

Provide Signature Page for Directional Survey

Survey Report

NM OIL CONSERVATION
ARTESIA DISTRICT

30-015-44252

JAN 09 2019

Company: XTO Energy
Project: Eddy County, NM (NAD27) NMEZ
Site: Remuda South 25 State Pad
Well: Remuda South 25 State 904H
Wellbore: Lateral
Design: Lateral

Local Co-ordinate Reference: Well Remuda South 25 State 904H - Slot S 904H
TVD Reference: 3075+30 @ 3105.00usft (Cactus 118)
MD Reference: 3075+30 @ 3105.00usft (Cactus 118)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: TRUEPERF_EDM

RECEIVED

Project	Eddy County, NM (NAD27) NMEZ		
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	Remuda South 25 State Pad, Centered on 904H			
Site Position:		Northing:	464,640.20 ft	Latitude: 32° 16' 36.472 N
From: Map		Easting:	621,538.20 ft	Longitude: 103° 56' 24.314 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.21 °

Well	Remuda South 25 State 904H - Slot S 904H			
Well Position	+N/-S	0.00 usft	Northing:	464,640.20 ft
	+E/-W	0.00 usft	Easting:	621,538.20 ft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level: 3,075.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	02/11/18	7.06	60.04	47,866

Design	Lateral				
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	176.95	

Survey Program	Date 03/15/18				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
210.00	18,210.00	Survey #1 (Lateral)	MWD	MWD v3: standard declination	
18,260.00	18,260.00	Survey #2 (Lateral)	Projection	Projection	

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
5.00	0.01	168.00	5.00	0.00	0.00	0.00	0.24	0.24	0.00
Remuda South 904H SL									
210.00	0.50	168.00	210.00	-0.90	0.19	0.91	0.24	0.24	0.00
301.00	1.30	30.00	300.99	-0.39	0.79	0.43	1.87	0.88	-151.65
430.00	1.60	22.10	429.95	2.55	2.20	-2.42	0.28	0.23	-6.12
524.00	1.50	350.80	523.92	4.98	2.50	-4.84	0.90	-0.11	-33.30
618.00	1.50	344.50	617.88	7.38	1.97	-7.26	0.18	0.00	-6.70
712.00	1.20	282.60	711.86	8.78	0.68	-8.73	1.50	-0.32	-65.85
789.00	1.40	268.10	788.84	8.92	-1.05	-8.96	0.50	0.26	-18.83

