

Pollutant	Operating Hours (hrs/yr)	Uncontrolled Estimated Emissions (lb/hr)	(tpy)	(lb/yr)	Controlled Estimated Emissions (lb/hr)	(tpy)	(lb/yr)	Source of Emission Factor
VOC-Uncontrolled	8760	0.04	0.18	360.12	0.001	0.004	7.202	TANKS 4.0.9d
HAP-Uncontrolled	8760	0.04	0.18	360.12	0.001	0.004	7.202	TANKS 4.0.9d

Vapor Collection Efficiency	100%	Emissions routed for combustion in the flare (FLR-2)
Destruction Efficiency	98%	
Gas Sent to Flare (scf/hr)	0.486	

Tanks 4.0.9.d Working VOC Losses	138.17	lb/yr
Tanks 4.0.9.d Breathing VOC Losses	221.96	lb/yr
Tanks 4.0.9.d WB VOC Losses	360.12	lb/yr

Robinson Lake Gas Plant
Andeavor Field Services LLC
Condensate Loadout Emission Calculations

Equipment Information

Source ID Number:	TL-1		
Description:	Loadout		
Status:	Active	Throughput Value (gal/yr):	13,490,400.00
Liquid Temperature (^{o}F):	41.43	Molecular Weight (lb/lb-mole):	66.00
Vapor Pressure (psia):	4.271	Saturation Factor:	0.6
Truck Volume (gal):	7500	Load Duration (min/truck):	100.00
Load Frequency (trucks/yr):	1799		
Load Rate (gal/min):	75	Emission Controls:	Flare
Emission Controls	None	Percent VOC Control:	98%
		Collection Efficiency:	70%

Loading Loss (lb/1000 gal) = (12.46*S*P*M)/ T (AP-42 Section 5.2 (1/95)) where:

S = Saturation Factor = dedicated normal service
P = True Vapor Pressure of liquid loaded*, psia
M = Molecular Weight of Vapors, lb/lb-mole
T = Temp. of bulk liquid loaded, deg. R = (deg. F + 460)

Loading Loss (lb VOC/1000 gal) =	4.20	lb/1000 gal
	0.177	lb/bbl

Potential Emissions

Pollutant	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Uncollected Emissions (Fugitives) (lb/yr)	Uncollected Emissions (Fugitives) (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
VOC	4.20	13490400.00	56696.64	28.35	17008.99	8.50	793.75	0.40	AP42

HAPs	Reporting Bin	Wt % of VOC	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Uncollected Emissions (lb/yr)	Uncollected Emissions (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
Benzene	#N/A	0.05%	30.32	0.02	9.10	0.00	0.42	0.00	Gas Analysis
Toluene	#N/A	0.11%	59.59	0.03	17.88	0.01	0.83	0.00	Gas Analysis
Ethylbenzene	#N/A	0.01%	5.67	0.00	1.70	0.00	0.08	0.00	Gas Analysis
Xylene	#N/A	0.03%	17.18	0.01	5.15	0.00	0.24	0.00	Gas Analysis
n-Hexane	#N/A	0.21%	119.71	0.06	35.91	0.02	1.68	0.00	Gas Analysis
HAP Total				0.12		0.03		0.00	

Robinson Lake Gas Plant
Andeavor Field Services LLC

Source Description	Pressurized NGL Loading
Source ID	TL-2
Annual Hours of Operation (hrs/yr)	8760

Hose Parameters

Parameters [1]	Units	Values
Vapor Hose Diameter	inches	2.067
Vapor Hose Length	feet	12
Vapor Hose Volume	cubic feet	0.280

[1] Parameters for the vapor hose diameter and length provided by Mr. Jerry Fiore (Whiting) to Mr. Hari Krishna Bharadwaj(Trinity) on February 11, 2016 via email.

NGL Data

Parameters [1]	Units	Values
NGL Tank Pressure (P)	psia	224.7
Average NGL Throughput per day [1]	bbl/day	13,095
Average NGL Throughput per month	Gal/month	17,050,000
Capacity of tanker truck	Gal/load	10,000
NGL Throughput	Loads/Month	1705

[1] The bbl/day number was obtained from the email communication between Mr. Jerry Fiore (Whiting) and Mr. Hari Krishna Bharadwaj (Trinity Consultants) on 02/17/2016. The plant produces 690,000 gal/day of which 550,000 gal/day gets fractionated and loaded out. 550,000 gal/day when converted to bbl/day is 13,095 bbl/day.

Physical Data

Parameters	Units	Values
Loadout Temperature (T) [1]	R	501.1
Molecular Weight [1]	lb/lbmole	44.1
Moles in the vapor phase (n) [2]	lbmole/ft^3	1.17E-02
Vapor Density	lb/ft^3	0.52

[1] Vapor molecular weight of liquid loaded assumed to be molecular weight of propane since the majority of the NGL is propane. Vapor molecular weight of propane obtained from Thermodynamics Research Center Hydrocarbon Project.
[2] Vapor density calculated using PV = nRT, where R = Universal Gas Constant, 10.73 cubic feet *psi/lbmole * deg R

VOC Emissions from Pressurized NGL Loadout

Source	Density (lb/ft^3)	Hose Volume (ft^3/load)	Loads per month	Monthly Emissions [1] (lb/month)	Annual Uncontrolled Emissions [2] (tpy)	Annual Controlled Emissions [3] (tpy)
Vapor Hoses	0.52	0.280	1705.00	245.71	1.47	0.03
Total				245.71	1.47	0.03

[1] Monthly Emissions (lb/month) = Density (lb/ft^3) x Hose Volume (ft^3/load) x Loads per month (load/month)

Eg. Liquid Hoses Monthly Emission Rate (lb/month) = $\frac{0.52\ \text{lb}}{\text{ft}^3} \times \frac{0.280\ \text{ft3}}{\text{load}} \times \frac{1705\ \text{load}}{\text{month}} = \frac{245.71\ \text{lb}}{\text{month}}$

[2] Actual Annual Emission Rate (tpy) = Uncontrolled emission rate (lb/hr) x (8,760 hr/yr) / (2,000 lb/ton).

Eg. Liquid Hoses Annual Emission Rate (tpy) = $\frac{245.71\ \text{lb}}{\text{month}} \times \frac{12\ \text{months}}{\text{yr}} \times \frac{1\ \text{ton}}{2{,}000\ \text{lb}} = \frac{1.47\ \text{ton}}{\text{yr}}$

[3] Emissions from NGL Loading are routed back to Y-Grade Tanks for Y-Grade loading and to FLARE-1 for Propane and Butane loading control. Therefore conservativley assumed controlled emissions equal entire uncontrolled emissions combusted at 98% destruction efficiency.

Robinson Lake Gas Plant
Andeavor Field Services LLC
Produced Water Loadout Emission Calculations

Equipment Information

Source ID Number:	TL-3		
Description:	Loadout		
Status:	Active	Throughput Value (gal/yr):	5,058,900.00
Liquid Temperature (^{o}F):	41.43	Molecular Weight (lb/lb-mole):	130.00
Vapor Pressure (psia):	0.0045	Saturation Factor:	0.6
Truck Volume (gal):	7500	Load Duration (min/truck):	100.00
Load Frequency (trucks/yr):	675		
Load Rate (gal/min):	75		
Emission Controls	None		

Loading Loss (lb/1000 gal) = (12.46*S*P*M)/ T (AP-42 Section 5.2 (1/95)) where:

S = Saturation Factor = dedicated normal service
P = True Vapor Pressure of liquid loaded*, psia
M = Molecular Weight of Vapors, lb/lb-mole
T = Temp. of bulk liquid loaded, deg. R = (deg. F + 460)

Loading Loss (lb VOC/1000 gal) =	0.01	lb/1000 gal
	0.000	lb/bbl

Potential Emissions

Pollutant	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
VOC	0.01	5058900.00	44.12	0.02	-	-	AP42

HAPs	Reporting Bin	Wt % of VOC	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
Benzene	#N/A	0.05%	0.02	0.00	-	-	Gas Analysis
Toluene	#N/A	0.11%	0.05	0.00	-	-	Gas Analysis
Ethylbenzene	#N/A	0.01%	0.00	0.00	-	-	Gas Analysis
Xylene	#N/A	0.03%	0.01	0.00	-	-	Gas Analysis
n-Hexane	#N/A	0.21%	0.09	0.00	-	-	Gas Analysis

Robinson Lake Gas Plant
Andeavor Field Services LLC

Equipment Information

Source ID Number: **TL-4**
Description: Natural Gasoline Loadout

Status:	Active	Throughput Value (gal/yr):	47,446,350
Liquid Temperature (^{o}F):	41.43	Molecular Weight (lb/lb-mole):	47.33
Vapor Pressure (psia):	7.64	Saturation Factor:	0.6
Truck Volume (gal):	7500	Load Duration (min/truck):	45.00
Load Frequency (trucks/yr):	6,327		
Load Rate (gal/min):	167	Emission Controls:	Flare
Vapor Generated (MMscf/yr)	2.05	Percent VOC Control:	98%
Vapor Generated (scf/hr)	234	Collection Efficiency:	70%

Loading Loss (lb/1000 gal) = (12.46*S*P*M)/ T (AP-42 Section 5.2 (1/95)) where:

S = Saturation Factor = dedicated normal service
P = True Vapor Pressure of liquid loaded*, psia
M = Molecular Weight of Vapors, lb/lb-mole
T = Temp. of bulk liquid loaded, deg. R = (deg. F + 460)

Loading Loss (lb VOC/1000 gal) = 5.39 lb/1000 gal
0.23 lb/bbl

Potential Emissions

Pollutant	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Uncollected Emissions (Fugitives) (lb/yr)	Uncollected Emissions (Fugitives) (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
VOC	5.39	47,446,350	255687.22	**127.84**	76706.17	**38.35**	3579.62	**1.79**	AP42

HAP	Reporting Bin	Wt % of VOC	Uncontrolled Emissions (lb/yr)	Uncontrolled Emissions (tpy)	Uncollected Emissions (lb/yr)	Uncollected Emissions (tpy)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)	Source of Emission Factor
Benzene	A	0.05%	136.73	0.07	-	-	-	-	
Toluene	C	0.11%	268.73	0.13	-	-	-	-	
Ethylbenzene	C	0.01%	25.57	0.01	-	-	-	-	
Xylene	C	0.03%	77.47	0.04	-	-	-	-	
n-Hexane	C	0.21%	539.87	0.27	-	-	-	-	

Robinson Lake Gas Plant
Andeavor Field Services LLC
Facility Process and Emergency Flare Emission Calculations

Equipment ID	FLARE-1	Potential operation:	8760 hr/yr
Source Description	Flare w/continuous pilot	Stack ID	Flare
Equipment Usage	Upsets, blowdowns, loadout vapor	Stack Height	165 ft, agl
Make/Model	Tornado Technologies	Stack Diameter	18 in
Install Date	Nov. 2010	Max Velocity	118 ft/s
		Exit Temperature	1273 deg F
		Max Flow Rate	27,778 ft³/min
		Destruction Efficiency	98 %

Pilots	4 Continuous pilots	
Inlet Gas HV	1557	Btu/scf
Residue Gas HV	1273	Btu/scf
Overheads Gas HV (NGL1, NGL2)	1580	Btu/scf
Natural Gasoline Vapor HV	2681	Btu/scf
Inlet Gas NMNE VOC Gas wt	10.97	lb/lb-mol
Inlet Gas HAP Gas wt	0.16	lb/lb-mol
Residue Gas NMNE VOC Gas wt	2.84	lb/lb-mol
Residue Gas HAP Gas wt	0.16	lb/lb-mol
Natural Gasoline Vapor VOC Gas wt	40.01	lb/lb-mol
Overheads Gas NMNE VOC Gas wt	10.97	lb/lb-mol
Overheads Gas HAP Gas wt	0.16	lb/lb-mol
Pilot Gas Fuel (4 pilots)	108	scf/hr
Anticipated Inlet Gas Flared (Includes Compressor Blowdowns)	512	MMscf/yr
	1.40	MMscfd
	58,447	scf/hr
	91.00	MMBtu/hr
Anticipated Overheads Gas Flared	59.13	MMscf/yr
	6,750	scf/hr
	10.67	MMBtu/hr
Anticipated Residue Gas Flared (Including Pilot & Purge)	133.0	MMscf/yr
	15,291	scf/hr
	19.46	MMBtu/hr
Potential Natural Gasoline Truck Loadout Vapor	2.05	MMscf/yr
	234	scf/hr
Total Gas Flared	706	MMscf/yr

Potential Emissions from Pilot Gas and Residue Gas Flared

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Annual Operation (hr/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	1.32	5.80	AP-42
CO	0.310	--	NA	8760	6.03	26.43	AP-42
Total NMNE VOC	--	--	NA	8760	2.29	10.02	Gas Analysis
HAP	--	--	NA	8760	0.13	0.58	Gas Analysis
CO2	116.7	-	NA	8760	2272.2	9952.2	Subpart C Default
Methane	0.0022	-	NA	8760	0.043	0.188	Subpart C Default
CO2e	-	-	-	-	2273.4	9957.4	Subpart C Default

Potential Emissions from Inlet Gas Flared

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Annual Operation (hr/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	6.19	27.10	AP-42
CO	0.310	--	NA	8760	28.21	123.56	AP-42
Total NMNE VOC	--	--	NA	8760	33.79	148.00	Gas Analysis
HAP	--	--	NA	8760	0.50	2.21	Gas Analysis
CO2	116.7	-	NA	8760	10622.9	46528.4	Subpart C Default
Methane	0.0022	-	NA	8760	0.200	0.877	Subpart C Default
CO2e	-	-	-	-	10628.5	46553.0	Subpart C Default

Potential Emissions from Overheads Gas Flared

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Annual Operation (hr/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.73	3.18	AP-42
CO	0.310	--	NA	8760	3.31	14.48	AP-42
Total NMNE VOC	--	--	NA	8760	3.90	17.09	Gas Analysis
HAP	--	--	NA	8760	0.06	0.25	Gas Analysis
CO2	116.7	-	NA	8760	1244.9	5452.9	Subpart C Default
Methane	0.0022	-	NA	8760	0.0	0.103	Subpart C Default
CO2e	-	-	-	-	1245.6	5455.7	Subpart C Default

