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Survey Report

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JAN 07 2019 30-015-44314

Company: XTO Energy
Project: Eddy County, NM (NAD27) NMEZ
Site: Remuda North 25 State Pad
Well: Remuda North 25 State 103H
Wellbore: Lateral
Design: Lateral

Local Co-ordinate Reference: Well Remuda North 25 State 103H - Slot N 103H
TVD Reference: 3070+30 @ 3100.00usft (Akita90act)
MD Reference: 3070+30 @ 3100.00usft (Akita90act)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: TRUEPERF_EDM

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 North 25 State Pad, Centered on 904H				
Site Position:		Northing:	463,887.20 ft	Latitude:	32° 16' 29.021 N
From:	Map	Easting:	621,538.10 ft	Longitude:	103° 56' 24.348 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.21 °

Well	Remuda North 25 State 103H - Slot N 103H					
Well Position	+N/-S	0.00 usft	Northing:	463,887.20 ft	Latitude:	32° 16' 29.019 N
	+E/-W	0.00 usft	Easting:	621,568.10 ft	Longitude:	103° 56' 23.998 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,070.00 usft	

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2018/02/11	7.06	60.04	47,864

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	357.69	

Survey Program	Date 2018/04/10				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
172.00	18,316.00	Survey #1 (Lateral)	MWD	MWD v3:standard declination	
18,370.00	18,370.00	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
Remuda North 103H SL - Remuda North 904H SL									
172.00	0.60	137.00	172.00	-0.66	0.61	-0.68	0.35	0.35	0.00
259.00	0.90	220.00	258.99	-1.52	0.49	-1.53	1.17	0.34	95.40
336.00	1.10	209.00	335.98	-2.62	-0.26	-2.61	0.36	0.26	-14.29
417.00	1.00	191.10	416.97	-4.00	-0.77	-3.96	0.42	-0.12	-22.10
507.00	1.00	195.30	506.95	-5.53	-1.13	-5.48	0.08	0.00	4.67
599.00	1.10	192.80	598.94	-7.16	-1.54	-7.09	0.12	0.11	-2.72
662.00	1.10	184.20	661.93	-8.36	-1.72	-8.28	0.26	0.00	-13.65
755.00	0.70	147.10	754.91	-9.72	-1.48	-9.65	0.74	-0.43	-39.89

