

RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT AS-DRILLED PLAT

¹ API Number 30-015-45133	² Pool Code 97020	³ Pool Name HACKBERRY; BONE SPRING, NW
⁴ Property Code 322180	⁵ Property Name BUTTERCUP 27-34 FEDERAL	⁶ Well Number 1H
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	⁹ Elevation 3,296'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	22	19 S	30 E		1,329'	SOUTH	2,410'	EAST	EDDY

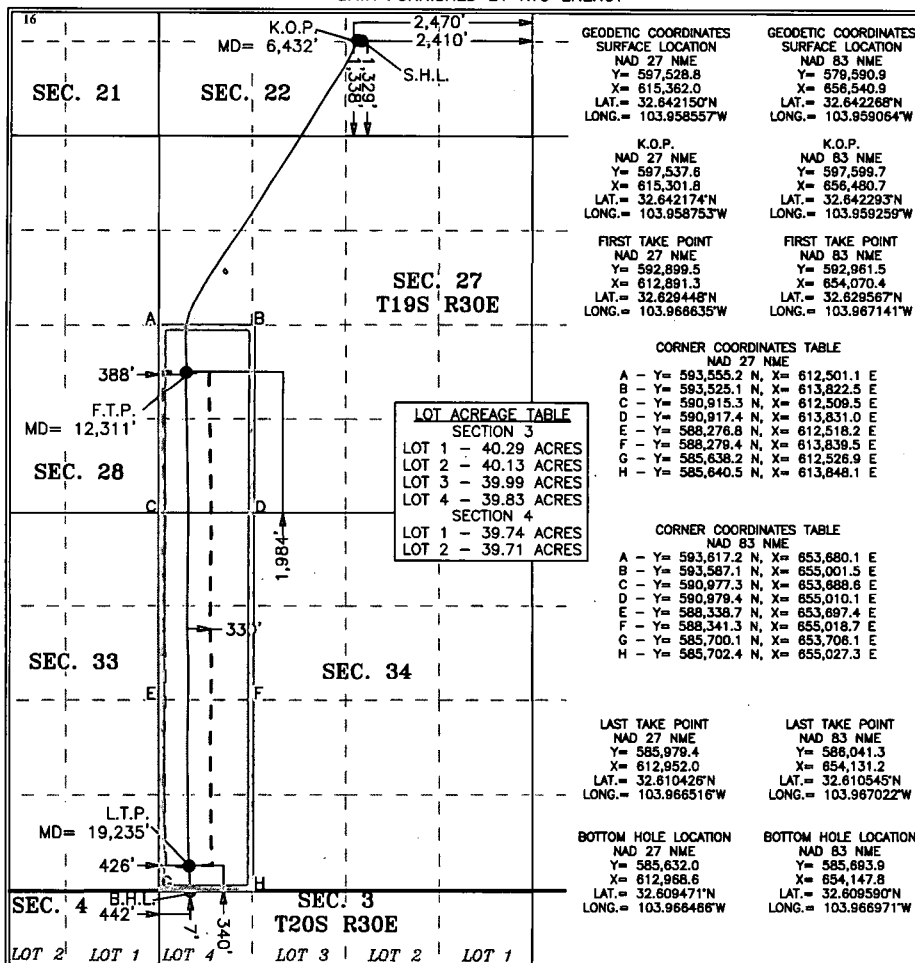
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L4	3	20 S	30 E		7'	NORTH	442'	WEST	EDDY

¹² Dedicated Acres 240	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NOTE: AS-DRILLED BOTTOM HOLE PLOTTED FROM
DATA FURNISHED BY XTO ENERGY



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Cheryl Rowell Date: 12/19/19

Printed Name: Cheryl Rowell

E-mail Address: cheryl_rowell@xtoenergy.com

E-mail Address: cheryl_rowell@xtoenergy.com

E-mail Address: cheryl_rowell@xtoenergy.com

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 12-18-2019

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:

Signature and Seal of Professional Surveyor:



MARK DILLON HARP 23786

Certificate Number

AW/JC

2017091478

Revised SHL/BHL
RWD for Drill Island
PAD AS Drilled
4-10-20



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FEB 14 2020

EMNRD-OCDARTESIA

February 4, 2020

New Mexico Energy, Minerals and Natural Resources Department
Attn: Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

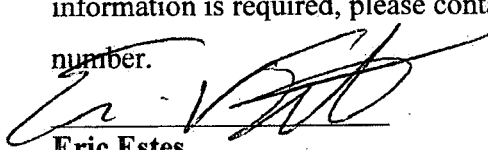
Attn: Court Adkins

Re: XTO Energy Inc.
Buttercup 27 34 Federal #001H
Bone Spring
Eddy County, New Mexico
API# 30-015-45133

Enclosed please find the original and one (1) copy of the survey performed on the reference well by STRYKER ENERGY DIRECTIONAL SERVICES, LLC. (P-5 #828149) Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole No.</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Mark Hopkins	Original Hole	209ft. to 12,118ft.	02-09-19 to 03-11-19	MWD Survey

A certified plat on which the bottom-hole location is oriented to both surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.


Eric Estes

Enclosures

CC:

XTO Energy Inc.
Attn: Court Adkins
6401 Holiday Hill Rd. #5
Midland, Texas 79707

NMEMaNRD\ XTO Energy Inc.\Buttercup 27 34 Fed Com #1H\M191052

STRYKER ENERGY DIRECTIONAL SERVICES, LLC.

P.O. Box 1250

Montgomery, TX 77356

Office (936) 582-7296 * Fax (936)-588-4163



February 4, 2020

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Eric Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of February 9, 2019 through March 11, 2019, conduct or supervise the taking of a SEDS MWD Original Hole Survey from a depth of 209feet to a depth of 12,118feet; that I am authorized and qualified to make this report; that this survey was conducted at the request of XTO Energy Inc., for the Buttercup 27 34 Federal #001H well, API #30-015-45133 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles as set forth by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C..

A handwritten signature in black ink, appearing to read "Eric Estes", written over a horizontal line.

Eric Estes

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

STRYKER ENERGY DIRECTIONAL SERVICES, LLC.

P.O. Box 1250

Montgomery, TX 77356

Office (936) 582-7296 * Fax (936)-588-4163

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Project	Eddy County, NM (NAD27) NMEZ Grid		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		BUTTERCUP 27-34			
Site Position:		Northing:	597,529.10 usft	Latitude:	32.64214952
From:	Map	Easting:	615,452.00 usft	Longitude:	-103.95826483
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.20 °

Well	BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL					
Well Position	+N-S	0.00 usft	Northing:	597,528.80 usft	Latitude:	32.64214957
	+E-W	0.00 usft	Easting:	615,362.00 usft	Longitude:	-103.95855721
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,285.00 usft

Wellbore	1H Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/16/19	6.99	60.36	47,982.38047366

Design	proj			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	19,040.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	191.37

Survey Tool Program		Date	03/22/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
209.00	19,040.00	Survey #1 (1H Lateral)	MWD	OWSG MWD - Standard	
19,040.00	19,582.44	proj (1H Lateral)	MWD	OWSG MWD - Standard	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BUTTERCUP 27-34 FED 1H SHL - BUTTERCUP 27-34 FED 3H SHL - BUTTERCUP 27-34 FED 4H SHL - BUTTERCUP 27-34 FED 2H SHL									
1.36	0.01	273.70	1.36	0.00	0.00	0.00	0.72	0.72	0.00
BUTTERCUP 27-34 FED 2H FTP_330FNL_400FWL									
9.97	0.07	273.70	9.97	0.00	-0.01	0.00	0.72	0.72	0.00
BUTTERCUP 27-34 FED 2H FTP_CALCULATED_330FNL_1820									
209.00	1.50	273.70	208.98	0.18	-2.73	0.37	0.72	0.72	0.00
302.00	2.10	269.60	301.93	0.24	-5.65	0.88	0.66	0.65	-4.41
363.00	2.10	264.40	362.89	0.13	-7.88	1.43	0.31	0.00	-8.52

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H- Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
448.00	2.20	253.80	447.83	-0.48	-11.00	2.64	0.48	0.12	-12.47	
584.00	2.30	248.50	583.72	-2.21	-16.04	5.33	0.17	0.07	-3.90	
684.00	2.50	252.10	683.64	-3.62	-19.98	7.49	0.25	0.20	3.60	
778.00	2.10	251.40	777.56	-4.79	-23.57	9.35	0.43	-0.43	-0.74	
873.00	1.70	260.30	872.51	-5.59	-26.61	10.72	0.52	-0.42	9.37	
917.00	1.60	257.80	916.49	-5.83	-27.85	11.20	0.28	-0.23	-5.68	
1,012.00	1.60	251.50	1,011.45	-6.53	-30.40	12.40	0.19	0.00	-6.63	
1,107.00	1.00	249.40	1,106.43	-7.24	-32.44	13.50	0.63	-0.63	-2.21	
1,202.00	0.40	257.10	1,201.42	-7.61	-33.54	14.07	0.64	-0.63	8.11	
1,296.00	0.60	251.00	1,295.42	-7.84	-34.32	14.45	0.22	0.21	-6.49	
1,390.00	0.40	236.10	1,389.41	-8.18	-35.06	14.94	0.25	-0.21	-15.85	
1,465.00	0.50	239.80	1,464.41	-8.49	-35.56	15.34	0.14	0.13	4.93	
1,475.59	0.51	237.76	1,475.00	-8.54	-35.64	15.40	0.20	0.11	-19.27	
Base Salt										
1,660.60	0.79	214.64	1,660.00	-10.04	-37.07	17.15	0.20	0.15	-12.49	
Yates										
1,665.00	0.80	214.30	1,664.40	-10.09	-37.10	17.20	0.20	0.17	-7.78	
1,760.00	1.00	213.30	1,759.39	-11.33	-37.93	18.58	0.21	0.21	-1.05	
1,854.00	0.40	333.90	1,853.38	-11.72	-38.52	19.09	1.33	-0.64	128.30	
1,948.00	1.70	2.80	1,947.37	-10.03	-38.60	17.45	1.45	1.38	30.74	
2,042.00	1.10	3.50	2,041.34	-7.74	-38.48	15.17	0.64	-0.64	0.74	
2,136.00	1.10	356.50	2,135.32	-5.94	-38.48	13.41	0.14	0.00	-7.45	
2,231.00	1.20	348.20	2,230.30	-4.05	-38.74	11.61	0.20	0.11	-8.74	
2,290.71	1.20	341.53	2,290.00	-2.85	-39.06	10.50	0.23	-0.01	-11.18	
Capitan										
2,325.00	1.20	337.70	2,324.28	-2.18	-39.31	9.89	0.23	0.01	-11.16	
2,420.00	0.60	285.80	2,419.27	-1.12	-40.17	9.02	1.00	-0.63	-54.63	
2,514.00	0.80	221.60	2,513.26	-1.48	-41.08	9.55	0.81	0.21	-68.30	
2,609.00	1.10	223.80	2,608.25	-2.63	-42.15	10.89	0.32	0.32	2.32	
2,703.00	1.40	224.50	2,702.23	-4.10	-43.58	12.62	0.32	0.32	0.74	
2,798.00	0.40	240.10	2,797.21	-5.10	-44.68	13.81	1.07	-1.05	16.42	
2,893.00	0.10	77.10	2,892.21	-5.24	-44.88	13.99	0.52	-0.32	-171.58	
2,987.00	0.20	106.10	2,986.21	-5.27	-44.65	13.97	0.13	0.11	30.85	
3,081.00	0.70	90.20	3,080.21	-5.32	-43.91	13.87	0.54	0.53	-16.91	
3,176.00	1.20	89.30	3,175.20	-5.31	-42.34	13.55	0.53	0.53	-0.95	
3,270.00	1.10	50.00	3,269.18	-4.72	-40.66	12.64	0.83	-0.11	-41.81	
3,365.00	1.30	19.70	3,364.16	-3.11	-39.60	10.86	0.69	0.21	-31.89	
3,459.00	1.70	20.10	3,458.13	-0.80	-38.76	8.43	0.43	0.43	0.43	
3,553.00	0.80	19.00	3,552.10	1.13	-38.07	6.40	0.96	-0.96	-1.17	
3,647.00	0.40	5.20	3,646.10	2.08	-37.83	5.43	0.45	-0.43	-14.68	
3,741.00	0.40	5.70	3,740.10	2.73	-37.77	4.77	0.00	0.00	0.53	
3,836.00	0.40	0.70	3,835.09	3.39	-37.73	4.12	0.04	0.00	-5.26	
3,930.00	0.40	347.40	3,929.09	4.04	-37.80	3.49	0.10	0.00	-14.15	

