ONEOK
ROCKIES MIDSTREAM
A SUBSIDIARY OF ONEOK PARTNERS

SUBMITTED VIA CERIS-ND

August 17, 2024

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

ONEOK ROCKIES MIDSTREAM, L.L.C.
ALAMO COMPRESSOR STATION
PERMIT TO CONSTRUCT APPLICATION

Dear Mr. Semerad:

ONEOK Rockies Midstream, L.L.C. (ORM) operates the Alamo Compressor Station, located in Williams County, pursuant to Permit No. ACP-18226. ORM submits this Permit to Construct application to update condensate tank and loading emissions and increase throughput through the facility.

Enclosed with this letter are required application forms, emissions calculations, supporting documents and previously submitted application, as well as a check in the amount of $325.00 for the application fee. If you need additional information or have any questions, please contact me at 918-588-7862 or Joshua.Hills@oneok.com.

Sincerely,

Joshua Hills
Environmental Professional

Enclosures
xc: K. Rudningen/V. Danzeisen/L. Weltikol/D. Vande Bossche/G. Roe/K. Hanner/R. Brown (.pdf)
Tulsa Environmental Files – Alamo Compressor Station – Permit Actions - ACTS

Permit to Construct Application

Alamo Compressor Station

ONEOK Rockies Midstream, L.L.C.

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Submitted to NDDEQ Division of Air Quality
August 2024

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Introduction

ONEOK Rockies Midstream, L.L.C. (ORM) operates the Alamo Compressor Station, located in Williams County, pursuant to Permit No. ACP-18226. ORM submits this Permit to Construct application to update condensate tank and loading emissions and increase throughput through the facility.

Facility Equipment

After construction, Alamo Compressor Station will consist of one (1) 2,500-hp Waukesha P9394GSI S5 compressor engine, six (6) electric-driven compressors, six (6) 400-bbl condensate storage tanks equipped with a vapor recovery unit (VRU), one (1) 200-bbl methanol tank, and one (1) emergency flare. Associated emission sources include condensate truck loading, fugitive emissions and miscellaneous vents and blowdowns.

Process Description

Alamo Compressor Station transports two-phase field gas from wells through an inlet separation vessel where free liquids (condensate and water) are removed. Natural gas then passes through a suction header that feeds the electric compressors, which boost gas pressure. The compressor units discharge natural gas into a pipeline for transmission. Condensate and water are stored in 400-bbl storage tanks until transported from the site. The condensate storage tanks are equipped with a vapor recovery unit (VRU) that vents to the suction header such that working, breathing and flashing emissions are comingled with the natural gas inlet stream and routed to the compressors. An emergency flare is utilized to combust compressor blowdowns and emergency upsets. Emissions from fugitive components and miscellaneous vents and blowdowns also occur at the facility.

Regulatory Applicability

The facility is a natural gas compressor station that falls under the North American Industrial Classification System (NAICS) code 211130 (formerly Standard Industrial Classification (SIC) 1311).

New Source Performance Standards 40 CFR Part 60 Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI-ICE) promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and various manufacture dates. The compressor engine was manufactured after July 1, 2010; therefore, is subject to the Stage 2 emissions limitations of this subpart.

New Source Performance Standards 40 CFR Part 60 Subpart OOOO, Crude Oil and Natural Gas Facilities, establishes emission standards for the following equipment that commences construction, modification, or reconstruction after August 23, 2011 and on or before September 18, 2015 at crude oil and natural gas p facilities:

1. Each single gas well;
2. Single centrifugal compressors using wet seals located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment;
3. Single reciprocating compressors located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment;
4. Single continuous bleed natural gas driven pneumatic controllers with a natural gas bleed rate greater than 6 SCFH, located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant;

5. Single continuous bleed natural gas driven pneumatic controllers located at a natural gas processing plant;
6. Single storage vessels located in the oil and natural gas production segment, natural gas processing segment, or natural gas transmission and storage segment with the potential for VOC emissions equal to or greater than 6 tons per year;
7. All equipment, except compressors, within a process unit at an onshore natural gas processing plant;
8. Sweetening units located at onshore natural gas processing plants.

The three existing electric-driven compressors were constructed after August 23, 2011 and prior to September 18, 2015; therefore, they are subject to this subpart. The three existing condensate tanks (TK-1 – TK-3) were constructed after August 23, 2011 and prior to September 18, 2015, but ORM has established a federally enforceable limit of less than 6 TPY VOC per tank; therefore, they are not subject to this subpart.

New Source Performance Standards 40 CFR Part 60 Subpart OOOOa, Crude Oil and Natural Gas Facilities, establishes emission standards for the following equipment that commences construction, modification or reconstruction after September 18, 2015 and on or before December 6, 2022 at crude oil and natural facilities:

1. Each single oil or gas well that conducts a completion following hydraulic fracturing or refracturing;
2. Single centrifugal compressors using wet seals that are not located at a well site;
3. Single reciprocating compressors not located at a well site;
4. Single continuous bleed natural gas driven pneumatic controllers with a natural gas bleed rate greater than 6 SCFH, not located at a natural gas processing plant;
5. Single continuous bleed natural gas driven pneumatic controllers located at a natural gas processing plant;
6. Single storage vessels with the potential for VOC emissions equal to or greater than 6 tons per year;
7. The group of all equipment within a process unit at an onshore natural gas processing plant;
8. Sweetening units located at onshore natural gas processing plants;
9. Pneumatic pumps at natural gas processing plants and well sites;
10. The group of fugitive emissions equipment at a well site;
11. The group of fugitive emissions equipment at a compressor station;

The proposed electric-driven compressors will be constructed after September 18, 2015; therefore, they will be subject to this subpart. The three proposed condensate tanks (TK-6 – TK-8) will be constructed after September 18, 2015, but ORM will establish a federally enforceable limit of less than 6 TPY VOC per tank; therefore, they will not be subject to this subpart. With the addition of three (3) electric-driven compressors, the facility will meet the definition of a modified compressor station and will therefore be subject to the leak detection requirements of this subpart.