Potential Emissions from Natural Gasoline Loadout Operations

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Annual Operation (hr/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.04	0.19	AP-42
CO	0.310	--	NA	8760	0.19	0.85	AP-42
Total NMNE VOC	--	--	NA	8760	---	---	Applied at Source
HAP	--	--	NA	8760	---	---	~1% of Gas Stream
CO2	116.7	-	NA	8760	73.15	320.4	Subpart C Default
Methane	0.0022	-	NA	8760	0.001	0.006	Subpart C Default
CO2e	-	-	-	-	73.2	320.6	Subpart C Default

Total Potential Emissions from Inlet Gas/Residue Gas/Pilot/Natural Gasoline Loadout Emissions Flaring

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Annual Operation (hr/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	8.28	36.26	AP-42
CO	0.310	--	NA	8760	37.75	165.32	AP-42
Total NMNE VOC	--	--	NA	8760	39.98	175.11	Gas Analysis
HAP	--	--	NA	8760	0.69	3.04	Gas Analysis
CO2	116.7	-	NA	8760	14213.2	62,253.9	Subpart C Default
Methane	0.0022	-	NA	8760	0.268	1.173	Subpart C Default
CO2e	-	-	-	-	14220.7	62,283.2	Subpart C Default

Robinson Lake Gas Plant
Andeavor Field Services LLC
Back-up Flare Emission Calculations

EU	22
EP	22
Equipment ID	FLARE-2

Source Description	DEHY-3 and Back-up to FLARE-3		
Make/Model	Steffes Engineered Flare System		
Pilot	Continuous		
Pilot Gas HV	1192	Btu/scf (Residue Gas Stream)	
Pilot Gas Fuel	20	scf/hr	(175 Mscf/yr)
Pilot Gas NMNE VOC Gas wt	2.98	lb/lb-mol	
Pilot Gas HAP Gas wt	0.16	lb/lb-mol	
Waste Gas to Flare	123.00	scf/hr	
Total Gas to Flare	143.00	scf/hr	
Total Gas to Flare (includes gas from FLARE-3)	990.67	scf/hr	
Total Heating Value of Gas to Flare	1,467,058	Btu/Mscf	
VOC Destruction Efficiency	98%		

TEG Dehydration Emissions HV	1511.78	Btu/scf	From GLYCalc Condenser Vent Stream (Glycalc Run dated 7/17/2023)
TEG Dehydration Emissions Sent to Flare (Annual)	1.1	MMscf/yr	
TEG Dehydration Emissions Sent to Flare	123.0	scf/hr	From GLYCalc Condenser Vent Stream (Glycalc Run dated 7/17/2023)
TEG Dehydration Emissions NMNE VOC Gas wt	20.35	lb/lb-mol	From GLYCalc Condenser Vent Stream (Glycalc Run dated 7/17/2023)
TEG Dehydration HAP Gas wt	0.84	lb/lb-mol	From GLYCalc Condenser Vent Stream (Glycalc Run dated 7/17/2023)

Potential Emissions from Pilot Gas

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.00	0.01	AP-42, Chapter 13.5
CO	0.310	--	NA	8760	0.01	0.03	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.00	0.01	Gas Analysis
HAP	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	2.78	12.2	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.000	Subpart C Default
CO2e	-	-	-	-	2.8	12.2	Subpart C Default

Potential Emissions from Dehy-3 Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.06	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.06	0.25	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.13	0.58	Gas Analysis
HAP	--	--	NA	8760	0.01	0.02	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	21.69	95.0	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.002	Subpart C Default
CO_2e	-	-	-	-	21.7	95.0	Subpart C Default

Total Potential Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.06	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.07	0.28	AP-42, Chapter 13.5
Total NMNE VOC[1]	--	--	NA	8760	0.00	0.01	AP-42, Chapter 13.5
HAP[1]	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	24.47	107.18	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.00	Subpart C Default
CO_2e	-	-	-	-	24.48	107.23	Subpart C Default

[1] Total VOC and HAP emissions showing only pilot based emissions; individual source emissions are allocated at each source

Robinson Lake Gas Plant
Andeavor Field Services LLC
Tanks and Dehydrators Unit Flare Emission Calculations

EU	27
EP	27
Equipment ID	FLARE-3

Source Description	Tanks and DEHY-1 & DEHY-2 Flare *(excludes DEHY-3 since it is accounted for under FLARE-2)*		
Make/Model	Steffes Air Assist Flare, Model: SAA-2		
VOC Destruction Efficiency	98%		
Pilot	Continuous		
Pilot Gas HV	1192	Btu/scf (Fuel Gas Stream)	
Pilot Gas Fuel	21	scf/hr	(182 Mscf/yr)
Pilot Gas NMNE VOC Gas wt	2.98	lb/lb-mol	
Pilot Gas HAP Gas wt	0.16	lb/lb-mol	
Waste Gas to Flare	847.67	scf/hr	
Total Gas to Flare	868.47	scf/hr	
Total Heating Value of Gas to Flare	2,081,423	Btu/Mscf	

Gunbarrel Tank Emissions HV	2284.12	Btu/scf (Flash Gas)	
Gunbarrel Tank Emissions Sent to Flare	571	scf/hr	
Gunbarrel Tank Emissions NMNE VOC Gas wt	34.86	lb/lb-mol	
Gunbarrel Tank HAP Gas wt	3.19	lb/lb-mol	

Condensate Tank Emissions HV	2284.12	Btu/scf (Flash Gas)	
Condensate Tank Emissions Sent to Flare	37.28	scf/hr	
Condensate Tank Emissions NMNE VOC Gas wt	34.86	lb/lb-mol	
Condensate Tank HAP Gas wt	3.19	lb/lb-mol	

PW Tank Emissions HV	2284.12	Btu/scf (Flash Gas)	
PW Tank Emissions Sent to Flare	0.26	scf/hr	
PW Tank Emissions NMNE VOC Gas wt	34.86	lb/lb-mol	
PW Tank HAP Gas wt	3.19	lb/lb-mol	

Methanol Tank Emissions HV	1.81	Btu/scf	726.1 KJ/mol (heat of combustion from Methanol.org)*(0.9478 Btu/KJ)/(379.4 scf/lb-mol)
Methanol Tank Emissions Sent to Flare	0.49	scf/hr	
Methanol Tank Emissions NMNE VOC Gas wt	32.04	lb/lb-mol	Methanol MW
Methanol Tank HAP Gas wt	32.04	lb/lb-mol	Methanol MW

Natural Gasoline Tank Emissions HV	3445.48	Btu/scf	
Natural Gasoline Emissions Sent to Flare	59.77	scf/hr	
Natural Gasoline Emissions NMNE VOC Gas wt	67.18	lb/lb-mol	
Natural Gasoline Tank HAP Gas wt	9.83	lb/lb-mol	

Dehy-1 Emissions HV	944.16	Btu/scf	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-1 Emissions Sent to Flare (Annual)	0.8	MMscf/yr	
Dehy-1 Emissions Sent to Flare	89.6	scf/hr	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-1 Emissions NMNE VOC Gas wt	13.12	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-1 HAP Gas wt	0.7141	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)

Dehy-2 Emissions HV	944.16	Btu/scf	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-2 Emissions Sent to Flare (Annual)	0.8	MMscf/yr	
Dehy-2 Emissions Sent to Flare	89.6	scf/hr	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-2 Emissions NMNE VOC Gas wt	13.12	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
Dehy-2 HAP Gas wt	0.7141	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)

Emissions from DEHY-3 are controlled primarily by FLARE-2; therefore, excluded in FLARE-3 emissions:

TEG Dehydration Emissions HV	1511.78	Btu/scf	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
TEG Dehydration Emissions Sent to Flare (Annual)	0.0	MMscf/yr	
TEG Dehydration Emissions Sent to Flare	0.0	scf/hr	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
TEG Dehydration Emissions NMNE VOC Gas wt	20.35	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)
TEG Dehydration HAP Gas wt	0.84	lb/lb-mol	From GLYCalc Condenser Vent Stream (GLYCalc Run dated 7/17/2023)

Potential Emissions from Pilot Gas

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.00	0.01	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.01	0.03	AP-42, Chapter 13.5
Total NMNE VOC	0.66	--	NA	8760	0.02	0.07	AP-42, Chapter 13.5
HAP	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	2.89	12.7	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.000	Subpart C Default
CO_2e	-	-	-	-	2.9	12.7	Subpart C Default

Potential Emissions from Gunbarrel Tank Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.09	0.39	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.40	1.77	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	1.05	4.59	Gas Analysis
HAP	--	--	NA	8760	0.10	0.42	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	152.05	666.0	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.013	Subpart C Default
CO_2e	-	-	-	-	152.1	666.3	Subpart C Default

Potential Emissions from Condensate Tank Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.03	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.03	0.12	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.07	0.30	Gas Analysis
HAP	--	--	NA	8760	0.01	0.03	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	9.93	43.5	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.001	Subpart C Default
CO_2e	-	-	-	-	9.9	43.5	Subpart C Default

Potential Emissions from Produced Water Tank Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.00	0.00	Gas Analysis
HAP	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	0.07	0.3	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.000	Subpart C Default
CO_2e	-	-	-	-	0.1	0.3	Subpart C Default

Potential Emissions from Methanol Tank Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.00	0.00	Gas Analysis
HAP	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	0.00	0.0	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.000	Subpart C Default
CO_2e	-	-	-	-	0.0	0.0	Subpart C Default

Potential Emissions from Natural Gasoline Tank Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.06	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.06	0.28	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.21	0.93	Gas Analysis
HAP	--	--	NA	8760	0.03	0.14	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	24.02	105.2	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.002	Subpart C Default
CO_2e	-	-	-	-	24.0	105.3	Subpart C Default

Potential Emissions from Dehy-1 Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.03	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.03	0.11	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.06	0.27	Gas Analysis
HAP	--	--	NA	8760	0.00	0.01	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	9.87	43.2	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.001	Subpart C Default
CO_2e	-	-	-	-	9.9	43.2	Subpart C Default

Potential Emissions from Dehy-2 Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.01	0.03	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.03	0.11	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.06	0.27	Gas Analysis
HAP	--	--	NA	8760	0.00	0.01	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	9.87	43.2	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.001	Subpart C Default
CO_2e	-	-	-	-	9.9	43.2	Subpart C Default

Emissions from DEHY-3 are controlled primarily by FLARE-2; therefore, excluded in FLARE-3 emissions:

Potential Emissions from Dehy-3 Vapor Combustion

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.00	0.00	AP-42, Chapter 13.5
Total NMNE VOC	--	--	NA	8760	0.00	0.00	Gas Analysis
HAP	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	0.00	0.0	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.000	Subpart C Default
CO_2e	-	-	-	-	0.0	0.0	Subpart C Default

Total Potential Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions Maximum (lb/hr)	Estimated Emissions Total (tpy)	Source of Emission Factor
NOx	0.068	--	NA	8760	0.12	0.53	AP-42, Chapter 13.5
CO	0.31	--	NA	8760	0.55	2.43	AP-42, Chapter 13.5
Total NMNE VOC[1]	--	--	NA	8760	0.02	0.07	AP-42, Chapter 13.5
HAP[1]	--	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	208.69	914.08	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.02	Subpart C Default
CO_2e	-	-	-	-	208.79	914.51	Subpart C Default

[1] Total VOC and HAP emissions showing only pilot based emissions; individual source emissions are allocated at each source

Andeavor Field Services LLC
Robinson Lake Gas Plant
Cummins Diesel Generator Emissions

Source ID Number	GEN-1			
Source Description	755 hp Cummins QSX15-G9 NR 2			
Engine Usage	Backup Diesel Generator			
Engine Make	Cummins			
Engine Model	QSX15-G9 NR 2			
Serial Number		Potential Operating Hrs:	500	hr/yr
Date Manufactured	2010			
Emission Controls	Tier 2 Emission Limits	139,000	Btu/gal diesel	
ISO Rating	755 BHP	34.7	gal/hr (max fuel usage)	
Sulfur Content (Assuming ULSD)	0.0015 %	4.82	MMBtu/hr	

Potential Criteria/GHG Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Emissions (lb/hr)	Emissions (tpy)	Source of Emission Factor
NOx	-	4.78	755	500	7.96	1.99	Tier 2
CO	-	2.61	755	500	4.34	1.09	Tier 2
VOC	-	0.30	755	500	0.50	0.12	Conservative
PM10	-	0.15	755	500	0.25	0.06	Tier 2
SO_x	1.01* S	-	755	500	0.01	0.002	AP-42 Table 3.4-1
CO_2	163	-	755	500	784.81	196.20	Subpart C
CH_4	0.007	-	755	500	0.03	0.01	Subpart C
N_2O	0.001		755	500	0.01	0.00	Subpart C
CO_{2e}	-	-	-	-	787.50	196.88	Subpart C

Potential HAP Emissions

HAP	Emission Factor (lb/MMBtu)	Emission Factor (lb/hr)	Heat Input (MMBtu/hr)	Hrs of Operation (hrs/yr)	Emissions (tpy)	Source of Emission Factor
1,3-Butadiene	3.91E-05	1.89E-04	4.82	500	4.71E-05	AP-42 Chapter 3.3
Acetaldehyde	7.67E-04	3.70E-03	4.82	500	9.25E-04	AP-42 Chapter 3.3
Acrolein	9.25E-05	4.46E-04	4.82	500	1.12E-04	AP-42 Chapter 3.3
Benzene	9.33E-04	4.50E-03	4.82	500	1.13E-03	AP-42 Chapter 3.3
Formaldehyde	1.18E-03	5.69E-03	4.82	500	1.42E-03	AP-42 Chapter 3.3
Toluene	4.09E-04	1.97E-03	4.82	500	4.93E-04	AP-42 Chapter 3.3
Xylenes	2.85E-04	1.37E-03	4.82	500	3.44E-04	AP-42 Chapter 3.3
PAH	1.68E-04	8.10E-04	4.82	500	2.03E-04	AP-42 Chapter 3.3
Total					4.67E-03	