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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)
883.00	1.60	238.10	882.81	8.19	-3.31	-8.35	0.85	0.21	-31.91
977.00	1.30	191.90	976.79	6.45	-4.64	-6.69	1.25	-0.32	-49.15
1,071.00	1.40	178.10	1,070.76	4.26	-4.82	-4.51	0.36	0.11	-14.68
1,164.00	1.30	181.10	1,163.73	2.07	-4.81	-2.32	0.13	-0.11	3.23
1,258.00	1.60	180.50	1,257.70	-0.31	-4.84	0.05	0.32	0.32	-0.64
1,352.00	1.70	189.10	1,351.66	-3.00	-5.07	2.72	0.28	0.11	9.15
1,446.00	1.90	188.20	1,445.62	-5.92	-5.51	5.61	0.21	0.21	-0.96
1,540.00	1.20	152.20	1,539.59	-8.33	-5.28	8.04	1.24	-0.74	-38.30
1,634.00	1.50	139.50	1,633.56	-10.13	-4.02	9.91	0.45	0.32	-13.51
1,728.00	2.40	153.60	1,727.50	-12.83	-2.34	12.69	1.08	0.96	15.00
1,822.00	2.10	153.90	1,821.43	-16.14	-0.71	16.08	0.32	-0.32	0.32
1,916.00	1.30	120.40	1,915.39	-18.23	0.97	18.25	1.32	-0.85	-35.64
2,009.00	1.60	120.80	2,008.36	-19.43	2.99	19.56	0.32	0.32	0.43
2,103.00	0.60	81.70	2,102.34	-20.03	4.61	20.25	1.27	-1.06	-41.60
2,197.00	0.70	74.40	2,196.34	-19.80	5.65	20.08	0.14	0.11	-7.77
2,291.00	0.90	2.30	2,290.33	-18.91	6.23	19.22	1.02	0.21	-76.70
2,384.00	1.10	47.10	2,383.32	-17.57	6.91	17.92	0.84	0.22	48.17
2,478.00	1.10	77.90	2,477.30	-16.77	8.45	17.20	0.62	0.00	32.77
2,572.00	0.60	150.50	2,571.29	-17.01	9.58	17.50	1.15	-0.53	77.23
2,667.00	0.80	159.70	2,666.29	-18.06	10.05	18.57	0.24	0.21	9.68
2,760.00	1.60	129.60	2,759.27	-19.50	11.28	20.07	1.07	0.86	-32.37
2,854.00	1.40	154.40	2,853.23	-21.37	12.79	22.02	0.72	-0.21	26.38
2,947.00	0.80	222.20	2,946.22	-22.88	12.84	23.53	1.42	-0.65	72.90
3,041.00	1.20	218.30	3,040.21	-24.14	11.79	24.73	0.43	0.43	-4.15
3,105.00	1.30	210.10	3,104.19	-25.29	11.01	25.84	0.32	0.16	-12.81
3,221.00	1.50	211.60	3,220.16	-27.72	9.56	28.19	0.18	0.17	1.29
3,315.00	1.00	280.00	3,314.14	-28.63	8.10	29.02	1.56	-0.53	72.77
3,409.00	1.10	270.40	3,408.12	-28.48	6.39	28.78	0.21	0.11	-10.21
3,503.00	1.10	270.70	3,502.10	-28.46	4.59	28.67	0.01	0.00	0.32
3,597.00	1.00	278.20	3,596.09	-28.33	2.88	28.45	0.18	-0.11	7.98
3,691.00	1.30	324.70	3,690.07	-27.35	1.45	27.39	1.01	0.32	49.47
3,784.00	1.30	327.00	3,783.05	-25.60	0.26	25.58	0.06	0.00	2.47
3,878.00	1.80	340.20	3,877.01	-23.32	-0.82	23.24	0.65	0.53	14.04
3,972.00	1.90	341.40	3,970.96	-20.45	-1.82	20.33	0.11	0.11	1.28
4,066.00	1.80	341.20	4,064.92	-17.58	-2.79	17.40	0.11	-0.11	-0.21
4,160.00	1.70	337.10	4,158.87	-14.90	-3.81	14.67	0.17	-0.11	-4.36
4,253.00	1.80	339.90	4,251.83	-12.25	-4.84	11.98	0.14	0.11	3.01
4,347.00	1.50	331.40	4,345.79	-9.79	-5.94	9.46	0.41	-0.32	-9.04
4,441.00	1.40	331.60	4,439.76	-7.70	-7.08	7.31	0.11	-0.11	0.21
4,535.00	0.70	23.40	4,533.74	-6.16	-7.39	5.76	1.18	-0.74	55.11
4,629.00	0.70	19.10	4,627.74	-5.09	-6.98	4.71	0.06	0.00	-4.57
4,723.00	0.70	16.60	4,721.73	-4.00	-6.63	3.64	0.03	0.00	-2.66
4,816.00	0.10	352.80	4,814.73	-3.37	-6.47	3.02	0.66	-0.65	-25.59