New Source Performance Standards 40 CFR Part 60 Subpart OOOOb, Crude Oil and Natural Gas Facilities, establishes emission standards for the following equipment that commences construction, modification or reconstruction after December 6, 2022 at crude oil and natural gas facilities:

1. Each single oil or gas well;;
2. Single centrifugal compressors using wet or dry seals that are not located at a well site;
3. Single reciprocating compressors not located at a well site;
4. Each collection of natural gas-driven process controllers at a well site, centralized production facility, onshore natural gas processing plant, or compressor station;
5. Storage vessel batteries with either the potential for VOC emissions equal to or greater than 6 tons per year or the potential for methane emissions equal to or greater than 20 tons per year;
6. The group of all equipment within a process unit at an onshore natural gas processing plant;
7. Sweetening units;

8. The group of all natural gas-driven pumps at a well site, centralized production facility, onshore natural gas processing plant, or compressor station;
9. The group of fugitive emissions equipment at a well site, centralized production facility or compressor station;

The six existing electric-driven compressors were constructed prior to December 6, 2022; therefore, they are not subject to this subpart. ORM is increasing throughput through the station which is a modification under OOOOb, thus the tanks are subject to this subpart.. With the addition of the natural gas engine driven compressor, the facility will meet the definition of a modified compressor station under this subpart; however the facility was subject to OOOOa and is currently in compliance with the NSPS leak detection requirements. The additional natural gas engine driven compressor will also be subject to the OOOOb standards for reciprocating compressors.

National Emission Standards for Hazardous Air Pollutants 40 CFR Part 63 Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE), affects any existing, new or reconstructed stationary RICE located at a major or area source of HAP emissions. Owners and operators of new or reconstructed engines at area sources must meet the requirements of Subpart ZZZZ by complying with either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines). Based on emission calculations, this facility is a minor source of HAP. Since the compressor engine is subject to 40 CFR Part 60 Subpart JJJJ, they automatically satisfy the requirements of Subpart ZZZZ by complying with NSPS Subpart JJJJ. There are no further requirements under Subpart ZZZZ for this engine.

PERMIT APPLICATION FOR AIR CONTAMINANT SOURCES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8516 (9-2021)

SECTION A - FACILITY INFORMATION

Name of Firm or Organization ONEOK Rockies Midstream, L.L.C.		
Applicant's Name Dick Vande Bossche		
Title Vice President, ONEOK Rockies Midstream Operations	Telephone Number (406) 433-8710	E-mail Address dick.vandebossche@oneok.com
Contact Person for Air Pollution Matters Joshua Hills		
Title Environmental Professional	Telephone Number (918) 588-7862	E-mail Address Joshua.Hills@oneok.com
Mailing Address (Street & No.) 100 W. Fifth St.		
City Tulsa	State OK	ZIP Code 74103
Facility Name Alamo Compressor Station		
Facility Address (Street & No.) 13393 74th St NW		
City Alamo	State ND	ZIP Code 58830

County Williams	Coordinates NAD 83 in Decimal Degrees (to forth decimal degree) Latitude 49.49014300	 Longitude -103.57943100

Legal Description of Facility Site

Quarter	Quarter	Section	Township	Range
SW	SW	23	158N	100W

Land Area at Facility Site 15 Acres (or) _____ Sq. Ft.	MSL Elevation at Facility 2126 ft

SECTION B – GENERAL NATURE OF BUSINESS

Describe Nature of Business	North American Industry Classification System Number	Standard Industrial Classification Number (SIC)
Natural Gas Gathering	211130	1311

SECTION C – GENERAL PERMIT INFORMATION

Type of Permit? ☒ Permit to Construct (PTC) ☐ Permit to Operate (PTO)

If application is for a Permit to Construct, please provide the following data:

Planned Start Construction Date	Planned End Construction Date
10/2024	11/2024

SECTION D – SOURCE IDENTIFICATION AND CATEGORY OF EACH SOURCE INCLUDED ON THIS PERMIT APPLICATION

		Permit to Construct				Minor Source Permit to Operate						
Your Source ID Number	Source or Unit (Equipment, Machines, Devices, Boilers, Processes, Incinerators, Etc.)	New Source	Existing Source Modification	Existing Source Expansion	Existing Source Change of Location	New Source	Existing Source Initial Application	Existing Source After Modification	Existing Source After Expansion	Existing Source After Change of Location	Existing Source After Change of Ownership	Other
TK 1-8	400-bbl condensate tanks		✓									
TL-1	Truck Loading		✓									

Add additional pages if necessary

SECTION D2 – APPLICABLE REGULATIONS

Source ID No.	Applicable Regulations (NSPS/MACT/NESHAP/etc.)
Facility-wide	
TK 1-8	NSPS OOOOb

SECTION E – TOTAL POTENTIAL EMISSIONS

Pollutant	Amount (Tons Per Year)
NO_x	24.22
CO	48.44
PM	1.54

Pollutant	Amount (Tons Per Year)
PM_{10} (filterable and condensable)	1.54
$PM_{2.5}$ (filterable and condensable)	1.54
SO_2	0.28
VOC	63.20
GHG (as CO_2e)	12196.44
Largest Single HAP	1.20
Total HAPS	3.86

*If performance test results are available for the unit, submit a copy of test with this application. If manufacturer guarantee is used provide spec sheet.

SECTION F1 – ADDITIONAL FORMS

Indicate which of the following forms are attached and made part of the application

☒ Air Pollution Control Equipment (SFN 8532)	☐ Fuel Burning Equipment Used for Indirect Heating (SFN 8518)
☐ Construct/Operate Incinerators (SFN 8522)	☐ Hazardous Air Pollutant (HAP) Sources (SFN 8329)
☐ Natural Gas Processing Plants (SFN 11408)	☐ Manufacturing or Processing Equipment (SFN 8520)
☐ Glycol Dehydration Units (SFN 58923)	☒ Volatile Organic Compounds Storage Tank (SFN 8535)
☐ Flares (SFN 59652)	☐ Internal Combustion Engines and Turbines (SFN 8891)
☐ Grain, Feed, and Fertilizer Operations (SFN 8524)	☐ Oil/Gas Production Facility Registration (SFN 14334)

SECTION F2 – OTHER ATTACHMENTS INCLUDED AS PART OF THIS APPLICATION

1.	Process Description and Regulatory Applicability	4.	Emission Calculations
2.	Area Map	5.	Support Documentation
3.	Process Flow Diagram	6.	