Andeavor Field Services LLC
Robinson Lake Gas Plant
Caterpillar Diesel Generator Emissions

Source ID Number	GEN-2		
Source Description	230 hp Caterpillar Engine		
Engine Usage	Backup Diesel Generator		
Engine Make	Caterpillar		
Engine Model	GKXL06-6PJ1		
Serial Number		Potential Operating Hrs:	500 hr/yr
Date Manufactured	2006		
Emission Controls	Tier 3 Emission Limits	7,000	Btu = 1 BHP (from AP-42)
ISO Rating	230 BHP	1.61	MMBtu/hr
Sulfur Content (Assuming ULSD)	0.0015 %		

Potential Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Emissions (lb/hr)	Emissions (tpy)	Source of Emission Factor
NOx	-	2.99	230	500	1.52	0.38	Tier 3
CO	-	2.61	230	500	1.32	0.33	Tier 3
VOC	-	0.30	230	500	0.15	0.04	Conservative
PM_{10}	-	0.15	230	500	0.08	0.02	Tier 3
SO_x	1.01* S	-	230	500	0.00	0.001	AP-42 Table 3.4-1
CO_2	163	-	230	500	261.97	65.49	Subpart C
CH_4	0.007	-	230	500	0.01	0.00	Subpart C
N_2O	0.001		230	500	0.00	0.00	Subpart C
CO_{2e}	-	-	-	-	262.87	65.72	Subpart C

Potential HAP Emissions

HAP	Emission Factor (lb/MMBtu)	Emission Factor (lb/hr)	Heat Input (MMBtu/hr)	Hrs of Operation (hrs/yr)	Emissions (tpy)	Source of Emission Factor
1,3-Butadiene	3.91E-05	6.30E-05	1.61	500	1.57E-05	AP-42 Chapter 3.3
Acetaldehyde	7.67E-04	1.23E-03	1.61	500	3.09E-04	AP-42 Chapter 3.3
Acrolein	9.25E-05	1.49E-04	1.61	500	3.72E-05	AP-42 Chapter 3.3
Benzene	9.33E-04	1.50E-03	1.61	500	3.76E-04	AP-42 Chapter 3.3
Formaldehyde	1.18E-03	1.90E-03	1.61	500	4.75E-04	AP-42 Chapter 3.3
Toluene	4.09E-04	6.58E-04	1.61	500	1.65E-04	AP-42 Chapter 3.3
Xylenes	2.85E-04	4.59E-04	1.61	500	1.15E-04	AP-42 Chapter 3.3
PAH	1.68E-04	2.70E-04	1.61	500	6.76E-05	AP-42 Chapter 3.3
Total					1.56E-03	

Andeavor Field Services LLC
Robinson Lake Gas Plant
Cummins Diesel Generator Emissions

Source ID Number	GEN-3			
Source Description	755 hp Cummins QSX15-G9 NR 2			
Engine Usage	Backup Diesel Generator			
Engine Make	Cummins			
Engine Model	QSX15-G9 NR 2			
Serial Number		Potential Operating Hrs:	500	hr/yr
Date Manufactured	Nov 2014			
Emission Controls	Tier 2 Emission Limits	139,000	Btu/gal diesel	
ISO Rating	755 BHP	34.7	gal/hr (max fuel usage)	
Sulfur Content (Assuming ULSD)	0.0015 %	4.82	MMBtu/hr	

Potential Criteria/GHG Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/hp-hr)	Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Emissions (lb/hr)	Emissions (tpy)	Source of Emission Factor
NOx	-	4.78	755	500	7.96	1.99	Tier 2
CO	-	2.61	755	500	4.34	1.09	Tier 2
VOC	-	0.30	755	500	0.50	0.12	Conservative
PM10	-	0.15	755	500	0.25	0.06	Tier 2
SO_x	1.01* S	-	755	500	0.01	0.002	AP-42 Table 3.4-1
CO_2	163	-	755	500	784.81	196.20	Subpart C
CH_4	0.007	-	755	500	0.03	0.01	Subpart C
N_2O	0.001	-	755	500	0.01	0.00	Subpart C
CO_{2e}	-	-	-	-	787.50	196.88	Subpart C

Potential HAP Emissions

HAP	Emission Factor (lb/MMBtu)	Emission Factor (lb/hr)	Heat Input (MMBtu/hr)	Hrs of Operation (hrs/yr)	Emissions (tpy)	Source of Emission Factor
1,3-Butadiene	3.91E-05	1.89E-04	4.82	500	4.71E-05	AP-42 Chapter 3.3
Acetaldehyde	7.67E-04	3.70E-03	4.82	500	9.25E-04	AP-42 Chapter 3.3
Acrolein	9.25E-05	4.46E-04	4.82	500	1.12E-04	AP-42 Chapter 3.3
Benzene	9.33E-04	4.50E-03	4.82	500	1.13E-03	AP-42 Chapter 3.3
Formaldehyde	1.18E-03	5.69E-03	4.82	500	1.42E-03	AP-42 Chapter 3.3
Toluene	4.09E-04	1.97E-03	4.82	500	4.93E-04	AP-42 Chapter 3.3
Xylenes	2.85E-04	1.37E-03	4.82	500	3.44E-04	AP-42 Chapter 3.3
PAH	1.68E-04	8.10E-04	4.82	500	2.03E-04	AP-42 Chapter 3.3
Total					4.67E-03	

Robinson Lake Gas Plant
Andeavor Field Services LLC
Fugitive Emission Calculations

Equipment Information
Source ID Number: FUG-1
Description: Fugitives
Status: Active

Component Type	Emission Factor [1] (kg/hr/source)	Emission Factor [1] (lb/hr/source)	Source Count	Percent VOC	Hours of Operation	Total HC Emissions (lb/hr)	Total VOC Emissions (lb/hr)	Total VOC Emissions (tpy)
Valves - Gas	2.5E-05	5.5E-05	3597	43.43%	8760	0.20	0.09	0.38
Valves - LL	1.9E-05	4.2E-05	2649	100%	8760	0.11	0.11	0.49
Valves - HL	8.4E-06	1.9E-05	0		8760	0.00	0.00	0.00
Relief valves - Gas	1.2E-04	2.6E-04	140	43.43%	8760	0.04	0.02	0.07
Relief valves - LL	1.1E-04	2.4E-04	41	100%	8760	0.01	0.01	0.04
Compressor Seals - Gas	1.2E-04	2.6E-04	14	43.43%	8760	0.00	0.00	0.01
Pump Seals - LL	5.1E-04	1.1E-03	51	100%	8760	0.06	0.06	0.25
Flanges - Gas	5.7E-06	1.3E-05	3546	43.43%	8760	0.04	0.02	0.08
Flanges - LL	2.4E-06	5.3E-06	1874	100%	8760	0.01	0.01	0.04
Flanges - HL	3.9E-07	8.6E-07	0		8760	0.00	0.00	0.00
Connectors - Gas	1.0E-05	2.2E-05	28091	43.43%	8760	0.62	0.27	1.18
Connectors - LL	9.7E-06	2.1E-05	12073	100%	8760	0.26	0.26	1.13
Connectors - HL	7.5E-06	1.7E-05	0		8760	0.00	0.00	0.00
Total Emissions:					Total Emissions:	1.35	0.84	3.67

Potential operation: 8760 hr/yr

[1] Emission factors from Table 2-8 <10,000 ppmv Category in EPA document titled "Protocol for Equipment Leaks Emission Estimates (November 1995) as instructed per AP-42.

HAPs/GHGs	Weight %	Pollutant Emissions (lb/hr)	Pollutant Emissions (lb/yr)	Pollutant Emissions (tpy)	Source of Emission Factor
Carbon Dioxide	1.12%	0.02	132.43	0.07	Extended Gas Analysis
Methane	32.09%	0.43	3792.96	1.90	Extended Gas Analysis
n-Hexane	0.44%	0.01	51.99	0.03	Extended Gas Analysis
2,2,4-Trimethylpentane	0.06%	0.00	6.69	3.35E-03	Extended Gas Analysis
Benzene	0.07%	0.00	7.92	3.96E-03	Extended Gas Analysis
Toluene	0.03%	0.00	3.87	1.93E-03	Extended Gas Analysis
Ethylbenzene	0.00%	0.00	0.46	2.32E-04	Extended Gas Analysis
Xylenes	0.01%	0.00	0.60	3.02E-04	Extended Gas Analysis
Total HAPs	0.61%	0.01	71.54	0.04	

Sample Calculations:
(3597 Valves - gas) x (0.000055115 lb/hr/source) x (8760 hr/yr) x (43.43 % VOC) / (2000 lb/ton)
= 0.38 tpy VOC

Robinson Lake Gas Plant

Andeavor Field Services LLC

Inlet Gas Analysis - Robinson Lake Gas Plant 10-31-2017

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf * MoleFrac
Methane	16.04	54.08%	0.5408	8.67	32.093%	34.35%	909.4	491.8
Ethane	30.07	18.12%	0.1812	5.45	20.157%	21.57%	1618.7	293.3
Total HC (Non-VOC)		*72.20%*	*0.7220*	*14.12*	*52.25%*	*55.92%*	*2528.1*	*785.1*
Propane	44.09	14.52%	0.1452	6.40	23.685%	25.35%	2314.9	336.1
i-Butane	58.12	1.18%	0.0118	0.69	2.541%	2.72%	3000.4	35.4
n-Butane	58.12	3.78%	0.0378	2.20	8.130%	8.70%	3010.8	113.8
i-Pentane	72.15	0.61%	0.0061	0.44	1.633%	1.75%	3699.0	22.6
n-Pentane	72.15	0.85%	0.0085	0.61	2.269%	2.43%	3706.9	31.5
Hexanes+	86.16	0.73%	0.0073	0.63	2.318%	2.48%	4403.8	32.0
Total NMNE VOC		*21.67%*	*0.2167*	*10.97*	*40.575%*	*43.43%*	*20135.8*	*571.6*
n-Hexane	86.16	0.14%	0.0014	0.12	0.440%	0.47%	2314.9	3.2
2,2,4-Trimethylpentane	114.24	0.01%	0.0001	0.02	0.057%	0.06%	3000.4	0.4
Benzene	78.11	0.02%	0.0002	0.02	0.067%	0.07%	3010.8	0.7
Toluene	92.13	0.01%	0.0001	0.01	0.033%	0.04%	3699.0	0.4
Ethylbenzene	106.17	0.00%	0.0000	0.00	0.004%	0.00%	3706.9	0.0
Xylenes	106.17	0.00%	0.0000	0.00	0.005%	0.01%	4403.8	0.1
Total HAPs		*0.19%*	*0.0019*	*0.16*	*0.605%*	*0.65%*	*20135.8*	*4.7*
Carbon dioxide	43.99	0.69%	0.0069	0.30	1.121%	NA	0	0
Nitrogen	28.02	5.26%	0.0526	1.47	5.449%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.0017604
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
	Totals:	100.00%		27.029	100.00%	100%		1356.6

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	40.58%	wt%	
Fraction of NMNE VOC:	10.97	lb/lb-mole	
Fraction of HAPs:	0.16	lb/lb-mole	
LHV BTU Content:	1486.1	Btu/scf	value directly from gas analysis is more conservative than calculated

Robinson Lake Gas Plant

Andeavor Field Services LLC

Residue Gas Analysis - Robinson Lake Gas Plant 10" Residue 10-31-2017

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf * MoleFrac
Methane	16.04	65.06%	0.6506	10.44	47.643%	52.77%	909.4	591.7
Ethane	30.07	21.63%	0.2163	6.50	29.689%	32.88%	1618.7	350.1
Total HC (Non-VOC)		*86.69%*	*0.8669*	*16.94*	*77.33%*	*85.65%*	*2528.1*	*941.8*
Propane	44.09	5.48%	0.0548	2.42	11.029%	12.22%	2314.9	126.8
i-Butane	58.12	0.19%	0.0019	0.11	0.495%	0.55%	3000.4	5.6
n-Butane	58.12	0.45%	0.0045	0.26	1.189%	1.32%	3010.8	13.5
i-Pentane	72.15	0.03%	0.0003	0.02	0.097%	0.11%	3699.0	1.1
n-Pentane	72.15	0.03%	0.0003	0.02	0.103%	0.11%	3706.9	1.2
Hexanes+	86.16	0.01%	0.0001	0.01	0.039%	0.04%	4403.8	0.4
Total NMNE VOC		*6.18%*	*0.0618*	*2.84*	*12.951%*	*14.35%*	*20135.8*	*148.6*
Carbon dioxide	43.99	0.83%	0.0083	0.36	1.658%	NA	0	0
Nitrogen	28.02	6.30%	0.0630	1.77	8.059%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.0
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
Totals:		100.00%		21.905	100.00%	100%		1090.4

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	12.95%	wt%	
Fraction of NMNE VOC:	2.84	lb/lb-mole	
LHV BTU Content:	1187.8	Btu/scf	value directly from gas analysis is more conservative than calculated

Robinson Lake Gas Plant

Andeavor Field Services LLC

Residue Gas Analysis - Robinson Lake Gas Plant Fuel 10-31-2017

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf * MoleFrac
Methane	16.04	64.76%	0.6476	10.39	47.230%	52.32%	909.4	589.0
Ethane	30.07	21.57%	0.2157	6.49	29.494%	32.67%	1618.7	349.2
Total HC (Non-VOC)		*86.34%*	*0.8634*	*16.88*	*76.72%*	*84.99%*	*2528.1*	*938.2*
Propane	44.09	5.77%	0.0577	2.54	11.565%	12.81%	2314.9	133.6
i-Butane	58.12	0.19%	0.0019	0.11	0.496%	0.55%	3000.4	5.6
n-Butane	58.12	0.46%	0.0046	0.26	1.205%	1.33%	3010.8	13.7
i-Pentane	72.15	0.03%	0.0003	0.02	0.102%	0.11%	3699.0	1.1
n-Pentane	72.15	0.03%	0.0003	0.02	0.111%	0.12%	3706.9	1.3
Hexanes+	86.16	0.02%	0.0002	0.02	0.073%	0.08%	4403.8	0.8
Total NMNE VOC		*6.50%*	*0.0650*	*2.98*	*13.552%*	*15.01%*	*20135.8*	*156.1*
Carbon dioxide	43.99	0.82%	0.0082	0.36	1.634%	NA	0	0
Nitrogen	28.02	6.35%	0.0635	1.78	8.090%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.0
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
	Totals:	100.00%		21.994	100.00%	100%		1094.3