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4,910.00	0.60	21.50	4,908.73	-2.83	-6.30	2.49	0.55	0.53	30.53
5,004.00	0.50	23.40	5,002.72	-2.00	-5.96	1.68	0.11	-0.11	2.02
5,098.00	0.50	33.10	5,096.72	-1.28	-5.57	0.98	0.09	0.00	10.32
5,192.00	0.30	38.10	5,190.72	-0.74	-5.20	0.46	0.22	-0.21	5.32
5,285.00	0.40	47.50	5,283.71	-0.33	-4.81	0.07	0.12	0.11	10.11
5,379.00	0.40	52.90	5,377.71	0.09	-4.31	-0.32	0.04	0.00	5.74
5,473.00	0.30	60.60	5,471.71	0.41	-3.83	-0.61	0.12	-0.11	8.19
5,567.00	0.20	130.80	5,565.71	0.42	-3.49	-0.61	0.32	-0.11	74.68
5,661.00	0.30	165.70	5,659.71	0.08	-3.31	-0.25	0.19	0.11	37.13
5,755.00	0.30	212.10	5,753.71	-0.37	-3.38	0.19	0.25	0.00	49.36
5,849.00	0.40	251.70	5,847.71	-0.68	-3.82	0.48	0.27	0.11	42.13
5,942.00	0.50	243.20	5,940.70	-0.97	-4.49	0.73	0.13	0.11	-9.14
6,036.00	0.50	244.10	6,034.70	-1.33	-5.22	1.05	0.01	0.00	0.96
6,130.00	0.50	230.00	6,128.70	-1.77	-5.91	1.46	0.13	0.00	-15.00
6,224.00	0.60	216.10	6,222.69	-2.44	-6.51	2.09	0.18	0.11	-14.79
6,317.00	0.80	214.80	6,315.68	-3.36	-7.17	2.98	0.22	0.22	-1.40
6,411.00	0.30	122.90	6,409.68	-4.03	-7.34	3.64	0.92	-0.53	-97.77
6,505.00	0.50	76.40	6,503.68	-4.07	-6.73	3.71	0.39	0.21	-49.47
6,599.00	0.30	124.60	6,597.68	-4.12	-6.13	3.78	0.40	-0.21	51.28
6,693.00	0.40	138.40	6,691.68	-4.50	-5.71	4.19	0.14	0.11	14.68
6,787.00	0.80	47.60	6,785.67	-4.30	-5.01	4.03	0.96	0.43	-96.60
6,881.00	1.00	51.00	6,879.66	-3.34	-3.88	3.13	0.22	0.21	3.62
6,974.00	0.80	62.80	6,972.65	-2.54	-2.68	2.39	0.29	-0.22	12.69
7,068.00	0.40	80.90	7,066.64	-2.18	-1.77	2.09	0.47	-0.43	19.26
7,162.00	0.30	116.20	7,160.64	-2.24	-1.22	2.17	0.25	-0.11	37.55
7,256.00	0.30	126.80	7,254.64	-2.50	-0.81	2.45	0.06	0.00	11.28
7,350.00	0.70	201.80	7,348.64	-3.18	-0.82	3.13	0.73	0.43	79.79
7,444.00	1.40	202.70	7,442.62	-4.77	-1.48	4.69	0.74	0.74	0.96
7,538.00	0.40	178.50	7,536.61	-6.16	-1.91	6.05	1.11	-1.06	-25.74
7,632.00	1.10	50.50	7,630.60	-5.91	-1.21	5.84	1.47	0.74	-136.17
7,726.00	1.60	52.10	7,724.58	-4.53	0.52	4.55	0.53	0.53	1.70
7,820.00	1.20	51.80	7,818.55	-3.12	2.33	3.24	0.43	-0.43	-0.32
7,914.00	0.80	58.00	7,912.53	-2.16	3.66	2.35	0.44	-0.43	6.60
8,008.00	0.90	99.50	8,006.52	-1.94	4.95	2.20	0.65	0.11	44.15
8,101.00	0.30	278.70	8,099.52	-2.02	5.43	2.30	1.29	-0.65	192.69
8,195.00	0.30	260.60	8,193.52	-2.02	4.94	2.28	0.10	0.00	-19.26
8,289.00	0.60	283.10	8,287.52	-1.95	4.22	2.17	0.36	0.32	23.94
8,382.00	1.20	258.70	8,380.51	-2.03	2.79	2.18	0.75	0.65	-26.24
8,476.00	1.10	238.50	8,474.49	-2.70	1.05	2.75	0.44	-0.11	-21.49
8,570.00	1.40	221.50	8,568.46	-4.03	-0.48	4.00	0.50	0.32	-18.09
8,664.00	1.50	238.40	8,662.44	-5.53	-2.28	5.40	0.47	0.11	17.98
8,758.00	0.70	301.50	8,756.42	-5.88	-3.82	5.66	1.42	-0.85	67.13
8,852.00	2.50	29.20	8,850.39	-3.79	-3.31	3.60	2.73	1.91	93.30

