



NEW MEXICO CONSERVATION
ARTESIA DISTRICT

APR 06 2017

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15-42921

XTO Energy

Eddy County, New Mexico (NAD 27)
Corral Canyon Federal
2H

Wellbore #1

Design: Surveys

Standard Survey Report

04 October, 2016



Company: XTO Energy
Site: Corral Canyon Federal
Well: 2H
Project: Eddy County, New Mexico (NAD 27)
Rig: Noram 25



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.12°

Magnetic Field
Strength: 48002.3snT
Dip Angle: 59.93°
Date: 9/17/2016
Model: BGGM2016

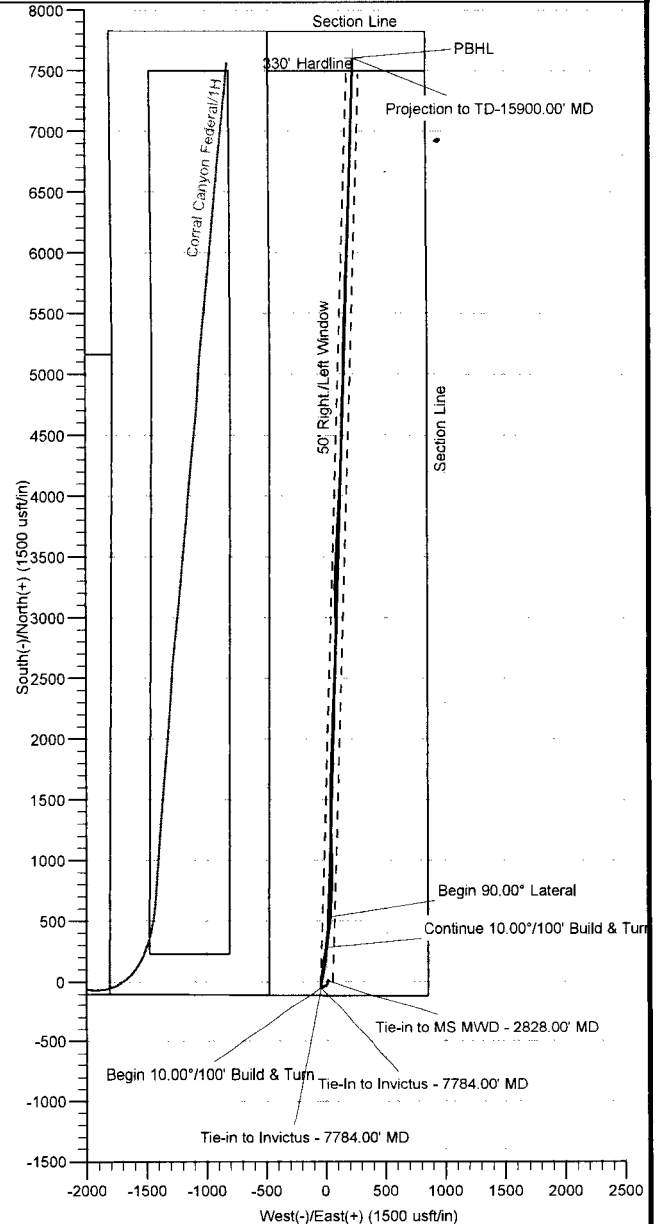
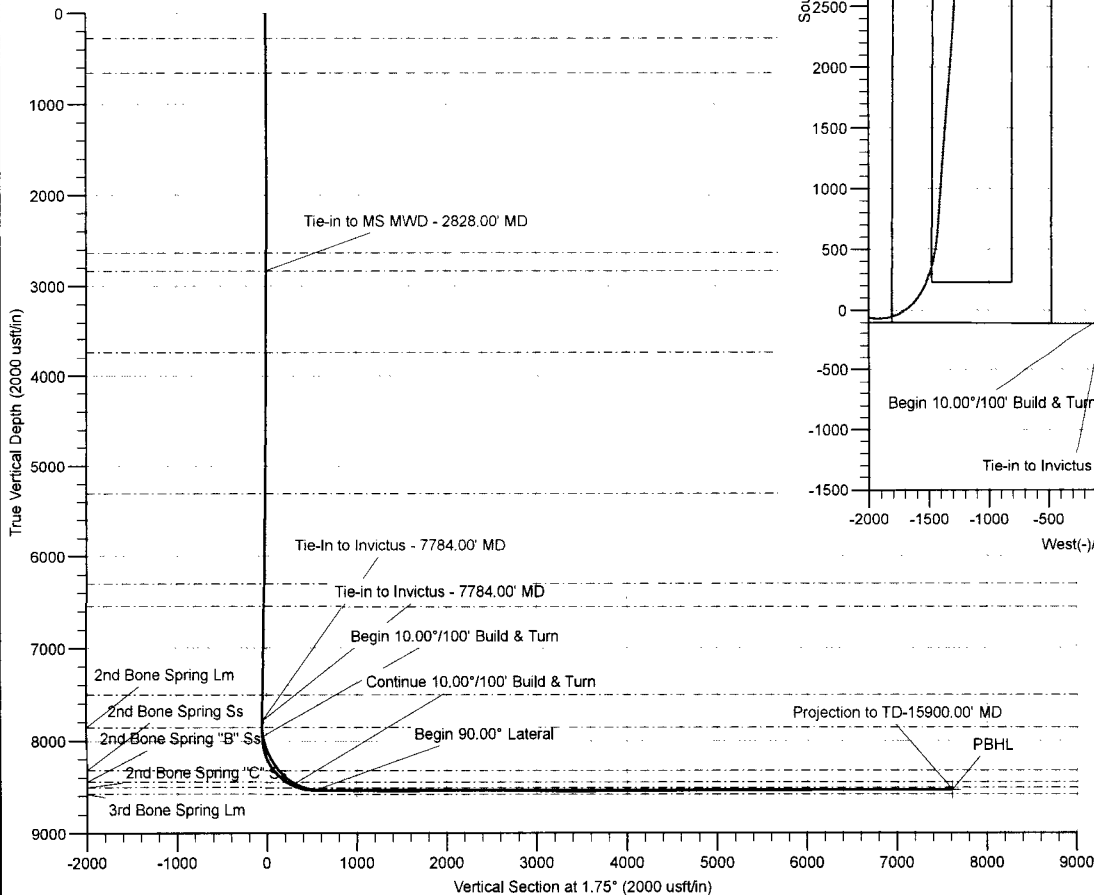
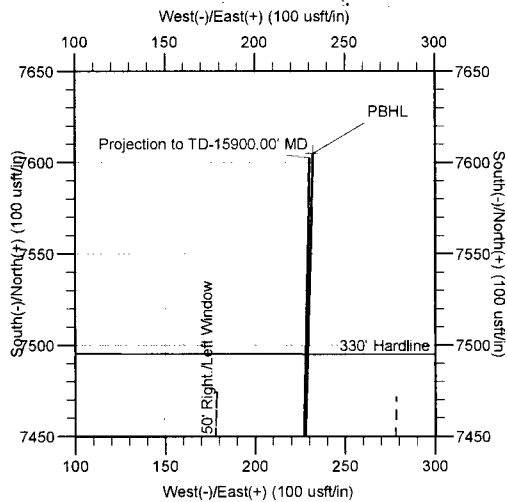
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
7784.00	1.40	274.10	7782.49	-46.26	-43.82	-47.57	0.00	Tie-in to Invictus - 7784.00' MD
7954.37	1.40	274.10	7952.81	-45.96	-47.97	-47.40	4.16	Begin 10.00°/100' Build & Turn
8605.62	65.00	8.90	8473.23	282.30	-5.58	282.00	335.99	Continue 10.00°/100' Build & Turn
8865.02	90.00	1.75	8529.00	532.35	16.94	532.62	587.22	Begin 90.00° Lateral
15941.06	90.00	1.75	8529.00	7605.10	232.72	7608.66	7663.26	PBHL

US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: VLS
Date: 9:04, October 04 2016
Plan: Design #3

Landing Point X: 600431.94 Y: 419767.36
PBHL X: 600647.72 Y: 426840.1



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented.
Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.



