XTO Energy Inc.
810 Houston Street
Fort Worth, TX 76102-6298
(817) 870-2800
(817) 870-1671 Fax

March 28, 2018

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

Via electronic submittal to R8AirPermitting@epa.gov

RE:
XTO Energy Inc.
Wild Horse Bench Site
Permit # SMNSR-UO-000124-2012.001
2017 Annual Emission Inventory
Uintah County, Utah

To Whom It May Concern:

XTO Energy, Inc. respectfully submits the attached documentation regarding the 2017 Annual Emission Report for the Wild Horse Bench Site – NSR Permit # SMNSR-UO-000124-2012.001. This report and the associated attachments satisfy the reporting requirements for Permit # SMNSR-UO-000124-2012.001, Paragraph E.1.

The 2017 Annual Emissions for the XTO Energy Inc. – Wild Horse Bench Site which includes the onsite natural gas dehydration system contains the following attached documents:

- GRI GLYCalc, Version 4.0 Dehydrator Emission Simulation for the Wild Horse Bench Triethylene Glycol (TEG) Dehydration Unit for the Calendar Year 2017.
- Summary Table of 2017 Annual Emissions for the TEG Glycol System.
- 2016 Extended Gas Analysis for the Wild Horse Bench Dehydration System.

Should you have any questions or require additional information, please feel free to contact me at 817-885-6872 or ethan.boor@xtoenergy.com.

Sincerely,
XTO Energy, Inc.

Ethan Boor
Environmental Engineer

WCA/encl

2017 ANNUAL TEG DEHY EMISSIONS

Company: XTO Energy, Inc.
Facility Name: Wild Horse Bench Compressor Station
Facility Location: Uintah County, Utah
Source: TEG Dehydrator 1 - WHD-1

Rating: 1.30 MMSCFD
Control Equipment: > 95% DRE Thermal Oxidizer
Hours of Operation: 8760 hrs

Unit Description	Gas Flow Rate (MMSCFD)	VOCs (TPY)	Benzene (TPY)	Toluene (TPY)	Ethylbenzene (TPY)	Xylenes (TPY)	Total BTEX (TPY)
TEG Dehydrator 1 - WHD-1	1.30	30.7739	4.7597	6.0037	0.1943	1.4392	12.3969
Flash Tank Off Gas							
TOTAL UNCONTROLLED		30.77	4.76	6.00	0.19	1.44	12.40
TOTAL CONTROLLED		1.54	0.24	0.30	0.010	0.07	0.62

TO Control efficiency = 95.00% Regenerator Still Vent

Uncontrolled annual % 0.0%
Controlled annual % 100.0% Flash Gas

Note 1: Used GRI-GLYCalc 4.0 to calculate emissions

PERMITTED EMISSION S	MAXIMUM PERMITTED EMISSIONS (TPY)	2017 ANNUAL CALCULATED EMISSIONS (TPY)
VOC's	7.3	1.54
TOTAL BTEX	3.6	0.62

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: WHB DEHY 2017 Annual Report
File Name: W:\EHS\Environmental\Air\Areas of Operation\Utah_MSO\Wild Horse Bench\Compliance\2016 Annual Report\WHB 2016 Annual EI.ddf
Date: March 28, 2018

DESCRIPTION:

Description: 2017 Annual Emission Calculation
Permit No. SMNSR-UO-000124-2012.001

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.3059	7.343	1.3400
Ethane	0.4875	11.700	2.1353
Propane	0.6813	16.352	2.9842
Isobutane	0.2804	6.729	1.2281
n-Butane	0.5141	12.338	2.2517
Isopentane	0.2174	5.218	0.9523
n-Pentane	0.2277	5.464	0.9972
n-Hexane	0.1861	4.466	0.8150
Cyclohexane	0.4955	11.893	2.1705
Other Hexanes	0.1966	4.718	0.8610
Heptanes	0.5149	12.358	2.2554
Methylcyclohexane	0.7128	17.107	3.1220
2,2,4-Trimethylpentane	0.0117	0.282	0.0514
Benzene	1.0867	26.081	4.7597
Toluene	1.3707	32.897	6.0037
Ethylbenzene	0.0444	1.064	0.1943
Xylenes	0.3286	7.886	1.4392
C8+ Heavies	0.1571	3.770	0.6881
Total Emissions	7.8195	187.667	34.2492
Total Hydrocarbon Emissions	7.8195	187.667	34.2492
Total VOC Emissions	7.0260	168.624	30.7739
Total HAP Emissions	3.0282	72.676	13.2634
Total BTEX Emissions	2.8303	67.928	12.3969