I, the undersigned applicant, am fully aware that statements made in this application and the attached exhibits and statements constitute the application for Permit(s) to Construct and/or Operate Air Contaminant sources from the North Dakota Department of Environmental Quality and certify that the information in this application is true, correct and complete to the best of my knowledge and belief. 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 the permit is nontransferable and, if granted a permit, I will promptly notify the Department upon sale or legal transfer of this permitted establishment.

Signature	Date
DocuSigned by: Dick Vande Bossche 67B797C4193640F...	8/21/2024

PERMIT APPLICATION FOR VOLATILE ORGANIC COMPOUNDS STORAGE TANK

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8535 (3-2019)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name
ONEOK Rockies Midstream, L.L.C.	Alamo Compressor Station

SECTION B – TANK DATA

Source ID Number (From SFN 8516)
TK-1 and TK-6

Capacity	Barrels 400		Gallons 16,800	
Dimensions	Diameter 12	Height 20	Length	Width

Shape: ☒ Cylindrical ☐ Spherical ☐ Other – Specify:

Materials of Construction: (i.e., steel)

Construction: ☐ Riveted ☒ Welded ☐ Other – Specify:

Color: Tan

Condition: ☒ Good ☐ Fair ☐ Poor

Status: ☒ New Construction ☐ Alteration ☐ Existing (Give Date Constructed):

Type of Tank: ☒ Fixed Roof ☐ Variable Vapor Space ☐ Pressure (low or high) ☐ External Floating ☐ Internal Floating ☐ Other – Specify:

Type of Roof: ☐ Pan ☐ Double Deck ☐ Pontoon ☒ Other – Specify: Cone

Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal
	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Shoe Mounted Secondary Seal	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Weather Shield	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Weather Shield

SECTION C – TANK CONTENTS

Name all liquids, vapors, gases, or mixtures of such materials to be stored in the tank.
Give density (lbs per gal) or A.P.I.

Natural gas condensate

SECTION D – VAPOR DISPOSAL

☐ Atmosphere ☒ Vapor Recovery Unit ☐ Flare ☐ Enclosed Combustor ☐ Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 12.87 psia	Maximum Reid Vapor Pressure

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) 200 bbl/hr	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15)
Average Throughput (barrels per day or gallons per day) 342 bbl/day	Tank Turnovers per Year

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent	Name of Material Dissolved
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal)	

SECTION H – AIR CONTAMINANATS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
VOC	0.99 (Each)	4.35 (Each)	ProMax Process Simulation
CO2e	2.43 (Each)	10.66 (Each)	ProMax Process Simulation

* Include an estimate of greenhouse gas emissions (CO_2e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to: ☐ 40 CFR 60, Subpart K ☐ 40 CFR 60, Subpart Ka ☐ 40 CFR 60, Subpart Kb

☐ 40 CFR 60, Subpart OOOO ■ 40 CFR 60, Subpart OOOOab

Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb, OOOO, OOOOa being adhered to, where applicable?

■ Yes ☐ No – Explain:

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
918 E Divide Avenue, 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR VOLATILE ORGANIC COMPOUNDS STORAGE TANK

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8535 (3-2019)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name
ONEOK Rockies Midstream, L.L.C.	Alamo Compressor Station

SECTION B – TANK DATA

Source ID Number (From SFN 8516)
TK-2 - Tk-3 and TK-7 - TK-8 (Each)

Capacity	Barrels 400		Gallons 16,800	
Dimensions	Diameter 12	Height 20	Length	Width

Shape	■ Cylindrical	☐ Spherical	☐ Other – Specify:
Materials of Construction	(i.e., steel)		
Construction	☐ Riveted	■ Welded	☐ Other – Specify:
Color Tan			
Condition	■ Good	☐ Fair	☐ Poor
Status	■ New Construction	☐ Alteration	☐ Existing (Give Date Constructed):
Type of Tank	■ Fixed Roof ☐ Variable Vapor Space ☐ Pressure (low or high)		☐ External Floating ☐ Internal Floating ☐ Other – Specify:
Type of Roof	☐ Pan	☐ Double Deck	☐ Pontoon ■ Other – Specify: Cone

Type of Seal	Metallic Shoe Seal	Liquid Mounted Resilient Seal	Vapor Mounted Resilient Seal
	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Shoe Mounted Secondary Seal	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Weather Shield	☐ Primary Seal Only ☐ With Rim Mounted Seal ☐ With Weather Shield

SECTION C – TANK CONTENTS

Name all liquids, vapors, gases, or mixtures of such materials to be stored in the tank.
Give density (lbs per gal) or A.P.I.

Natural gas condensate

SECTION D – VAPOR DISPOSAL

☐ Atmosphere ■ Vapor Recovery Unit ☐ Flare ☐ Enclosed Combustor ☐ Other – Specify:

SECTION E – VAPOR PRESSURE DATA

psia	
Maximum True Vapor Pressure 12.87 psia	Maximum Reid Vapor Pressure

SECTION F – OPERATIONAL DATA

Maximum Filling Rate (barrels per hour or gallons per hour) 200 bbl/hr	Vapor Space Outage (See AP-42, 7.1-92, Equation 1-15)
Average Throughput (barrels per day or gallons per day) 342 bbl/day	Tank Turnovers per Year

SECTION G – SOLUTION STORAGE

If material stored is a solution, supply the following information:	
Name of Solvent	Name of Material Dissolved
Concentration of Material Dissolved (% by weight or % by volume or lbs/gal)	

SECTION H – AIR CONTAMINANATS EMITTED

Pollutant*	Maximum Pounds Per Hour	Tons Per Year	Basis and Calculations for Quantities (Attach separate sheet if needed)
VOC	0.07 (Each)	0.3 (Each)	ProMax Process Simulation

* Include an estimate of greenhouse gas emissions (CO_2e)

SECTION I – STANDARDS OF PERFORMANCE

Tank subject to: ☐ 40 CFR 60, Subpart K ☐ 40 CFR 60, Subpart Ka ☐ 40 CFR 60, Subpart Kb

☐ 40 CFR 60, Subpart OOOO ■ 40 CFR 60, Subpart OOOO~~a~~b

Are the standards of performance for new stationary sources; petroleum liquid storage vessels, 40 CFR Part 60, Subparts K, Ka, and Kb, OOOO, OOOOa being adhered to, where applicable?