MS Energy Services

Survey Report



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Local Co-ordinate Reference: Well 2H
TVD Reference: Rig @ 2966.00usft (Noram 25)
MD Reference: Rig @ 2966.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

Project	Eddy County, New Mexico (NAD 27)		
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		

Well 2H

Well Position	+N/-S	0.00 usft	Northing:	419,234.99 usft	Latitude:	32° 9' 7.840 N
	+E/-W	0.00 usft	Easting:	600,415.00 usft	Longitude:	104° 0' 31.940 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,941.00 usft

Wellbore	Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
	BGGM2016	9/17/2016	7.29	59.93	48,002	

Design Surveys

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:

Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
0.00	0.00	0.00	1.75

Survey Program	Date 10/4/2016				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
690.00	2,828.00	MS MWD (690' MD - 2828' MD) (Wellbore: MWD		OWSG MWD - Standard	
2,879.00	7,784.00	Invictus Survey (2879' MD - 7784' MD) (W MWD		OWSG MWD - Standard	
7,862.00	15,900.00	MS MWD (7784' MD - 15900' MD) (Wellbore: MWD		OWSG MWD - Standard	

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
690.00	1.50	51.60	689.92	5.61	7.08	5.82	0.22	0.22	0.00
784.00	1.20	53.20	783.90	6.96	8.83	7.23	0.32	-0.32	1.70
879.00	0.90	51.50	878.88	8.02	10.21	8.33	0.32	-0.32	-1.79
974.00	0.50	60.80	973.87	8.69	11.16	9.03	0.44	-0.42	9.79
1,068.00	0.50	89.90	1,067.87	8.89	11.92	9.25	0.27	0.00	30.96
1,163.00	0.20	100.00	1,162.87	8.86	12.50	9.24	0.32	-0.32	10.63
1,257.00	0.10	250.80	1,256.87	8.81	12.59	9.19	0.31	-0.11	160.43
1,352.00	0.10	235.50	1,351.87	8.73	12.44	9.11	0.03	0.00	-16.11
1,446.00	0.40	303.60	1,445.87	8.87	12.10	9.23	0.40	0.32	72.45
1,541.00	0.70	346.50	1,540.86	9.62	11.69	9.97	0.52	0.32	45.16
1,635.00	0.10	340.80	1,634.86	10.25	11.53	10.60	0.64	-0.64	-6.06
1,729.00	0.20	315.30	1,728.86	10.45	11.38	10.79	0.13	0.11	-27.13
1,824.00	0.60	317.10	1,823.86	10.93	10.93	11.26	0.42	0.42	1.89