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	13.55%	wt%	
Fraction of NMNE VOC:	2.98	lb/lb-mole	
LHV BTU Content:	1192.0	Btu/scf	value directly from gas analysis is more conservative than calculated

Robinson Lake Gas Plant
Andeavor Field Services LLC
Robinson Lake Gas Plant Natural Gasoline (Stabilized Condensate)

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf*MoleFrac
Methane	16.04	0.02%	0.0002	0.00	0.004%	0.00%	909.4	0.2
Ethane	30.07	0.04%	0.0004	0.01	0.016%	0.02%	1618.7	0.7
Total HC (Non-VOC)		*0.06%*	*0.0006*	*0.01*	*0.02%*	*0.02%*	*2528.1*	*0.8*
Propane	44.09	0.05%	0.0005	0.02	0.029%	0.03%	2314.9	1.2
i-Butane	58.12	0.09%	0.0009	0.05	0.065%	0.06%	3000.4	2.6
n-Butane	58.12	3.83%	0.0383	2.23	2.892%	2.89%	3010.8	115.5
i-Pentane	72.15	23.59%	0.2359	17.02	22.085%	22.10%	3699.0	872.6
n-Pentane	72.15	36.10%	0.3610	26.05	33.800%	33.82%	3706.9	1338.4
Hexanes+	86.16	25.31%	0.2531	21.80	28.293%	28.31%	4403.8	1114.5
Total NMNE VOC		*88.97%*	*0.8897*	*67.18*	*87.164%*	*87.22%*	*20135.8*	*3444.7*
n-Hexane	86.16	8.16%	0.0816	7.03	9.122%	9.13%	2314.9	188.9
2,2,4-Trimethylpentane	114.24	1.69%	0.0169	1.93	2.499%	2.50%	3000.4	50.6
Benzene	78.11	0.40%	0.0040	0.31	0.400%	0.40%	3010.8	11.9
Toluene	92.13	0.44%	0.0044	0.41	0.529%	0.53%	3699.0	16.4
Ethylbenzene	106.17	0.03%	0.0003	0.03	0.036%	0.04%	3706.9	1.0
Xylenes	106.17	0.12%	0.0012	0.13	0.169%	0.17%	4403.8	5.4
Total HAPs		*10.83%*	*0.1083*	*9.83*	*12.757%*	*12.76%*	*20135.8*	*274.1*
Carbon dioxide	43.99	0.05%	0.0005	0.02	0.028%	NA	0	0
Nitrogen	28.02	0.09%	0.0009	0.02	0.031%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.00176
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
	Totals:	100.00%		77.068	100.00%	100%		3445.5

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	87.164%	wt%
Fraction of NMNE VOC:	67.1759	lb/lb-mole
Fraction of HAPs:	9.8316	lb/lb-mole
LHV BTU Content (Btu/scf):	3445.5	

Tesoro Great Plains Gathering & Processing LLC - Fryburg Rail Terminal Existing Emissions
Natural Gasoline Loading Vapor and Speciation

Component	Molecular Weight	Higher Heating Value	Natural Gasoline Composition [a]	Natural Gasoline Vapor Composition [b]		Natural Gasoline Vapor Weight
	(lb/lb-mole)	(Btu/scf)	(Mole %)	(Mole %)	(Wt. %)	(lb/lb-mole)
Carbon Dioxide	44.01	0	0.0101	0.3056	0.2841	0.13
Nitrogen [c]	28.01	0	0.0722	0.0000	0.0000	0.00
Methane	16.04	1013	0.0716	43.6680	14.7987	7.00
Ethane	30.06	1792	0.0176	0.6205	0.3941	0.19
Propane	44.09	2590	0.0630	0.6372	0.5935	0.28
Isobutane	58.12	3363	0.0150	0.0548	0.0673	0.03
n-Butane	58.12	3370	0.8380	2.0359	2.4998	1.18
Isopentane	72.11	4008	29.6956	24.4746	37.2876	17.65
n-Pentane	72.11	4016	41.8364	24.8637	37.8803	17.93
Cyclopentane	70.13	3764	0.0000	0.0000	0.0000	0.00
n-Hexane	86.17	4762	5.9191	0.9025	1.6431	0.78
Cyclohexane	84.16	4482	0.0000	0.0000	0.0000	0.00
Other Hexanes	86.17	4762	9.1358	1.9993	3.6397	1.72
Heptanes	100.21	5503	7.9286	0.3258	0.6896	0.33
Methylcyclohexane	98.19	5216	0.0000	0.0000	0.0000	0.00
2,2,4-Trimethylpentane	114.23	6232	0.4912	0.0196	0.0472	0.02
Benzene	78.12	3751	0.7774	0.0625	0.1032	0.05
Toluene	92.15	4484	0.2039	0.0039	0.0076	0.00
Ethylbenzene	106.17	5222	0.0024	0.0000	0.0000	0.00
Xylenes (Total)	106.17	5230	0.0216	0.0001	0.0002	0.00
Octanes	114.23	6249	2.1277	0.0251	0.0605	0.03
Nonanes	128.20	6947	0.0635	0.0002	0.0006	0.00
Decanes +	175.06	7711	0.7091	0.0008	0.0029	0.00
Total			99.9998	100.0000	100.0000	47.33

Loading Temperature [d]	41.60	F
Calculated True Vapor Pressure [b]	7.64	psia
Calculated Molecular Weight of Vapors [e]	47.33	lb/lb-mole
Calculated VOC Wt. % of Vapors	84.52	wt. %
Calculated VOC Gas Weight of Vapors	40.01	lb/lb-mole
Calculated HHV of Vapors	2681.40	Btu/scf
Calculated CO2 Emission Factor	374,301.2	lb/MMscf

Notes:

(a) Natural Gasoline Sample based on Belfield Plant Natural Gasoline Sample Dated 2/7/2017

(b) Vapor Composition (Mole %) = (Constituent TVP, psia) * (Consituent Mole Fraction in Stable Oil) / (Total Liquid TVP, psia) - AP42 Chap 7-1, eq. 4-5
True vapor pressure of each constituent calculated using Mpbpwin v1.43
Vapor Composition (Wt %) = (Constituent Mole Fraction) * (Consituent MW, lb/lb-mole) / (Total Vapor MW, lb/lb-mole)

(c) Although Nitrogen was detected in the sample it was not included in the calculations because Mpbpwin v1.43 does not have valid vapor pressure data for inorganic compounds

(d) Loading Temperature is based on the Average Annual Temperature for Bismarck, ND from the TANKS 4.0.9d Database

(e) Molecular Weight of Vapors calculated based on Equation 1-22 of AP 42 Chapter 7.1

Robinson Lake Gas Plant
Andeavor Field Services LLC
Robinson Lake Gas Plant DEHY-1 + DEHY-2 Condenser Vent Stream (From GLYCalc)

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf*MoleFrac
Methane	16.04	8.41%	0.0841	1.35	3.605%	7.27%	909.4	76.5
Ethane	30.07	13.60%	0.1360	4.09	10.928%	22.03%	1618.7	220.1
Total HC (Non-VOC)		*22.01%*	*0.2201*	*5.44*	*14.53%*	*29.30%*	*2528.1*	*296.6*
Propane	44.09	17.50%	0.1750	7.72	20.618%	41.57%	2314.9	405.1
i-Butane	58.12	1.20%	0.0120	0.70	1.864%	3.76%	3000.4	36.0
n-Butane	58.12	5.13%	0.0513	2.98	7.967%	16.06%	3010.8	154.5
i-Pentane	72.15	0.42%	0.0042	0.30	0.810%	1.63%	3699.0	15.5
n-Pentane	72.15	0.59%	0.0059	0.42	1.136%	2.29%	3706.9	21.8
Hexanes+	86.16	0.33%	0.0033	0.29	0.763%	1.54%	4403.8	14.6
Total NMNE VOC		*25.17%*	*0.2517*	*12.41*	*33.158%*	*66.85%*	*20135.8*	*647.5*
n-Hexane	86.16	0.04%	0.0004	0.03	0.083%	0.17%	2314.9	0.8
2,2,4-Trimethylpentane	114.24	0.00%	0.0000	0.00	0.000%	0.00%	3000.4	0.0
Benzene	78.11	0.23%	0.0023	0.18	0.478%	0.96%	3010.8	6.9
Toluene	92.13	0.00%	0.0000	0.00	0.000%	0.00%	3699.0	0.0
Ethylbenzene	106.17	0.18%	0.0018	0.19	0.499%	1.01%	3706.9	6.5
Xylenes	106.17	0.30%	0.0030	0.32	0.848%	1.71%	4403.8	13.2
Total HAPs		*0.74%*	*0.0074*	*0.71*	*1.908%*	*3.85%*	*20135.8*	*27.4*
Carbon dioxide	43.99	36.30%	0.3630	15.97	42.672%	NA	0	0
Nitrogen	28.02	0.48%	0.0048	0.14	0.361%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.00176
Water	18.02	15.30%	0.1530	2.76	7.368%	NA	0	0
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
Totals:		100%		37.422	100.00%	100%		944.2

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	35.067%	wt%
Fraction of NMNE VOC:	13.1225	lb/lb-mole
Fraction of HAPs:	0.7141	lb/lb-mole
LHV BTU Content (Btu/scf):	944.2	

Robinson Lake Gas Plant
Andeavor Field Services LLC
Robinson Lake Gas Plant DEHY-3 Condenser Vent Stream (From GLYCalc)

Compound	Molecular Wt (lb/lb-mol)	Mol %	Mole Frac.	Gas Weight (lb/lb-mol)	Weight %	Corrected Weight % [1]	Btu/scf	Btu/scf*MoleFrac
Methane	16.04	8.19%	0.0819	1.31	3.587%	4.46%	909.4	74.5
Ethane	30.07	25.90%	0.2590	7.79	21.268%	26.45%	1618.7	419.2
Total HC (Non-VOC)		*34.09%*	*0.3409*	*9.10*	*24.86%*	*30.91%*	*2528.1*	*493.7*
Propane	44.09	27.90%	0.2790	12.30	33.592%	41.77%	2314.9	645.9
i-Butane	58.12	2.07%	0.0207	1.20	3.285%	4.09%	3000.4	62.1
n-Butane	58.12	7.36%	0.0736	4.28	11.682%	14.53%	3010.8	221.6
i-Pentane	72.15	0.61%	0.0061	0.44	1.192%	1.48%	3699.0	22.4
n-Pentane	72.15	0.92%	0.0092	0.67	1.821%	2.26%	3706.9	34.3
Hexanes+	86.16	0.72%	0.0072	0.62	1.703%	2.12%	4403.8	31.9
Total NMNE VOC		*39.58%*	*0.3958*	*19.51*	*53.275%*	*66.25%*	*20135.8*	*1018.1*
n-Hexane	86.16	0.13%	0.0013	0.11	0.294%	0.37%	2314.9	2.9
2,2,4-Trimethylpentane	114.24	0.00%	0.0000	0.00	0.000%	0.00%	3000.4	0.0
Benzene	78.11	0.00%	0.0000	0.00	0.000%	0.00%	3010.8	0.0
Toluene	92.13	0.00%	0.0000	0.00	0.000%	0.00%	3699.0	0.0
Ethylbenzene	106.17	0.00%	0.0000	0.00	0.000%	0.00%	3706.9	0.0
Xylenes	106.17	0.69%	0.0069	0.73	1.992%	2.48%	4403.8	30.3
Total HAPs		*0.81%*	*0.0081*	*0.84*	*2.286%*	*2.84%*	*20135.8*	*33.1*
Carbon dioxide	43.99	9.58%	0.0958	4.21	11.508%	NA	0	0
Nitrogen	28.02	0.78%	0.0078	0.22	0.595%	NA	0	0
Hydrogen sulfide	34.06	0.00%	0.0000	0.00	0.000%	NA	586.8	0.00176
Water	18.02	15.20%	0.1520	2.74	7.480%	NA	0	0
Helium	4.00	0.00%	0.0000	0.00	0.000%	NA	0	0
Totals:		100%		36.619	100.00%	100%		1511.8

[1] Weight fraction corrected to remove Carbon dioxide, Nitrogen, Hydrogen sulfide and Helium content.

*Other HAPs are included in n-Hexane above based on the gas analyses.