■ Yes ☐ No – Explain:

Tanks will comply with the requirements under OOOOb.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
918 E Divide Avenue, 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR MANUFACTURING OR PROCESSING EQUIPMENT

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8520 (9-2021)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Equipment items operating as a functional unit may be grouped as one application	
Name of Firm or Organization ONEOK Rockies Midstream, L.L.C.	Facility Name Alamo Compressor Station

SECTION B – EQUIPMENT INFORMATION

Source ID Number (From SFN 8516) TL-1		
Type of Unit or Process (rotary dryer, cupola furnace, crusher, pelletizer, etc.) Condensate Tank Truck Loading		
Make N/A	Model N/A	Date Installed
Capacity (manufacturer's or designer's guaranteed maximum) 11,038,000 gallons	Operating Capacity (specific units) 10,500,000 gallons	
Brief description of operation of unit or process: Loading operation of the condensate storage tanks at the facility.		

SECTION C – NORMAL OPERATING SCHEDULE

Hours Per Day	Days Per Week	Weeks Per Year	Peak Production Season (if any)	Dates of Annual Shutdown
24	7	52	N/A	N/A

SECTION D – RAW MATERIALS INTRODUCED INTO UNIT OR PROCESS

Include solid fuels such as coke or coal. *Exclude* indirect heat exchangers from this section
For indirect heat exchangers, complete form SFN 8518

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
Condensate	1,198.63	1,198.63	0	10,500,000 gallons	24

SECTION E – PRODUCTS OF UNIT OR PROCESS

Include all, even those not usable because they do not meet specifications

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
Condensate	1,198.63	1,198.63	0	10,500,000 gallons	5

SECTION F – FUELS USED

Coal (Tons/Yr)	% Sulfur	% Ash	Oil (Gal/Yr)	% Sulfur	Grade No.
N/A	N/A	N/A	N/A	N/A	N/A

Natural Gas (Thousand CF/Yr)	LP Gas (Gal/Yr)	Other (Specify)
N/A	N/A	N/A

SECTION G – EMISSION POINTS

List each point separately, number each and locate on attached flow chart

Number	Stack Height (ft)	Stack Diameter (ft at top)	Gas Volume (ACFM)	Exit Temp (°F)	Gas Velocity (fps)
1	N/A	N/A	N/A	N/A	N/A

SECTION H – AIR CONTAMINANTS EMITTED

Known or Suspected - Use same identification number as above

Number	Pollutant	Amount		Basis of Estimate
		Pounds/Hr	Tons/Yr	
1	VOC	4.57	20.00	Representative Sampling
1	HAP	0.24	1.06	Representative Sampling

SECTION I – VOLATILE ORGANIC COMPOUNDS

Are any volatile organic compounds (VOCs) stored on premises? ☐ No ■ Yes – List Below
See 40 CFR 51.100(s) for classes of compounds covered

Material Stored	Size Tank (Gallons)	Vapor Control Device
Condensate	16,800	VRU

SECTION J – ORGANIC SOLVENTS

Are any organic solvents used or produced? ☒ No (None or less than 50 gal/yr) ☐ Yes – List Below

Type	Principal Use	Gallons/Yr Consumed	Gallons/Yr Produced

SECTION K – AIR POLLUTION CONTROL EQUIPMENT

Is any air pollution control equipment installed on this unit or process? ☒ No ☐ Yes
If 'Yes' attach form SFN 8532

SECTION L – MATERIAL STORAGE

Does the input material or product from this process contain finely divided material which could become airborne? ☒ No ☐ Yes

Describe storage methods used:

Storage Piles	Type of Material	Particle Diameter (Avg. or Screen Size)	Pile Size Average Tons	Pile Wetted	Pile Covered

Describe any fugitive dust problems:

Attach additional sheets if needed to explain any answers. Use separate form for each contaminant emitting process