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8,945.00	2.60	32.30	8,943.30	-0.23	-1.19	0.17	0.18	0.11	3.33
9,039.00	3.10	15.70	9,037.18	4.02	0.63	-3.98	1.02	0.53	-17.66
9,132.00	3.70	13.90	9,130.02	9.35	2.03	-9.23	0.66	0.65	-1.94
9,227.00	3.30	13.50	9,224.84	14.98	3.41	-14.78	0.42	-0.42	-0.42
9,321.00	4.00	19.80	9,318.65	20.70	5.15	-20.40	0.86	0.74	6.70
9,414.00	3.50	14.30	9,411.45	26.50	6.95	-26.10	0.66	-0.54	-5.91
9,508.00	3.30	13.30	9,505.28	31.92	8.28	-31.43	0.22	-0.21	-1.06
9,538.00	3.30	11.30	9,535.23	33.60	8.65	-33.10	0.38	0.00	-6.67
9,578.00	3.30	9.30	9,575.17	35.87	9.06	-35.34	0.29	0.00	-5.00
9,609.00	3.90	45.80	9,606.11	37.48	9.96	-36.90	7.50	1.94	117.74
9,640.00	7.00	74.50	9,636.97	38.72	12.54	-38.00	13.02	10.00	92.58
9,672.00	11.10	84.80	9,668.57	39.53	17.49	-38.54	13.73	12.81	32.19
9,703.00	14.20	93.20	9,698.81	39.58	24.26	-38.24	11.60	10.00	27.10
9,734.00	15.70	106.30	9,728.77	38.19	32.08	-36.43	11.89	4.84	42.26
9,765.00	17.40	115.80	9,758.49	35.00	40.28	-32.81	10.29	5.48	30.65
9,797.00	18.80	118.70	9,788.91	30.44	49.11	-27.78	5.20	4.37	9.06
9,828.00	20.70	119.50	9,818.08	25.34	58.27	-22.21	6.19	6.13	2.58
9,859.00	22.70	120.10	9,846.89	19.64	68.21	-15.99	6.49	6.45	1.94
9,888.00	25.20	120.10	9,873.39	13.74	78.39	-9.55	8.62	8.62	0.00
9,922.00	29.00	120.70	9,903.65	5.90	91.75	-1.01	11.21	11.18	1.76
9,953.00	32.50	121.50	9,930.29	-2.29	105.31	7.89	11.37	11.29	2.58
9,982.00	35.60	124.10	9,954.31	-11.10	118.95	17.41	11.81	10.69	8.97
10,016.00	39.50	127.90	9,981.27	-23.29	135.69	30.48	13.34	11.47	11.18
10,047.00	42.00	132.40	10,004.76	-36.35	151.13	44.34	12.44	8.06	14.52
10,076.00	44.00	135.90	10,025.97	-50.13	165.31	58.85	10.74	6.90	12.07
10,125.00	47.60	142.20	10,060.14	-76.67	188.26	86.58	11.78	7.35	12.86
10,172.00	50.10	146.80	10,091.07	-105.48	208.78	116.44	9.09	5.32	9.79
10,219.00	53.70	149.70	10,120.07	-136.93	228.21	148.88	9.07	7.66	6.17
10,266.00	56.50	151.20	10,146.96	-170.46	247.22	183.38	6.51	5.96	3.19
10,313.00	60.70	153.70	10,171.45	-206.03	265.75	219.88	10.02	8.94	5.32
10,359.00	61.20	157.10	10,193.79	-242.58	282.48	257.27	6.55	1.09	7.39
10,406.00	63.80	160.40	10,215.49	-281.43	297.57	296.87	8.33	5.53	7.02
10,453.00	68.20	162.80	10,234.61	-322.17	311.11	338.26	10.46	9.36	5.11
10,500.00	72.80	165.20	10,250.30	-364.74	323.30	381.43	10.91	9.79	5.11
10,517.00	74.35	165.97	10,255.10	-380.53	327.36	397.41	10.11	9.14	4.53
Wellpath Crosses Lease Line @ Heel									
10,547.00	77.10	167.30	10,262.50	-408.82	334.08	426.01	10.11	9.16	4.43
10,594.00	81.90	168.90	10,271.06	-454.02	343.60	471.66	10.75	10.21	3.40
10,640.44	86.94	170.09	10,275.58	-499.46	352.02	517.48	11.14	10.85	2.55
Remuda South 904H LP p3									
10,641.00	87.00	170.10	10,275.60	-500.00	352.12	518.03	11.14	10.85	2.53
10,687.98	89.20	170.70	10,277.16	-546.30	359.95	564.67	4.85	4.68	1.28
10,688.00	89.20	170.70	10,277.16	-546.32	359.95	564.70	0.00	0.00	0.00
10,735.00	90.40	171.00	10,277.33	-592.72	367.43	611.43	2.63	2.55	0.64

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Local Co-ordinate Reference: Well Remuda South 25 State 904H - Slot S 904H
 TVD Reference: 3075+30 @ 3105.00usft (Cactus118)
 MD Reference: 3075+30 @ 3105.00usft (Cactus118)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: TRUEPERF_EDM