Fraction of NMNE VOC:	55.560%	wt%
Fraction of NMNE VOC:	20.3455	lb/lb-mole
Fraction of HAPs:	0.8371	lb/lb-mole
LHV BTU Content (Btu/scf):	1511.8	

Robinson Lake Gas Plant
Andeavor Field Services LLC
Flash Gas Analysis of Condensate

COMPONENT	MOL %	MW	lb/lb-mol	wt %	Lower Heating Value (btu/scf)	LHV*mole% (btu/scf)
Methane (C1)	11.562%	16.00	1.85	4.1818%	909	105.10
Ethane (C2)	22.560%	30.00	6.77	15.2994%	1619	365.25
Propane (C3)	33.222%	44.00	14.62	33.0440%	2315	769.09
Nitrogen (N2)	0.000%	28.00	0.00	0.0000%	0	0.00
Iso-Butane (IC4)	4.425%	58.00	2.57	5.8017%	3000	132.75
Nor-Butane (NC4)	15.333%	58.00	8.89	20.1034%	3011	461.68
Iso-Pentane (IC5)	2.721%	72.00	1.96	4.4287%	3699	100.65
Nor-Pentane (NC5)	3.825%	72.00	2.75	6.2255%	3704	141.68
Hexane (C6)	3.66300%	86.00	3.15	7.1211%	4404	161.32
Hexanes Plus (C6+)		86.00	0.00	0.0000%	--	--
Heptanes (C7)		100.00	0.00	0.0000%	--	--
Heptanes Plus (C7+)	0.87900%	100.00	0.88	1.9870%	5100	44.83
Carbon Dioxide (CO2)	1.730%	44.00	0.76	1.7207%	0	0.00
Hydrogen Sulfide (H2S)	0.000%	34.08	0.00	0.0000%	587	0.00
Benzene	0.000%	78.00	0.00	0.0000%	3591	0.00
Toluene	0.029%	92.00	0.03	0.0603%	4274	1.24
Ethylbenzene	0.000%	106.00	0.00	0.0000%	4970	0.00
Xylene	0.011%	106.00	0.01	0.0264%	4957	0.55
Others (VOC) [1]	0.000%	72.20	0.00	0.0000%	--	--
Total Gas (HC + H2S)	100.0%		44.24	100.0%		2284.12

Methanol Emissions from Injection of Methanol -> Represented under DEHY-1 and DEHY-2

The VMG simulation model is used for estimating methanol emissions from field and plant injection of methanol. The assumptions and results of this model are summarized below

1. Total capacity of EG DEHY-1 and EG DEHY-2 is 150 MMscfd (75 MMscfd per unit)
2. 600 gallons/day (300 gallons/day per unit) of methanol is injected in the field. This is done for all days during the months of November to March and only 50% of the days in April and October.
3. 100 gallons/day is injected in the plant. This is done throughout the year (365 days/year).

Condenser Control Efficiency	80%
Flare-3 Destruction Efficiency	98%

Emission Estimation (Per Day)

Category	DEHY-1 (lb/hr)	DEHY-2 (lb/hr)	Total Uncontrolled Emissions (lb/hr)	Total Uncontrolled Emissions (ton/day)	Controlled Emissions (after control by condenser) (ton/day)	Controlled Emissions (after control by flare) (ton/day)
Methanol Emissions from Field and Plant Injection	100.65	100.65	201.30	2.42	0.4831	0.010
Plant Injection	27.63	27.63	55.26	0.66	0.1326	0.003
Field Injection	73.02	73.02	146.04	1.75	0.3505	0.007

Emission Estimation (Per Month Emissions) [1,2]

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Days/Month	31	28	31	30	31	30	31	31	30	31	30	31
% Methanol injected in the field [1]	100%	100%	100%	50%	0%	0%	0%	0%	0%	0%	50%	100%
Total Emissions (tons/month) [2]	0.300	0.271	0.300	0.185	0.082	0.080	0.082	0.082	0.080	0.082	0.185	0.300

[1] During winter months December to March) methanol is injected in the field 100% of the time, during April and November 50% of the time and not injected during rest of the months. Plant Injection is done through the year.

[2] Total Emissions (tons/month) = Percentage of Methanol being injected (%) x No of days in a month (day/month) x Controlled Emissions from Plant Injection (ton/day) + No of days in month (day/month) x Controlled Emissions from Field Injection (tons/day)

Emission Estimation (Annual Emissions)[1,2]

Category	Uncontrolled Emissions (tpy)	Controlled Emissions (tpy)
Total Annual Emissions of Methanol	506.66	2.03
Total Annual Emissions of Methanol from DEHY-1	253.33	1.01
Total Annual Emissions of Methanol from DEHY-2	253.33	1.01

[1] Total Annual Emissions are split evenly between DEHY-1 and DEHY-2. Total Annual Emissions = Sum of All monthly emissions.

[2] Methanol emissions are included in the total HAP emissions from DEHY-1 and DEHY-2.

SPL
5057 Owan Industrial Park
Williston, ND 58801
701-368-7180

Sample ID:	RLGP Pre-EG Dehydrator Inlet	Sample Pressure:	510 PSI
Unique #:	N/A	Sample Temperature:	90 DEG F
Sampled By:	Nick Warnke	Analysis Date:	3/18/2021
Purpose:	Environmental	Date Sampled:	3/18/2021
Type Sample:	On-Site		
County:	Mountrail		

Component	Mol%	Wt%	LV%
Carbon Dioxide	0.8432	1.5796	0.7239
Nitrogen	5.8904	7.024	3.2599
Methane	62.0542	42.376	52.9206
Ethane	18.7688	24.0232	25.25
Propane	9.95	18.6764	13.7896
Isobutane	0.6784	1.6784	1.1167
n-Butane	1.629	4.0303	2.5835
Isopentane	0.0848	0.2604	0.156
n-Pentane	0.078	0.2396	0.1422
Cyclopentane	0.00138	0.00506	0.00253
n-Hexane	0.0025	0.0092	0.0051
Cyclohexane	0.0004	0.0014	0.0007
Other Hexanes	0.00642	0.02404	0.01237
Heptanes	0.0013	0.0055	0.003
Methylcyclohexane	0	0	0
2,2,4 Trimethylpentane	0	0	0
Benzene	0.0002	0.0007	0.0003
Toluene	0	0	0
Ethylbenzene	0.0001	0.0005	0.0002
Xylenes	0.0001	0.0005	0.0002
C8+ Heavies	0.0108	0.0652	0.0332
Total	100	100	100

SPL
5057 Owan Industrial Park
Williston, ND 58801
701-368-7180

Sample ID:	RLGP Pre-TEG Dehydrator Inlet	Sample Pressure:	381 PSI
Unique #:	N/A	Sample Temperature:	81 DEG F
Sampled By:	Nick Warnke	Analysis Date:	3/18/2021
Purpose:	Environmental	Date Sampled:	3/18/2021
Type Sample:	On-Site		
County:	Mountrail		

Component	Mol%	Wt%	LV%
Carbon Dioxide	0.884	1.7441	0.7724
Hydrogen Sulfide	0	0	0
Nitrogen	6.0214	7.562	3.3919
Methane	64.2624	46.2167	55.7816
Ethane	21.0398	28.3617	28.8104
Propane	6.7928	13.4281	9.5821
Isobutane	0.2699	0.7033	0.4522
n-Butane	0.6237	1.6251	1.0068
Isopentane	0.0441	0.1426	0.0826
n-Pentane	0.0472	0.1527	0.0876
Cyclopentane	0.001242	0.004807	0.002323
n-Hexane	0.0029	0.0112	0.0061
Cyclohexane	0.0005	0.0019	0.0009
Other Hexanes	0.006058	0.023993	0.011977
Heptanes	0.0018	0.0081	0.0043
Methylcyclohexane	0	0	0
2,2,4 Trimethylpentane	0	0	0
Benzene	0	0	0
Toluene	0	0	0
Ethylbenzene	0	0	0
Xylenes	0.0001	0.0005	0.0002
C8+ Heavies	0.0021	0.0132	0.0066
Total	100	100	100

AIR POLLUTION CONTROL
TITLE V PERMIT TO OPERATE

Permittee: **Name**: Andeavor Field Services LLC **Address**: 1611 E Century Avenue, Ste 300 Bismarck, ND 58503	**Permit Number**: AOP-28404 v1.0 **Source Name**: Robinson Lake Gas Plant
Source Location: NW ¼, NW ¼, Sec. 23, T153N, R91W Belden, North Dakota Mountrail County	**Source Type**: Natural Gas Processing
Expiration Date: November 16, 2026	

Pursuant to Chapter 23.1-06 of the North Dakota Century Code (NDCC), and the Air Pollution Control Rules of the State of North Dakota, Article 33.1-15 of the North Dakota Administrative Code (NDAC), and in reliance on statements and representations heretofore made by the permittee (i.e., owner) designated above, a Title V Permit to Operate is hereby issued authorizing such permittee to operate the emissions units at the location designated above. This Title V Permit to Operate is subject to all applicable rules and orders now or hereafter in effect of the North Dakota Department of Environmental Quality (Department) and to any conditions specified on the following pages. All conditions are enforceable by EPA and citizens under the Clean Air Act unless otherwise noted.

Initial: 11/16/21

James L. Semerad
Director
Division of Air Quality

Robinson Lake Gas Plant
Title V Permit to Operate
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1. **Emission Unit Identification**:

The emission units regulated by this permit are as follows:

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
Two ethylene glycol (EG) dehydration units rated at 87.5 MMscfd, each	DEHY-1 & DEHY-2	FLARE-3/ FLARE-2 [A]	Still Vent-Condenser & FLARE-3/FLARE-2
Triethylene glycol (TEG) dehydration unit rated at 60.0 MMscfd (HH)	DEHY-3	RBLR-3 [C] & FLARE-3/ FLARE-2 [A]	RBLR-3, Condenser & FLARE-3/FLARE-2
TEG reboiler rated at 0.75 x 10^6 Btu/hr and fired on natural gas	RBLR-3 [B]		
Two hot oil heaters rated at 43.64 x 10^6 Btu/hr, each, and fired on natural gas (Dc)	HTR-1 & HTR-2	HTR-1 & HTR-2	None
400 bbl condensate storage tank	TANKS [B]	FLARE-3/ FLARE-2 [A]	Submerged Fill Pipe (SFP) & FLARE-3/ FLARE-2
400 bbl gunbarrel tank	GB-1 [B]	FLARE-3/ FLARE-2 [A]	FLARE-3/FLARE-2
400 bbl atmospheric produced water storage tank	PW-TANKS [B]	FLARE-3/ FLARE-2 [A]	SFP & FLARE-3/FLARE-2
400 bbl atmospheric methanol storage tank	MT-1 [B]	FLARE-3/ FLARE-2 [A]	SFP & FLARE-3/FLARE-2
Condensate truck loadout	TL-1 [B]	FLARE-1	FLARE-1
Natural Gas Liquids (NGL) truck loadout	TL-2 [B]	FLARE-1	Recycle or FLARE-1
Produced water loadout	TL-3 [B]	TL-3	None
Natural gasoline loadout	TL-4 [B]	FLARE-1	FLARE-1
Four 400 bbl natural gasoline tanks	STABTANKS	FLARE-3/ FLARE-2 [A]	SFP & FLARE-3/FLARE-2
Facility process & emergency flare (Tornado Tech. – 160 ft.)	FLARE-1	FLARE-1	None
Tanks & Dehy-3 flare (Steffes Eng. Flare)	FLARE-2	FLARE-2 [A, E, F]	None
Tanks & Dehy-2 flare (Steffes Air Assist)	FLARE-3	FLARE-3 [A, E, F]	None
Cummins diesel engine-driven emergency generator set rated at 755 bhp (manuf. 2010, IIII)	GEN-1 [B, D]	GEN-1	None
Caterpillar diesel engine-driven emergency generator set rated at 230 bhp (manuf. 12/2/2006, IIII)	GEN-2 [B, D]	GEN-2	None
Cummins diesel engine-driven emergency generator set rated at 755 bhp (manuf. 2014, IIII)	GEN-3 [B, D]	GEN-3	None
Condensate loadout fugitives	TL-1 FUG [B]	TL-1 FUG	None

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	Air Pollution Control Equipment
Natural gas loadout fugitives	TL-4 FUG [B]	TL-4 FUG [B]	None
Fugitive emissions (OOOOa)	FUG-1 [B]	FUG-1	Leak Detection and Repair (LDAR)
Fourteen reciprocating compressors (NSPS OOOOa)	C-2700 through C-2713	FUG-1	LDAR
Two deethanizer towers (T-3510 & T-7600) (NSPS NNN)	DIST-1 & DIST-2 [B]	FLARE-1	None
Depropanizer tower (T-600) (NSPS NNN)	DIST-3 [B]	FLARE-1	None
Debutanizer tower (T-601) (NSPS NNN)	DIST-4 [B]	FLARE-1	None

[A] FLARE-2 and FLARE-3 are carsealed open such that both flares are operable until a flare is offline, in which event the offline flare is closed and all emissions are routed to the second flare via a bypass line between the flares (typically carsealed closed until necessary to open).

[B] Insignificant or fugitive emission sources (no specific emission limit).

[C] Flash tank overheads are routed to RBLR-3 as fuel gas under normal operation; when there is no heat demand for the reboiler, the vapors go to FLARE-2.

[D] The potential to emit for an emergency stationary reciprocating internal combustion engine (RICE) is based on operating no more hours per year than is allowed by the subpart (40 CFR 60, Subpart IIII) for other than emergency situations. For engines to be considered emergency stationary RICE under the RICE rules, engine operations must comply with the operating hour limits as specified in the applicable subpart. There is no time limit on the use of emergency stationary RICE in emergency situations [40 CFR 60, Subpart IIII, §60.4211(f)]

[E] When either FLARE-2 or FLARE-3 is capable of controlling emissions from DEHY-3 or flash tank vapors (MACT HH), it is subject to 40 CFR 63.11(b).

[F] To ensure NSPS OOOOa exemption, tank effluent controlled with flares shall operate with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

2. **Applicable Standards, Restrictions and Miscellaneous Conditions**:

A. **Fuel Restrictions**:

1) Emission units HTR-1, HTR-2 & RBLR-3 are restricted to combusting only natural gas containing no more than 2 grains of sulfur per 100 standard cubic feet.

2) The generators (EU GEN-1, GEN-2 & GEN-3) are restricted to combusting only distillate oil containing no more than 0.0015 percent sulfur by weight.

Applicable Requirements: Air Construction Permit (ACP)-17871 v1.0 and NDAC 33.1-15-14-06.5.b(1)

B. **Flaring Restrictions**:

1) When it is necessary to operate the flare(s) during emergency, malfunction or maintenance, all precautions shall be taken to minimize emissions and maintain compliance with the applicable ambient air quality standards as outlined in NDAC 33.1-15-02 and the opacity standard of 20% not to exceed 60% for more than one six-minute period per hour.