MS Energy Services Survey Report



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MD Reference: Rig @ 2966.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,918.00	0.50	293.90	1,917.85	11.46	10.22	11.76	0.26	-0.11	-24.68
2,013.00	0.60	295.80	2,012.85	11.84	9.39	12.12	0.11	0.11	2.00
2,107.00	0.30	324.70	2,106.84	12.26	8.81	12.52	0.39	-0.32	30.74
2,202.00	0.30	81.10	2,201.84	12.50	8.91	12.76	0.54	0.00	122.53
2,297.00	0.50	98.40	2,296.84	12.47	9.56	12.76	0.24	0.21	18.21
2,391.00	0.90	96.70	2,390.83	12.33	10.70	12.65	0.43	0.43	-1.81
2,486.00	1.40	106.60	2,485.81	11.91	12.56	12.29	0.56	0.53	10.42
2,580.00	1.90	113.10	2,579.78	10.97	15.09	11.43	0.57	0.53	6.91
2,674.00	1.00	163.30	2,673.75	9.57	16.76	10.08	1.57	-0.96	53.40
2,769.00	1.10	191.20	2,768.73	7.88	16.82	8.39	0.54	0.11	29.37
2,828.00	1.10	191.20	2,827.72	6.77	16.60	7.28	0.00	0.00	0.00
Tie-in to MS MWD - 2828.00' MD									
2,879.00	0.90	179.10	2,878.71	5.89	16.51	6.39	0.57	-0.39	-23.73
2,973.00	1.00	194.10	2,972.70	4.36	16.32	4.86	0.28	0.11	15.96
3,069.00	0.90	188.10	3,068.69	2.80	16.01	3.29	0.15	-0.10	-6.25
3,164.00	0.70	214.10	3,163.68	1.58	15.58	2.06	0.43	-0.21	27.37
3,257.00	0.80	190.10	3,256.67	0.47	15.15	0.93	0.35	0.11	-25.81
3,353.00	0.40	231.10	3,352.67	-0.40	14.77	0.05	0.59	-0.42	42.71
3,448.00	0.50	219.10	3,447.66	-0.93	14.25	-0.49	0.14	0.11	-12.63
3,542.00	0.40	236.10	3,541.66	-1.43	13.72	-1.01	0.18	-0.11	18.09
3,637.00	0.20	160.10	3,636.66	-1.77	13.50	-1.36	0.42	-0.21	-80.00
3,732.00	0.10	301.10	3,731.66	-1.88	13.49	-1.47	0.30	-0.11	148.42
3,826.00	0.10	320.10	3,825.66	-1.78	13.37	-1.37	0.04	0.00	20.21
3,881.00	0.60	239.10	3,880.66	-1.89	13.09	-1.49	1.08	0.91	-147.27
3,976.00	0.20	331.10	3,975.66	-2.00	12.58	-1.61	0.67	-0.42	96.84
4,068.00	0.80	250.10	4,067.65	-2.08	11.90	-1.71	0.86	0.65	-88.04
4,164.00	0.70	213.10	4,163.64	-2.80	10.95	-2.46	0.51	-0.10	-38.54
4,258.00	0.30	312.10	4,257.64	-3.11	10.45	-2.79	0.85	-0.43	105.32
4,353.00	0.70	238.10	4,352.64	-3.25	9.78	-2.95	0.72	0.42	-77.89
4,449.00	0.20	259.10	4,448.64	-3.59	9.11	-3.31	0.54	-0.52	21.88
4,543.00	0.80	199.10	4,542.63	-4.25	8.74	-3.98	0.77	0.64	-63.83
4,637.00	0.30	163.10	4,636.63	-5.10	8.59	-4.84	0.62	-0.53	-38.30
4,732.00	0.40	236.10	4,731.63	-5.52	8.39	-5.27	0.45	0.11	76.84
4,921.00	1.30	196.10	4,920.60	-7.95	7.25	-7.73	0.54	0.48	-21.16
5,016.00	0.70	152.10	5,015.59	-9.50	7.22	-9.28	0.98	-0.63	-46.32
5,110.00	0.80	168.10	5,109.58	-10.65	7.63	-10.41	0.25	0.11	17.02
5,204.00	1.60	201.10	5,203.56	-12.52	7.29	-12.29	1.09	0.85	35.11
5,299.00	0.90	227.10	5,298.54	-14.26	6.26	-14.06	0.93	-0.74	27.37
5,394.00	1.10	201.10	5,393.53	-15.62	5.39	-15.45	0.52	0.21	-27.37
5,489.00	1.50	208.10	5,488.50	-17.57	4.48	-17.42	0.45	0.42	7.37
5,583.00	1.40	200.10	5,582.47	-19.73	3.50	-19.62	0.24	-0.11	-8.51
5,678.00	1.10	199.10	5,677.45	-21.68	2.80	-21.59	0.32	-0.32	-1.05
5,732.00	0.80	217.10	5,731.44	-22.47	2.41	-22.39	0.78	-0.56	33.33