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)
10,828.00	90.60	172.50	10,276.52	-684.75	380.77	704.04	1.63	0.22	1.61
10,855.71	90.33	173.50	10,276.29	-712.26	384.15	731.69	3.74	-0.96	3.62
Remuda South 904H FTP p3									
10,922.00	89.70	175.90	10,276.27	-778.25	390.27	797.92	3.74	-0.96	3.62
11,016.00	90.00	178.70	10,276.52	-872.14	394.69	891.91	3.00	0.32	2.98
11,110.00	92.00	178.70	10,274.87	-966.10	396.83	985.84	2.13	2.13	0.00
11,204.00	92.50	180.90	10,271.18	-1,060.02	397.16	1,079.65	2.40	0.53	2.34
11,297.00	90.20	180.80	10,268.99	-1,152.98	395.78	1,172.40	2.48	-2.47	-0.11
11,391.00	89.00	180.80	10,269.65	-1,246.96	394.46	1,266.18	1.28	-1.28	0.00
11,485.00	89.90	181.10	10,270.55	-1,340.94	392.91	1,359.95	1.01	0.96	0.32
11,579.00	89.50	183.00	10,271.04	-1,434.88	389.54	1,453.57	2.07	-0.43	2.02
11,673.00	88.70	182.50	10,272.52	-1,528.76	385.03	1,547.08	1.00	-0.85	-0.53
11,767.00	89.70	181.60	10,273.83	-1,622.69	381.67	1,640.69	1.43	1.06	-0.96
11,861.00	88.80	179.10	10,275.06	-1,716.67	381.10	1,734.51	2.83	-0.96	-2.66
11,954.00	90.60	179.40	10,275.55	-1,809.65	382.31	1,827.43	1.96	1.94	0.32
12,048.00	89.70	179.40	10,275.30	-1,903.65	383.30	1,921.35	0.96	-0.96	0.00
12,142.00	87.90	179.20	10,277.27	-1,997.62	384.45	2,015.24	1.93	-1.91	-0.21
12,236.00	89.80	179.50	10,279.16	-2,091.59	385.51	2,109.14	2.05	2.02	0.32
12,329.00	89.50	179.00	10,279.73	-2,184.58	386.73	2,202.06	0.63	-0.32	-0.54
12,423.00	88.20	179.20	10,281.61	-2,278.54	388.21	2,295.97	1.40	-1.38	0.21
12,517.00	89.80	179.10	10,283.25	-2,372.52	389.60	2,389.89	1.71	1.70	-0.11
12,611.00	89.30	179.90	10,283.99	-2,466.51	390.42	2,483.79	1.00	-0.53	0.85
12,705.00	89.30	180.60	10,285.14	-2,560.50	390.01	2,577.62	0.74	0.00	0.74
12,798.00	90.00	181.10	10,285.71	-2,653.49	388.63	2,670.41	0.92	0.75	0.54
12,892.00	90.10	181.50	10,285.63	-2,747.46	386.50	2,764.14	0.44	0.11	0.43
12,986.00	91.20	180.40	10,284.56	-2,841.44	384.94	2,857.90	1.65	1.17	-1.17
13,108.00	89.30	179.70	10,284.03	-2,963.43	384.83	2,979.71	1.66	-1.56	-0.57
13,202.00	87.80	179.60	10,286.41	-3,057.40	385.41	3,073.57	1.60	-1.60	-0.11
13,295.00	90.00	180.10	10,288.19	-3,150.38	385.65	3,166.43	2.43	2.37	0.54
13,389.00	90.90	180.00	10,287.45	-3,244.37	385.57	3,260.29	0.96	0.96	-0.11
13,483.00	88.10	178.20	10,288.27	-3,338.34	387.04	3,354.21	3.54	-2.98	-1.91
13,577.00	89.30	178.60	10,290.41	-3,432.28	389.67	3,448.15	1.35	1.28	0.43
13,671.00	90.50	178.90	10,290.57	-3,526.26	391.72	3,542.10	1.32	1.28	0.32
13,765.00	91.10	178.90	10,289.26	-3,620.23	393.52	3,636.04	0.64	0.64	0.00
13,859.00	89.10	178.30	10,289.09	-3,714.20	395.82	3,730.00	2.22	-2.13	-0.64
13,953.00	90.00	179.40	10,289.83	-3,808.17	397.71	3,823.94	1.51	0.96	1.17
14,046.00	91.90	179.80	10,288.29	-3,901.15	398.36	3,916.82	2.09	2.04	0.43
14,140.00	92.90	179.60	10,284.35	-3,995.07	398.85	4,010.63	1.08	1.06	-0.21
14,234.00	90.90	179.80	10,281.24	-4,089.01	399.34	4,104.46	2.14	-2.13	0.21
14,326.00	90.50	181.10	10,280.11	-4,181.00	398.62	4,196.28	1.48	-0.43	1.41
14,420.00	90.20	180.30	10,279.54	-4,274.99	397.47	4,290.08	0.91	-0.32	-0.85
14,514.00	89.00	179.60	10,280.20	-4,368.98	397.55	4,383.95	1.48	-1.28	-0.74
14,608.00	90.20	179.60	10,280.85	-4,462.98	398.21	4,477.84	1.28	1.28	0.00
14,701.00	89.00	178.70	10,281.50	-4,555.96	399.59	4,570.77	1.61	-1.29	-0.97

