



State of New Mexico
County of Eddy

I, Larry Wright, certify that: I am employed by WellBenders Directional Services LLC; that I did on the day(s) of November 4, 2018 through November 14, 2018 conduct or supervise the taking of MWD Directional Survey from a depth of 0 feet to a depth of 1,426 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by WellBenders Directional Services LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of XTO Energy Inc. for the State of New Mexico; Well: Buttercup 27-34 Fed #2H in Eddy County; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by WellBenders Directional Services LLC.

(Sign Name)

Larry Wright
MWD Manager



XTO Energy

**Eddy County, NM (Nad-27 / East Zone)
Buttercup 27-34 Fed
#2H**

Wellbore #1

Design: Wellbore #1

Standard Survey Report

24 September, 2020





Survey Report



Company:	XTO Energy	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM (Nad-27 / East Zone)	TVD Reference:	RKB = 30.5 @ 3327.50usft (Nabors F26)
Site:	Buttercup 27-34 Fed	MD Reference:	RKB = 30.5 @ 3327.50usft (Nabors F26)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	WBDS_SQL_2

Project	Eddy County, NM (Nad-27 / East Zone)		
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 Fed		
Site Position:		Northing:	597,528.96 usft
From:	Lat/Long	Easting:	615,362.07 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	32.642150
		Longitude:	-103.958557
		Grid Convergence:	0.202 °

Well	#2H		
Well Position	+N/-S	0.00 usft	Northing: 597,528.90 usft
	+E/-W	0.00 usft	Easting: 615,392.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.642150
		Longitude:	-103.958460
		Ground Level:	3,297.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	09/24/20	6.812
			Dip Angle (°) 60.341
			Field Strength (nT) 47,808.12204041

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 191.73

Survey Program	Date	09/24/20		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
140.00	1,426.00	Survey #1 (Wellbore #1)	WBDS_IGRF	OWSG MWD + IGRF or WMM

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
140.00	1.20	172.20	139.99	-1.45	0.20	1.38	0.86	0.86	0.00
203.00	1.40	212.70	202.97	-2.75	-0.13	2.72	1.46	0.32	64.29
295.00	2.10	215.70	294.93	-5.07	-1.72	5.31	0.77	0.76	3.26
388.00	2.40	201.00	387.86	-8.27	-3.41	8.79	0.70	0.32	-15.81
406.00	2.50	262.80	405.85	-8.67	-3.93	9.29	13.98	0.56	343.33
501.00	2.60	213.00	500.76	-10.74	-7.16	11.97	2.26	0.11	-52.42
561.00	2.30	209.60	560.71	-12.93	-8.50	14.39	0.56	-0.50	-5.67
655.00	2.40	206.00	654.63	-16.34	-10.29	18.09	0.19	0.11	-3.83
751.00	2.90	206.50	750.53	-20.32	-12.26	22.38	0.52	0.52	0.52



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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)
774.00	3.00	209.30	773.50	-21.36	-12.81	23.52	0.76	0.43	12.17
868.00	3.50	209.80	867.34	-26.00	-15.44	28.59	0.53	0.53	0.53
957.00	1.70	182.20	956.25	-29.67	-16.84	32.48	2.41	-2.02	-31.01
1,047.00	1.40	146.50	1,046.22	-31.92	-16.29	34.57	1.10	-0.33	-39.67
1,142.00	1.40	134.00	1,141.19	-33.70	-14.81	36.01	0.32	0.00	-13.16
1,284.00	1.50	128.50	1,283.15	-36.06	-12.11	37.77	0.12	0.07	-3.87
1,332.00	1.80	120.60	1,331.13	-36.83	-10.97	38.30	0.78	0.62	-16.46
1,426.00	2.30	112.60	1,425.07	-38.31	-7.96	39.13	0.61	0.53	-8.51

Projection to Bit: 1426.00' MD/ 1425.07' TVD - Final Station Closure Distance= 39.13 /Direction= 191.94 - TD: Y= 597490.

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Final Survey @ 1426'	0.00	359.80	1,425.07	-38.31	-7.96	597,490.59	615,384.05	32.642044	-103.958486
- actual wellpath hits target center									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,426.00	1,425.07	-38.31	-7.96	Projection to Bit: 1426.00' MD/ 1425.07' TVD
1,426.00	1,425.07	-38.31	-7.96	Final Station Closure Distance= 39.13 /Direction= 191.94
1,426.00	1,425.07	-38.31	-7.96	TD: Y= 597490.59 / X= 615384.04
1,426.00	1,425.07	-38.31	-7.96	TD: Latitude= 32.642044 / Longitude= -103.958486

Checked By: _____ Approved By: _____ Date: _____