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701)328-5188

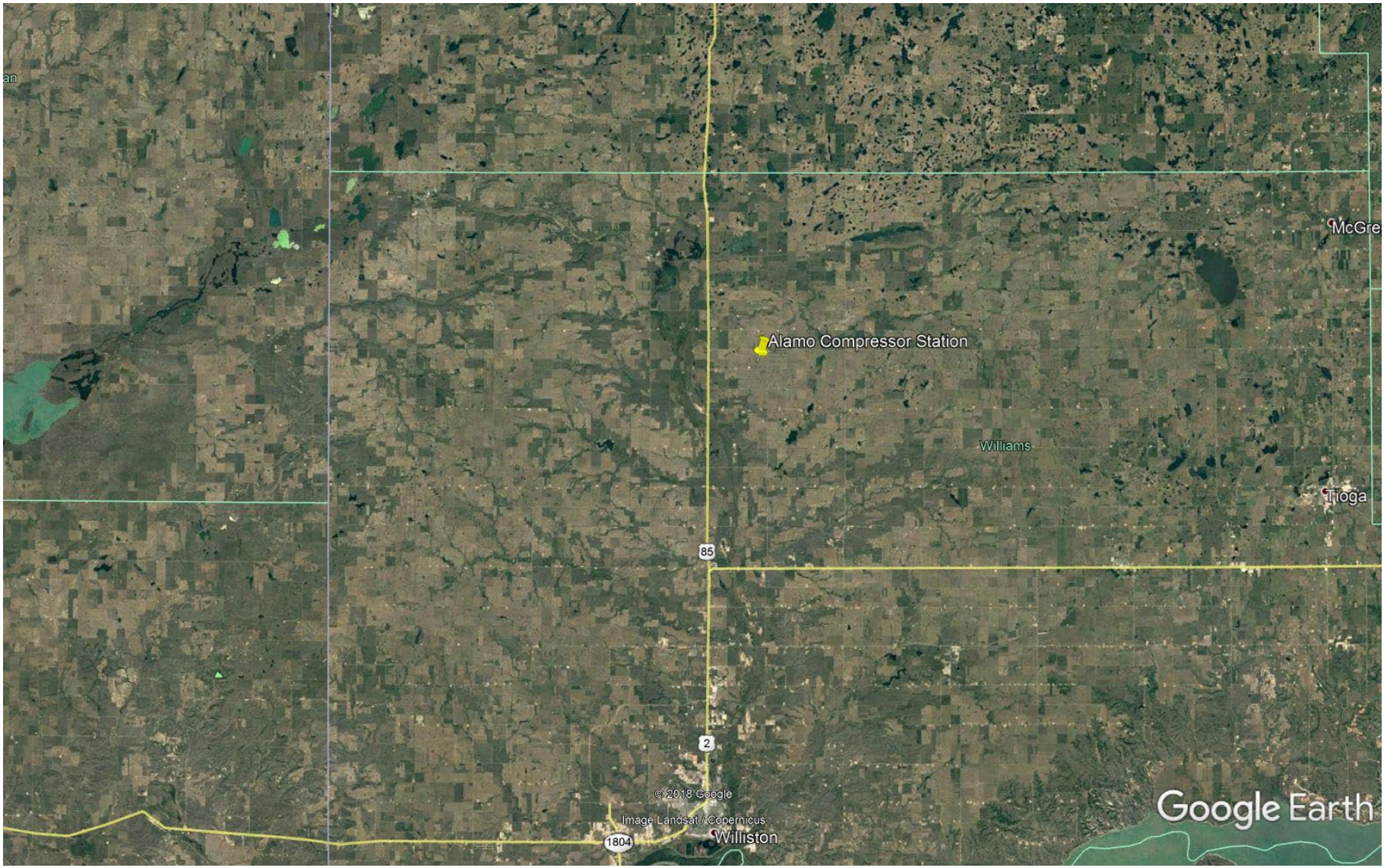

Figure Title: **Area Map**

ONEOK
ROCKIES MIDSTREAM
A SUBSIDIARY OF ONEOK PARTNERS

Figure 1.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Williams County, ND

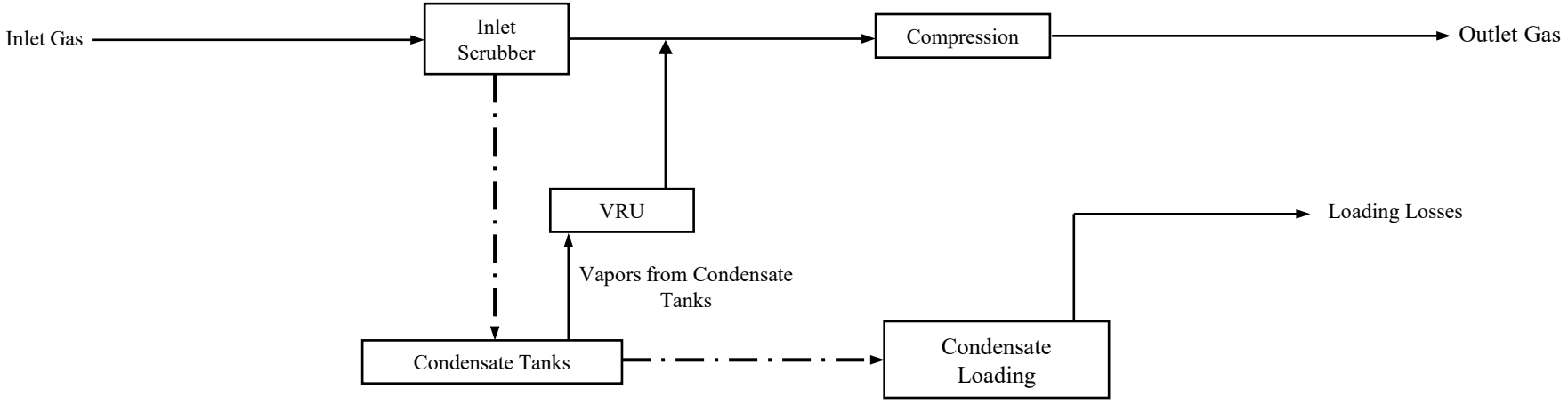

Figure Title: **Process Flow Diagram**

ONEOK ROCKIES MIDSTREAM
A SUBSIDIARY OF ONEOK PARTNERS

Figure 2.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Williams County, ND

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Facility Emissions Summary - Annual

Unit ID	Description	NOx	CO	VOC	SO_2	PM	HCHO	HAP	CO_2e
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
C-1	2,500-hp Waukesha P9394 GSI Series 5	24.09	48.18	16.86	0.05	1.53	1.20	1.67	11,428.19
TK-1	400-bbl Condensate Tank	--	--	4.35	--	--	--	0.23	10.66
TK-2	400-bbl Condensate Tank	--	--	0.30	--	--	--	0.02	0.00
TK-3	400-bbl Condensate Tank	--	--	0.30	--	--	--	0.02	0.00
TK-6	400-bbl Condensate Tank	--	--	4.35	--	--	--	0.23	10.66
TK-7	400-bbl Condensate Tank	--	--	0.30	--	--	--	0.02	0.00
TK-8	400-bbl Condensate Tank	--	--	0.30	--	--	--	0.02	0.00
TL-1	Condensate Truck Loading	--	--	20.00	--	--	--	1.06	3.61
FL-1	Emergency Flare	0.13	0.26	0.17	0.24	0.01	<0.01	<0.01	181.33
TK-4	200-bbl Methanol Tank	--	--	0.17	--	--	--	0.17	--
FUG	Fugitive Emissions	--	--	11.82	--	--	--	0.41	398.00
BD	Miscellaneous Venting and Blowdowns to Atmosphere	--	--	4.30	--	--	--	0.02	163.99
	Total =	**24.22**	**48.44**	**63.20**	**0.28**	**1.54**	**1.20**	**3.86**	**12,196.44**