Survey Report

Company: XTO Energy
 Project: Eddy County, NM (NAD27) NMEZ
 Site: Remuda South 25 State Pad
 Well: Remuda South 25 State 904H
 Wellbore: Lateral
 Design: Lateral

Local Co-ordinate Reference: Well Remuda South 25 State 904H - Slot S 904H
 TVD Reference: 3075+30 @ 3105.00usft (Cactus118)
 MD Reference: 3075+30 @ 3105.00usft (Cactus118)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: TRUEPERF_EDM

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)
14,795.00	90.70	179.50	10,281.75	-4,649.95	401.06	4,664.70	2.00	1.81	0.85
14,889.00	90.00	179.70	10,281.17	-4,743.94	401.72	4,758.60	0.77	-0.74	0.21
14,983.00	88.70	179.20	10,282.24	-4,837.93	402.62	4,852.50	1.48	-1.38	-0.53
15,077.00	88.30	179.10	10,284.70	-4,931.89	404.01	4,946.40	0.44	-0.43	-0.11
15,171.00	89.10	178.90	10,286.83	-5,025.85	405.65	5,040.31	0.88	0.85	-0.21
15,265.00	89.90	178.80	10,287.65	-5,119.82	407.54	5,134.25	0.86	0.85	-0.11
15,359.00	89.60	179.60	10,288.06	-5,213.81	408.85	5,228.18	0.91	-0.32	0.85
15,452.00	90.80	180.10	10,287.74	-5,306.81	409.10	5,321.06	1.40	1.29	0.54
15,546.00	89.80	179.90	10,287.25	-5,400.81	409.10	5,414.92	1.08	-1.06	-0.21
15,639.00	90.10	179.80	10,287.33	-5,493.81	409.34	5,507.80	0.34	0.32	-0.11
15,733.00	89.40	180.70	10,287.74	-5,587.80	408.93	5,601.65	1.21	-0.74	0.96
15,827.00	90.30	180.50	10,287.98	-5,681.80	407.95	5,695.45	0.98	0.96	-0.21
15,921.00	89.70	180.50	10,287.98	-5,775.79	407.13	5,789.27	0.64	-0.64	0.00
16,015.00	90.10	179.30	10,288.15	-5,869.79	407.29	5,883.15	1.35	0.43	-1.28
16,109.00	90.70	180.10	10,287.49	-5,963.79	407.78	5,977.03	1.06	0.64	0.85
16,202.00	90.00	180.70	10,286.92	-6,056.78	407.13	6,069.86	0.99	-0.75	0.65
16,296.00	89.10	181.10	10,287.66	-6,150.76	405.66	6,163.64	1.05	-0.96	0.43
16,390.00	89.80	181.10	10,288.56	-6,244.74	403.85	6,257.38	0.74	0.74	0.00
16,484.00	88.90	181.10	10,289.63	-6,338.72	402.05	6,351.13	0.96	-0.96	0.00
16,578.00	89.50	181.10	10,290.94	-6,432.69	400.24	6,444.87	0.64	0.64	0.00
16,672.00	89.20	180.60	10,292.01	-6,526.67	398.85	6,538.65	0.62	-0.32	-0.53
16,766.00	89.80	180.30	10,292.83	-6,620.67	398.11	6,632.47	0.71	0.64	-0.32
16,860.00	88.60	180.50	10,294.14	-6,714.65	397.45	6,726.29	1.29	-1.28	0.21
16,953.00	89.30	180.20	10,295.85	-6,807.64	396.89	6,819.11	0.82	0.75	-0.32
17,047.00	89.90	179.80	10,296.50	-6,901.63	396.89	6,912.97	0.77	0.64	-0.43
17,141.00	90.40	179.60	10,296.26	-6,995.63	397.38	7,006.87	0.57	0.53	-0.21
17,235.00	91.10	179.40	10,295.03	-7,089.62	398.20	7,100.76	0.77	0.74	-0.21
17,329.00	90.20	179.40	10,293.96	-7,183.61	399.18	7,194.67	0.96	-0.96	0.00
17,423.00	90.00	178.70	10,293.80	-7,277.59	400.74	7,288.61	0.77	-0.21	-0.74
17,517.00	89.10	177.70	10,294.53	-7,371.54	403.69	7,382.58	1.43	-0.96	-1.06
17,611.00	89.50	178.20	10,295.68	-7,465.47	407.06	7,476.56	0.68	0.43	0.53
17,704.00	89.10	178.80	10,296.82	-7,558.43	409.49	7,569.52	0.78	-0.43	0.65
17,798.00	90.10	179.60	10,297.47	-7,652.42	410.80	7,663.44	1.36	1.06	0.85
17,893.00	90.80	179.20	10,296.73	-7,747.41	411.80	7,758.35	0.85	0.74	-0.42
17,986.00	90.00	179.50	10,296.08	-7,840.40	412.85	7,851.26	0.92	-0.86	0.32
18,080.00	89.30	179.50	10,296.65	-7,934.40	413.67	7,945.17	0.74	-0.74	0.00
18,168.00	89.39	178.84	10,297.66	-8,022.38	414.94	8,033.10	0.75	0.11	-0.74
Wellpath Crosses 330' From Lease line @ Toe									
18,168.81	89.39	178.84	10,297.67	-8,023.19	414.96	8,033.91	0.75	0.11	-0.74
Remuda South 904H LTP									
18,174.00	89.40	178.80	10,297.72	-8,028.38	415.07	8,039.09	0.75	0.11	-0.74
18,210.00	89.70	178.50	10,298.00	-8,064.37	415.92	8,075.08	1.18	0.83	-0.83
18,260.00	89.70	178.50	10,298.26	-8,114.35	417.22	8,125.06	0.00	0.00	0.00