FLASH GAS EMISSIONS

Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	3.2387	77.729	14.1855
Ethane	1.3800	33.120	6.0444

Propane	0.9556	22.935	4.1857
Isobutane	0.2536	6.087	1.1109
n-Butane	0.3518	8.443	1.5409
Isopentane	0.1270	3.049	0.5564
n-Pentane	0.1058	2.539	0.4634
n-Hexane	0.0465	1.117	0.2038
Cyclohexane	0.0292	0.700	0.1278
Other Hexanes	0.0651	1.563	0.2852
Heptanes	0.0605	1.451	0.2649
Methylcyclohexane	0.0324	0.778	0.1419
2,2,4-Trimethylpentane	0.0028	0.067	0.0122
Benzene	0.0093	0.223	0.0406
Toluene	0.0073	0.174	0.0318
Ethylbenzene	0.0001	0.003	0.0006
Xylenes	0.0007	0.017	0.0030
C8+ Heavies	0.0016	0.038	0.0069
Total Emissions	6.6680	160.032	29.2059
Total Hydrocarbon Emissions	6.6680	160.032	29.2059
Total VOC Emissions	2.0493	49.183	8.9760
Total HAP Emissions	0.0667	1.600	0.2920
Total BTEX Emissions	0.0174	0.417	0.0761

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages:	1.25	
Calculated Dry Gas Dew Point:	1.17	lbs. H2O/MMSCF
Temperature:	84.0	deg. F
Pressure:	1030.0	psig
Dry Gas Flow Rate:	1.3000	MMSCF/day
Glycol Losses with Dry Gas:	0.0159	lb/hr
Wet Gas Water Content:	Saturated	
Calculated Wet Gas Water Content:	35.92	lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	63.72	gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	3.23%	96.77%
Carbon Dioxide	97.52%	2.48%
Nitrogen	99.78%	0.22%
Methane	99.82%	0.18%
Ethane	99.46%	0.54%
Propane	99.23%	0.77%
Isobutane	98.98%	1.02%
n-Butane	98.67%	1.33%
Isopentane	98.74%	1.26%
n-Pentane	98.36%	1.64%
n-Hexane	97.47%	2.53%

Cyclohexane	88.60%	11.40%
Other Hexanes	98.05%	1.95%
Heptanes	95.64%	4.36%
Methylcyclohexane	88.43%	11.57%
2,2,4-Trimethylpentane	98.22%	1.78%
Benzene	40.25%	59.75%
Toluene	31.29%	68.71%
Ethylbenzene	26.85%	73.15%
Xylenes	19.79%	80.21%
C8+ Heavies	92.52%	7.48%

FLASH TANK

Flash Control: Recycle/recompression
Flash Temperature: 120.0 deg. F
Flash Pressure: 90.0 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.98%	0.02%
Carbon Dioxide	53.60%	46.40%
Nitrogen	8.59%	91.41%
Methane	8.63%	91.37%
Ethane	26.10%	73.90%
Propane	41.62%	58.38%
Isobutane	52.50%	47.50%
n-Butane	59.37%	40.63%
Isopentane	63.30%	36.70%
n-Pentane	68.43%	31.57%
n-Hexane	80.10%	19.90%
Cyclohexane	94.62%	5.38%
Other Hexanes	75.37%	24.63%
Heptanes	89.54%	10.46%
Methylcyclohexane	95.83%	4.17%
2,2,4-Trimethylpentane	81.17%	18.83%
Benzene	99.20%	0.80%
Toluene	99.51%	0.49%
Ethylbenzene	99.73%	0.27%
Xylenes	99.82%	0.18%
C8+ Heavies	99.12%	0.88%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	89.95%	10.05%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%

Isopentane	0.79%	99.21%
n-Pentane	0.73%	99.27%
n-Hexane	0.62%	99.38%
Cyclohexane	3.38%	96.62%
Other Hexanes	1.33%	98.67%
Heptanes	0.56%	99.44%
Methylcyclohexane	4.17%	95.83%
2,2,4-Trimethylpentane	1.85%	98.15%
Benzene	5.04%	94.96%
Toluene	7.94%	92.06%
Ethylbenzene	10.43%	89.57%
Xylenes	12.92%	87.08%
C8+ Heavies	12.11%	87.89%

STREAM REPORTS:

WET GAS STREAM

Temperature: 84.00 deg. F
Pressure: 1044.70 psia
Flow Rate: 5.44e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	7.57e-002	1.95e+000
Carbon Dioxide	8.39e-001	5.29e+001
Nitrogen	4.52e-001	1.81e+001
Methane	8.50e+001	1.95e+003
Ethane	8.01e+000	3.45e+002
Propane	3.38e+000	2.13e+002
Isobutane	6.29e-001	5.24e+001
n-Butane	7.79e-001	6.49e+001
Isopentane	2.64e-001	2.73e+001
n-Pentane	1.97e-001	2.04e+001
n-Hexane	7.45e-002	9.21e+000
Cyclohexane	3.82e-002	4.60e+000
Other Hexanes	1.09e-001	1.34e+001
Heptanes	9.19e-002	1.32e+001
Methylcyclohexane	4.58e-002	6.44e+000
2,2,4-Trimethylpentane	5.00e-003	8.18e-001
Benzene	1.64e-002	1.83e+000
Toluene	1.52e-002	2.01e+000
Ethylbenzene	4.00e-004	6.08e-002
Xylenes	2.70e-003	4.10e-001
C8+ Heavies	8.69e-003	2.12e+000
Total Components	100.00	2.80e+003

DRY GAS STREAM

Temperature: 84.00 deg. F
Pressure: 1044.70 psia
Flow Rate: 5.42e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	2.46e-003	6.32e-002
Carbon Dioxide	8.22e-001	5.16e+001
Nitrogen	4.53e-001	1.81e+001
Methane	8.51e+001	1.95e+003
Ethane	8.00e+000	3.43e+002
Propane	3.36e+000	2.12e+002
Isobutane	6.25e-001	5.19e+001
n-Butane	7.72e-001	6.40e+001
Isopentane	2.62e-001	2.70e+001
n-Pentane	1.95e-001	2.01e+001
n-Hexane	7.29e-002	8.97e+000
Cyclohexane	3.40e-002	4.08e+000
Other Hexanes	1.07e-001	1.32e+001
Heptanes	8.83e-002	1.26e+001
Methylcyclohexane	4.06e-002	5.69e+000
2,2,4-Trimethylpentane	4.93e-003	8.03e-001
Benzene	6.62e-003	7.38e-001
Toluene	4.77e-003	6.28e-001
Ethylbenzene	1.08e-004	1.63e-002
Xylenes	5.36e-004	8.12e-002
C8+ Heavies	8.07e-003	1.96e+000
Total Components	100.00	2.79e+003

LEAN GLYCOL STREAM

Temperature: 84.00 deg. F
Flow Rate: 2.00e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	1.11e+003
Water	1.50e+000	1.69e+001
Carbon Dioxide	1.17e-011	1.31e-010
Nitrogen	3.48e-013	3.92e-012
Methane	1.06e-017	1.19e-016
Ethane	7.83e-008	8.81e-007
Propane	5.92e-009	6.66e-008
Isobutane	1.42e-009	1.60e-008
n-Butane	1.91e-009	2.15e-008
Isopentane	1.54e-004	1.73e-003
n-Pentane	1.49e-004	1.68e-003
n-Hexane	1.04e-004	1.17e-003
Cyclohexane	1.54e-003	1.73e-002
Other Hexanes	2.35e-004	2.64e-003
Heptanes	2.57e-004	2.89e-003
Methylcyclohexane	2.76e-003	3.10e-002
2,2,4-Trimethylpentane	1.96e-005	2.21e-004
Benzene	5.12e-003	5.77e-002
Toluene	1.05e-002	1.18e-001
Ethylbenzene	4.59e-004	5.16e-003
Xylenes	4.33e-003	4.88e-002
C8+ Heavies	1.92e-003	2.16e-002
Total Components	100.00	1.13e+003

RICH GLYCOL STREAM

Temperature: 84.00 deg. F
Pressure: 1044.70 psia
Flow Rate: 2.04e+000 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.69e+001	1.11e+003
Water	1.64e+000	1.88e+001
Carbon Dioxide	1.15e-001	1.31e+000
Nitrogen	3.44e-003	3.93e-002
Methane	3.10e-001	3.54e+000
Ethane	1.63e-001	1.87e+000
Propane	1.43e-001	1.64e+000
Isobutane	4.67e-002	5.34e-001
n-Butane	7.57e-002	8.66e-001
Isopentane	3.03e-002	3.46e-001
n-Pentane	2.93e-002	3.35e-001
n-Hexane	2.04e-002	2.34e-001
Cyclohexane	4.74e-002	5.42e-001
Other Hexanes	2.31e-002	2.64e-001
Heptanes	5.06e-002	5.78e-001
Methylcyclohexane	6.79e-002	7.76e-001
2,2,4-Trimethylpentane	1.29e-003	1.47e-002
Benzene	1.01e-001	1.15e+000
Toluene	1.31e-001	1.50e+000
Ethylbenzene	4.34e-003	4.96e-002
Xylenes	3.31e-002	3.78e-001
C8+ Heavies	1.58e-002	1.80e-001
Total Components	100.00	1.14e+003