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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)
851.00	0.70	115.70	850.91	-10.47	-0.63	-10.44	0.39	0.00	-32.71
945.00	0.80	146.10	944.90	-11.26	0.25	-11.26	0.43	0.11	32.34
1,041.00	1.10	38.80	1,040.89	-11.10	1.21	-11.14	1.60	0.31	-111.77
1,135.00	2.00	29.70	1,134.86	-8.97	2.58	-9.07	0.99	0.96	-9.68
1,229.00	0.70	251.00	1,228.84	-7.73	2.85	-7.84	2.73	-1.38	-147.55
1,322.00	1.80	235.70	1,321.82	-8.74	1.11	-8.78	1.23	1.18	-16.45
1,416.00	0.30	225.70	1,415.80	-9.75	-0.29	-9.73	1.60	-1.60	-10.64
1,509.00	0.50	102.30	1,508.80	-10.00	-0.06	-9.99	0.76	0.22	-132.69
1,603.00	0.80	69.30	1,602.79	-9.86	0.95	-9.89	0.50	0.32	-35.11
1,698.00	2.70	55.00	1,697.74	-8.34	3.40	-8.47	2.04	2.00	-15.05
1,793.00	2.50	68.00	1,792.65	-6.28	7.16	-6.56	0.65	-0.21	13.68
1,886.00	2.00	34.10	1,885.58	-4.18	9.95	-4.57	1.50	-0.54	-36.45
1,981.00	4.00	23.70	1,980.44	0.23	12.21	-0.26	2.17	2.11	-10.95
2,075.00	6.10	23.00	2,074.07	7.83	15.48	7.20	2.23	2.23	-0.74
2,169.00	7.80	16.00	2,167.38	18.56	19.19	17.77	2.02	1.81	-7.45
2,262.00	5.10	355.80	2,259.80	28.75	20.63	27.90	3.75	-2.90	-21.72
2,356.00	2.20	332.00	2,353.60	34.51	19.47	33.70	3.42	-3.09	-25.32
2,450.00	2.20	243.40	2,447.55	35.30	17.01	34.58	3.27	0.00	-94.26
2,545.00	2.80	200.90	2,542.47	32.31	14.56	31.70	2.00	0.63	-44.74
2,639.00	4.00	180.90	2,636.31	26.89	13.68	26.32	1.78	1.28	-21.28
2,732.00	5.90	177.70	2,728.96	18.87	13.83	18.30	2.06	2.04	-3.44
2,826.00	6.40	173.00	2,822.41	8.84	14.66	8.25	0.75	0.53	-5.00
2,919.00	6.40	165.90	2,914.84	-1.33	16.55	-1.99	0.85	0.00	-7.63
3,013.00	7.40	170.50	3,008.16	-12.38	18.83	-13.13	1.21	1.06	4.89
3,108.00	6.30	177.40	3,102.48	-23.62	20.07	-24.41	1.44	-1.16	7.26
3,201.00	5.10	186.70	3,195.02	-32.83	19.82	-33.60	1.62	-1.29	10.00
3,296.00	4.80	189.00	3,289.66	-40.94	18.71	-41.67	0.38	-0.32	2.42
3,389.00	4.40	188.30	3,382.36	-48.32	17.59	-48.99	0.43	-0.43	-0.75
3,482.00	4.40	189.30	3,475.09	-55.37	16.49	-55.99	0.08	0.00	1.08
3,576.00	4.20	187.00	3,568.82	-62.34	15.49	-62.92	0.28	-0.21	-2.45
3,672.00	3.90	184.90	3,664.59	-69.09	14.78	-69.63	0.35	-0.31	-2.19
3,766.00	3.60	186.90	3,758.38	-75.20	14.16	-75.71	0.35	-0.32	2.13
3,860.00	3.50	187.90	3,852.20	-80.97	13.41	-81.45	0.13	-0.11	1.06
3,953.00	3.30	185.60	3,945.04	-86.45	12.76	-86.89	0.26	-0.22	-2.47
4,046.00	2.80	192.30	4,037.91	-91.33	12.01	-91.74	0.66	-0.54	7.20
4,140.00	1.60	184.70	4,131.84	-94.88	11.41	-95.27	1.31	-1.28	-8.09
4,233.00	0.90	149.60	4,224.82	-96.81	11.68	-97.20	1.08	-0.75	-37.74
4,328.00	0.80	132.90	4,319.81	-97.90	12.54	-98.33	0.28	-0.11	-17.58
4,421.00	0.80	142.90	4,412.80	-98.86	13.41	-99.32	0.15	0.00	10.75
4,517.00	0.90	128.70	4,508.79	-99.87	14.40	-100.37	0.24	0.10	-14.79
4,612.00	0.70	134.30	4,603.78	-100.74	15.40	-101.28	0.23	-0.21	5.89
4,706.00	0.20	140.40	4,697.77	-101.27	15.91	-101.83	0.53	-0.53	6.49
4,802.00	0.40	338.90	4,793.77	-101.08	15.90	-101.64	0.62	0.21	-168.23