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5,827.00	0.60	222.10	5,826.43	-23.37	1.67	-23.31	0.22	-0.21	5.26
5,922.00	0.50	204.10	5,921.43	-24.12	1.17	-24.07	0.21	-0.11	-18.95
6,016.00	0.40	252.10	6,015.43	-24.59	0.69	-24.56	0.40	-0.11	51.06
6,111.00	0.80	193.10	6,110.42	-25.34	0.23	-25.32	0.72	0.42	-62.11
6,205.00	0.20	266.10	6,204.42	-25.99	-0.09	-25.98	0.81	-0.64	77.66
6,300.00	1.10	221.10	6,299.41	-26.69	-0.85	-26.70	1.02	0.95	-47.37
6,395.00	1.00	254.10	6,394.40	-27.61	-2.25	-27.66	0.64	-0.11	34.74
6,489.00	0.70	203.10	6,488.39	-28.36	-3.26	-28.44	0.83	-0.32	-54.26
6,583.00	1.30	257.10	6,582.38	-29.12	-4.53	-29.25	1.12	0.64	57.45
6,719.00	2.90	258.10	6,718.28	-30.18	-9.40	-30.45	1.18	1.18	0.74
6,813.00	2.80	258.10	6,812.16	-31.14	-13.97	-31.55	0.11	-0.11	0.00
6,907.00	2.50	259.10	6,906.06	-32.00	-18.23	-32.55	0.32	-0.32	1.06
7,002.00	2.40	254.10	7,000.98	-32.94	-22.18	-33.60	0.25	-0.11	-5.26
7,097.00	1.40	234.10	7,095.92	-34.17	-25.03	-34.91	1.25	-1.05	-21.05
7,191.00	2.10	194.10	7,189.88	-36.51	-26.38	-37.30	1.45	0.74	-42.55
7,285.00	1.80	217.10	7,283.83	-39.36	-27.69	-40.18	0.88	-0.32	24.47
7,340.00	1.70	241.10	7,338.80	-40.44	-28.93	-41.31	1.33	-0.18	43.64
7,434.00	2.50	234.10	7,432.74	-42.32	-31.81	-43.27	0.89	0.85	-7.45
7,528.00	3.00	247.10	7,526.63	-44.48	-35.74	-45.55	0.85	0.53	13.83
7,623.00	1.70	260.10	7,621.55	-45.69	-39.41	-46.87	1.47	-1.37	13.68
7,718.00	1.60	260.10	7,716.51	-46.16	-42.11	-47.42	0.11	-0.11	0.00
7,784.00	1.40	274.10	7,782.49	-46.26	-43.82	-47.57	0.63	-0.30	21.21
Final Invictus - 7784.00' MD - Tie-In to Invictus - 7784.00' MD									
7,862.00	1.90	299.00	7,860.46	-45.56	-45.90	-46.94	1.11	0.64	31.92
7,894.00	4.50	347.20	7,892.41	-44.08	-46.64	-45.48	11.03	8.13	150.63
7,926.00	5.80	352.60	7,924.28	-41.25	-47.13	-42.67	4.33	4.06	16.88
7,957.00	8.50	1.00	7,955.04	-37.41	-47.29	-38.83	9.32	8.71	27.10
7,989.00	12.10	6.30	7,986.52	-31.71	-46.88	-33.12	11.62	11.25	16.56
8,020.00	15.60	8.40	8,016.61	-24.35	-45.92	-25.74	11.40	11.29	6.77
8,052.00	18.80	9.10	8,047.18	-15.00	-44.47	-16.35	10.02	10.00	2.19
8,083.00	21.50	10.20	8,076.28	-4.48	-42.68	-5.78	8.79	8.71	3.55
8,115.00	23.70	11.70	8,105.82	7.59	-40.33	6.36	7.11	6.88	4.69
8,146.00	25.70	11.80	8,133.98	20.28	-37.69	19.12	6.45	6.45	0.32
8,178.00	28.10	11.30	8,162.52	34.46	-34.80	33.38	7.53	7.50	-1.56
8,210.00	30.50	11.50	8,190.42	49.81	-31.70	48.82	7.51	7.50	0.63
8,241.00	32.40	12.00	8,216.86	65.64	-28.41	64.75	6.19	6.13	1.61
8,273.00	34.10	10.80	8,243.62	82.84	-24.94	82.04	5.70	5.31	-3.75
8,304.00	36.20	9.20	8,268.97	100.42	-21.85	99.70	7.40	6.77	-5.16
8,335.00	38.00	6.60	8,293.70	118.94	-19.29	118.29	7.70	5.81	-8.39
8,367.00	40.30	6.40	8,318.51	139.01	-17.00	138.42	7.20	7.19	-0.63
8,399.00	44.00	6.60	8,342.23	160.34	-14.57	159.82	11.57	11.56	0.63
8,430.00	47.50	7.30	8,363.86	182.38	-11.88	181.93	11.41	11.29	2.26
8,462.00	50.00	7.80	8,384.96	206.23	-8.72	205.86	7.90	7.81	1.56
8,493.00	53.10	7.60	8,404.23	230.28	-5.47	230.01	10.01	10.00	-0.65