FLASH TANK OFF GAS STREAM

Temperature: 120.00 deg. F
Pressure: 104.70 psia
Flow Rate: 1.14e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	6.30e-002	3.42e-003
Carbon Dioxide	4.59e+000	6.09e-001
Nitrogen	4.26e-001	3.59e-002
Methane	6.70e+001	3.24e+000
Ethane	1.52e+001	1.38e+000
Propane	7.19e+000	9.56e-001
Isobutane	1.45e+000	2.54e-001
n-Butane	2.01e+000	3.52e-001
Isopentane	5.84e-001	1.27e-001
n-Pentane	4.87e-001	1.06e-001
n-Hexane	1.79e-001	4.65e-002
Cyclohexane	1.15e-001	2.92e-002
Other Hexanes	2.51e-001	6.51e-002
Heptanes	2.00e-001	6.05e-002
Methylcyclohexane	1.10e-001	3.24e-002

2,2,4-Trimethylpentane	8.07e-003	2.78e-003
Benzene	3.94e-002	9.28e-003
Toluene	2.62e-002	7.27e-003
Ethylbenzene	4.15e-004	1.33e-004
Xylenes	2.16e-003	6.91e-004
C8+ Heavies	3.09e-003	1.58e-003
Total Components	100.00	7.32e+000

FLASH TANK GLYCOL STREAM

Temperature: 120.00 deg. F
Flow Rate: 2.02e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.76e+001	1.11e+003
Water	1.65e+000	1.88e+001
Carbon Dioxide	6.19e-002	7.04e-001
Nitrogen	2.97e-004	3.37e-003
Methane	2.69e-002	3.06e-001
Ethane	4.29e-002	4.88e-001
Propane	6.00e-002	6.81e-001
Isobutane	2.47e-002	2.80e-001
n-Butane	4.53e-002	5.14e-001
Isopentane	1.93e-002	2.19e-001
n-Pentane	2.02e-002	2.29e-001
n-Hexane	1.65e-002	1.87e-001
Cyclohexane	4.52e-002	5.13e-001
Other Hexanes	1.75e-002	1.99e-001
Heptanes	4.56e-002	5.18e-001
Methylcyclohexane	6.55e-002	7.44e-001
2,2,4-Trimethylpentane	1.05e-003	1.20e-002
Benzene	1.01e-001	1.14e+000
Toluene	1.31e-001	1.49e+000
Ethylbenzene	4.36e-003	4.95e-002
Xylenes	3.32e-002	3.77e-001
C8+ Heavies	1.57e-002	1.79e-001
Total Components	100.00	1.14e+003

FLASH GAS EMISSIONS

Control Method: Recycle/recompression
Control Efficiency: 100.00

Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 9.39e+001 scfh

Component	Conc. (vol%)	Loading (lb/hr)

Water	4.23e+001	1.89e+000
Carbon Dioxide	6.46e+000	7.04e-001
Nitrogen	4.87e-002	3.37e-003
Methane	7.71e+000	3.06e-001
Ethane	6.55e+000	4.88e-001
Propane	6.24e+000	6.81e-001
Isobutane	1.95e+000	2.80e-001
n-Butane	3.57e+000	5.14e-001
Isopentane	1.22e+000	2.17e-001
n-Pentane	1.28e+000	2.28e-001
n-Hexane	8.72e-001	1.86e-001
Cyclohexane	2.38e+000	4.96e-001
Other Hexanes	9.22e-001	1.97e-001
Heptanes	2.08e+000	5.15e-001
Methylcyclohexane	2.93e+000	7.13e-001
2,2,4-Trimethylpentane	4.16e-002	1.17e-002
Benzene	5.62e+000	1.09e+000
Toluene	6.01e+000	1.37e+000
Ethylbenzene	1.69e-001	4.44e-002
Xylenes	1.25e+000	3.29e-001
C8+ Heavies	3.73e-001	1.57e-001
Total Components	100.00	1.04e+001