Survey Report

Company: XTO Energy
Project: Eddy County, NM (NAD27) NMEZ
Site: Remuda South 25 State Pad
Well: Remuda South 25 State 904H
Wellbore: Lateral
Design: Lateral

Local Co-ordinate Reference: Well Remuda South 25 State 904H - Slot S 904H
TVD Reference: 3075+30 @ 3105.00usft (Cactus118)
MD Reference: 3075+30 @ 3105.00usft (Cactus118)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: TRUEPERF_EDM

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)
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TD @ 238°FSL, 361°FEL - Remuda South 904H PBHL p3

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Remuda South 904H SL - actual wellpath hits target center - Point	0.00	0.01	5.00	0.00	0.00	464,640.20	621,538.20	32° 16' 36.472 N	103° 56' 24.314 W
Remuda South 904H PE - actual wellpath misses target center by 42.34usft at 18260.00usft MD (10298.26 TVD, -8114.35 N, 417.22 E) - Rectangle (sides W50.00 H7,440.00 D0.00)	0.00	0.00	10,297.0 0	-8,152.98	434.50	456,487.20	621,972.70	32° 15' 15.774 N	103° 56' 19.602 W
Remuda South 904H BF - actual wellpath misses target center by 0.01usft at 18260.00usft MD (10298.26 TVD, -8114.35 N, 417.22 E) - Point	0.00	0.00	10,298.2 6	-8,114.35	417.22	456,525.83	621,955.42	32° 15' 16.157 N	103° 56' 19.802 W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,517.00	10,255.10	-380.53	327.36	Wellpath Crosses Lease Line @ Heel
18,168.00	10,297.66	-8,022.38	414.94	Wellpath Crosses 330' From Lease line @ Toe
18,260.00	10,298.26	-8,114.35	417.22	TD @ 238°FSL, 361°FEL

Checked By: _____ Approved By: _____ Date: _____

XTO Energy

Project: Eddy County, NM (NAD27) NMEZ
 Site: Remuda South 25 State Pad
 Well: Remuda South 25 State 904H
 Wellbore: Lateral
 Design: Lateral
 3075+30 @ 3105.00usft (Cactus118)
 NAD 1927 (NADCON CONUS)