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,985.91	0.49	330.31	3,985.00	4.44	-37.96	3.14	0.28	0.15	-30.57	
Delaware										
3,993.00	0.50	328.60	3,992.09	4.49	-37.99	3.09	0.28	0.19	-24.10	
4,154.00	0.90	306.70	4,153.08	5.84	-39.37	2.04	0.29	0.25	-13.60	
4,248.00	1.30	301.00	4,247.06	6.83	-40.87	1.36	0.44	0.43	-6.06	
4,343.00	0.20	105.20	4,342.05	7.35	-41.64	1.01	1.57	-1.16	172.84	
4,438.00	0.10	257.80	4,437.05	7.28	-41.56	1.05	0.31	-0.11	160.63	
4,530.00	0.20	289.70	4,529.05	7.32	-41.79	1.06	0.14	0.11	34.67	
4,585.95	0.09	289.39	4,585.00	7.37	-41.92	1.04	0.20	-0.20	-0.55	
Brushy Canyon										
4,624.00	0.01	285.20	4,623.05	7.38	-41.95	1.04	0.20	-0.20	-11.02	
4,719.00	0.40	341.50	4,718.05	7.70	-42.06	0.75	0.42	0.41	59.26	
4,812.00	0.50	345.90	4,811.05	8.40	-42.26	0.10	0.11	0.11	4.73	
4,906.00	0.60	335.70	4,905.04	9.24	-42.57	-0.67	0.15	0.11	-10.85	
5,000.00	0.40	339.30	4,999.04	10.00	-42.89	-1.34	0.22	-0.21	3.83	
5,095.00	0.70	330.30	5,094.04	10.81	-43.29	-2.06	0.33	0.32	-9.47	
5,189.00	0.70	347.70	5,188.03	11.87	-43.70	-3.02	0.23	0.00	18.51	
5,284.00	0.70	3.20	5,283.02	13.02	-43.79	-4.13	0.20	0.00	16.32	
5,378.00	0.70	339.60	5,377.02	14.13	-43.96	-5.18	0.30	0.00	-25.11	
5,473.00	0.60	353.70	5,472.01	15.17	-44.21	-6.15	0.20	-0.11	14.84	
5,568.00	0.10	6.60	5,567.01	15.75	-44.26	-6.71	0.53	-0.53	13.58	
5,663.00	0.10	172.50	5,662.01	15.75	-44.24	-6.71	0.21	0.00	174.63	
5,757.00	0.40	268.80	5,756.01	15.66	-44.56	-6.56	0.45	0.32	102.45	
5,852.00	0.70	238.60	5,851.00	15.35	-45.38	-6.10	0.43	0.32	-31.79	
5,947.00	0.90	258.00	5,945.99	14.89	-46.61	-5.41	0.36	0.21	20.42	
6,041.00	1.50	260.40	6,039.97	14.53	-48.54	-4.67	0.64	0.64	2.55	
6,096.05	1.44	257.53	6,095.00	14.26	-49.93	-4.14	0.17	-0.11	-5.21	
Bone Spring										
6,136.00	1.40	255.30	6,134.94	14.03	-50.89	-3.72	0.17	-0.10	-5.58	
6,205.08	1.54	258.24	6,204.00	13.63	-52.62	-2.98	0.24	0.21	4.25	
Avalon Sand										
6,231.00	1.60	259.20	6,229.91	13.49	-53.32	-2.71	0.24	0.21	3.72	
6,326.00	1.90	238.90	6,324.87	12.43	-55.97	-1.14	0.72	0.32	-21.37	
6,374.00	2.10	244.20	6,372.84	11.63	-57.44	-0.07	0.57	0.42	11.04	
6,457.00	6.00	218.60	6,455.62	7.58	-61.52	4.70	5.07	4.70	-30.84	
6,503.00	13.20	216.30	6,500.95	1.46	-66.13	11.61	15.67	15.65	-5.00	
6,550.00	17.90	214.00	6,546.21	-8.86	-73.35	23.15	10.08	10.00	-4.89	
6,596.00	21.60	211.80	6,589.50	-21.92	-81.77	37.62	8.20	8.04	-4.78	
6,644.00	25.80	206.70	6,633.45	-38.77	-91.13	55.98	9.73	8.75	-10.62	
6,691.00	31.10	204.40	6,674.76	-58.98	-100.74	77.69	11.51	11.28	-4.89	
6,738.00	34.70	202.10	6,714.21	-82.44	-110.79	102.67	8.11	7.66	-4.89	
6,785.00	38.20	201.60	6,752.01	-108.35	-121.18	130.12	7.47	7.45	-1.06	
6,832.00	38.80	202.60	6,788.85	-135.40	-132.16	158.81	1.57	0.85	2.13	

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid.	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,878.00	42.80	203.50	6,823.71	-162.99	-143.92	188.17	9.22	9.13	1.96
6,926.00	47.40	206.60	6,857.59	-193.76	-158.34	221.18	10.62	9.58	6.46
6,973.00	51.00	207.30	6,888.30	-225.47	-174.46	255.45	7.74	7.66	1.49
7,020.00	53.40	207.50	6,917.10	-258.44	-191.56	291.14	5.12	5.11	0.43
7,067.00	55.90	208.30	6,944.29	-292.31	-209.50	327.89	5.50	5.32	1.70
7,114.00	58.40	209.50	6,969.79	-326.87	-228.58	365.53	5.74	5.32	2.55
7,161.00	62.60	211.40	6,992.93	-362.12	-249.32	404.18	9.60	8.94	4.04
7,209.00	66.00	212.50	7,013.74	-398.81	-272.21	444.66	7.38	7.08	2.29
7,256.00	68.70	212.80	7,031.84	-435.33	-295.61	485.08	5.77	5.74	0.64
7,303.00	70.80	213.40	7,048.10	-472.26	-319.69	526.04	4.63	4.47	1.28
7,397.00	72.50	213.60	7,077.70	-546.66	-368.93	608.68	1.82	1.81	0.21
7,491.00	72.30	213.20	7,106.12	-621.46	-418.25	691.74	0.46	-0.21	-0.43
7,585.00	71.20	213.10	7,135.56	-696.20	-467.07	774.64	1.17	-1.17	-0.11
7,678.00	73.10	212.40	7,164.06	-770.65	-514.95	857.07	2.16	2.04	-0.75
7,772.00	72.60	212.10	7,191.78	-846.61	-562.88	941.00	0.61	-0.53	-0.32
7,867.00	71.60	211.10	7,220.98	-923.61	-610.25	1,025.82	1.45	-1.05	-1.05
7,961.00	72.80	211.50	7,249.71	-1,000.08	-656.75	1,109.96	1.34	1.28	0.43
8,056.00	72.40	211.80	7,278.12	-1,077.25	-704.32	1,195.00	0.52	-0.42	0.32
8,151.00	71.30	211.40	7,307.72	-1,154.13	-751.62	1,279.70	1.23	-1.16	-0.42
8,246.00	70.20	211.40	7,339.04	-1,230.69	-798.35	1,363.97	1.16	-1.16	0.00
8,341.00	68.70	211.70	7,372.38	-1,306.49	-844.89	1,447.46	1.61	-1.58	0.32
8,436.00	67.30	211.80	7,407.97	-1,381.39	-891.24	1,530.03	1.48	-1.47	0.11
8,531.00	67.90	212.80	7,444.17	-1,455.63	-938.17	1,612.07	1.16	0.63	1.05
8,626.00	70.90	212.60	7,477.59	-1,530.45	-986.21	1,694.90	3.16	3.16	-0.21
8,722.00	73.20	213.50	7,507.18	-1,606.99	-1,036.01	1,779.76	2.58	2.40	0.94
8,815.00	72.10	213.70	7,534.91	-1,680.93	-1,085.13	1,861.93	1.20	-1.18	0.22
8,910.00	74.40	214.20	7,562.29	-1,756.39	-1,135.94	1,945.92	2.47	2.42	0.53
8,912.65	74.42	214.20	7,563.00	-1,758.50	-1,137.37	1,948.28	0.74	0.74	0.00
First Bone Spring Sand									
9,005.00	75.10	214.20	7,587.27	-1,832.19	-1,187.45	2,030.40	0.74	0.74	0.00
9,099.00	75.10	213.10	7,611.45	-1,907.81	-1,237.79	2,114.46	1.13	0.00	-1.17
9,193.00	74.90	212.10	7,635.78	-1,984.30	-1,286.71	2,199.10	1.05	-0.21	-1.06
9,288.00	75.10	211.30	7,660.36	-2,062.37	-1,334.93	2,285.15	0.84	0.21	-0.84
9,383.00	74.20	211.50	7,685.51	-2,140.57	-1,382.65	2,371.22	0.97	-0.95	0.21
9,477.00	74.40	211.60	7,710.95	-2,217.68	-1,430.00	2,456.16	0.24	0.21	0.11
9,538.88	73.61	212.45	7,728.00	-2,268.11	-1,461.55	2,511.82	1.84	-1.28	1.38
Second Bone Spring Limestone									
9,571.00	73.20	212.90	7,737.17	-2,294.02	-1,478.17	2,540.50	1.84	-1.27	1.39
9,584.40	72.90	213.01	7,741.08	-2,304.78	-1,485.14	2,552.42	2.35	-2.21	0.83
BUTTERCUP 27-34 FED 4H FTP_330FNL_400FEL									
9,666.00	71.10	213.70	7,766.29	-2,369.60	-1,527.81	2,624.38	2.35	-2.21	0.84
9,761.00	72.80	213.90	7,795.73	-2,444.65	-1,578.05	2,707.87	1.80	1.79	0.21
9,856.00	73.50	213.20	7,823.26	-2,520.43	-1,628.30	2,792.07	1.02	0.74	-0.74

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,950.00	71.40	212.80	7,851.61	-2,595.59	-1,677.11	2,875.38	2.27	-2.23	-0.43
10,044.00	71.30	214.00	7,881.67	-2,669.94	-1,726.14	2,957.94	1.21	-0.11	1.28
10,139.00	73.10	215.00	7,910.71	-2,744.48	-1,777.37	3,041.12	2.14	1.89	1.05
10,209.35	74.07	215.82	7,930.59	-2,799.47	-1,816.47	3,102.74	1.78	1.38	1.17
BUTTERCUP 27-34 FED 3H FTP_330FNL_1820FEL									
10,233.00	74.40	216.10	7,937.01	-2,817.90	-1,829.84	3,123.44	1.78	1.39	1.16
10,327.00	73.80	216.00	7,962.77	-2,890.99	-1,883.04	3,205.59	0.65	-0.64	-0.11
10,421.00	76.30	215.30	7,987.01	-2,964.78	-1,935.97	3,288.38	2.76	2.66	-0.74
10,515.00	74.90	214.20	8,010.39	-3,039.59	-1,987.87	3,371.95	1.87	-1.49	-1.17
10,610.00	73.50	213.40	8,036.26	-3,115.54	-2,038.72	3,456.44	1.68	-1.47	-0.84
10,704.00	74.80	213.20	8,061.93	-3,191.12	-2,088.36	3,540.32	1.40	1.38	-0.21
10,798.00	76.40	212.40	8,085.31	-3,267.65	-2,137.68	3,625.08	1.89	1.70	-0.85
10,891.00	75.40	211.70	8,107.96	-3,344.10	-2,185.54	3,709.46	1.30	-1.08	-0.75
10,986.00	72.50	211.00	8,134.22	-3,422.06	-2,233.04	3,795.26	3.13	-3.05	-0.74
11,081.00	71.90	210.30	8,163.27	-3,499.87	-2,279.15	3,880.64	0.94	-0.63	-0.74
11,175.00	72.50	209.90	8,192.00	-3,577.30	-2,324.04	3,965.40	0.76	0.64	-0.43
11,270.00	72.30	207.70	8,220.73	-3,656.65	-2,367.66	4,051.79	2.22	-0.21	-2.32
11,318.00	72.40	205.30	8,235.29	-3,697.58	-2,388.07	4,095.94	4.77	0.21	-5.00
11,364.00	72.70	202.20	8,249.08	-3,737.74	-2,405.74	4,138.80	6.46	0.65	-6.74
11,411.00	73.60	198.70	8,262.71	-3,779.88	-2,421.45	4,183.21	7.38	1.91	-7.45
11,459.00	74.10	196.00	8,276.06	-3,823.88	-2,435.19	4,229.06	5.50	1.04	-5.62
11,507.00	73.50	193.60	8,289.46	-3,868.44	-2,446.97	4,275.07	4.96	-1.25	-5.00
11,554.00	72.90	191.50	8,303.04	-3,912.36	-2,456.74	4,320.05	4.46	-1.28	-4.47
11,602.00	72.70	189.20	8,317.24	-3,957.46	-2,464.98	4,365.89	4.60	-0.42	-4.79
11,648.00	71.70	186.50	8,331.30	-4,000.85	-2,470.97	4,409.60	6.00	-2.17	-5.67
11,697.00	69.10	184.20	8,347.74	-4,046.80	-2,475.28	4,455.50	6.91	-5.31	-4.69
11,743.00	68.10	182.70	8,364.53	-4,089.55	-2,477.86	4,497.92	3.73	-2.17	-3.26
11,790.00	68.40	181.60	8,381.94	-4,133.17	-2,479.49	4,541.01	2.27	0.64	-2.34
11,803.88	68.84	181.21	8,387.00	-4,146.09	-2,479.81	4,553.74	4.11	3.18	-2.79
Second Bone Spring Sand									
11,837.00	69.90	180.30	8,398.67	-4,177.08	-2,480.22	4,584.20	4.11	3.19	-2.76
11,929.00	70.60	178.50	8,429.76	-4,263.66	-2,479.31	4,668.90	1.99	0.76	-1.96
11,997.61	70.02	177.92	8,452.88	-4,328.22	-2,477.29	4,731.80	1.17	-0.85	-0.85
BUTTERCUP 27-34 FED 1H FTP_330FNL_400FWL									
12,023.00	69.80	177.70	8,461.60	-4,352.05	-2,476.38	4,754.98	1.17	-0.85	-0.85
12,118.00	70.60	177.20	8,493.78	-4,441.35	-2,472.40	4,841.74	0.98	0.84	-0.53
12,150.00	72.10	177.20	8,504.02	-4,471.63	-2,470.92	4,871.13	4.69	4.69	0.00
12,197.00	75.20	179.00	8,517.25	-4,516.70	-2,469.43	4,915.02	7.55	6.60	3.83
12,244.00	80.70	180.60	8,527.05	-4,562.64	-2,469.28	4,960.03	12.17	11.70	3.40
12,291.00	85.70	181.40	8,532.62	-4,609.29	-2,470.09	5,005.92	10.77	10.64	1.70
12,298.83	86.22	181.43	8,533.17	-4,617.09	-2,470.29	5,013.61	6.68	6.67	0.42
BUTTERCUP 27-34 FED 1H LP p3									
12,339.00	88.90	181.60	8,534.88	-4,657.21	-2,471.35	5,053.15	6.68	6.67	0.42
12,434.00	91.80	181.60	8,534.30	-4,752.16	-2,474.00	5,146.76	3.05	3.05	0.00