2) Each flare must be equipped and operated with an automatic ignitor or a continuous burning pilot which must be maintained in good working order as outlined in NDAC 33.1-15-07-02.

3) The presence of a flame for each flare shall be monitored using a thermocouple or any other equivalent device approved by the Department.

Applicable Requirements: ACP-17871 v1.0, ACP-17902 v1.0, ACP-17947 v1.0 and NDAC 33.1-15-14-06.5.b(1)

C. **New Source Performance Standards (NSPS)**: The permittee shall comply with all applicable requirements of the following NDAC 33.1-15-12-02 and 40 CFR 60 subparts in addition to complying with Subpart A - General Provisions.

1) Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (EU HTR-1 & HTR-2).

3) Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (EU GEN-1, GEN-2 & GEN-3).

5) Subpart OOOOa - Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015 (EU FUG-1).

Note: The facility has elected to comply with the requirements of 40 CFR 60, Subparts KKK and OOOO by complying with 40 CFR 60, Subpart OOOOa for the entire facility.

The following equipment shall be considered affected facilities under 40 CFR Part 60, Subpart OOOOa, and comply with all applicable requirements:

- Reciprocating Compressors [§60.5365a(c)]; this includes the 14 compressor units (EUs C-2700 through C-2713).
- Process Unit Affected Facilities (fugitive leaks), EU FUG-1 [§60.5365a(f)].

6) Subpart NNN - Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations After December 30, 1983, and on or Before April 25, 2023 (EU DIST-1, DIST-2, DIST-3,)

Applicable Requirements: NDAC 33.1-15-12-02, Subparts A, Dc, KKK, NNN, IIII, , and OOOOa

D. **Maximum Achievable Control Technology (MACT)**: The permittee shall comply with all applicable requirements of the following NDAC 33.1-15-22-03 and 40 CFR 63 subparts in addition to complying with Subpart A - General Provisions.

1) Subpart HH - National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities (EU DEHY-2 and DEHY-3). The North Dakota Department of Environmental Quality has not adopted the area source provisions of this subpart. Please send all documentation to EPA at the following address.

U.S. EPA Region 8
1595 Wynkoop Street
Mail Code 8ENF-AT
Denver, CO 80202-1129

2) Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (EU GEN-1, GEN-2 & GEN-3). As an area source of HAP, compliance with 40 CFR 60, Subpart IIII constitutes compliance with this subpart. The North Dakota Department of Environmental Quality has not adopted the area source provisions of this subpart. Please send all documentation to EPA at the address above.

Applicable Requirements: NDAC 33.1-15-22-03, Subpart A and 40 CFR 63, Subparts HH and ZZZZ

E. **Like-Kind Engine Replacement**: This permit allows the permittee to replace the existing engine(s) with a like-kind engine. Replacement is subject to the following conditions.

1) The Department must be notified within 10 days after change-out of the engine.

2) The replacement engine shall operate in the same manner, provide no increase in throughput and have equal or less emissions than the engine it is replacing.

3) The date of manufacture of the replacement engine must be included in the notification. The facility must comply with any applicable federal standards (e.g. NSPS, NESHAP, MACT) triggered by the replacement.

4) The replacement engine is subject to the same state emission limits as the existing engine in addition to any NSPS or MACT emission limit that is applicable.

Applicable Requirement: NDAC 33.1-15-14-06.5.b(1)

3. **Emission Unit Limits**:

Emission Unit Description	EU	EP	Pollutant/ Parameter	Emission Limit [A]	NDAC Applicable Requirement
Two hot oil heaters	HTR-1 & HTR-2	HTR-1 & HTR-2	Opacity	20% [B]	ACP-17871 v1.0 & 33.1-15-03-02
Triethylene glycol (TEG) dehydration unit	DEHY-3	RBLR-3 [C]	Opacity	20% [B]	ACP-17871 v1.0 & 33.1-15-03-02
TEG reboiler	RBLR-3		DEHY-3 Condenser Outlet Temp.	≤ 120°F	ACP-17287 v1.0
Facility process & emergency flare	FLARE-1	FLARE-1	NO_x (24-Hr)	3,500 lb/24-hr [D] or 35 MMscfd [E]	ACP-17902 v1.0
			NO_x	40 tons/year [F]	ACP-17902 v1.0
			CO	200 tons/year [F]	ACP-17902 v1.0
			VOC	220 tons/year [F]	ACP-17902 v1.0
			Opacity	20% [G]	ACP-17902 v1.0
Back-up flare	FLARE-2	FLARE-2	Opacity	20% [G, H]	ACP-17871 v1.0 & 33.1-15-03-03.1
Tanks & dehydration units flare	FLARE-3	FLARE-3	Opacity	20% [G, H]	ACP-17871 v1.0 & 33.1-15-03-03.1
Cummins emergency generator set	GEN-1 [J]	GEN-1	Opacity	20% [B]	ACP-17871 v1.0 & 33.1-15-03-02
			Operating Hours	See Condition 1 Footnote D	33.1-15-12-02, Subpart IIII
Caterpillar emergency generator set	GEN-2 [J]	GEN-2	Opacity	20% [B]	ACP-17871 v1.0 & 33.1-15-03-02
			Operating Hours	See Condition 1 Footnote D	33.1-15-12-02, Subpart IIII
Cummins emergency generator set	GEN-3 [J]	GEN-3	Opacity	20% [B]	ACP-17871 v1.0 & 33.1-15-03-02
			Operating Hours	See Condition 1 Footnote D	33.1-15-12-02, Subpart IIII
Fugitives	FUG-1	FUG-1	VOC	See Conditions 2.C.2, 2.C.4 & 2.C.5	33.1-15-12-02, Subpart OOOOa
Facility-wide Methanol Emissions	*multiple*	*multiple*	Methanol	4.9 tons per year [K]	ACP-18215 v1.0

[A] Applies to each emission point.

B 40% opacity is permissible for not more than one six-minute period per hour.

C FLARE-3/FLARE-2 emission limits associated with EU/EP RBLR-3 and EU DEHY-3 are addressed separately in this table.

D Short-term limit for emergency flaring.

E The 3,500 lb/hr NO_x emission rate is calculated using a flare rate of 35 MMscfd; as such, gas flare rate can be used instead of calculating the lb/24-hr NO_x emission rate.

F Tons/year is a tons per 12-month rolling total limit.

G 60% opacity is permissible for not more than one six-minute period per hour; applies at all times.

H When operating EU DEHY-3 controlled by FLARE-3/FLARE-2, the permittee shall comply with the control device and work practice requirements as indicated in 40 CFR 63.11(b). Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours.

J If applicable, each engine must also comply with NO_x, CO and VOC emission limits established in 40 CFR 60, Subpart IIII.

K 12-month rolling average.

4. **Monitoring Requirements and Conditions**:

A. **Requirements**:

Emission Unit Description	EP	Pollutant/ Parameter	Monitoring Requirement (Method)	Condition Number	NDAC Applicable Requirement
Two hot oil heaters	HTR-1 & HTR-2	Opacity	Recordkeeping [1]	4.B.1	33.1-15-14-06.5.a(3)(a)
Triethylene glycol (TEG) dehydration unit	RBLR-3 & FLARE-3/ FLARE-2	DEHY-3 Condenser Outlet Temp.	Recordkeeping	4.B.2	ACP-17287 v1.0
Facility process & emergency flare	FLARE-1	NO_x (24-Hr)	Calculation & Recordkeeping	4.B.3	ACP-17902 v1.0
		NO_x	Calculation & Recordkeeping	4.B.4)a & 4.B.4)d	ACP-17902 v1.0
		CO	Calculation & Recordkeeping	4.B.4)b & 4.B.3)d	ACP-17902 v1.0
		VOC	Calculation & Recordkeeping	4.B.4)c & 4.B.3)d	ACP-17902 v1.0
		Opacity	Recordkeeping & VEO	4.B.5	33.1-15-14-06.5.a(3)(a)
Back-up flare	FLARE-2	Opacity	Recordkeeping & VEO	4.B.5	33.1-15-14-06.5.a(3)(a)

1 Monthly fuel use is recorded for NSPS Subpart Dc.

Emission Unit Description	EP	Pollutant/ Parameter	Monitoring Requirement (Method)	Condition Number	NDAC Applicable Requirement
Tanks & dehydration units flare	FLARE-3	Opacity	Recordkeeping & VEO	4.B.5	33.1-15-14-06.5.a(3)(a)
Cummins emergency generator sets	GEN-1 through GEN-3	Opacity	Recordkeeping	4.B.1	33.1-15-14-06.5.a(3)(a)
		Operating Hours	Recordkeeping	4.B.6	33.1-15-12-02, Subpart IIII
Fugitives	FUG-1	VOC	LDAR	4.B.7	33.1-15-12-02, Subpart OOOOa

B. **Monitoring Conditions**:

1) For purposes of compliance monitoring, burning of fuels outlined in Condition 2.A shall be considered credible evidence of compliance with the opacity limit. However, results from tests conducted in accordance with the test methods in 40 CFR 50, 51, 60, 61, or 75 will take precedence over the burning fuels as outlined in Condition 2.A for evidence of compliance or noncompliance with the opacity limit in the event of enforcement action.

2) The permittee shall observe and record the outlet temperature of the condenser using a thermocouple or an equivalent device at least once per day when EU DEHY-3 is operated.

a) If the outlet temperature is found to be above 120°F, the permittee shall investigate the problem within 8 hours and any malfunction shall be corrected as soon as possible.

3) 24-Hour NO_x emission rate shall be calculated via the following method:

$$NOx\ \left(\frac{lb}{24\ hr}\right) = \left[\left(Gas_{Propane} \times LHV_{Propane}\right) + \left(Gas_{Inlet} \times LHV_{Inlet}\right) + \left(Gas_{Residue} \times LHV_{Residue}\right)\right] \times EF_{NOX}$$

Where,

Gas $_{Propane}$ = amount of propane flared (MMscf/day)
Gas $_{Inlet}$ = amount of inlet gas flared (MMscf/day)
Gas $_{Residue}$ = amount of residue gas flared (MMscf/day)
LHV $_{Propane}$ = lower heating value of propane (Btu/scf)
LHV $_{Inlet}$ = lower heating value of inlet gas (Btu/scf)
LHV $_{Residue}$ = lower heating value of reside gas (Btu/scf)
EF_{NOX} = 0.068 lb/MMBtu
(AP-42 Chapter 13.5 Table C-1, Feb 2018)

4) Monthly Calculations for the 12-month rolling total (NO_x, CO and VOC):

a) Monthly NO_x emissions shall be calculated via the following method:

$$NOx\ (tons/month) = \left[\left(Gas_{Propane} \times LHV_{Propane}\right) + \left(Gas_{Inlet} \times LHV_{Inlet}\right) + \left(Gas_{Residue} \times LHV_{Residue}\right)\right] \times EF_{NOX} \times \frac{1\ ton}{2000\ lb}$$

Where,

Gas $_{Propane}$ = amount of propane flared (MMscf/month)
Gas $_{Inlet}$ = amount of inlet gas flared (MMscf/month)
Gas $_{Residue}$ = amount of residue gas flared (MMscf/month)
LHV $_{Propane}$ = lower heating value of propane (Btu/scf)
LHV $_{Inlet}$ = lower heating value of inlet gas (Btu/scf)
LHV $_{Residue}$ = lower heating value of reside gas (Btu/scf)
EF_{NOX} = 0.068 lb/MMBtu
(AP-42 Chapter 13.5, Table 13.5-1, Feb 2018)

b) Monthly CO emissions shall be calculated via the following method:

$$CO\ (tons/month) = \left[\left(Gas_{Propane} \times LHV_{Propane}\right) + \left(Gas_{Inlet} \times LHV_{Inlet}\right) + \left(Gas_{Residue} \times LHV_{Residue}\right)\right] \times EF_{CO} \times \frac{1\ ton}{2000\ lb}$$

Where,

Gas $_{Propane}$ = amount of propane flared (MMscf/month)
Gas $_{Inlet}$ = amount of inlet gas flared (MMscf/month)
Gas $_{Residue}$ = amount of residue gas flared (MMscf/month)
LHV $_{Propane}$ = lower heating value of propane (Btu/scf)
LHV $_{Inlet}$ = lower heating value of inlet gas (Btu/scf)
LHV $_{Residue}$ = lower heating value of reside gas (Btu/scf)
EF_{CO} = 0.31 lb/MMBtu
(AP-42 Chapter 13.5, Table 13.5-2, Feb 2018)

c) Monthly VOC emissions shall be calculated via the following method:

$$VOC\ (tons/month) = \left[\left(MW_{Propane} \times Gas_{Propane}\right) + \left(MW_{Inlet} \times Gas_{Inlet}\right) + \left(MW_{Residue} \times Gas_{Residue}\right)\right] \times \frac{10^6\ lb-mol}{379.4\ MMscf} \times \frac{1\ ton}{2000\ lb} \times DE$$

Where,

Gas $_{Propane}$ = amount of propane flared (MMscf/month)
Gas $_{Inlet}$ = amount of inlet gas flared (MMscf/month)
Gas $_{Residue}$ = amount of residue gas flared (MMscf/month)
MW $_{Propane}$ = molecular weight of propane (lb-mol)
MW $_{Inlet}$ = molecular weight VOCs in inlet gas (lb-mol)
MW $_{Residue}$ = molecular weight VOCs in reside gas (lb-mol)
DE = 0.02 (98% DRE of flare).
$\frac{10^6\ lb-mol}{379.4\ MMscf}$ is volume of gas at 60°C and 14.696 psia

d) By the 15th day of each month, the permittee must record NOx, CO and VOC emissions for the previous month and for the previous 12-month period (12-month rolling total) for EU FLARE-1/EP FLARE-1. These records will be kept for a period of at least five years. The Department shall be notified by the 15th day of the month in which the calculation was made anytime a limit was exceeded in any rolling 12-month period.