Note:
Miscellaneous venting and blowdowns to atmosphere include, but are not limited to, miscellaneous planned and unplanned venting to atmosphere from pressure relief valves, startup, shut-down, maintenance, compressor blowdowns, pigging actions, and/or pneumatic controllers.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Facility Emissions Summary - Hourly

Unit ID	Description	NOx	CO	VOC	SO_2	PM	HCHO	HAP	CO_2e
		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
C-1	2,500-hp Waukesha P9394 GSI Series 5	5.50	11.00	3.85	0.01	0.35	0.28	0.38	2,609.18
TK-1	400-bbl Condensate Tank	--	--	0.99	--	--	--	0.05	2.43
TK-2	400-bbl Condensate Tank	--	--	0.07	--	--	--	<0.01	0.00
TK-3	400-bbl Condensate Tank	--	--	0.07	--	--	--	<0.01	0.00
TK-6	400-bbl Condensate Tank	--	--	0.99	--	--	--	0.05	2.43
TK-7	400-bbl Condensate Tank	--	--	0.07	--	--	--	<0.01	0.00
TK-8	400-bbl Condensate Tank	--	--	0.07	--	--	--	<0.01	0.00
TL-1	Condensate Truck Loading	--	--	4.57	--	--	--	0.24	0.82
FL-1	Emergency Flare	0.18	0.75	0.65	0.94	<0.01	<0.01	<0.01	328.36
TK-4	200-bbl Methanol Tank	--	--	--	--	--	--	--	--
FUG	Fugitive Emissions	--	--	2.70	--	--	--	0.09	90.87
BD	Miscellaneous Venting and Blowdowns to Atmosphere	--	--	--	--	--	--	--	--
	Total =	**5.68**	**11.75**	**14.02**	**0.95**	**0.35**	**0.28**	**0.84**	**3,034.09**

Note:
1) Hourly emissions from tanks and flares are estimates based on average values.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Facility Analyses

Component	Molecular Weight	Stream 1 Inlet Gas				Stream 2 Condensate				Stream 3 Flash Gas			
		Mole %	Equiv. Wt. Basis	Weight %	HC Weight %	Mole %	Equiv. Wt. Basis	Weight %	HC Weight %	Mole %	Equiv. Wt. Basis	Weight %	HC Weight %
Hydrogen Sulfide	34.081	0.3000%	0.10	0.43%	-	0.0000%	0.00	0.00%	-	0.0000%	0.00	0.00%	-
Carbon Dioxide	44.010	0.7310%	0.32	1.34%	-	0.0085%	0.00	0.00%	-	0.5290%	0.23	0.57%	-
Nitrogen	28.013	2.0350%	0.57	2.38%	-	0.0016%	0.00	0.00%	-	1.0700%	0.30	0.73%	-
Helium	4.003	0.0000%	0.00	0.00%	-	0.0000%	0.00	0.00%	-	0.0000%	0.00	0.00%	-
Oxygen	31.999	0.0000%	0.00	0.00%	-	0.0000%	0.00	0.00%	-	0.0000%	0.00	0.00%	-
Methane	16.043	61.9740%	9.94	41.46%	43.26%	0.1040%	0.02	0.02%	0.02%	19.6000%	3.14	7.67%	7.77%
Ethane	30.069	21.6850%	6.52	27.19%	28.37%	0.9600%	0.29	0.32%	0.32%	24.9000%	7.49	18.26%	18.50%
Propane	44.096	9.4690%	4.18	17.41%	18.17%	3.7900%	1.67	1.85%	1.85%	26.0000%	11.46	27.96%	28.32%
i-Butane	58.122	0.8550%	0.50	2.07%	2.16%	1.4300%	0.83	0.92%	0.92%	3.5400%	2.06	5.02%	5.08%
n-Butane	58.122	2.1890%	1.27	5.31%	5.54%	7.9500%	4.62	5.11%	5.11%	12.9000%	7.50	18.28%	18.52%
i-Pentane	72.149	0.2650%	0.19	0.80%	0.83%	5.2500%	3.79	4.19%	4.19%	3.2300%	2.33	5.68%	5.76%
n-Pentane	72.149	0.3370%	0.24	1.01%	1.06%	11.2000%	8.08	8.93%	8.93%	4.9500%	3.57	8.71%	8.82%
n-Hexane	86.175	0.0240%	0.02	0.09%	0.09%	19.4000%	16.72	18.48%	18.48%	2.2100%	1.90	4.64%	4.71%
Other Hexanes	86.175	0.1022%	0.09	0.37%	0.38%	0.0000%	0.00	0.00%	0.00%	0.0000%	0.00	0.00%	0.00%
Heptanes	100.202	0.0110%	0.01	0.05%	0.05%	23.1000%	23.15	25.59%	25.59%	0.7540%	0.76	1.84%	1.87%
Benzene	78.114	0.0053%	0.00	0.02%	0.02%	0.6450%	0.50	0.56%	0.56%	0.0756%	0.06	0.14%	0.15%
Toluene	92.141	0.0046%	0.00	0.02%	0.02%	0.9990%	0.92	1.02%	1.02%	0.0300%	0.03	0.07%	0.07%
Ethylbenzene	106.167	0.0002%	0.00	0.00%	0.00%	0.5110%	0.54	0.60%	0.60%	0.0045%	0.00	0.01%	0.01%
Xylenes	106.167	0.0012%	0.00	0.01%	0.01%	0.6780%	0.72	0.80%	0.80%	0.0046%	0.00	0.01%	0.01%
Octanes	114.229	0.0077%	0.01	0.04%	0.04%	14.9000%	17.02	18.81%	18.82%	0.1360%	0.16	0.38%	0.38%
2,2,4-Trimethylpentane	114.231	0.0043%	0.00	0.02%	0.02%	2.8605%	3.27	3.61%	3.61%	0.0000%	0.00	0.00%	0.00%
Nonanes	128.255	0.0000%	0.00	0.00%	0.00%	3.6800%	4.72	5.22%	5.22%	0.0094%	0.01	0.03%	0.03%
Decanes	142.282	0.0000%	0.00	0.00%	0.00%	2.5324%	3.60	3.98%	3.98%	0.0000%	0.00	0.00%	0.00%
Totals =		100.0005%	23.98	100.00%	100.00%	100.0000%	90.46	100.00%	100.00%	99.9431%	41.01	100.00%	100.00%
		Total HC =	**22.98**	**Total VOC =**	**28.38%**	**Total HC =**	**90.46**	**Total VOC =**	**99.66%**	**Total HC =**	**40.48**	**Total VOC =**	**73.73%**
				Total HAP =	**0.15%**			**Total HAP =**	**25.06%**			**Total HAP =**	**4.94%**