MWD SURVEY CERTIFICATION
Gordon Technologies, LLC

State Of New Mexico

County Of Eddy

I, Marcus Mitcham certify that; I am employed by Gordon Technologies, LLC.;
that I did on the day(s) of March 12, 2019 through March 21, 2019 conduct
or supervise the taking of a MWD survey from a depth of 12,150 feet to a depth of
19,370 feet; that the data is true, correct, complete and within the limitations of the
tool set forth by Gordon Technologies, LLC.; that I am authorized and qualified to make this report;
that this survey was conducted at the request of XTO Energy Incorporated for the
Buttercup 27-34 Federal 1H Well, A.P.I. No. 30-015-45133 in
Hackberry, Bone Spring, NW/HA Field and that I have reviewed this report and find that
it conforms to the principles and procedures set forth by Gordon Technologies, LLC.

Signature

MWD Coordinator

Title



Directional Survey Report

Company: XTO Energy Incorporated	Well Surface Location	Report Date: Feb 06 2020
Well: Buttercup 27-34 Federal 1H	Latitude: 32.64214952	Time: 16:02
County: Eddy	Longitude: -103.95826483	Mag Reference: Grid North
State: NM	Reference: NAD 1927	Mag Correction: 6.79
Field: Hackberry; Bone Spring, NW/HA	Y (Northing): 597,529.00	Vert Sect. Azi: 191.77
API: 30-015-45133	X (Easting): 615,452.00	Perm Datum: Mean Sea Level
Rig: Nabors F-26	Field Engr: Sammy Hayman	Depth Ref: Rotary Table
Service Co: Gordon Technologies LLC	Mike Stanley	RKB Height: 30
Job #: GT190228		GL Elev: 3285
Survey Calc: Minimum Curvature		

Survey Tie In	MD	Inc	Azimuth	TVD	VS	Rectangular Offsets		Course		Closure		Source	
						NS	EW	Length	DLS	Temp	Distance		Azimuth
	0	0	0	0	0	0	0	0	0	0	0		
1	209.00	1.50	273.70	208.98	0.38	0.18	-2.73	209.00	0.72	0.00	2.74	273.70	ImpSvys
2	302.00	2.10	269.60	301.93	0.91	0.24	-5.65	93.00	0.66	0.00	5.65	272.47	ImpSvys
3	363.00	2.10	264.40	362.89	1.48	0.13	-7.88	61.00	0.31	0.00	7.88	270.92	ImpSvys
4	448.00	2.20	253.80	447.83	2.71	-0.48	-11.00	85.00	0.48	0.00	11.01	267.50	ImpSvys
5	584.00	2.30	248.50	583.72	5.43	-2.21	-16.04	136.00	0.17	0.00	16.19	262.16	ImpSvys
6	684.00	2.50	252.10	683.64	7.62	-3.62	-19.98	100.00	0.25	0.00	20.31	259.75	ImpSvys
7	778.00	2.10	251.40	777.56	9.50	-4.79	-23.57	94.00	0.43	0.00	24.05	258.50	ImpSvys
8	873.00	1.70	260.30	872.51	10.90	-5.59	-26.61	95.00	0.52	0.00	27.19	258.14	ImpSvys
9	917.00	1.60	257.80	916.49	11.39	-5.83	-27.85	44.00	0.28	0.00	28.45	258.18	ImpSvys
10	1012.00	1.60	251.50	1011.45	12.59	-6.53	-30.40	95.00	0.19	0.00	31.10	257.88	ImpSvys
11	1107.00	1.00	249.40	1106.43	13.70	-7.24	-32.44	95.00	0.63	0.00	33.23	257.42	ImpSvys
12	1202.00	0.40	257.10	1201.42	14.29	-7.61	-33.54	95.00	0.64	0.00	34.39	257.22	ImpSvys
13	1296.00	0.60	251.00	1295.42	14.68	-7.84	-34.32	94.00	0.22	0.00	35.21	257.13	ImpSvys
14	1390.00	0.40	236.10	1389.41	15.16	-8.18	-35.06	94.00	0.25	0.00	36.00	256.86	ImpSvys
15	1465.00	0.50	239.80	1464.41	15.57	-8.49	-35.56	75.00	0.14	0.00	36.56	256.57	ImpSvys
16	1665.00	0.80	214.30	1664.40	17.44	-10.09	-37.10	200.00	0.20	0.00	38.45	254.79	ImpSvys
17	1760.00	1.00	213.30	1759.39	18.83	-11.33	-37.93	95.00	0.21	0.00	39.58	253.37	ImpSvys
18	1854.00	0.40	333.90	1853.38	19.33	-11.72	-38.52	94.00	1.33	0.00	40.27	253.08	ImpSvys
19	1948.00	1.70	2.80	1947.37	17.69	-10.03	-38.60	94.00	1.45	0.00	39.88	255.43	ImpSvys
20	2042.00	1.10	3.50	2041.34	15.42	-7.74	-38.48	94.00	0.64	0.00	39.25	258.63	ImpSvys
21	2136.00	1.10	356.50	2135.32	13.66	-5.94	-38.48	94.00	0.14	0.00	38.93	261.23	ImpSvys
22	2231.00	1.20	348.20	2230.30	11.87	-4.05	-38.74	95.00	0.20	0.00	38.95	264.03	ImpSvys
23	2325.00	1.20	337.70	2324.28	10.15	-2.18	-39.31	94.00	0.23	0.00	39.37	266.83	ImpSvys
24	2420.00	0.60	285.80	2419.27	9.29	-1.12	-40.17	95.00	1.00	0.00	40.18	268.40	ImpSvys
25	2514.00	0.80	221.60	2513.26	9.83	-1.48	-41.08	94.00	0.81	0.00	41.10	267.94	ImpSvys
26	2609.00	1.10	223.80	2608.25	11.17	-2.63	-42.15	95.00	0.32	0.00	42.23	266.43	ImpSvys
27	2703.00	1.40	224.50	2702.23	12.91	-4.10	-43.58	94.00	0.32	0.00	43.77	264.62	ImpSvys
28	2798.00	0.40	240.10	2797.21	14.10	-5.10	-44.68	95.00	1.07	0.00	44.97	263.49	ImpSvys
29	2893.00	0.10	77.10	2892.21	14.29	-5.24	-44.88	95.00	0.52	0.00	45.19	263.34	ImpSvys
30	2987.00	0.20	106.10	2986.21	14.27	-5.27	-44.65	94.00	0.13	0.00	44.96	263.27	ImpSvys
31	3081.00	0.70	90.20	3080.21	14.16	-5.32	-43.91	94.00	0.54	0.00	44.24	263.10	ImpSvys
32	3176.00	1.20	89.30	3175.20	13.83	-5.31	-42.34	95.00	0.53	0.00	42.67	262.86	ImpSvys
33	3270.00	1.10	50.00	3269.18	12.91	-4.72	-40.66	94.00	0.83	0.00	40.94	263.39	ImpSvys
34	3365.00	1.30	19.70	3364.16	11.13	-3.11	-39.60	95.00	0.69	0.00	39.72	265.50	ImpSvys
35	3459.00	1.70	20.10	3458.13	8.69	-0.80	-38.76	94.00	0.43	0.00	38.77	268.82	ImpSvys
36	3553.00	0.80	19.00	3552.10	6.66	1.13	-38.07	94.00	0.96	0.00	38.09	271.70	ImpSvys
37	3647.00	0.40	5.20	3646.10	5.68	2.08	-37.83	94.00	0.45	0.00	37.88	273.14	ImpSvys
38	3741.00	0.40	5.70	3740.10	5.03	2.73	-37.77	94.00	0.00	0.00	37.86	274.13	ImpSvys
39	3836.00	0.40	0.70	3835.09	4.38	3.39	-37.73	95.00	0.04	0.00	37.88	275.14	ImpSvys
40	3930.00	0.40	347.40	3929.09	3.76	4.04	-37.80	94.00	0.10	0.00	38.01	276.10	ImpSvys
41	3993.00	0.50	328.60	3992.09	3.35	4.49	-37.99	63.00	0.28	0.00	38.25	276.74	ImpSvys
42	4154.00	0.90	306.70	4153.08	2.31	5.84	-39.37	161.00	0.29	0.00	39.80	278.44	ImpSvys
43	4248.00	1.30	301.00	4247.06	1.65	6.83	-40.87	94.00	0.44	0.00	41.44	279.49	ImpSvys
44	4343.00	0.20	105.20	4342.05	1.30	7.35	-41.64	95.00	1.57	0.00	42.28	280.01	ImpSvys
45	4438.00	0.10	257.80	4437.05	1.35	7.28	-41.56	95.00	0.31	0.00	42.19	279.94	ImpSvys
46	4530.00	0.20	289.70	4529.05	1.36	7.32	-41.79	92.00	0.14	0.00	42.42	279.94	ImpSvys
47	4624.00	0.01	285.20	4623.05	1.33	7.38	-41.95	94.00	0.20	0.00	42.59	279.98	ImpSvys
48	4719.00	0.40	341.50	4718.05	1.05	7.70	-42.06	95.00	0.42	0.00	42.76	280.37	ImpSvys