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4,895.00	0.60	322.20	4,886.77	-100.40	15.48	-100.94	0.26	0.22	-17.96
4,990.00	0.40	312.00	4,981.77	-99.78	14.93	-100.30	0.23	-0.21	-10.74
5,084.00	0.50	350.00	5,075.76	-99.16	14.62	-99.67	0.33	0.11	40.43
5,177.00	0.60	348.40	5,168.76	-98.28	14.45	-98.78	0.11	0.11	-1.72
5,272.00	0.60	322.00	5,263.75	-97.40	14.04	-97.89	0.29	0.00	-27.79
5,366.00	0.50	295.50	5,357.75	-96.84	13.37	-97.30	0.29	-0.11	-28.19
5,460.00	0.80	266.10	5,451.74	-96.70	12.35	-97.12	0.47	0.32	-31.28
5,554.00	1.10	261.90	5,545.73	-96.88	10.80	-97.23	0.33	0.32	-4.47
5,648.00	0.90	255.80	5,639.72	-97.18	9.19	-97.48	0.24	-0.21	-6.49
5,743.00	0.70	239.60	5,734.71	-97.66	7.96	-97.90	0.32	-0.21	-17.05
5,838.00	0.60	251.20	5,829.70	-98.12	6.99	-98.32	0.17	-0.11	12.21
5,931.00	0.90	260.00	5,922.69	-98.40	5.81	-98.55	0.34	0.32	9.46
6,025.00	0.70	250.70	6,016.68	-98.72	4.54	-98.82	0.25	-0.21	-9.89
6,120.00	0.50	254.20	6,111.68	-99.02	3.60	-99.09	0.21	-0.21	3.68
6,215.00	0.40	263.10	6,206.68	-99.17	2.87	-99.21	0.13	-0.11	9.37
6,309.00	0.80	238.40	6,300.67	-99.56	1.99	-99.56	0.50	0.43	-26.28
6,403.00	0.50	224.50	6,394.66	-100.19	1.14	-100.16	0.36	-0.32	-14.79
6,497.00	0.50	238.50	6,488.66	-100.70	0.50	-100.64	0.13	0.00	14.89
6,591.00	0.70	206.00	6,582.66	-101.43	-0.10	-101.34	0.41	0.21	-34.57
6,685.00	0.50	205.80	6,676.65	-102.32	-0.53	-102.21	0.21	-0.21	-0.21
6,779.00	0.70	213.70	6,770.65	-103.16	-1.03	-103.04	0.23	0.21	8.40
6,874.00	0.80	181.60	6,865.64	-104.31	-1.37	-104.17	0.45	0.11	-33.79
6,969.00	0.40	174.90	6,960.63	-105.30	-1.36	-105.16	0.43	-0.42	-7.05
7,064.00	0.30	237.60	7,055.63	-105.77	-1.54	-105.62	0.39	-0.11	66.00
7,157.00	0.10	43.40	7,148.63	-105.84	-1.69	-105.68	0.43	-0.22	178.28
7,251.00	0.30	11.80	7,242.63	-105.54	-1.58	-105.39	0.24	0.21	-33.62
7,347.00	0.90	278.80	7,338.63	-105.18	-2.27	-105.00	1.00	0.62	-96.87
7,416.00	1.10	290.90	7,407.61	-104.86	-3.43	-104.63	0.42	0.29	17.54
7,574.00	1.20	328.90	7,565.59	-102.90	-5.70	-102.59	0.48	0.06	24.05
7,669.00	1.90	330.60	7,660.55	-100.68	-6.99	-100.31	0.74	0.74	1.79
7,765.00	2.50	308.50	7,756.48	-97.99	-9.41	-97.53	1.07	0.62	-23.02
7,859.00	3.30	279.30	7,850.36	-96.27	-13.68	-95.64	1.76	0.85	-31.06
7,954.00	3.80	268.80	7,945.18	-95.90	-19.53	-95.03	0.86	0.53	-11.05
8,049.00	2.50	278.80	8,040.04	-95.64	-24.72	-94.57	1.48	-1.37	10.53
8,144.00	1.30	297.90	8,134.98	-94.82	-27.72	-93.63	1.41	-1.26	20.11
8,238.00	1.10	333.80	8,228.97	-93.51	-29.06	-92.27	0.81	-0.21	38.19
8,332.00	0.90	350.10	8,322.95	-91.98	-29.59	-90.71	0.37	-0.21	17.34
8,427.00	1.10	156.60	8,417.95	-92.08	-29.35	-90.82	2.09	0.21	175.26
8,521.00	2.50	144.80	8,511.90	-94.58	-27.81	-93.39	1.53	1.49	-12.55
8,614.00	3.00	147.60	8,604.79	-98.30	-25.34	-97.19	0.56	0.54	3.01
8,708.00	2.70	154.90	8,698.67	-102.38	-23.08	-101.36	0.50	-0.32	7.77
8,780.69	1.60	165.36	8,771.31	-104.91	-22.10	-103.93	1.60	-1.51	14.39
Remuda North 704H FTP									
8,802.00	1.30	171.70	8,792.62	-105.44	-21.99	-104.47	1.60	-1.41	29.77