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8,525.00	56.20	6.90	8,422.74	256.17	-2.18	255.99	9.85	9.69	-2.19
8,557.00	59.30	6.90	8,439.82	283.04	1.07	282.94	9.69	9.69	0.00
8,588.00	61.90	7.40	8,455.03	309.83	4.44	309.82	8.50	8.39	1.61
8,620.00	64.90	6.90	8,469.36	338.22	8.00	338.30	9.48	9.38	-1.56
8,651.00	67.80	6.80	8,481.80	366.41	11.38	366.59	9.36	9.35	-0.32
8,683.00	70.60	6.90	8,493.16	396.11	14.95	396.38	8.75	8.75	0.31
8,714.00	73.20	7.60	8,502.79	425.33	18.67	425.71	8.66	8.39	2.26
8,745.00	76.30	6.50	8,510.94	455.01	22.34	455.48	10.57	10.00	-3.55
8,777.00	79.80	5.50	8,517.57	486.14	25.61	486.70	11.36	10.94	-3.13
8,808.00	82.50	4.70	8,522.33	516.65	28.33	517.27	9.08	8.71	-2.58
8,840.00	85.10	4.00	8,525.79	548.37	30.74	549.05	8.41	8.13	-2.19
8,862.00	86.60	3.40	8,527.38	570.26	32.16	570.98	7.34	6.82	-2.73
8,893.00	88.10	2.20	8,528.82	601.19	33.67	601.94	6.19	4.84	-3.87
8,956.00	88.70	2.00	8,530.57	664.12	35.98	664.91	1.00	0.95	-0.32
9,051.00	89.80	4.10	8,531.82	758.98	41.03	759.87	2.50	1.16	2.21
9,145.00	89.50	1.80	8,532.39	852.84	45.87	853.85	2.47	-0.32	-2.45
9,240.00	89.20	359.10	8,533.47	947.82	46.62	948.81	2.86	-0.32	-2.84
9,334.00	89.20	358.20	8,534.78	1,041.79	44.40	1,042.66	0.96	0.00	-0.96
9,429.00	89.50	357.90	8,535.86	1,136.73	41.17	1,137.45	0.45	0.32	-0.32
9,524.00	89.90	357.80	8,536.36	1,231.66	37.60	1,232.23	0.43	0.42	-0.11
9,618.00	88.90	359.10	8,537.34	1,325.62	35.06	1,326.07	1.74	-1.06	1.38
9,713.00	89.70	359.30	8,538.50	1,420.60	33.74	1,420.97	0.87	0.84	0.21
9,807.00	89.80	1.00	8,538.91	1,514.59	33.98	1,514.93	1.81	0.11	1.81
9,902.00	90.30	0.60	8,538.83	1,609.58	35.31	1,609.91	0.67	0.53	-0.42
9,996.00	91.40	2.10	8,537.44	1,703.54	37.52	1,703.89	1.98	1.17	1.60
10,091.00	89.90	2.20	8,536.36	1,798.47	41.09	1,798.88	1.58	-1.58	0.11
10,186.00	90.50	2.50	8,536.03	1,893.39	44.98	1,893.88	0.71	0.63	0.32
10,280.00	91.20	2.50	8,534.63	1,987.29	49.08	1,987.86	0.74	0.74	0.00
10,375.00	89.20	1.00	8,534.30	2,082.23	51.98	2,082.85	2.63	-2.11	-1.58
10,469.00	89.90	2.10	8,535.04	2,176.19	54.52	2,176.84	1.39	0.74	1.17
10,564.00	90.70	3.30	8,534.54	2,271.09	59.00	2,271.83	1.52	0.84	1.26
10,658.00	91.00	2.90	8,533.15	2,364.94	64.08	2,365.79	0.53	0.32	-0.43
10,753.00	90.20	2.80	8,532.15	2,459.81	68.81	2,460.77	0.85	-0.84	-0.11
10,848.00	89.90	1.80	8,532.07	2,554.74	72.62	2,555.76	1.10	-0.32	-1.05
10,943.00	90.40	1.70	8,531.82	2,649.69	75.52	2,650.76	0.54	0.53	-0.11
11,037.00	88.80	1.80	8,532.48	2,743.64	78.39	2,744.76	1.71	-1.70	0.11
11,132.00	89.30	1.80	8,534.05	2,838.58	81.37	2,839.74	0.53	0.53	0.00
11,226.00	89.20	359.70	8,535.28	2,932.56	82.60	2,933.72	2.24	-0.11	-2.23
11,321.00	89.40	357.60	8,536.44	3,027.52	80.37	3,028.56	2.22	0.21	-2.21
11,415.00	88.50	358.20	8,538.17	3,121.44	76.92	3,122.33	1.15	-0.96	0.64
11,510.00	88.10	359.50	8,540.98	3,216.38	75.02	3,217.17	1.43	-0.42	1.37
11,604.00	89.00	1.80	8,543.36	3,310.33	76.08	3,311.11	2.63	0.96	2.45
11,699.00	89.90	2.70	8,544.28	3,405.25	79.81	3,406.10	1.34	0.95	0.95