49	4812.00	0.50	345.90	4811.05	0.40	8.40	-42.26	93.00	0.11	0.00	43.09	281.24	ImpSvys
50	4906.00	0.60	335.70	4905.04	-0.37	9.24	-42.57	94.00	0.15	0.00	43.56	282.25	ImpSvys
51	5000.00	0.40	339.30	4999.04	-1.04	10.00	-42.89	94.00	0.22	0.00	44.04	283.12	ImpSvys
52	5095.00	0.70	330.30	5094.04	-1.76	10.81	-43.29	95.00	0.33	0.00	44.62	284.02	ImpSvys
53	5189.00	0.70	347.70	5188.03	-2.71	11.87	-43.70	94.00	0.23	0.00	45.28	285.20	ImpSvys
54	5284.00	0.70	3.20	5283.02	-3.81	13.02	-43.79	95.00	0.20	0.00	45.68	286.56	ImpSvys
55	5378.00	0.70	339.60	5377.02	-4.87	14.13	-43.96	94.00	0.30	0.00	46.17	287.82	ImpSvys
56	5473.00	0.60	353.70	5472.01	-5.83	15.17	-44.21	95.00	0.20	0.00	46.74	288.94	ImpSvys
57	5568.00	0.10	6.60	5567.01	-6.39	15.75	-44.26	95.00	0.53	0.00	46.98	289.58	ImpSvys
58	5663.00	0.10	172.50	5662.01	-6.39	15.75	-44.24	95.00	0.21	0.00	46.96	289.59	ImpSvys
59	5757.00	0.40	268.80	5756.01	-6.24	15.66	-44.56	94.00	0.45	0.00	47.23	289.36	ImpSvys
60	5852.00	0.70	238.60	5851.00	-5.77	15.35	-45.38	95.00	0.43	0.00	47.91	288.69	ImpSvys
61	5947.00	0.90	258.00	5945.99	-5.07	14.89	-46.61	95.00	0.35	0.00	48.93	287.72	ImpSvys
62	6041.00	1.50	260.40	6039.97	-4.33	14.53	-48.54	94.00	0.64	0.00	50.67	286.67	ImpSvys
63	6136.00	1.40	255.30	6134.94	-3.35	14.03	-50.89	95.00	0.17	0.00	52.79	285.41	ImpSvys
64	6231.00	1.60	259.20	6229.91	-2.33	13.49	-53.32	95.00	0.24	0.00	55.00	284.20	ImpSvys
65	6326.00	1.90	238.90	6324.87	-0.75	12.43	-55.97	95.00	0.72	0.00	57.33	282.52	ImpSvys
66	6374.00	2.10	244.20	6372.84	0.33	11.63	-57.44	48.00	0.57	0.00	58.61	281.45	ImpSvys
67	6457.00	6.00	218.60	6455.62	5.13	7.58	-61.52	83.00	5.07	0.00	61.98	277.02	ImpSvys
68	6503.00	13.20	216.30	6500.94	12.06	1.46	-66.13	46.00	15.67	0.00	66.15	271.26	ImpSvys
69	6550.00	17.90	214.00	6546.21	23.64	-8.86	-73.35	47.00	10.08	0.00	73.89	263.11	ImpSvys
70	6596.00	21.60	211.80	6589.50	38.14	-21.92	-81.77	46.00	8.20	0.00	84.66	254.99	ImpSvys
71	6644.00	25.80	206.70	6633.45	56.54	-38.77	-91.13	48.00	9.73	0.00	99.03	246.95	ImpSvys
72	6691.00	31.10	204.40	6674.76	78.29	-58.98	-100.74	47.00	11.51	0.00	116.74	239.65	ImpSvys
73	6738.00	34.70	202.10	6714.21	103.30	-82.44	-110.79	47.00	8.11	0.00	138.10	233.35	ImpSvys
74	6785.00	38.20	201.60	6752.01	130.79	-108.35	-121.18	47.00	7.47	0.00	162.56	228.20	ImpSvys
75	6832.00	38.60	202.60	6788.85	159.51	-135.40	-132.16	47.00	1.57	0.00	189.21	224.31	ImpSvys
76	6878.00	42.80	203.50	6823.71	188.92	-162.99	-143.92	46.00	9.22	0.00	217.43	221.44	ImpSvys
77	6926.00	47.40	206.60	6857.59	221.99	-193.76	-158.34	48.00	10.62	0.00	250.23	219.25	ImpSvys
78	6973.00	51.00	207.30	6888.30	256.32	-225.47	-174.46	47.00	7.74	0.00	285.09	217.73	ImpSvys
79	7020.00	53.40	207.50	6917.10	292.08	-258.44	-191.56	47.00	5.12	0.00	321.69	216.55	ImpSvys
80	7067.00	55.90	208.30	6944.29	328.90	-292.31	-209.50	47.00	5.50	0.00	359.63	215.63	ImpSvys
81	7114.00	58.40	209.50	6969.79	366.62	-326.87	-228.58	47.00	5.74	0.00	398.87	214.97	ImpSvys
82	7161.00	62.60	211.40	6992.93	405.36	-362.12	-249.32	47.00	9.60	0.00	439.65	214.55	ImpSvys
83	7209.00	66.00	212.50	7013.74	445.95	-398.81	-272.21	48.00	7.38	0.00	482.85	214.32	ImpSvys
84	7256.00	68.70	212.80	7031.84	486.47	-435.33	-295.61	47.00	5.77	0.00	526.20	214.18	ImpSvys
85	7303.00	70.80	213.40	7048.10	527.54	-472.26	-319.69	47.00	4.63	0.00	570.29	214.10	ImpSvys
86	7397.00	72.50	213.60	7077.70	610.42	-546.66	-368.93	94.00	1.82	0.00	659.50	214.01	ImpSvys
87	7491.00	72.30	213.20	7106.12	693.71	-621.46	-418.25	94.00	0.46	0.00	749.10	213.94	ImpSvys
88	7585.00	71.20	213.10	7135.56	776.84	-696.20	-467.07	94.00	1.17	0.00	838.36	213.86	ImpSvys
89	7678.00	73.10	212.40	7164.06	859.49	-770.65	-514.95	93.00	2.16	0.00	926.86	213.75	ImpSvys
90	7772.00	72.60	212.10	7191.78	943.63	-846.61	-562.88	94.00	0.61	0.00	1016.66	213.62	ImpSvys
91	7867.00	71.60	211.10	7220.98	1028.67	-923.61	-610.25	95.00	1.45	0.00	1107.00	213.45	ImpSvys
92	7961.00	72.80	211.50	7249.71	1113.02	-1000.08	-656.75	94.00	1.34	0.00	1196.44	213.29	ImpSvys
93	8056.00	72.40	211.80	7278.12	1198.27	-1077.25	-704.32	95.00	0.52	0.00	1287.06	213.18	ImpSvys
94	8151.00	71.30	211.40	7307.72	1283.19	-1154.13	-751.62	95.00	1.23	0.00	1377.30	213.07	ImpSvys
95	8246.00	70.20	211.40	7339.04	1367.66	-1230.69	-798.35	95.00	1.16	0.00	1466.95	212.97	ImpSvys
96	8341.00	68.70	211.70	7372.38	1451.36	-1306.49	-844.89	95.00	1.61	0.00	1555.88	212.89	ImpSvys
97	8436.00	67.30	211.80	7407.97	1534.14	-1381.39	-891.24	95.00	1.48	0.00	1643.94	212.83	ImpSvys
98	8531.00	67.90	212.80	7444.17	1616.39	-1455.63	-938.17	95.00	1.16	0.00	1731.77	212.80	ImpSvys
99	8626.00	70.90	212.60	7477.59	1699.44	-1530.45	-986.21	95.00	3.16	0.00	1820.68	212.80	ImpSvys
100	8722.00	73.20	213.50	7507.18	1784.54	-1606.99	-1036.01	96.00	2.56	0.00	1912.00	212.81	ImpSvys
101	8815.00	72.10	213.70	7534.91	1866.94	-1680.93	-1085.13	93.00	1.20	0.00	2000.76	212.84	ImpSvys
102	8910.00	74.40	214.20	7562.29	1951.17	-1756.39	-1135.94	95.00	2.47	0.00	2091.71	212.89	ImpSvys
103	9005.00	75.10	214.20	7587.27	2035.89	-1832.19	-1187.45	95.00	0.74	0.00	2183.34	212.95	ImpSvys
104	9099.00	75.10	213.10	7611.45	2120.18	-1907.81	-1237.79	94.00	1.13	0.00	2274.17	212.98	ImpSvys
105	9193.00	74.90	212.10	7635.78	2205.04	-1984.30	-1286.71	94.00	1.05	0.00	2364.96	212.96	ImpSvys
106	9288.00	75.10	211.30	7660.36	2291.31	-2062.37	-1334.93	95.00	0.84	0.00	2456.71	212.91	ImpSvys
107	9383.00	74.20	211.50	7685.51	2377.60	-2140.57	-1382.65	95.00	0.97	0.00	2548.28	212.86	ImpSvys
108	9477.00	74.40	211.60	7710.95	2462.75	-2217.68	-1430.00	94.00	0.24	0.00	2638.75	212.81	ImpSvys
109	9571.00	73.20	212.90	7737.17	2547.31	-2294.02	-1478.17	94.00	1.84	0.00	2729.01	212.80	ImpSvys
110	9666.00	71.10	213.70	7766.29	2631.42	-2369.60	-1527.81	95.00	2.35	0.00	2819.43	212.81	ImpSvys
111	9761.00	72.80	213.90	7795.73	2715.15	-2444.65	-1578.05	95.00	1.80	0.00	2909.74	212.84	ImpSvys
112	9856.00	73.50	213.20	7823.26	2799.58	-2520.43	-1628.30	95.00	1.02	0.00	3000.65	212.86	ImpSvys
113	9950.00	71.40	212.80	7851.61	2883.12	-2595.59	-1677.11	94.00	2.27	0.00	3090.27	212.87	ImpSvys
114	10044.00	71.30	214.00	7881.67	2965.91	-2669.94	-1726.14	94.00	1.21	0.00	3179.33	212.88	ImpSvys
115	10139.00	73.10	215.00	7910.71	3049.33	-2744.48	-1777.37	95.00	2.14	0.00	3269.74	212.93	ImpSvys
116	10233.00	74.40	216.10	7937.01	3131.91	-2817.90	-1829.84	94.00	1.78	0.00	3359.89	213.00	ImpSvys