Notes:
1) Representative gas analysis. Condensate and flash gas compositions calculated with ProMax process simulation.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Tank Information

Equipment Information		
	TK-1 - TK-3	**TK-6 - TK-8**
Contents	Condensate	Condensate
Number of Tanks	3	3
Capacity (bbl)	400	400
Capacity (gal)	16,800	16,800
Total Throughput (bbl/yr)	125,000	125,000
Total Throughput (gal/yr)	5,250,000	5,250,000
Total Throughput (bbl/d)	342	342
Per Tank Throughput (bbl/yr)[1]	125,000	125,000
Per Tank Throughput (gal/yr)[1]	5,250,000	5,250,000
Per Tank Throughput (bbl/d)	342	342
VOC Tank Working Emission Factor (lb VOC/bbl)[2]	0.07	0.07
VOC Tank Breathing Losses (lb/yr)[2]	3,738.00	3,738.00
Flash Calculation Method	Process Simulation	Process Simulation
VOC Tank Flashing Emission Factor (lb VOC/bbl)[2]	1.296	1.296
CO_2 Tank Flashing Emission Factor (lb CO_2/bbl)[2]	0.010	0.010
CH_4 Tank Flashing Emission Factor (lb CH_4/bbl)[2]	0.136	0.136
Control Type	Vapor Recovery Unit	Vapor Recovery Unit
Capture/Control Efficiency[3]	95%	95%

Notes:
1) The six tanks are connected in two series of three tanks; therefore, half of station total condensate throughput flows through each tank in each series and only flashes at the inlet to the first tank in each series (TK-1 and TK-6).
2) Working and breathing calculated using EPA TANKS 4.0.9d. Flashing calculated wiith site specific ProMax process simulation. See attached reports and following tables.
3) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: TK-1

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[1]	
VOC[2]	4.08	TPY	+	1.87	TPY	+	81.00	TPY	=	**86.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**19.85**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	1.30	TPY	=	**1.39**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.32**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.73	TPY	=	**0.78**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.18**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	1.05	TPY	=	**1.13**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.26**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.08	TPY	=	**0.09**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.41	TPY	=	**0.43**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.10**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.73	TPY	=	**0.78**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.18**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.63	TPY	=	**0.63**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.14**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	8.50	TPY	=	**8.50**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.94**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	4.05	TPY	=	**4.35**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.99**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.06	TPY	=	**0.07**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.04	TPY	=	**0.04**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.05	TPY	=	**0.06**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	<0.01	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.02	TPY	=	**0.02**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.04	TPY	=	**0.04**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.03	TPY	=	**0.03**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.01**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.43	TPY	=	**0.43**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.10**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
2) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
3) Per API Chapter 5: CH_4 and CO_2 emissions from crude storage tanks occur mainly as a result of flashing; working and breathing loss emissions of these gases are very small in production and virtually non-existent in downstream segments. Unless site-specific data indicate otherwise, working and breathing losses are presumed to contain no CH_4 or CO_2 .
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: **TK-2**

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses[1]			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[2]	
VOC[3]	4.08	TPY	+	1.87	TPY	+	0.00	TPY	=	**5.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.36**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	0.00	TPY	=	**0.10**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.08**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.00	TPY	=	**0.03**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	0.00	TPY	=	**0.30**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.07**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2000	lb/ton	=	**<0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Tanks are connected in series; therefore, station total condensate throughput flows through each tank and only flashes at the inlet to the first tank.
2) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
3) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: **TK-3**

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses[1]			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[2]	
VOC[3]	4.08	TPY	+	1.87	TPY	+	0.00	TPY	=	**5.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.36**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	0.00	TPY	=	**0.10**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.08**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.00	TPY	=	**0.03**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	0.00	TPY	=	**0.30**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.07**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2000	lb/ton	=	**<0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Tanks are connected in series; therefore, station total condensate throughput flows through each tank and only flashes at the inlet to the first tank.
2) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
3) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: TK-6

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[1]	
VOC[2]	4.08	TPY	+	1.87	TPY	+	81.00	TPY	=	**86.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**19.85**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	1.30	TPY	=	**1.39**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.32**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.73	TPY	=	**0.78**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.18**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	1.05	TPY	=	**1.13**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.26**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.08	TPY	=	**0.09**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.41	TPY	=	**0.43**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.10**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.73	TPY	=	**0.78**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.18**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.63	TPY	=	**0.63**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.14**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	8.50	TPY	=	**8.50**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.94**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	4.05	TPY	=	**4.35**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.99**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.06	TPY	=	**0.07**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.04	TPY	=	**0.04**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.05	TPY	=	**0.06**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	<0.01	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.02	TPY	=	**0.02**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.04	TPY	=	**0.04**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.03	TPY	=	**0.03**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.01**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.43	TPY	=	**0.43**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.10**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
2) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
3) Per API Chapter 5: CH_4 and CO_2 emissions from crude storage tanks occur mainly as a result of flashing; working and breathing loss emissions of these gases are very small in production and virtually non-existent in downstream segments. Unless site-specific data indicate otherwise, working and breathing losses are presumed to contain no CH_4 or CO_2 .
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: TK-7