MS Energy Services Survey Report



Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 2H
Wellbore: Wellbore #1
Design: Surveys

Local Co-ordinate Reference: Well 2H
TVD Reference: Rig @ 2966.00usft (Noram 25)
MD Reference: Rig @ 2966.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,794.00	90.70	3.00	8,543.78	3,500.14	84.53	3,501.08	0.90	0.84	0.32
11,889.00	91.20	2.80	8,542.20	3,595.00	89.34	3,596.05	0.57	0.53	-0.21
11,983.00	91.60	2.70	8,539.91	3,688.86	93.85	3,690.01	0.44	0.43	-0.11
12,078.00	90.50	3.60	8,538.17	3,783.70	99.07	3,784.96	1.50	-1.16	0.95
12,172.00	91.20	4.70	8,536.77	3,877.44	105.87	3,878.87	1.39	0.74	1.17
12,266.00	89.10	2.90	8,536.52	3,971.23	112.10	3,972.80	2.94	-2.23	-1.91
12,361.00	89.40	3.00	8,537.77	4,066.09	116.99	4,067.77	0.33	0.32	0.11
12,455.00	89.50	2.50	8,538.67	4,159.98	121.50	4,161.75	0.54	0.11	-0.53
12,550.00	89.80	2.00	8,539.25	4,254.90	125.23	4,256.74	0.61	0.32	-0.53
12,644.00	90.20	1.50	8,539.25	4,348.86	128.10	4,350.74	0.68	0.43	-0.53
12,739.00	90.80	1.70	8,538.42	4,443.82	130.75	4,445.74	0.67	0.63	0.21
12,833.00	90.70	359.90	8,537.19	4,537.80	132.06	4,539.71	1.92	-0.11	-1.91
12,927.00	90.00	1.00	8,536.62	4,631.79	132.80	4,633.69	1.39	-0.74	1.17
13,022.00	90.30	2.70	8,536.37	4,726.74	135.87	4,728.68	1.82	0.32	1.79
13,117.00	91.00	3.40	8,535.29	4,821.60	140.92	4,823.65	1.04	0.74	0.74
13,212.00	89.90	1.10	8,534.54	4,916.51	144.65	4,918.64	2.68	-1.16	-2.42
13,307.00	90.70	1.10	8,534.05	5,011.49	146.47	5,013.63	0.84	0.84	0.00
13,402.00	91.30	0.80	8,532.39	5,106.46	148.05	5,108.60	0.71	0.63	-0.32
13,496.00	89.70	0.50	8,531.57	5,200.45	149.12	5,202.58	1.73	-1.70	-0.32
13,591.00	88.80	1.80	8,532.81	5,295.42	151.02	5,297.56	1.66	-0.95	1.37
13,686.00	88.90	2.10	8,534.72	5,390.35	154.25	5,392.54	0.33	0.11	0.32
13,780.00	90.40	2.80	8,535.29	5,484.26	158.27	5,486.53	1.76	1.60	0.74
13,874.00	90.00	2.00	8,534.96	5,578.17	162.21	5,580.52	0.95	-0.43	-0.85
13,968.00	89.50	1.40	8,535.37	5,672.13	165.00	5,674.52	0.83	-0.53	-0.64
14,063.00	90.30	1.50	8,535.54	5,767.10	167.40	5,769.52	0.85	0.84	0.11