117	10327.00	73.80	216.00	7962.76	3214.31	-2890.99	-1883.04	94.00	0.65	0.00	3450.17	213.08	ImpSvys
118	10421.00	76.30	215.30	7987.01	3297.35	-2964.78	-1935.97	94.00	2.76	0.00	3540.89	213.14	ImpSvys
119	10515.00	74.90	214.20	8010.39	3381.17	-3039.59	-1987.87	94.00	1.87	0.00	3631.90	213.18	ImpSvys
120	10610.00	73.50	213.40	8036.26	3465.90	-3115.54	-2038.72	95.00	1.68	0.00	3723.30	213.20	ImpSvys
121	10704.00	74.80	213.20	8061.93	3550.02	-3191.12	-2088.36	94.00	1.40	0.00	3813.73	213.20	ImpSvys
122	10798.00	76.40	212.40	8085.31	3635.00	-3267.65	-2137.68	94.00	1.89	0.00	3904.77	213.19	ImpSvys
123	10891.00	75.40	211.70	8107.96	3719.60	-3344.10	-2185.54	93.00	1.30	0.00	3994.95	213.17	ImpSvys
124	10986.00	72.50	211.00	8134.22	3805.61	-3422.06	-2233.04	95.00	3.13	0.00	4086.19	213.13	ImpSvys
125	11081.00	71.90	210.30	8163.27	3891.19	-3499.87	-2279.15	95.00	0.94	0.00	4176.56	213.07	ImpSvys
126	11175.00	72.50	209.90	8192.00	3976.15	-3577.30	-2324.04	94.00	0.76	0.00	4265.94	213.01	ImpSvys
127	11270.00	72.30	207.70	8220.73	4062.73	-3656.65	-2367.66	95.00	2.22	0.00	4356.25	212.92	ImpSvys
128	11318.00	72.40	205.30	8235.28	4106.96	-3697.58	-2388.07	48.00	4.77	0.00	4401.70	212.86	ImpSvys
129	11364.00	72.70	202.20	8249.08	4149.88	-3737.74	-2405.74	46.00	6.46	0.00	4445.03	212.77	ImpSvys
130	11411.00	73.60	198.70	8262.71	4194.34	-3779.88	-2421.45	47.00	7.38	0.00	4488.97	212.64	ImpSvys
131	11459.00	74.10	196.00	8276.06	4240.22	-3823.88	-2435.19	48.00	5.50	0.00	4533.46	212.49	ImpSvys
132	11507.00	73.50	193.60	8289.46	4286.25	-3868.44	-2446.97	48.00	4.96	0.00	4577.39	212.32	ImpSvys
133	11554.00	72.90	191.50	8303.04	4331.23	-3912.36	-2456.74	47.00	4.46	0.00	4619.76	212.13	ImpSvys
134	11602.00	72.70	189.20	8317.24	4377.07	-3957.46	-2464.98	48.00	4.60	0.00	4662.37	211.92	ImpSvys
135	11648.00	71.70	186.50	8331.30	4420.76	-4000.84	-2470.97	46.00	6.00	0.00	4702.39	211.70	ImpSvys
136	11697.00	69.10	184.20	8347.74	4466.63	-4046.80	-2475.28	49.00	6.91	0.00	4743.79	211.45	ImpSvys
137	11743.00	68.10	182.70	8364.52	4509.00	-4089.55	-2477.86	46.00	3.73	0.00	4781.65	211.21	ImpSvys
138	11790.00	68.40	181.60	8381.94	4552.04	-4133.17	-2479.49	47.00	2.27	0.00	4819.85	210.96	ImpSvys
139	11837.00	69.90	180.30	8398.67	4595.18	-4177.08	-2480.22	47.00	4.11	0.00	4857.93	210.70	ImpSvys
140	11929.00	70.60	178.50	8429.76	4679.75	-4263.66	-2479.31	92.00	1.99	0.00	4932.12	210.18	ImpSvys
141	12023.00	69.80	177.70	8461.60	4765.69	-4352.05	-2476.38	94.00	1.17	0.00	5007.28	209.64	ImpSvys
142	12118.00	70.60	177.20	8493.78	4852.29	-4441.35	-2472.40	95.00	0.98	0.00	5083.14	209.10	ImpSvys
143	12150.00	72.10	177.20	8504.01	4881.64	-4471.63	-2470.92	32.00	4.69	0.00	5108.91	208.92	MWD Run 1
144	12197.00	75.20	179.00	8517.24	4925.45	-4516.70	-2469.43	47.00	7.55	0.00	5147.68	208.67	MWD Run 1
145	12244.00	80.70	180.60	8527.05	4970.40	-4562.64	-2469.28	47.00	12.17	130.82	5187.97	208.42	MWD Run 1
146	12291.00	85.70	181.40	8532.62	5016.23	-4609.29	-2470.09	47.00	10.77	137.88	5229.43	208.19	MWD Run 1
147	12339.00	88.90	181.60	8534.88	5063.41	-4657.21	-2471.35	48.00	6.68	141.41	5272.30	207.95	MWD Run 1
148	12434.00	91.80	181.60	8534.30	5156.90	-4752.16	-2474.00	95.00	3.05	144.94	5357.59	207.50	MWD Run 1
149	12529.00	93.30	179.90	8530.07	5250.05	-4847.05	-2475.24	95.00	2.39	148.47	5442.50	207.05	MWD Run 1
150	12623.00	92.50	177.20	8525.31	5341.43	-4940.89	-2472.87	94.00	2.99	150.24	5525.17	206.59	MWD Run 1
151	12717.00	91.20	177.40	8522.28	5432.40	-5034.74	-2468.44	94.00	1.40	152.00	5607.30	206.12	MWD Run 1
152	12812.00	89.10	178.30	8522.03	5524.61	-5129.67	-2464.88	95.00	2.40	153.76	5691.14	205.66	MWD Run 1
153	12907.00	90.40	178.30	8522.45	5616.99	-5224.62	-2462.06	95.00	1.37	153.76	5775.67	205.23	MWD Run 1
154	13001.00	92.38	178.17	8520.17	5708.35	-5318.54	-2459.17	94.00	2.11	155.53	5859.56	204.81	MWD Run 1
155	13095.00	92.07	178.34	8516.52	5799.68	-5412.43	-2456.31	94.00	0.38	150.24	5943.72	204.41	MWD Run 1
156	13189.00	90.03	178.22	8514.79	5891.06	-5506.37	-2453.48	94.00	2.17	152.00	6028.24	204.02	MWD Run 1
157	13283.00	89.97	180.34	8514.79	5982.83	-5600.35	-2452.30	94.00	2.26	152.00	6113.73	203.65	MWD Run 1
158	13377.00	91.29	180.53	8513.76	6074.99	-5694.34	-2453.02	94.00	1.42	150.24	6200.23	203.31	MWD Run 1
159	13472.00	90.73	178.96	8512.09	6167.89	-5789.32	-2452.59	95.00	1.75	153.76	6287.41	202.96	MWD Run 1
160	13566.00	89.58	178.40	8511.83	6259.44	-5883.30	-2450.43	94.00	1.36	153.76	6373.21	202.61	MWD Run 1
161	13661.00	87.76	178.21	8514.04	6351.80	-5978.23	-2447.62	95.00	1.93	153.76	6459.88	202.27	MWD Run 1
162	13755.00	89.24	178.32	8516.50	6443.17	-6072.15	-2444.77	94.00	1.58	155.53	6545.83	201.93	MWD Run 1
163	13850.00	90.81	178.28	8516.46	6535.55	-6167.10	-2441.96	95.00	1.65	157.29	6632.97	201.60	MWD Run 1
164	13944.00	89.05	178.81	8516.57	6627.06	-6261.07	-2439.57	94.00	1.96	157.29	6719.56	201.29	MWD Run 1
165	14037.00	87.79	179.41	8519.13	6717.76	-6354.02	-2438.13	93.00	1.50	157.29	6805.73	200.99	MWD Run 1
166	14132.00	88.79	179.23	8521.97	6810.48	-6448.97	-2437.00	95.00	1.07	159.06	6894.07	200.70	MWD Run 1
167	14227.00	90.17	178.65	8522.83	6903.10	-6543.95	-2435.24	95.00	1.58	160.82	6982.38	200.41	MWD Run 1
168	14320.00	89.44	180.38	8523.15	6993.98	-6636.94	-2434.45	93.00	2.02	160.82	7069.34	200.14	MWD Run 1
169	14414.00	90.48	180.25	8523.21	7086.11	-6730.94	-2434.97	94.00	1.11	159.06	7157.83	199.89	MWD Run 1
170	14508.00	89.33	179.78	8523.37	7178.13	-6824.93	-2435.00	94.00	1.32	159.06	7246.30	199.64	MWD Run 1
171	14603.00	90.14	179.38	8523.81	7270.99	-6919.93	-2434.30	95.00	0.95	160.82	7335.61	199.38	MWD Run 1
172	14698.00	88.99	180.59	8524.53	7363.98	-7014.92	-2434.27	95.00	1.76	160.82	7425.28	199.14	MWD Run 1
173	14791.00	90.56	181.26	8524.89	7455.32	-7107.91	-2435.78	93.00	1.84	160.82	7513.68	198.92	MWD Run 1
174	14886.00	90.14	181.07	8524.31	7548.69	-7202.89	-2437.71	95.00	0.49	159.06	7604.21	198.70	MWD Run 1
175	14980.00	91.46	180.85	8523.00	7641.01	-7296.86	-2439.28	94.00	1.42	157.29	7693.78	198.48	MWD Run 1
176	15074.00	89.86	180.50	8521.92	7733.25	-7390.84	-2440.39	94.00	1.74	160.82	7783.32	198.27	MWD Run 1
177	15168.00	91.09	180.38	8521.14	7825.41	-7484.84	-2441.11	94.00	1.31	162.59	7872.85	198.06	MWD Run 1
178	15263.00	90.00	180.18	8520.24	7918.50	-7579.83	-2441.57	95.00	1.17	160.82	7963.36	197.85	MWD Run 1
179	15357.00	91.46	180.09	8519.04	8010.56	-7673.82	-2441.80	94.00	1.56	162.59	8052.94	197.65	MWD Run 1
180	15451.00	90.17	180.34	8517.70	8102.64	-7767.81	-2442.15	94.00	1.40	162.59	8142.66	197.45	MWD Run 1
181	15546.00	87.70	180.02	8519.47	8195.68	-7862.78	-2442.45	95.00	2.62	160.82	8233.40	197.26	MWD Run 1
182	15640.00	89.05	180.11	8522.13	8287.69	-7956.74	-2442.55	94.00	1.44	164.35	8323.21	197.07	MWD Run 1
183	15735.00	90.90	180.45	8522.17	8380.78	-8051.74	-2443.02	95.00	1.98	164.35	8414.20	196.88	MWD Run 1
184	15829.00	90.00	179.79	8521.44	8472.84	-8145.73	-2443.22	94.00	1.19	162.59	8504.25	196.70	MWD Run 1

185	15924.00	91.35	179.60	8520.32	8565.73	-8240.72	-2442.71	95.00	1.44	164.35	8595.13	196.51	MWD Run 1
186	16018.00	89.05	178.89	8519.99	8657.48	-8334.71	-2441.47	94.00	2.56	162.59	8684.94	196.33	MWD Run 1
187	16113.00	88.91	178.15	8521.68	8749.94	-8429.66	-2439.02	95.00	0.79	164.35	8775.42	196.14	MWD Run 1
188	16208.00	89.72	177.55	8522.82	8842.14	-8524.58	-2435.45	95.00	1.06	164.35	8865.66	195.94	MWD Run 1
189	16302.00	90.03	175.93	8523.02	8932.92	-8618.43	-2430.11	94.00	1.75	162.59	8954.48	195.75	MWD Run 1
190	16396.00	89.30	178.14	8523.57	9023.82	-8712.30	-2425.25	94.00	2.48	164.35	9043.56	195.56	MWD Run 1
191	16491.00	88.68	180.63	8525.25	9116.59	-8807.27	-2424.23	95.00	2.70	166.12	9134.81	195.39	MWD Run 1
192	16586.00	90.90	180.25	8525.59	9209.73	-8902.26	-2424.96	95.00	2.37	166.12	9226.62	195.24	MWD Run 1
193	16680.00	90.17	180.86	8524.72	9301.93	-8996.25	-2425.87	94.00	1.01	167.88	9317.58	195.09	MWD Run 1
194	16775.00	91.15	180.58	8523.62	9395.16	-9091.23	-2427.06	95.00	1.07	167.88	9409.63	194.95	MWD Run 1
195	16870.00	88.85	180.75	8523.62	9488.38	-9186.22	-2428.16	95.00	2.43	166.12	9501.72	194.81	MWD Run 1
196	16965.00	87.84	179.73	8526.37	9581.42	-9281.18	-2428.56	95.00	1.51	167.88	9593.65	194.66	MWD Run 1
197	17059.00	88.01	180.97	8529.77	9673.50	-9375.11	-2429.14	94.00	1.33	166.12	9684.70	194.53	MWD Run 1
198	17153.00	89.47	181.40	8531.84	9765.87	-9469.07	-2431.08	94.00	1.62	166.12	9776.16	194.40	MWD Run 1
199	17247.00	90.67	181.72	8531.72	9858.38	-9563.03	-2433.64	94.00	1.32	164.35	9867.83	194.28	MWD Run 1
200	17342.00	92.38	181.49	8529.19	9951.85	-9657.96	-2436.30	95.00	1.82	166.12	9960.50	194.16	MWD Run 1
201	17436.00	91.71	181.44	8525.84	10044.28	-9751.86	-2438.70	94.00	0.71	166.12	10052.17	194.04	MWD Run 1
202	17531.00	91.18	180.20	8523.44	10137.52	-9846.82	-2440.06	95.00	1.42	166.12	10144.64	193.92	MWD Run 1
203	17625.00	90.98	179.30	8521.67	10229.44	-9940.80	-2439.65	94.00	0.98	167.88	10235.79	193.79	MWD Run 1
204	17720.00	90.17	179.20	8520.72	10322.17	-10035.79	-2438.40	95.00	0.86	166.12	10327.77	193.66	MWD Run 1
205	17814.00	90.50	179.53	8520.17	10413.98	-10129.78	-2437.36	94.00	0.50	169.65	10418.89	193.53	MWD Run 1
206	17909.00	90.03	179.03	8519.73	10506.73	-10224.77	-2436.17	95.00	0.72	169.65	10510.99	193.40	MWD Run 1
207	18004.00	90.28	178.99	8519.47	10599.38	-10319.76	-2434.53	95.00	0.27	169.65	10603.03	193.27	MWD Run 1
208	18099.00	88.94	178.23	8520.12	10691.88	-10414.73	-2432.22	95.00	1.62	171.41	10694.96	193.15	MWD Run 1
209	18193.00	90.31	180.08	8520.73	10783.60	-10508.71	-2430.84	94.00	2.45	169.65	10786.19	193.02	MWD Run 1
210	18282.00	91.77	179.87	8519.12	10870.71	-10597.69	-2430.80	89.00	1.66	155.53	10872.89	192.92	MWD Run 2
211	18377.00	91.82	179.32	8516.14	10963.53	-10692.64	-2430.13	95.00	0.58	159.06	10965.31	192.80	MWD Run 2
212	18472.00	91.06	179.54	8513.76	11056.30	-10787.60	-2429.18	95.00	0.83	162.59	11057.73	192.69	MWD Run 2
213	18567.00	89.16	180.12	8513.57	11149.24	-10882.60	-2428.90	95.00	2.09	162.59	11150.36	192.58	MWD Run 2
214	18662.00	90.00	179.88	8514.27	11242.24	-10977.60	-2428.90	95.00	0.92	164.35	11243.09	192.48	MWD Run 2
215	18757.00	87.98	179.33	8515.94	11335.09	-11072.57	-2428.25	95.00	2.20	166.12	11335.71	192.37	MWD Run 2
216	18851.00	87.59	178.58	8519.58	11426.68	-11166.49	-2426.53	94.00	0.90	167.88	11427.09	192.26	MWD Run 2
217	18946.00	87.95	177.70	8523.27	11518.93	-11261.36	-2423.45	95.00	1.00	166.12	11519.18	192.14	MWD Run 2
218	19040.00	88.35	177.26	8526.31	11609.97	-11355.22	-2419.32	94.00	0.63	167.88	11610.09	192.03	MWD Run 2
219	19134.00	89.50	176.75	8528.07	11700.85	-11449.08	-2414.41	94.00	1.34	169.65	11700.89	191.91	MWD Run 2
220	19228.00	90.06	175.78	8528.43	11791.43	-11542.87	-2408.29	94.00	1.19	162.59	11791.43	191.79	MWD Run 2
221	19316.00	90.59	175.21	8527.93	11875.90	-11630.60	-2401.38	88.00	0.88	166.12	11875.92	191.67	MWD Run 2
222	19370.00	90.59	175.21	8527.38	11927.66	-11684.41	-2396.87	54.00	0.00	0.00	11927.72	191.59	PTB

DEC 26 2019

Survey Report

DISTRICT 7 - ARTESIA O.C.D.