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses[1]			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[2]	
VOC[3]	4.08	TPY	+	1.87	TPY	+	0.00	TPY	=	**5.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.36**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	0.00	TPY	=	**0.10**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.08**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.00	TPY	=	**0.03**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	0.00	TPY	=	**0.30**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.07**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2000	lb/ton	=	**<0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Tanks are connected in series; therefore, station total condensate throughput flows through each tank and only flashes at the inlet to the first tank.
2) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
3) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Tank Emissions Calculations

Unit ID: **TK-8**

Uncontrolled Emissions

Pollutant	Working Losses			Breathing Losses			Flashing Losses[1]			Annual Emissions			Operating Hours			Conversion			Hourly Emissions[2]	
VOC[3]	4.08	TPY	+	1.87	TPY	+	0.00	TPY	=	**5.95**	**TPY**	/	8,760	X	2,000	lb/ton	=	**1.36**	**lb/hr**
n-Hexane	0.07	TPY	+	0.03	TPY	+	0.00	TPY	=	**0.10**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Benzene	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Toluene	0.05	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.08**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	0.02	TPY	+	0.01	TPY	+	0.00	TPY	=	**0.03**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
Other HAP	0.04	TPY	+	0.02	TPY	+	0.00	TPY	=	**0.05**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.01**	**lb/hr**
CO_2[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**
CH_4[3]	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.00**	**lb/hr**

Controlled Emissions[4]

Pollutant	Working Losses			Breathing Losses			Flashing Losses			Annual Emissions			Operating Hours			Conversion			Hourly Emissions	
VOC	0.20	TPY	+	0.09	TPY	+	0.00	TPY	=	**0.30**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.07**	**lb/hr**
n-Hexane	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Benzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Toluene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Ethylbenzene	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Other HAP	<0.01	TPY	+	<0.01	TPY	+	0.00	TPY	=	**<0.01**	**TPY**	/	8,760	X	2000	lb/ton	=	**<0.01**	**lb/hr**
CO_2	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**
CH_4	-	TPY	+	-	TPY	+	0.00	TPY	=	**0.00**	**TPY**	/	8,760	X	2000	lb/ton	=	**0.00**	**lb/hr**

Estimated HAP Composition (% by Weight)[5]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Tanks are connected in series; therefore, station total condensate throughput flows through each tank and only flashes at the inlet to the first tank.
2) Due to variable short-term emission rates, average lb/hr based on annual emissions shown for reference only.
3) VOC TPY working and breathing losses calculated from lb/yr TANKS 4.0.9d results as follows: lb/yr * 1/2000 = TPY. VOC, CO_2 and CH_4 TPY flashing losses calculated with ProMax flash emission factor as follows: lb/bbl factor * annual bbl throughput * 1/2000 = TPY.
4) Capture/control efficiency is based on the VRU controlling 100% of captured vapors when operating, plus 5% downtime.
5) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Truck Loading Information

Equipment Information	
	TL-1
Contents Loaded	Condensate
Fill Method	Submerged
Type of Service	Dedicated
Mode of Operation	Normal
Saturation Factor	0.6
Throughput (1000 gal/yr)	10,500
Throughput (10^6 gal/yr)	10.500
Maximum Loading Rate (gal/hr)	7,500
VOC Emission Factor (lb/bbl)	0.16
ProMax Flash Gas CH_4 wt%	7.768%
ProMax Flash Gas CO_2 wt%	0.568%
Control Type	None

Notes:
1) Properties based on EPA TANKS 4.0.9d for conservative ONEOK composition.
2) AP-42 5.2-4 Eq.1: Loading Loss (lb/1000 gal) = 12.46 *S*P*M/T.
3) API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry, Table 5-12. Emission factor converted as follows: tonne/10^6 gal * 1.10231131 ton/tonne.

ONEOK Rockies Midstream, L.L.C.
Alamo Compressor Station
Condensate Truck Loading Emissions Calculations

Unit ID: TL-1

Uncontrolled Emissions

Pollutant	Emission Factor			Throughput			Conversion			Annual Emissions			Operating Hours		Conversion			Average Hourly Emissions[1]	
VOC	0.16	lb/bbl	X	250,000	bbl/yr	X	0.0005	ton/lb	=	**20.00**	**TPY**	/	8,760	X	2,000	lb/ton	=	**4.57**	**lb/hr**
n-Hexane	-	-	-	-	-	-	-	-	=	**0.32**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.07**	**lb/hr**
Benzene	-	-	-	-	-	-	-	-	=	**0.18**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.04**	**lb/hr**
Toluene	-	-	-	-	-	-	-	-	=	**0.26**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.06**	**lb/hr**
Ethylbenzene	-	-	-	-	-	-	-	-	=	**0.02**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
Xylenes	-	-	-	-	-	-	-	-	=	**0.10**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.02**	**lb/hr**
Other HAP	-	-	-	-	-	-	-	-	=	**0.18**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.04**	**lb/hr**
CO_2	0.18	ton/10^6 gal	X	10.500	10^6 gal/yr	X	0.568%	Wt%	=	**0.01**	**TPY**	/	8,760	X	2,000	lb/ton	=	**<0.01**	**lb/hr**
CH_4	0.18	ton/10^6 gal	X	10.500	10^6 gal/yr	X	7.768%	Wt%	=	**0.14**	**TPY**	/	8,760	X	2,000	lb/ton	=	**0.03**	**lb/hr**

Estimated HAP Composition (% by Weight)[2]

Pollutant	Wt%
n-Hexane	1.600%
Benzene	0.900%
Toluene	1.300%
Ethylbenzene	0.100%
Xylenes	0.500%
Other HAP	0.900%
Total HAP =	**5.300%**

Notes:
1) Due to variable short-term emission rates, average lb/hr rate shown for reference only.
2) Table 11.3-2, "HAP Percent of VOC Emissions," Gasoline Marketing (Stage I and Stage II), EPA Document Revised Final 1/2001.