5) Once per week in which the flares are operated, a trained company representative (need not be certified) shall observe the emission point. If no visible emissions are observed, the date and time shall be recorded. If visible emissions are observed:

a) The permittee must investigate for a potential problem within eight hours. Any problems that are discovered must be corrected as soon as possible. If the correction of the emissions is expected to take longer than 24 hours, the permittee shall follow procedures as outlined in Condition 7.G. Following corrective maintenance, a visible emissions observation shall be made by a trained company representative (need not be certified). If no visible emissions are observed, the date and time shall be recorded. If visible emissions are observed, a formal visible emissions evaluation shall be conducted in accordance with Condition 4.B.5)b.

b) If visible emissions are observed for longer than 24 hours, the permittee shall conduct a formal visible emissions evaluation of the flare to determine if the emissions are in compliance with the applicable opacity standard. Opacity reading shall consist of three consecutive six-minute periods per day of flaring using EPA Reference Method 9 and conducted by a certified visible emissions reader.

All investigations of malfunctions and visible emissions shall be recorded. The permittee shall comply with the visible emissions emission limit and nothing in this condition shall be construed as authorizing otherwise.

6) A log shall be kept of the total hours of operation on a calendar year basis for each of the engines. Records shall be maintained to differentiate annual emergency vs. non-emergency/maintenance/etc. hours of operation.

7) For all equipment subject to the standard, the permittee shall comply with the inspection, monitoring and repair requirements of 40 CFR 60, Subpart OOOOa, as applicable.

C. In addition to the requirements outlined in Conditions 4.A and 4.B, monitoring shall be in accordance with the following requirements of 40 CFR 63, as applicable.

1) 40 CFR 63, Subpart HH, §63.773, Inspection and Monitoring Requirements

Applicable Requirement: 40 CFR 63, Subpart HH

5. **Recordkeeping Requirements**:

A. The permittee shall maintain compliance monitoring records as outlined in the Monitoring Records table that include the following information.

1) The date, place (as defined in the permit) and time of sampling or measurement.

2) The date(s) testing was performed.

3) The company, entity, or person that performed the testing.

4) The testing techniques or methods used.

5) The results of such testing.

6) The operating conditions that existed at the time of sampling or measurement.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(3)(b)[1]

Monitoring Records

Emission Unit Description	**EP**	**Pollutant/ Parameter**	**Compliance Monitoring Record**
Two hot oil heaters	HTR-1 & HTR-2	Opacity	Fuel Type Data
Triethylene glycol (TEG) dehydration unit	RBLR-3 & FLARE-3/ FLARE-2	DEHY-3 Condenser Outlet Temp.	Temperature Records Data
Facility process & emergency flare	FLARE-1	NO_x (24-Hr)	Emission Calculations Data
		NO_x	Emission Calculations Data
		CO	Emission Calculations Data
		VOC	Emission Calculations Data
		Opacity	Recordkeeping & VEO Data
Back-up flare	FLARE-2	Opacity	Recordkeeping & VEO Data
Tanks & dehydration units flare	FLARE-3	Opacity	Recordkeeping & VEO Data
Cummins emergency generator sets	GEN-1 through GEN-3	Opacity	Fuel Type Data
		Operating Hours	Hours of Operation Data
Fugitives – OOOOa	FUG-1	VOC	LDAR Inspection, Monitoring & Repair Records Data
Facility-wide Methanol Emissions		Methanol (monthly)	Recordkeeping

B. In addition to requirements outlined in Condition 5.A, recordkeeping shall be in accordance with the following requirements of NDAC 33.1-15-12, 33.1-15-22 and 40 CFR 63, as applicable:

1) NDAC 33.1-15-12:

a) Subpart A, §60.7, Notification and Recordkeeping

b) Subpart Dc, §60.48c, Reporting and Recordkeeping Requirements

c) Subpart IIII, §60.4214, Notification, Reports and Records for Owners and Operators

d) Subpart OOOOa, §60.5420a and §60.5421a, Notification, Reporting, and Recordkeeping Requirements and Additional Recordkeeping Requirements

2) NDAC 33.1-15-22 and 40 CFR 63:

a) Subpart A, §63.10, Recordkeeping and Reporting Requirements

b) Subpart HH, §63.774, Recordkeeping Requirements

Applicable Requirements: NDAC 33.1-15-12, NDAC 33.1-15-22 and 40 CFR 63, Subpart HH

C. The permittee shall retain records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sampling, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings/computer printouts of continuous monitoring instrumentation, and copies of all reports required by the permit.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(3)(b)[2]

6. **Reporting**:

A. Reporting shall be in accordance with the following requirements of NDAC 33.1-15-12, 33.1-15-22 and 40 CFR 63, as applicable.

1) NDAC 33.1-15-12:

a) Subpart A, §60.7, Notification and Recordkeeping

b) Subpart Dc, §60.48c, Reporting and Recordkeeping Requirements

c) Subpart IIII, §60.4214, Notification, Reports and Records for Owners and Operators

d) Subpart OOOOa, §60.5420a and §60.5422a, Notification, Reporting, and Recordkeeping Requirements and Additional Reporting Requirements

2) NDAC 33.1-15-22 and 40 CFR 63:

a) Subpart A, §63.10, Recordkeeping and Reporting Requirements

b) Subpart HH, §63.775, Reporting Requirements

Applicable Requirements: NDAC 33.1-15-12, NDAC 33.1-15-22 and 40 CFR 63, Subpart HH

B. The permittee shall submit a semi-annual monitoring report for all monitoring records required under Condition 5 in a format provided or approved by the Department. All instances of deviations from the permit must be identified in the report. A monitoring report shall be submitted within 45 days after June 30 and December 31 of each year.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(3)(c)[1] and [2]

C. The permittee shall submit an annual compliance certification report in accordance with NDAC 33.1-15-14-06.5.c(5) within 45 days after December 31 of each year in a format provided or approved by the Department.

Applicable Requirement: NDAC 33.1-15-14-06.5.c(5)

D. For emission units where the method of compliance monitoring is demonstrated by an EPA Test Method or a portable analyzer test, the test report shall be submitted to the Department within 60 days after completion of the test.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(6)(e)

E. The permittee shall submit an annual emission inventory report in a format provided or approved by the Department. This report shall be submitted by March 15 of each year. Insignificant units/activities listed in this permit do not need to be included in the report.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(7) and NDAC 33.1-15-23-04

7. **Facility Wide Operating Conditions**:

A. **Ambient Air Quality Standards**:

1) Particulate and gases. The permittee shall not emit air contaminants in such a manner or amount that would violate the standards of ambient air quality listed in Table 1 of NDAC 33.1-15-02, external to buildings, to which the general public has access.

2) Radioactive substances. The permittee shall not release into the ambient air any radioactive substances exceeding the concentrations specified in NDAC 33.1-10.

3) Other air contaminants. The permittee shall not emit any other air contaminants in concentrations that would be injurious to human health or well-being or unreasonably interfere with the enjoyment of property or that would injure plant or animal life.

4) Disclaimer. Nothing in any other part or section of this permit may in any manner be construed as authorizing or legalizing the emission of air contaminants in such manner that would violate the standards in Paragraphs 1), 2) and 3) of this condition.

Applicable Requirements: NDAC 33.1-15-02-04 and 40 CFR 50.1(e)

B. **Fugitive Emissions**: The release of fugitive emissions shall comply with the applicable requirements in NDAC 33.1-15-17.

Applicable Requirement: NDAC 33.1-15-17

C. **Open Burning**: The permittee may not cause, conduct, or permit open burning of refuse, trade waste, or other combustible material, except as provided for in Section 33.1-15-04-02 and may not conduct, cause, or permit the conduct of a salvage operation by open burning. Any permissible open burning under NDAC 33.1-15-04-02 must comply with the requirements of that section.

Applicable Requirement: NDAC 33.1-15-04

D. **Asbestos Renovation or Demolition**: Any asbestos renovation or demolition at the facility shall comply with emission standard for asbestos in NDAC 33.1-15-13.

Applicable Requirement: NDAC 33.1-15-13-02

E. **Requirements for Organic Compounds Gas Disposal**:

1) Any organic compounds, gases and vapors which are generated as wastes as the result of storage, refining or processing operations and which contain hydrogen sulfide shall be incinerated, flared or treated in an equally effective manner before being released into the ambient air.

2) Each flare must be equipped and operated with an automatic ignitor or a continuous burning pilot.

Applicable Requirement: NDAC 33.1-15-07-02

F. **Rotating Pumps and Compressors**: All rotating pumps and compressors handling volatile organic compounds must be equipped and operated with properly maintained seals designed for their specific product service and operating conditions.

Applicable Requirement: NDAC 33.1-15-07-01.5

G. **Shutdowns/Malfunction/Continuous Emission Monitoring System Failure**:

1) Maintenance Shutdowns. In the case of shutdown of air pollution control equipment for necessary scheduled maintenance, the intent to shut down such equipment shall be reported to the Department at least 24 hours prior to the planned shutdown provided that the air contaminating source will be operated while the control equipment is not in service. Such prior notice shall include the following:

a) Identification of the specific facility to be taken out of service as well as its location and permit number.

b) The expected length of time that the air pollution control equipment will be out of service.

c) The nature and estimated quantity of emissions of air pollutants likely to be emitted during the shutdown period.

d) Measures, such as the use of off-shift labor and equipment, that will be taken to minimize the length of the shutdown period.

e) The reasons that it would be impossible or impractical to shut down the source operation during the maintenance period.

f) Nothing in this subsection shall in any manner be construed as authorizing or legalizing the emission of air contaminants in excess of the rate allowed by this article or a permit issued pursuant to this article.

Applicable Requirement: NDAC 33.1-15-01-13.1

2) Malfunctions.

a) When a malfunction in any installation occurs that can be expected to last longer than 24 hours and cause the emission of air contaminants in violation of this article or other applicable rules and regulations, the person responsible for such installation shall notify the Department of such malfunction as soon as possible during normal working hours. The notification must contain a statement giving all pertinent facts, including the estimated duration of the breakdown. The Department shall be notified when the condition causing the malfunction has been corrected.

b) Immediate notification to the Department is required for any malfunction that would threaten health or welfare or pose an imminent danger. During normal working hours the Department can be contacted at 701-328-5188. After hours the Department can be contacted through the 24-hour state radio emergency number 1-800-472-2121. If calling from out of state, the 24-hour number is 701-328-9921.

c) Unavoidable Malfunction. The owner or operator of a source who believes any excess emissions resulted from an unavoidable malfunction shall submit a written report to the Department which includes evidence that:

[1] The excess emissions were caused by a sudden, unavoidable breakdown of technology that was beyond the reasonable control of the owner or operator.

[2] The excess emissions could not have been avoided by better operation and maintenance, did not stem from an activity or event that could have been foreseen and avoided, or planned for.

[3] To the extent practicable, the source maintained and operated the air pollution control equipment and process equipment in a manner consistent with good practice for minimizing emissions, including minimizing any bypass emissions.

[4] Any necessary repairs were made as quickly as practicable, using off-shift labor and overtime as needed and possible.

[5] All practicable steps were taken to minimize the potential impact of the excess emissions on ambient air quality.

[6] The excess emissions are not part of a recurring pattern that may have been caused by inadequate operation or maintenance, or inadequate design of the malfunctioning equipment.

The report shall be submitted within 30 days of the end of the calendar quarter in which the malfunction occurred or within 30 days of a written request by the Department, whichever is sooner.

The burden of proof is on the owner or operator of the source to provide sufficient information to demonstrate that an unavoidable equipment malfunction occurred. The Department may elect not to pursue enforcement action after considering whether excess emissions resulted from an unavoidable equipment malfunction. The Department will evaluate, on a case-by-case basis, the information submitted by the owner or operator to determine whether to pursue enforcement action.

Applicable Requirement: NDAC 33.1-15-01-13.2

3) Continuous Emission Monitoring System Failures. When a failure of a continuous emission monitoring system occurs, an alternative method for measuring or estimating emissions must be undertaken as soon as possible. The owner or operator of a source that uses an alternative method shall have the burden of demonstrating that the method is accurate. Timely repair of the emission monitoring system must be made. The provisions

of this subsection do not apply to sources that are subject to monitoring requirements in Chapter 33.1-15-21 (40 CFR 75, Acid Rain Program).

Applicable Requirement: NDAC 33.1-15-01-13.3

H. **Noncompliance Due to an Emergency**: The permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

1) An emergency occurred, and that the permittee can identify the cause(s) of the emergency;

2) The permitted facility was at the time being properly operated;

3) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and

4) The permittee submitted notice of the emergency to the Department within one working day of the time when emission limitations were exceeded longer than 24-hours due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. Those emergencies not reported within one working day, as well as those that were, will be included in the semi-annual report.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

Technology-based emission limits are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a New Source Performance Standard) rather than those established to attain a health-based air quality standard.

An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of this source, including acts of God, which requires immediate corrective action to restore normal operation, and that causes this source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

Applicable Requirement: NDAC 33.1-15-14-06.5.g

I. **Air Pollution from Internal Combustion Engines**: The permittee shall comply with all applicable requirements of NDAC 33.1-15-08-01 – Internal Combustion Engine Emissions Restricted.

Applicable Requirement: NDAC 33.1-15-08-01

J. **Prohibition of Air Pollution**:

1) The permittee shall not permit or cause air pollution, as defined in NDAC 33.1-15-01-04.

2) Nothing in any other part of this permit or any other regulation relating to air pollution shall in any manner be construed as authorizing or legalizing the creation or maintenance of air pollution.

Applicable Requirement: NDAC 33.1-15-01-15

K. **Performance Tests**:

1) The Department may reasonably require the permittee to make or have made tests, at a reasonable time or interval, to determine the emission of air contaminants from any source, for the purpose of determining whether the permittee is in violation of any standard or to satisfy other requirements of NDCC 23.1-06. All tests shall be made, and the results calculated in accordance with test procedures approved or specified by the Department including the North Dakota Department of Environmental Quality Emission Testing Guideline. All tests shall be conducted by reputable, qualified personnel. The Department shall be given a copy of the test results in writing and signed by the person responsible for the tests.