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Project	Eddy County, NM (NAD27) NMEZ Grid		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	BUTTERCUP 27-34		
Site Position:		Northing:	597,529.10 usft
From:	Map	Easting:	615,452.00 usft
Position Uncertainty:	0.00. usft	Slot Radius:	13.20 in
		Latitude:	32.64214952
		Longitude:	-103.95826483
		Grid Convergence:	0.20 °

Well	BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL		
Well Position	+N/-S	0.00 usft	Northing: 597,528.80 usft
	+E/-W	0.00 usft	Easting: 615,362.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.64214957
		Longitude:	-103.95855721
		Ground Level:	3,285.00 usft

Wellbore	1H Lateral		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	01/16/19	6.99
			Dip Angle (°)
			60.36
			Field Strength (nT)
			47,982.38047366

Design	proj		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 19,040.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			191.37

Survey Tool Program	Date	03/22/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
209.00	19,040.00	Survey #1 (1H Lateral)	MWD	OWSG MWD - Standard
19,040.00	19,582.44	proj (1H Lateral)	MWD	OWSG MWD - Standard

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 1H SHL - BUTTERCUP 27-34 FED 3H SHL - BUTTERCUP 27-34 FED 4H SHL - BUTTERCUP 27-34 FED 2H SHL										
1.36	0.01	273.70	1.36	0.00	0.00	0.00	0.72	0.72	0.00	
BUTTERCUP 27-34 FED 2H FTP_330FNL_400FWL										
9.97	0.07	273.70	9.97	0.00	-0.01	0.00	0.72	0.72	0.00	
BUTTERCUP 27-34 FED 2H FTP_CALCULATED_330FNL_1820										
209.00	1.50	273.70	208.98	0.18	-2.73	0.37	0.72	0.72	0.00	
302.00	2.10	269.60	301.93	0.24	-5.65	0.88	0.66	0.65	-4.41	
363.00	2.10	264.40	362.89	0.13	-7.88	1.43	0.31	0.00	-8.52	

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
448.00	2.20	253.80	447.83	-0.48	-11.00	2.64	0.48	0.12	-12.47	
584.00	2.30	248.50	583.72	-2.21	-16.04	5.33	0.17	0.07	-3.90	
684.00	2.50	252.10	683.64	-3.62	-19.98	7.49	0.25	0.20	3.60	
778.00	2.10	251.40	777.56	-4.79	-23.57	9.35	0.43	-0.43	-0.74	
873.00	1.70	260.30	872.51	-5.59	-26.61	10.72	0.52	-0.42	9.37	
917.00	1.60	257.80	916.49	-5.83	-27.85	11.20	0.28	-0.23	-5.68	
1,012.00	1.60	251.50	1,011.45	-6.53	-30.40	12.40	0.19	0.00	-6.63	
1,107.00	1.00	249.40	1,106.43	-7.24	-32.44	13.50	0.63	-0.63	-2.21	
1,202.00	0.40	257.10	1,201.42	-7.61	-33.54	14.07	0.64	-0.63	8.11	
1,296.00	0.60	251.00	1,295.42	-7.84	-34.32	14.45	0.22	0.21	-6.49	
1,390.00	0.40	236.10	1,389.41	-8.18	-35.06	14.94	0.25	-0.21	-15.85	
1,465.00	0.50	239.80	1,464.41	-8.49	-35.56	15.34	0.14	0.13	4.93	
1,475.59	0.51	237.76	1,475.00	-8.54	-35.64	15.40	0.20	0.11	-19.27	
Base Salt										
1,660.60	0.79	214.64	1,660.00	-10.04	-37.07	17.15	0.20	0.15	-12.49	
Yates										
1,665.00	0.80	214.30	1,664.40	-10.09	-37.10	17.20	0.20	0.17	-7.78	
1,760.00	1.00	213.30	1,759.39	-11.33	-37.93	18.58	0.21	0.21	-1.05	
1,854.00	0.40	333.90	1,853.38	-11.72	-38.52	19.09	1.33	-0.64	128.30	
1,948.00	1.70	2.80	1,947.37	-10.03	-38.60	17.45	1.45	1.38	30.74	
2,042.00	1.10	3.50	2,041.34	-7.74	-38.48	15.17	0.64	-0.64	0.74	
2,136.00	1.10	356.50	2,135.32	-5.94	-38.48	13.41	0.14	0.00	-7.45	
2,231.00	1.20	348.20	2,230.30	-4.05	-38.74	11.61	0.20	0.11	-8.74	
2,290.71	1.20	341.53	2,290.00	-2.85	-39.06	10.50	0.23	-0.01	-11.18	
Capitan										
2,325.00	1.20	337.70	2,324.28	-2.18	-39.31	9.89	0.23	0.01	-11.16	
2,420.00	0.60	285.80	2,419.27	-1.12	-40.17	9.02	1.00	-0.63	-54.63	
2,514.00	0.80	221.60	2,513.26	-1.48	-41.08	9.55	0.81	0.21	-68.30	
2,609.00	1.10	223.80	2,608.25	-2.63	-42.15	10.89	0.32	0.32	2.32	
2,703.00	1.40	224.50	2,702.23	-4.10	-43.58	12.62	0.32	0.32	0.74	
2,798.00	0.40	240.10	2,797.21	-5.10	-44.68	13.81	1.07	-1.05	16.42	
2,893.00	0.10	77.10	2,892.21	-5.24	-44.88	13.99	0.52	-0.32	-171.58	
2,987.00	0.20	106.10	2,986.21	-5.27	-44.65	13.97	0.13	0.11	30.85	
3,081.00	0.70	90.20	3,080.21	-5.32	-43.91	13.87	0.54	0.53	-16.91	
3,176.00	1.20	89.30	3,175.20	-5.31	-42.34	13.55	0.53	0.53	-0.95	
3,270.00	1.10	50.00	3,269.18	-4.72	-40.66	12.64	0.83	-0.11	-41.81	
3,365.00	1.30	19.70	3,364.16	-3.11	-39.60	10.86	0.69	0.21	-31.89	
3,459.00	1.70	20.10	3,458.13	-0.80	-38.76	8.43	0.43	0.43	0.43	
3,553.00	0.80	19.00	3,552.10	1.13	-38.07	6.40	0.96	-0.96	-1.17	
3,647.00	0.40	5.20	3,646.10	2.08	-37.83	5.43	0.45	-0.43	-14.68	
3,741.00	0.40	5.70	3,740.10	2.73	-37.77	4.77	0.00	0.00	0.53	
3,836.00	0.40	0.70	3,835.09	3.39	-37.73	4.12	0.04	0.00	-5.26	
3,930.00	0.40	347.40	3,929.09	4.04	-37.80	3.49	0.10	0.00	-14.15	

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,985.91	0.49	330.31	3,985.00	4.44	-37.96	3.14	0.28	0.15	-30.57	
Delaware										
3,993.00	0.50	328.60	3,992.09	4.49	-37.99	3.09	0.28	0.19	-24.10	
4,154.00	0.90	306.70	4,153.08	5.84	-39.37	2.04	0.29	0.25	-13.60	
4,248.00	1.30	301.00	4,247.06	6.83	-40.87	1.36	0.44	0.43	-6.06	
4,343.00	0.20	105.20	4,342.05	7.35	-41.64	1.01	1.57	-1.16	172.84	
4,438.00	0.10	257.80	4,437.05	7.28	-41.56	1.05	0.31	-0.11	160.63	
4,530.00	0.20	289.70	4,529.05	7.32	-41.79	1.06	0.14	0.11	34.67	
4,585.95	0.09	289.39	4,585.00	7.37	-41.92	1.04	0.20	-0.20	-0.55	
Brushy Canyon										
4,624.00	0.01	285.20	4,623.05	7.38	-41.95	1.04	0.20	-0.20	-11.02	
4,719.00	0.40	341.50	4,718.05	7.70	-42.06	0.75	0.42	0.41	59.26	
4,812.00	0.50	345.90	4,811.05	8.40	-42.26	0.10	0.11	0.11	4.73	
4,906.00	0.60	335.70	4,905.04	9.24	-42.57	-0.67	0.15	0.11	-10.85	
5,000.00	0.40	339.30	4,999.04	10.00	-42.89	-1.34	0.22	-0.21	3.83	
5,095.00	0.70	330.30	5,094.04	10.81	-43.29	-2.06	0.33	0.32	-9.47	
5,189.00	0.70	347.70	5,188.03	11.87	-43.70	-3.02	0.23	0.00	18.51	
5,284.00	0.70	3.20	5,283.02	13.02	-43.79	-4.13	0.20	0.00	16.32	
5,378.00	0.70	339.60	5,377.02	14.13	-43.96	-5.18	0.30	0.00	-25.11	
5,473.00	0.60	353.70	5,472.01	15.17	-44.21	-6.15	0.20	-0.11	14.84	
5,568.00	0.10	6.60	5,567.01	15.75	-44.26	-6.71	0.53	-0.53	13.58	
5,663.00	0.10	172.50	5,662.01	15.75	-44.24	-6.71	0.21	0.00	174.63	
5,757.00	0.40	268.80	5,756.01	15.66	-44.56	-6.56	0.45	0.32	102.45	
5,852.00	0.70	238.60	5,851.00	15.35	-45.38	-6.10	0.43	0.32	-31.79	
5,947.00	0.90	258.00	5,945.99	14.89	-46.61	-5.41	0.35	0.21	20.42	
6,041.00	1.50	260.40	6,039.97	14.53	-48.54	-4.67	0.64	0.64	2.55	
6,096.05	1.44	257.53	6,095.00	14.26	-49.93	-4.14	0.17	-0.11	-5.21	
Bone Spring										
6,136.00	1.40	255.30	6,134.94	14.03	-50.89	-3.72	0.17	-0.10	-5.58	
6,205.08	1.54	258.24	6,204.00	13.63	-52.62	-2.98	0.24	0.21	4.25	
Avalon Sand										
6,231.00	1.60	259.20	6,229.91	13.49	-53.32	-2.71	0.24	0.21	3.72	
6,326.00	1.90	238.90	6,324.87	12.43	-55.97	-1.14	0.72	0.32	-21.37	
6,374.00	2.10	244.20	6,372.84	11.63	-57.44	-0.07	0.57	0.42	11.04	
6,457.00	6.00	218.60	6,455.62	7.58	-61.52	4.70	5.07	4.70	-30.84	
6,503.00	13.20	216.30	6,500.95	1.46	-66.13	11.61	15.67	15.65	-5.00	
6,550.00	17.90	214.00	6,546.21	-8.86	-73.35	23.15	10.08	10.00	-4.89	
6,596.00	21.60	211.80	6,589.50	-21.92	-81.77	37.62	8.20	8.04	-4.78	
6,644.00	25.80	206.70	6,633.45	-38.77	-91.13	55.98	9.73	8.75	-10.62	
6,691.00	31.10	204.40	6,674.76	-58.98	-100.74	77.69	11.51	11.28	-4.89	
6,738.00	34.70	202.10	6,714.21	-82.44	-110.79	102.67	8.11	7.66	-4.89	
6,785.00	38.20	201.60	6,752.01	-108.35	-121.18	130.12	7.47	7.45	-1.06	
6,832.00	38.60	202.60	6,788.85	-135.40	-132.16	158.81	1.57	0.85	2.13	