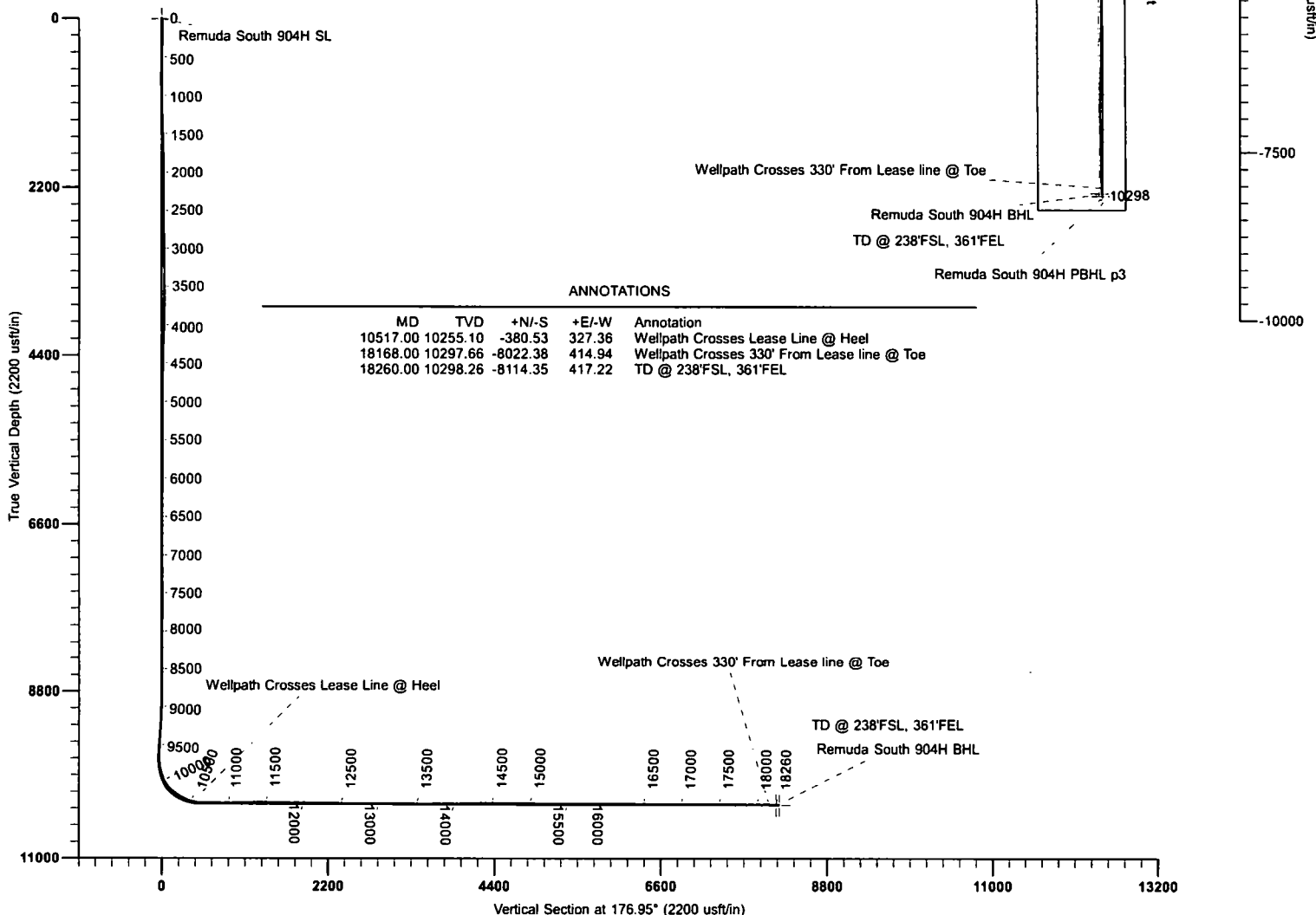


To convert a Magnetic Direction to a Grid Direction, Add 6.85°



Azimuths to Grid North
 True North: -0.21°
 Magnetic North: 6.85°

Magnetic Field
 Strength: 47865.5nT
 Dip Angle: 60.04°
 Date: 02/11/2018
 Model: IGRF2015



ANNOTATIONS

MD	TVD	+N/-S	+E/-W	Annotation
10517.00	10255.10	-380.53	327.36	Wellpath Crosses Lease Line @ Heel
18168.00	10297.66	-8022.38	414.94	Wellpath Crosses 330' From Lease line @ Toe
18260.00	10298.26	-8114.35	417.22	TD @ 238'FSL, 361'FEL

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Remuda South 904H SL	5.00	0.00	0.00	464640.20	621538.20	Point
Remuda South 904H PBHL p3	10297.00	-8152.98	434.50	456487.20	621972.70	Rectangle (Sides: L7440.00 W50.00)
Remuda South 904H BHL	10298.26	-8114.35	417.22	456525.83	621955.42	Point