QUESTAR APPLIED TECHNOLOGY

1210 D. Street, Rock Springs, Wyoming 82901

(307) 352-7292

Description:	Wild Horse Bench Pre Dehy	Company:	XTO
Field:	Turkey Track	Data File:	001796.D
Meter Number:		G.C. Method:	GAS EXTENDED.M
Analysis Date/Time:	6/15/2016, 10:21:55	GPA Method	GPA 2286
Date Sampled:	6/13/2016	Sampled By:	BC
Sample Temperature:	84	Analyst Initials:	JFL
Sample Pressure:	1030		

Component	Mol%	Wt%	LV%
Methane	85.0319	69.7411	78.0254
Ethane	8.0175	12.3252	11.6391
Propane	3.3793	7.6184	5.0440
Isobutane	0.6295	1.8705	1.1154
n-Butane	0.7799	2.3175	1.3319
Neopentane	0.0070	0.0258	0.0145
Isopentane	0.2574	0.9495	0.5104
n-Pentane	0.1973	0.7279	0.3871
2,2-Dimethylbutane	0.0078	0.0342	0.0175
2,3-Dimethylbutane	0.0124	0.0544	0.0274
2-Methylpentane	0.0547	0.2411	0.1230
3-Methylpentane	0.0338	0.1491	0.0748
n-Hexane	0.0746	0.3287	0.1661
Heptanes	0.2126	1.0108	0.4491
Octanes	0.0080	0.0464	0.0216
Nonanes	0.0036	0.0194	0.0076
Decanes plus	0.0002	0.0017	0.0008
Nitrogen	0.4524	0.6480	0.2687
Carbon Dioxide	0.8401	1.8903	0.7756
Oxygen	ND	ND	ND
Hydrogen Sulfide	ND	ND	ND
Total	100.0000	100.0000	100.0000

Calculated Global Properties		**Units**
Gross BTU/Real CF	1176.3	BTU/SCF at 60°F and14.73 psia
Sat.Gross BTU/Real CF	1157.2	BTU/SCF at 60°F and14.73 psia
Gas Compressibility (Z)	0.9969	
Specific Gravity	0.6772	air=1
Avg Molecular Weight	19.560	gm/mole
Propane GPM	0.926140	gal/MCF
Butane GPM	0.450714	gal/MCF
Gasoline GPM	0.324692	gal/MCF
26# Gasoline GPM	0.570339	gal/MCF
Total GPM	4.038764	gal/MCF
Base Mol%	99.761	%v/v

H2S detection limit 100 ppm (+/-)

Component	Mol%	Wt%	LV%
Benzene	0.0164	0.0656	0.0249
Toluene	0.0152	0.0716	0.0276
Ethylbenzene	0.0004	0.0019	0.0007
M&P Xylene	0.0025	0.0135	0.0052
O-Xylene	0.0002	0.0009	0.0003
2,2,4-Trimethylpentane	0.0050	0.0294	0.0137
Cyclopentane	0.0000	0.0000	0.0000
Cyclohexane	0.0382	0.1643	0.0704
Methylcyclohexane	0.0458	0.2298	0.0997
Description:	Wild Horse Bench Pre Dehy		

GRI GlyCalc Information

Component	Mol%	Wt%	LV%
Carbon Dioxide	0.8401	1.8903	0.7756
Hydrogen Sulfide	ND	ND	ND
Nitrogen	0.4524	0.6480	0.2687
Methane	85.0319	69.7411	78.0254
Ethane	8.0175	12.3252	11.6391
Propane	3.3793	7.6184	5.0440
Isobutane	0.6295	1.8705	1.1154
n-Butane	0.7799	2.3175	1.3319
Isopentane	0.2644	0.9753	0.5249
n-Pentane	0.1973	0.7279	0.3871
Cyclopentane	0.0000	0.0000	0.0000
n-Hexane	0.0746	0.3287	0.1661
Cyclohexane	0.0382	0.1643	0.0704
Other Hexanes	0.1087	0.4788	0.2427
Heptanes	0.0920	0.4501	0.2128
Methylcyclohexane	0.0458	0.2298	0.0997
2,2,4 Trimethylpentane	0.0050	0.0294	0.0137
Benzene	0.0164	0.0656	0.0249
Toluene	0.0152	0.0716	0.0276
Ethylbenzene	0.0004	0.0019	0.0007
Xylenes	0.0027	0.0144	0.0055
C8+ Heavies	0.0087	0.0512	0.0238
Subtotal	100.0000	100.0000	100.0000
Oxygen	ND	ND	ND
Total	100.0000	100.0000	100.0000