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,878.00	42.80	203.50	6,823.71	-162.99	-143.92	188.17	9.22	9.13	1.96
6,926.00	47.40	206.60	6,857.59	-193.76	-158.34	221.18	10.62	9.58	6.46
6,973.00	51.00	207.30	6,888.30	-225.47	-174.46	255.45	7.74	7.66	1.49
7,020.00	53.40	207.50	6,917.10	-258.44	-191.56	291.14	5.12	5.11	0.43
7,067.00	55.90	208.30	6,944.29	-292.31	-209.50	327.89	5.50	5.32	1.70
7,114.00	58.40	209.50	6,969.79	-326.87	-228.58	365.53	5.74	5.32	2.55
7,161.00	62.60	211.40	6,992.93	-362.12	-249.32	404.18	9.60	8.94	4.04
7,209.00	66.00	212.50	7,013.74	-398.81	-272.21	444.66	7.38	7.08	2.29
7,256.00	68.70	212.80	7,031.84	-435.33	-295.61	485.08	5.77	5.74	0.64
7,303.00	70.80	213.40	7,048.10	-472.26	-319.69	526.04	4.63	4.47	1.28
7,397.00	72.50	213.60	7,077.70	-546.66	-368.93	608.68	1.82	1.81	0.21
7,491.00	72.30	213.20	7,106.12	-621.46	-418.25	691.74	0.46	-0.21	-0.43
7,585.00	71.20	213.10	7,135.56	-696.20	-467.07	774.64	1.17	-1.17	-0.11
7,678.00	73.10	212.40	7,164.06	-770.65	-514.95	857.07	2.16	2.04	-0.75
7,772.00	72.60	212.10	7,191.78	-846.61	-562.88	941.00	0.61	-0.53	-0.32
7,867.00	71.60	211.10	7,220.98	-923.61	-610.25	1,025.82	1.45	-1.05	-1.05
7,961.00	72.80	211.50	7,249.71	-1,000.08	-656.75	1,109.96	1.34	1.28	0.43
8,056.00	72.40	211.80	7,278.12	-1,077.25	-704.32	1,195.00	0.52	-0.42	0.32
8,151.00	71.30	211.40	7,307.72	-1,154.13	-751.62	1,279.70	1.23	-1.16	-0.42
8,246.00	70.20	211.40	7,339.04	-1,230.69	-798.35	1,363.97	1.16	-1.16	0.00
8,341.00	68.70	211.70	7,372.38	-1,306.49	-844.89	1,447.46	1.61	-1.58	0.32
8,436.00	67.30	211.80	7,407.97	-1,381.39	-891.24	1,530.03	1.48	-1.47	0.11
8,531.00	67.90	212.80	7,444.17	-1,455.63	-938.17	1,612.07	1.16	0.63	1.05
8,626.00	70.90	212.60	7,477.59	-1,530.45	-986.21	1,694.90	3.16	3.16	-0.21
8,722.00	73.20	213.50	7,507.18	-1,606.99	-1,036.01	1,779.76	2.56	2.40	0.94
8,815.00	72.10	213.70	7,534.91	-1,680.93	-1,085.13	1,861.93	1.20	-1.18	0.22
8,910.00	74.40	214.20	7,562.29	-1,756.39	-1,135.94	1,945.92	2.47	2.42	0.53
8,912.65	74.42	214.20	7,563.00	-1,758.50	-1,137.37	1,948.28	0.74	0.74	0.00
First Bone Spring Sand									
9,005.00	75.10	214.20	7,587.27	-1,832.19	-1,187.45	2,030.40	0.74	0.74	0.00
9,099.00	75.10	213.10	7,611.45	-1,907.81	-1,237.79	2,114.46	1.13	0.00	-1.17
9,193.00	74.90	212.10	7,635.78	-1,984.30	-1,286.71	2,199.10	1.05	-0.21	-1.06
9,288.00	75.10	211.30	7,660.36	-2,062.37	-1,334.93	2,285.15	0.84	0.21	-0.84
9,383.00	74.20	211.50	7,685.51	-2,140.57	-1,382.65	2,371.22	0.97	-0.95	0.21
9,477.00	74.40	211.60	7,710.95	-2,217.68	-1,430.00	2,456.16	0.24	0.21	0.11
9,538.88	73.61	212.45	7,728.00	-2,268.11	-1,461.55	2,511.82	1.84	-1.28	1.38
Second Bone Spring Limestone									
9,571.00	73.20	212.90	7,737.17	-2,294.02	-1,478.17	2,540.50	1.84	-1.27	1.39
9,584.40	72.90	213.01	7,741.08	-2,304.78	-1,485.14	2,552.42	2.35	-2.21	0.83
BUTTERCUP 27-34 FED 4H FTP_330FNL_400FEL									
9,666.00	71.10	213.70	7,766.29	-2,369.60	-1,527.81	2,624.38	2.35	-2.21	0.84
9,761.00	72.80	213.90	7,795.73	-2,444.65	-1,578.05	2,707.87	1.80	1.79	0.21
9,856.00	73.50	213.20	7,823.26	-2,520.43	-1,628.30	2,792.07	1.02	0.74	-0.74

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,950.00	71.40	212.80	7,851.61	-2,595.59	-1,677.11	2,875.38	2.27	-2.23	-0.43
10,044.00	71.30	214.00	7,881.67	-2,669.94	-1,726.14	2,957.94	1.21	-0.11	1.28
10,139.00	73.10	215.00	7,910.71	-2,744.48	-1,777.37	3,041.12	2.14	1.89	1.05
10,209.35	74.07	215.82	7,930.59	-2,799.47	-1,816.47	3,102.74	1.78	1.38	1.17
BUTTERCUP 27-34 FED 3H FTP_330FNL_1820FEL									
10,233.00	74.40	216.10	7,937.01	-2,817.90	-1,829.84	3,123.44	1.78	1.39	1.16
10,327.00	73.80	216.00	7,962.77	-2,890.99	-1,883.04	3,205.59	0.65	-0.64	-0.11
10,421.00	76.30	215.30	7,987.01	-2,964.78	-1,935.97	3,288.38	2.76	2.66	-0.74
10,515.00	74.90	214.20	8,010.39	-3,039.59	-1,987.87	3,371.95	1.87	-1.49	-1.17
10,610.00	73.50	213.40	8,036.26	-3,115.54	-2,038.72	3,456.44	1.68	-1.47	-0.84
10,704.00	74.80	213.20	8,061.93	-3,191.12	-2,088.36	3,540.32	1.40	1.38	-0.21
10,798.00	76.40	212.40	8,085.31	-3,267.65	-2,137.68	3,625.08	1.89	1.70	-0.85
10,891.00	75.40	211.70	8,107.96	-3,344.10	-2,185.54	3,709.46	1.30	-1.08	-0.75
10,986.00	72.50	211.00	8,134.22	-3,422.06	-2,233.04	3,795.26	3.13	-3.05	-0.74
11,081.00	71.90	210.30	8,163.27	-3,499.87	-2,279.15	3,880.64	0.94	-0.63	-0.74
11,175.00	72.50	209.90	8,192.00	-3,577.30	-2,324.04	3,965.40	0.76	0.64	-0.43
11,270.00	72.30	207.70	8,220.73	-3,656.65	-2,367.66	4,051.79	2.22	-0.21	-2.32
11,318.00	72.40	205.30	8,235.29	-3,697.58	-2,388.07	4,095.94	4.77	0.21	-5.00
11,364.00	72.70	202.20	8,249.08	-3,737.74	-2,405.74	4,138.80	6.46	0.65	-6.74
11,411.00	73.60	198.70	8,262.71	-3,779.88	-2,421.45	4,183.21	7.38	1.91	-7.45
11,459.00	74.10	196.00	8,276.06	-3,823.88	-2,435.19	4,229.06	5.50	1.04	-5.62
11,507.00	73.50	193.60	8,289.46	-3,868.44	-2,446.97	4,275.07	4.96	-1.25	-5.00
11,554.00	72.90	191.50	8,303.04	-3,912.36	-2,456.74	4,320.05	4.46	-1.28	-4.47
11,602.00	72.70	189.20	8,317.24	-3,957.46	-2,464.98	4,365.89	4.60	-0.42	-4.79
11,648.00	71.70	186.50	8,331.30	-4,000.85	-2,470.97	4,409.60	6.00	-2.17	-5.87
11,697.00	69.10	184.20	8,347.74	-4,046.80	-2,475.28	4,455.50	6.91	-5.31	-4.69
11,743.00	68.10	182.70	8,364.53	-4,089.55	-2,477.86	4,497.92	3.73	-2.17	-3.26
11,790.00	68.40	181.60	8,381.94	-4,133.17	-2,479.49	4,541.01	2.27	0.64	-2.34
11,803.88	68.84	181.21	8,387.00	-4,146.09	-2,479.81	4,553.74	4.11	3.18	-2.79
Second Bone Spring Sand									
11,837.00	69.90	180.30	8,398.67	-4,177.08	-2,480.22	4,584.20	4.11	3.19	-2.76
11,929.00	70.60	178.50	8,429.76	-4,263.66	-2,479.31	4,668.90	1.99	0.76	-1.96
11,997.61	70.02	177.92	8,452.88	-4,328.22	-2,477.29	4,731.80	1.17	-0.85	-0.85
BUTTERCUP 27-34 FED 1H FTP_330FNL_400FWL									
12,023.00	69.80	177.70	8,461.60	-4,352.05	-2,476.38	4,754.98	1.17	-0.85	-0.85
12,118.00	70.60	177.20	8,493.78	-4,441.35	-2,472.40	4,841.74	0.98	0.84	-0.53
12,150.00	72.10	177.20	8,504.02	-4,471.63	-2,470.92	4,871.13	4.69	4.69	0.00
12,197.00	75.20	179.00	8,517.25	-4,516.70	-2,469.43	4,915.02	7.55	6.60	3.83
12,244.00	80.70	180.60	8,527.05	-4,562.64	-2,469.28	4,960.03	12.17	11.70	3.40
12,291.00	85.70	181.40	8,532.62	-4,609.29	-2,470.09	5,005.92	10.77	10.64	1.70
12,298.83	86.22	181.43	8,533.17	-4,617.09	-2,470.29	5,013.61	6.68	6.67	0.42
BUTTERCUP 27-34 FED 1H LP p3									
12,339.00	88.90	181.60	8,534.88	-4,657.21	-2,471.35	5,053.15	6.68	6.67	0.42
12,434.00	91.80	181.60	8,534.30	-4,752.16	-2,474.00	5,146.76	3.05	3.05	0.00