2) The Department may conduct tests of emissions of air contaminants from any source. Upon request of the Department, the permittee shall provide necessary and adequate access into stacks or ducts and such other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices, as may be necessary for proper determination of the emission of air contaminants.

Applicable Requirement: NDAC 33.1-15-01-12

3) Except for sources subject to 40 CFR 63, the permittee shall notify the Department by submitting a Proposed Test Plan, or its equivalent, at least 30 calendar days in advance of any tests of emissions of air contaminants required by the Department. The permittee shall notify the Department at least 60 calendar days in advance of any performance testing required under 40 CFR 63, unless otherwise specified by the subpart. If the permittee is unable to conduct the performance test on the scheduled date, the permittee shall notify the Department as soon as practicable when conditions warrant and shall coordinate a new test date with the Department.

Failure to give the proper notification may prevent the Department from observing the test. If the Department is unable to observe the test because of improper notification, the test results may be rejected.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(3)(a), NDAC 33.1-15-12-02 Subpart A (40 CFR 60.8), NDAC 33.1-15-13-01.2 Subpart A (40 CFR 61.13), NDAC 33.1-15-22-03 Subpart A (40 CFR 63.7)

L. **Pesticide Use and Disposal**: Any use of a pesticide or disposal of surplus pesticides and empty pesticide containers shall comply with the requirements in NDAC 33.1-15-10.

Applicable Requirements: NDAC 33.1-15-10-01 and NDAC 33.1-15-10-02

M. **Air Pollution Emergency Episodes**: When an air pollution emergency episode is declared by the Department, the permittee shall comply with the requirements in NDAC 33.1-15-11.

Applicable Requirements: NDAC 33.1-15-11-01 through NDAC 33.1-15-11-04

N. **Stratospheric Ozone Protection**: The permittee shall comply with any applicable standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for MVACs in Subpart B:

1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.

2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.

3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

4) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to Section 82.156.

Applicable Requirement: 40 CFR 82

O. **Chemical Accident Prevention**: The permittee shall comply with all applicable requirements of Chemical Accident Prevention pursuant to 40 CFR 68. The permittee shall comply with the requirements of this part no later than the latest of the following dates:

1) Three years after the date on which a regulated substance is first listed under this part; or

2) The date on which a regulated substance is first present above a threshold quantity in a process.

Applicable Requirement: 40 CFR 68

P. **Air Pollution Control Equipment**: The permittee shall maintain and operate air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. The manufacturer's recommended Operations and Maintenance (O&M) procedures, or a site-specific O&M procedure developed from the manufacturer's recommended O&M procedures, shall be followed to assure proper operation and maintenance of the equipment. The permittee shall have the O&M procedures available onsite and provide the Department with a copy when requested.

Applicable Requirement: NDAC 33.1-15-14-06.5.b(1)

Q. **Prevention of Significant Deterioration of Air Quality** (40 CFR 52.21 as incorporated by NDAC Chapter 33.1-15-15): If this facility is classified as a major stationary source under the Prevention of Significant Deterioration of Air Quality (PSD) rules, a Permit to Construct must be obtained from the Department for any project which meets the definition of a "major modification" under 40 CFR 52.21(b)(2).

If this facility is classified as a major stationary source under the PSD rules and the permittee elects to use the method specified in 40 CFR 52.21(b)(41)(ii)(a) through (c) for calculating the projected actual emissions of a proposed project, then the permittee shall comply with all applicable requirements of 40 CFR 52.21(r)(6).

Applicable Requirement: NDAC 33.1-15-15-01.2

8. **General Conditions**:

A. **Annual Fee Payment**: The permittee shall pay an annual fee, for administering and monitoring compliance, which is determined by the actual annual emissions of regulated contaminants from the previous calendar year. The Department will send a notice, identifying the amount of the annual permit fee, to the permittee of each affected installation. The fee is due within 60 days following the date of such notice. Any source that qualifies as a "small business" may petition the Department to reduce or exempt any fee required under this section. Failure to pay the fee in a timely manner or submit a certification for exemption may cause this Department to initiate action to revoke the permit.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(7) and NDAC 33.1-15-23-04

B. **Permit Renewal and Expiration**: This permit shall be effective from the date of its issuance for a fixed period of five years. The permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least six months, but no more than 18 months, prior to the date of permit expiration. The Department shall approve or disapprove the renewal application within 60 days of receipt. Unless the Department requests additional information or otherwise notifies the applicant of incompleteness, the

application shall be deemed complete. For timely and complete renewal applications for which the Department has failed to issue or deny the renewal permit before the expiration date of the previous permit, all terms and conditions of the permit, including any permit shield previously granted shall remain in effect until the renewal permit has been issued or denied. The application for renewal shall include the current permit number, description of any permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term.

Applicable Requirements: NDAC 33.1-15-14-06.4 and NDAC 33.1-15-14-06.6

C. **Transfer of Ownership or Operation**: This permit may not be transferred except by procedures allowed in Chapter 33.1-15-14 and is to be returned to the Department upon the destruction or change of ownership of the source unit(s), or upon expiration, suspension or revocation of this permit. A change in ownership or operational control of a source is treated as an administrative permit amendment if no other change in the permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Department.

Applicable Requirement: NDAC 33.1-15-14-06.6.d

D. **Property Rights**: This permit does not convey any property rights of any sort, or any exclusive privilege.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(6)(d)

E. **Submissions**:

1) Reports, test data, monitoring data, notifications, and requests for renewal shall be submitted to the Department using a format provided or approved by the Department. Physical submittals shall be submitted to:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324

2) Any application form, report or compliance certification submitted shall be certified as being true, accurate, and complete by a responsible official.

Applicable Requirement: NDAC 33.1-15-14-06.4.d

F. **Right of Entry**: Any duly authorized officer, employee or agent of the North Dakota Department of Environmental Quality may enter and inspect any property, premise or place listed on this permit or where records are kept concerning this permit at any reasonable time for the purpose of ascertaining the state of compliance with this permit and the North Dakota Air Pollution Control Rules. The Department may conduct tests and take samples of air contaminants, fuel, processing material, and other materials which affect or may affect emissions of air contaminants from any

source. The Department shall have the right to access and copy any records required by the Department's rules and to inspect monitoring equipment located on the premises.

Applicable Requirements: NDAC 33.1-15-14-06.5.c(2) and NDAC 33.1-15-01-06

G. **Compliance**: The permittee must comply with all conditions of this permit. Any noncompliance with a federally-enforceable permit condition constitutes a violation of the Federal Clean Air Act. Any noncompliance with any State enforceable condition of this permit constitutes a violation of NDCC Chapter 23.1-06 and NDAC 33.1-15. Violation of any condition of this permit is grounds for enforcement action, for permit termination, revocation and reissuance or modification, or for denial of a permit renewal application. Noncompliance may also be grounds for assessment of penalties under the NDCC 23.1-06. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(6)(a) and NDAC 33.1-15-14-06.5.a(6)(b)

H. **Duty to Provide Information**: The permittee shall furnish to the Department, within a reasonable time, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. This includes instances where an alteration, repair, expansion, or change in method of operation of the source occurs. Upon request, the permittee shall also furnish to the Department copies of records that the permittee is required to keep by this permit, or for information claimed to be confidential, the permittee may furnish such recourse directly to the Department along with a claim of confidentiality. The permittee, upon becoming aware that any relevant facts were omitted, or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. Items that warrant supplemental information submittal include, but are not limited to, changes in the ambient air boundary and changes in parameters associated with emission points (i.e., stack parameters). The permittee shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete renewal application was submitted but prior to release of a draft permit.

Applicable Requirements: NDAC 33.1-15-14-06.5.a(6)(e), NDAC 33.1-15-14-06.6.b(3) and NDAC 33.1-15-14-06.4.b

I. **Reopening for Cause**: The Department will reopen and revise this permit as necessary to remedy deficiencies in the following circumstances:

1) Additional applicable requirements under the Federal Clean Air Act become applicable to the permittee with a remaining permit term of three or more years. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.

2) The Department or the United States Environmental Protection Agency determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

3) The Department or the United States Environmental Protection Agency determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

4) Reopenings shall not be initiated before a notice of intent to reopen is provided to the permittee by the Department at least 30 days in advance of the date that this permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency. Proceedings to reopen and issue this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable.

Applicable Requirement: NDAC 33.1-15-14-06.6.f

J. **Permit Changes**: The permit may be modified, revoked, reopened, and reissued or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(6)(c)

K. **Off-Permit Changes**: A permit revision is not required for changes that are not addressed or prohibited by this permit, provided the following conditions are met:

1) No such change may violate any term or condition of this permit.

2) Each change must comply with all applicable requirements.

3) Changes under this provision may not include changes or activities subject to any requirement under Title IV or that are modifications under any provision of Title I of the Federal Clean Air Act.

4) A Permit to Construct under NDAC 33.1-15-14-02 has been issued, if required.

5) Before the permit change is made, the permittee must provide written notice to both the Department and Air Program (8P-AR), Office of Partnerships & Regulatory Assistance, US EPA Region 8, 1595 Wynkoop Street, Denver, CO 80202-1129, except for changes that qualify as insignificant activities in Section 33.1-15-14-06. This notice shall describe each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result.

6) The permittee shall record all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes. The record shall reside at the permittee's facility.

Applicable Requirement: NDAC 33.1-15-14-06.6.b(3)

L. **Administrative Permit Amendments**: This permit may be revised through an administrative permit amendment, if the revision to this permit accomplishes one of the following:

1) Corrects typographical errors.

2) Identifies a change in the name, address or phone number of any person identified in this permit or provides a similar minor administrative change at the source.

3) Requires more frequent monitoring or reporting by the permittee.

4) Allows for a change in ownership or operational control of the source where the Department determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittee has been submitted to the Department.

5) Incorporates into the Title V permit the requirements from a Permit to Construct when the review was substantially equivalent to Title V requirements for permit issuance, renewal, reopenings, revisions and permit review by the United States Environmental Protection Agency and affected state review, that would be applicable to the change if it were subject to review as a permit modification and compliance requirements substantially equivalent to Title V requirements for permit content were contained in the Permit to Construct.

6) Incorporates any other type of change which the Administrator of the United States Environmental Protection Agency has approved as being an administrative permit amendment as part of the Department's approved Title V operating permit program.

Applicable Requirement: NDAC 33.1-15-14-06.6.d

M. **Minor Permit Modification**: This permit may be revised by a minor permit modification, if the proposed permit modification meets the following requirements:

1) Does not violate any applicable requirement.

2) Does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in this permit.

3) Does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis.

4) Does not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include a federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the Federal Clean Air Act; and alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the Federal Clean Air Act.

5) Is not a modification under NDAC 33.1-15-12, 33.1-15-13, and 33.1-15-15 or any provision of Title I of the Federal Clean Air Act.

6) Is not required to be processed as a significant modification.

Applicable Requirement: NDAC 33.1-15-14-06.6.e(1)

N. **Significant Modifications**:

1) Significant modification procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative amendments. Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant. Nothing therein shall be construed to preclude the permittee from making changes consistent with this subsection that would render existing permit compliance terms and conditions irrelevant.

2) Significant permit modifications shall meet all Title V requirements, including those for applications, public participation, review by affected states, and review by the United States Environmental Protection Agency, as they apply to permit issuance and permit renewal. The Department shall complete review of significant permit modifications within nine months after receipt of a complete application.

Applicable Requirement: NDAC 33.1-15-14-06.6.e(3)

O. **Operational Flexibility**: The permittee is allowed to make a limited class of changes within the permitted facility that contravene the specific terms of this permit without applying for a permit revision, provided the changes do not exceed the emissions allowable under this permit, are not Title I modifications and a Permit to Construct is not required. This class of changes does not include changes that would violate applicable requirements; or changes to federally-enforceable permit terms or conditions that are monitoring, recordkeeping, reporting, or compliance certification requirements.

The permittee is required to send a notice to both the Department and Air Program (8P-AR), Office of Partnerships & Regulatory Assistance, US EPA Region 8, 1595 Wynkoop Street, Denver, CO 80202-1129, at least seven days in advance of any change made under this provision. The notice must describe the change, when it will occur and any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy of this permit. Any permit shield provided in this permit does not apply to changes made under this provision.

Applicable Requirement: NDAC 33.1-15-14-06.6.b(2)

P. **Relationship to Other Requirements**: Nothing in this permit shall alter or affect the following:

1) The provisions of Section 303 of the Federal Clean Air Act (emergency orders), including the authority of the administrator of the United States Environmental Protection Agency under that section.

2) The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance.

3) The ability of the United States Environmental Protection Agency to obtain information from a source pursuant to Section 114 of the Federal Clean Air Act.

4) Nothing in this permit shall relieve the permittee of the requirement to obtain a Permit to Construct.

Applicable Requirements: NDAC 33.1-15-14-06.3 and NDAC 33.1-15-14-06.5.f(3)(a), (b) and (d)

Q. **Severability Clause**: The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Applicable Requirement: NDAC 33.1-15-14-06.5.a(5)

R. **Circumvention**: The permittee shall not cause or permit the installation or use of any device of any means which conceals or dilutes an emission of air contaminants which would otherwise violate this permit.

Applicable Requirement: NDAC 33.1-15-01-08

9. **State Enforceable Only Conditions (not Federally enforceable)**:

A. **General Odor Restriction**: The permittee shall not discharge into the ambient air any objectionable odorous air contaminant which exceeds the limits established in NDAC 33.1-15-16.

Applicable Requirement: NDAC 33.1-15-16

B. **Hydrogen Sulfide Restriction**: The permittee shall not discharge into the ambient air hydrogen sulfide (H_2S) in concentrations that would be objectionable on land owned or leased by the complainant or in areas normally accessed by the general public. For the purpose of complaint resolution, two samples with concentrations greater than 0.05 parts per million (50 parts per billion) sampled at least 15 minutes apart within a two-hour period and measured in accordance with Section 33.1-15-16-04 constitute a violation.

Applicable Requirement: NDAC 33.1-15-16-04