14,157.00	91.60	2.10	8,533.98	5,861.04	170.35	5,863.50	1.52	1.38	0.64
14,252.00	90.50	2.50	8,532.24	5,955.94	174.16	5,958.48	1.23	-1.16	0.42
14,346.00	90.80	2.10	8,531.18	6,049.86	177.94	6,052.47	0.53	0.32	-0.43
14,441.00	89.80	2.20	8,530.68	6,144.79	181.50	6,147.47	1.06	-1.05	0.11
14,536.00	89.90	2.50	8,530.93	6,239.71	185.40	6,242.46	0.33	0.11	0.32
14,630.00	90.10	2.60	8,530.93	6,333.62	189.58	6,336.45	0.24	0.21	0.11
14,725.00	90.80	2.90	8,530.18	6,428.50	194.14	6,431.43	0.80	0.74	0.32
14,820.00	89.80	2.60	8,529.68	6,523.39	198.69	6,526.42	1.10	-1.05	-0.32
14,914.00	90.20	2.80	8,529.68	6,617.29	203.12	6,620.40	0.48	0.43	0.21
15,009.00	90.10	1.90	8,529.43	6,712.21	207.02	6,715.40	0.95	-0.11	-0.95
15,103.00	90.30	1.80	8,529.11	6,806.16	210.05	6,809.40	0.24	0.21	-0.11
15,198.00	91.10	1.80	8,527.95	6,901.10	213.04	6,904.39	0.84	0.84	0.00
15,292.00	89.20	1.70	8,527.70	6,995.05	215.91	6,998.38	2.02	-2.02	-0.11
15,387.00	89.60	1.80	8,528.69	7,090.00	218.81	7,093.38	0.43	0.42	0.11
15,481.00	89.80	1.20	8,529.19	7,183.97	221.27	7,187.38	0.67	0.21	-0.64
15,576.00	89.40	1.30	8,529.85	7,278.94	223.34	7,282.37	0.43	-0.42	0.11
15,670.00	90.70	1.20	8,529.77	7,372.92	225.39	7,376.36	1.39	1.38	-0.11
15,765.00	91.30	1.40	8,528.11	7,467.88	227.55	7,471.35	0.67	0.63	0.21



MS Energy Services
Survey Report



Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 2H
Wellbore: Wellbore #1
Design: Surveys

Local Co-ordinate Reference: Well 2H
TVD Reference: Rig @ 2966.00usft (Noram 25)
MD Reference: Rig @ 2966.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,844.00	92.10	1.20	8,525.77	7,546.82	229.34	7,550.31	1.04	1.01	-0.25
15,900.00	92.10	1.20	8,523.71	7,602.78	230.51	7,606.27	0.00	0.00	0.00

Projection to TD-15900.00' MD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,828.00	2,827.72	6.77	16.60	Tie-in to MS MWD - 2828.00' MD
7,784.00	7,782.49	-46.26	-43.82	Final Invictus - 7784.00' MD
7,784.00	7,782.49	-46.26	-43.82	Tie-In to Invictus - 7784.00' MD
15,900.00	8,523.71	7,602.78	230.51	Projection to TD-15900.00' MD