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,442.17	91.93	181.45	8,534.03	-4,760.32	-2,474.22	5,154.80	2.39	1.58	-1.79
BUTTERCUP 27-34 FED 1H LP p2									
12,529.00	93.30	179.90	8,530.07	-4,847.05	-2,475.24	5,240.03	2.39	1.58	-1.79
12,623.00	92.50	177.20	8,525.31	-4,940.89	-2,472.87	5,331.56	2.99	-0.85	-2.87
12,717.00	91.20	177.40	8,522.28	-5,034.74	-2,468.44	5,422.69	1.40	-1.38	0.21
12,812.00	89.10	178.30	8,522.03	-5,129.67	-2,464.88	5,515.05	2.40	-2.21	0.95
12,907.00	90.40	178.30	8,522.45	-5,224.62	-2,462.06	5,607.58	1.37	1.37	0.00
13,001.00	92.38	178.17	8,520.17	-5,318.54	-2,459.17	5,699.09	2.11	2.11	-0.14
13,095.00	92.07	178.34	8,516.52	-5,412.43	-2,456.31	5,790.57	0.38	-0.33	0.18
13,189.00	90.03	178.22	8,514.79	-5,506.37	-2,453.48	5,882.10	2.17	-2.17	-0.13
13,283.00	89.97	180.34	8,514.79	-5,600.35	-2,452.30	5,974.01	2.26	-0.06	2.26
13,377.00	91.29	180.53	8,513.76	-5,694.34	-2,453.02	6,066.30	1.42	1.40	0.20
13,472.00	90.73	178.96	8,512.09	-5,789.32	-2,452.59	6,159.33	1.75	-0.59	-1.65
13,566.00	89.58	178.40	8,511.83	-5,883.30	-2,450.43	6,251.03	1.36	-1.22	-0.60
13,661.00	87.76	178.21	8,514.04	-5,978.23	-2,447.62	6,343.54	1.93	-1.92	-0.20
13,755.00	89.24	178.32	8,516.50	-6,072.15	-2,444.77	6,435.06	1.58	1.57	0.12
13,850.00	90.81	178.28	8,516.46	-6,167.10	-2,441.96	6,527.59	1.65	1.65	-0.04
13,944.00	89.05	178.81	8,516.57	-6,261.07	-2,439.57	6,619.24	1.96	-1.87	0.56
14,037.00	87.79	179.41	8,519.13	-6,354.02	-2,438.13	6,710.08	1.50	-1.35	0.65
14,132.00	88.79	179.23	8,521.97	-6,448.97	-2,437.00	6,802.94	1.07	1.05	-0.19
14,227.00	90.17	178.65	8,522.83	-6,543.95	-2,435.24	6,895.71	1.58	1.45	-0.61
14,320.00	89.44	180.38	8,523.15	-6,636.94	-2,434.45	6,986.72	2.02	-0.78	1.86
14,414.00	90.48	180.25	8,523.21	-6,730.94	-2,434.97	7,078.97	1.11	1.11	-0.14
14,508.00	89.33	179.78	8,523.37	-6,824.93	-2,435.00	7,171.13	1.32	-1.22	-0.50
14,603.00	90.14	179.38	8,523.81	-6,919.93	-2,434.30	7,264.12	0.95	0.85	-0.42
14,698.00	88.99	180.59	8,524.53	-7,014.92	-2,434.27	7,357.24	1.76	-1.21	1.27
14,791.00	90.56	181.26	8,524.90	-7,107.91	-2,435.78	7,448.69	1.84	1.69	0.72
14,886.00	90.14	181.07	8,524.31	-7,202.89	-2,437.71	7,542.19	0.49	-0.44	-0.20
14,980.00	91.46	180.85	8,523.00	-7,296.86	-2,439.28	7,634.63	1.42	1.40	-0.23
15,074.00	89.86	180.50	8,521.92	-7,390.84	-2,440.39	7,726.98	1.74	-1.70	-0.37
15,168.00	91.09	180.38	8,521.14	-7,484.84	-2,441.11	7,819.27	1.31	1.31	-0.13
15,263.00	90.00	180.18	8,520.24	-7,579.83	-2,441.57	7,912.49	1.17	-1.15	-0.21
15,357.00	91.46	180.09	8,519.04	-7,673.82	-2,441.80	8,004.68	1.56	1.55	-0.10
15,451.00	90.17	180.34	8,517.70	-7,767.81	-2,442.15	8,096.89	1.40	-1.37	0.27
15,546.00	87.70	180.02	8,519.47	-7,862.78	-2,442.45	8,190.06	2.62	-2.60	-0.34
15,640.00	89.05	180.11	8,522.13	-7,956.74	-2,442.55	8,282.19	1.44	1.44	0.10
15,735.00	90.90	180.45	8,522.17	-8,051.74	-2,443.02	8,375.41	1.98	1.95	0.36
15,829.00	90.00	179.79	8,521.44	-8,145.73	-2,443.22	8,467.60	1.19	-0.96	-0.70
15,924.00	91.35	179.60	8,520.32	-8,240.72	-2,442.71	8,560.63	1.44	1.42	-0.20
16,018.00	89.05	178.89	8,519.99	-8,334.71	-2,441.47	8,652.52	2.56	-2.45	-0.76
16,113.00	88.91	178.15	8,521.68	-8,429.66	-2,439.02	8,745.12	0.79	-0.15	-0.78
16,208.00	89.72	177.55	8,522.82	-8,524.59	-2,435.45	8,837.48	1.06	0.85	-0.63

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
16,302.00	90.03	175.93	8,523.02	-8,618.43	-2,430.11	8,928.43	1.75	0.33	-1.72	
16,396.00	89.30	178.14	8,523.57	-8,712.30	-2,425.25	9,019.49	2.48	-0.78	2.35	
16,491.00	88.68	180.63	8,525.25	-8,807.27	-2,424.23	9,112.40	2.70	-0.65	2.62	
16,586.00	90.90	180.25	8,525.59	-8,902.26	-2,424.96	9,205.67	2.37	2.34	-0.40	
16,680.00	90.17	180.86	8,524.72	-8,996.25	-2,425.87	9,297.99	1.01	-0.78	0.65	
16,775.00	91.15	180.58	8,523.62	-9,091.23	-2,427.06	9,391.34	1.07	1.03	-0.29	
16,870.00	88.85	180.75	8,523.62	-9,186.22	-2,428.16	9,484.68	2.43	-2.42	0.18	
16,965.00	87.84	179.73	8,526.37	-9,281.18	-2,428.56	9,577.85	1.51	-1.06	-1.07	
17,059.00	88.01	180.97	8,529.77	-9,375.11	-2,429.14	9,670.06	1.33	0.18	1.32	
17,153.00	89.47	181.40	8,531.84	-9,469.07	-2,431.08	9,762.55	1.62	1.55	0.46	
17,247.00	90.67	181.72	8,531.72	-9,563.03	-2,433.64	9,855.17	1.32	1.28	0.34	
17,342.00	92.38	181.49	8,529.19	-9,657.96	-2,436.30	9,948.76	1.82	1.80	-0.24	
17,436.00	91.71	181.44	8,525.84	-9,751.86	-2,438.70	10,041.29	0.71	-0.71	-0.05	
17,531.00	91.18	180.20	8,523.44	-9,846.82	-2,440.06	10,134.66	1.42	-0.56	-1.31	
17,625.00	90.98	179.30	8,521.67	-9,940.80	-2,439.65	10,226.71	0.98	-0.21	-0.96	
17,720.00	90.17	179.20	8,520.72	-10,035.79	-2,438.40	10,319.59	0.86	-0.85	-0.11	
17,814.00	90.50	179.53	8,520.17	-10,129.78	-2,437.36	10,411.53	0.50	0.35	0.35	
17,909.00	90.03	179.03	8,519.73	-10,224.77	-2,436.17	10,504.42	0.72	-0.49	-0.53	
18,004.00	90.28	178.99	8,519.47	-10,319.76	-2,434.53	10,597.21	0.27	0.26	-0.04	
18,099.00	88.94	178.23	8,520.12	-10,414.73	-2,432.22	10,689.86	1.62	-1.41	-0.80	
18,193.00	90.31	180.08	8,520.73	-10,508.71	-2,430.84	10,781.72	2.45	1.46	1.97	
18,282.00	91.77	179.87	8,519.12	-10,597.69	-2,430.80	10,868.95	1.66	1.64	-0.24	
18,377.00	91.82	179.32	8,516.14	-10,692.64	-2,430.13	10,961.90	0.58	0.05	-0.58	
18,472.00	91.06	179.54	8,513.76	-10,787.60	-2,429.18	11,054.81	0.83	-0.80	0.23	
18,567.00	89.16	180.12	8,513.57	-10,882.60	-2,428.90	11,147.89	2.09	-2.00	0.61	
18,662.00	90.00	179.88	8,514.27	-10,977.60	-2,428.90	11,241.02	0.92	0.88	-0.25	
18,757.00	87.98	179.33	8,515.94	-11,072.57	-2,428.25	11,334.00	2.20	-2.13	-0.58	
18,851.00	87.59	178.58	8,519.58	-11,166.49	-2,426.53	11,425.73	0.90	-0.41	-0.80	
18,946.00	87.95	177.70	8,523.27	-11,261.36	-2,423.45	11,518.14	1.00	0.38	-0.93	
19,040.00	88.35	177.26	8,526.31	-11,355.22	-2,419.32	11,609.34	0.63	0.43	-0.47	
19,063.74	88.35	177.26	8,526.99	-11,378.92	-2,418.19	11,632.35	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 2H LTP_330FSL_1820FWL										
19,100.00	88.35	177.26	8,528.04	-11,415.13	-2,416.45	11,667.50	0.00	0.00	0.00	
19,193.55	88.35	177.26	8,530.73	-11,508.54	-2,411.98	11,758.19	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 2H PBHL_200FSL_1820FWL										
19,200.00	88.35	177.26	8,530.92	-11,514.97	-2,411.68	11,764.44	0.00	0.00	0.00	
19,243.72	88.35	177.26	8,532.17	-11,558.62	-2,409.59	11,806.82	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 1H LTP_330FSL_400FWL										
19,251.05	88.35	177.26	8,532.39	-11,565.95	-2,409.24	11,813.93	0.00	0.00	0.00	
19,300.00	88.35	177.26	8,533.79	-11,614.82	-2,406.90	11,861.38	0.00	0.00	0.00	
19,369.78	88.35	177.26	8,535.80	-11,684.49	-2,403.56	11,929.03	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 1H BHL										
19,373.53	88.35	177.26	8,535.91	-11,688.24	-2,403.38	11,932.67	0.00	0.00	0.00	
BUTTERCUP 27-34 FED 1H PBHL_200FSL_400FWLp3										

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot BUTTERCUP 27-34 FED 1H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	Grid
Wellbore:	1H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	proj	Database:	STRYKER_EDM

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
19,374.53	88.35	177.26	8,535.94	-11,689.23	-2,403.34	11,933.63	0.00	0.00	0.00
BUTTERCUP 27-34 FED 1H PBHL_200FSL_400FWL									
19,382.44	88.35	177.26	8,536.17	-11,697.13	-2,402.96	11,941.30	0.00	0.00	0.00
19,386.93	88.35	177.26	8,536.30	-11,701.61	-2,402.74	11,945.65	0.00	0.00	0.00
BUTTERCUP 27-34 FED 3H LTP_330FSL_1820FEL									
19,400.00	88.35	177.26	8,536.67	-11,714.66	-2,402.12	11,958.32	0.00	0.00	0.00
19,452.37	88.35	177.26	8,538.18	-11,766.95	-2,399.62	12,009.09	0.00	0.00	0.00
BUTTERCUP 27-34 FED 4H LTP_330FSL_400FEL									
19,500.00	88.35	177.26	8,539.55	-11,814.51	-2,397.34	12,055.27	0.00	0.00	0.00
BUTTERCUP 27-34 FED 3H PBHL_200FSL_1820FEL									
19,581.03	88.35	177.26	8,541.89	-11,895.41	-2,393.47	12,133.81	0.00	0.00	0.00
BUTTERCUP 27-34 FED 4H PBHL_200FSL_400FEL									
19,582.44	88.35	177.26	8,541.93	-11,896.82	-2,393.40	12,135.18	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BUTTERCUP 27-34 FEI - hit/miss target - Shape - Point	0.00	0.01	0.00	0.00	0.00	597,528.80	615,362.00	32.64214957	-103.95855721
BUTTERCUP 27-34 FEI - plan hits target center - Point	0.00	0.00	8,520.00	-11,690.30	-2,436.90	585,838.50	612,925.10	32.61003911	-103.96660487
BUTTERCUP 27-34 FEI - plan misses target center by 37.16usft at 19373.53usft MD (8535.91 TVD, -11688.24 N, -2403.38 E) - Point	0.00	0.00	8,520.00	-4,618.00	-2,459.40	592,910.80	612,902.60	32.62947941	-103.96659870
BUTTERCUP 27-34 FEI - plan misses target center by 17.11usft at 12298.54usft MD (8533.15 TVD, -4616.80 N, -2470.28 E) - Point	0.00	0.00	8,520.00	-4,303.50	-2,460.90	593,225.30	612,901.10	32.63034390	-103.96660004
BUTTERCUP 27-34 FEI - plan misses target center by 73.38usft at 11998.05usft MD (8453.03 TVD, -4328.64 N, -2477.28 E) - Point	0.00	0.00	8,520.00	-11,560.30	-2,437.30	585,968.50	612,924.70	32.61039645	-103.96660472
BUTTERCUP 27-34 FEI - plan misses target center by 30.32usft at 19243.72usft MD (8532.17 TVD, -11558.62 N, -2409.59 E) - Point	0.00	0.00	8,554.00	-4,761.37	-2,462.08	592,767.43	612,899.92	32.62908534	-103.96660901
BUTTERCUP 27-34 FEI - plan misses target center by 23.39usft at 12442.16usft MD (8534.03 TVD, -4760.32 N, -2474.22 E) - Point	0.00	0.00	8,554.00	-4,761.37	-2,462.08	592,767.43	612,899.92	32.62908534	-103.96660901

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 1H - Slot
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	BUTTERCUP 27-34 FED 1H SHL
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 1H	North Reference:	3285+30 @ 3315.00usft (F26)
Wellbore:	1H Lateral	Survey Calculation Method:	Grid
Design:	proj	Database:	Minimum Curvature
			STRYKER_EDM

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
475.19	475.00	Top Salt				
1,475.59	1,475.00	Base Salt				
1,660.60	1,660.00	Yates				
2,290.71	2,290.00	Capitan				
3,985.91	3,985.00	Delaware				
4,585.95	4,585.00	Brushy Canyon				
6,096.05	6,095.00	Bone Spring				
6,205.08	6,204.00	Avalon Sand				
8,912.65	7,563.00	First Bone Spring Sand				
9,538.88	7,728.00	Second Bone Spring Limestone				
11,803.88	8,387.00	Second Bone Spring Sand				

Checked By: _____	Approved By: _____	Date: _____
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