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8,896.00	1.40	176.60	8,886.59	-107.64	-21.77	-106.67	0.16	0.11	5.21
8,990.00	1.60	179.50	8,980.56	-110.10	-21.69	-109.13	0.23	0.21	3.09
9,083.00	1.40	197.60	9,073.53	-112.48	-22.02	-111.50	0.55	-0.22	19.46
9,177.00	1.50	211.60	9,167.50	-114.62	-23.01	-113.60	0.39	0.11	14.89
9,270.00	1.10	238.90	9,260.47	-116.12	-24.42	-115.04	0.78	-0.43	29.35
9,363.00	0.90	344.40	9,353.46	-115.88	-25.38	-114.76	1.72	-0.22	113.44
9,457.00	0.40	181.20	9,447.46	-115.49	-25.58	-114.37	1.37	-0.53	-173.62
9,551.00	2.50	186.50	9,541.43	-117.86	-25.82	-116.72	2.24	2.23	5.64
9,645.00	4.00	198.10	9,635.27	-123.01	-27.07	-121.82	1.73	1.60	12.34
9,737.00	4.80	211.60	9,727.00	-129.34	-30.09	-128.02	1.42	0.87	14.67
9,768.00	4.50	215.90	9,757.90	-131.43	-31.48	-130.06	1.48	-0.97	13.87
9,799.00	2.10	249.60	9,788.85	-132.61	-32.72	-131.19	9.64	-7.74	108.71
9,830.00	3.10	331.70	9,819.83	-132.07	-33.65	-130.61	11.28	3.23	264.84
9,862.00	6.90	351.90	9,851.70	-129.41	-34.34	-127.92	12.91	11.87	63.12
9,893.00	11.00	352.60	9,882.32	-124.63	-34.98	-123.12	13.23	13.23	2.26
9,925.00	14.90	347.90	9,913.50	-117.58	-36.23	-116.02	12.61	12.19	-14.69
9,956.00	19.00	343.50	9,943.15	-108.84	-38.50	-107.20	13.85	13.23	-14.19
9,988.00	23.20	338.40	9,973.00	-97.98	-42.31	-96.19	14.31	13.12	-15.94
10,018.00	27.40	336.60	10,000.11	-86.14	-47.23	-84.17	14.23	14.00	-6.00
10,050.00	31.30	337.70	10,028.00	-71.69	-53.31	-69.48	12.30	12.19	3.44
10,081.00	35.60	338.40	10,053.86	-55.84	-59.69	-53.39	13.93	13.87	2.26
10,112.00	39.80	340.00	10,078.38	-38.12	-66.40	-35.41	13.91	13.55	5.16
10,143.00	43.70	341.40	10,101.51	-18.64	-73.22	-15.67	12.93	12.58	4.52
10,174.00	46.70	341.90	10,123.35	2.24	-80.14	5.47	9.74	9.68	1.61
10,205.00	48.80	343.10	10,144.19	24.12	-87.03	27.61	7.36	6.77	3.87
10,237.00	51.10	344.50	10,164.78	47.64	-93.86	51.39	7.93	7.19	4.37
10,269.00	53.50	346.50	10,184.35	72.15	-100.19	76.13	8.98	7.50	6.25
10,300.00	55.70	346.80	10,202.31	96.74	-106.03	100.93	7.14	7.10	0.97
10,331.00	57.90	347.00	10,219.28	122.00	-111.91	126.41	7.12	7.10	0.65
10,362.00	61.50	348.60	10,234.92	148.16	-117.55	152.78	12.44	11.61	5.16
10,393.00	64.10	349.30	10,249.09	175.22	-122.84	180.03	8.62	8.39	2.26
10,425.00	66.40	350.10	10,262.48	203.81	-128.03	208.80	7.54	7.19	2.50
10,456.00	68.80	348.60	10,274.30	231.97	-133.33	237.16	8.94	7.74	-4.84
10,487.00	71.00	348.60	10,284.95	260.51	-139.08	265.90	7.10	7.10	0.00
10,518.00	73.50	345.20	10,294.40	289.25	-145.78	294.89	13.20	8.06	-10.97
10,549.00	73.40	347.50	10,303.23	318.13	-152.79	324.03	7.12	-0.32	7.42
10,580.38	74.87	345.05	10,311.81	347.45	-159.96	353.61	8.86	4.69	-7.81
Remuda North 904H LP									
10,581.00	74.90	345.00	10,311.97	348.03	-160.11	354.20	8.86	4.73	-7.76
10,607.00	76.36	346.79	10,318.43	372.45	-166.25	378.85	8.72	5.62	6.89
Wellpath Crosses Section Line @ Heel									
10,613.00	76.70	347.20	10,319.82	378.14	-167.56	384.58	8.72	5.65	6.83
10,644.00	79.90	348.60	10,326.11	407.81	-173.92	414.49	11.23	10.32	4.52

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Company: XTO Energy
 Project: Eddy County, NM (NAD27) NMEZ
 Site: Remuda North 25 State Pad
 Well: Remuda North 25 State 103H
 Wellbore: Lateral
 Design: Lateral

Local Co-ordinate Reference: Well Remuda North 25 State 103H - Slot N 103H
 TVD Reference: 3070+30 @ 3100.00usft (Akita90act)
 MD Reference: 3070+30 @ 3100.00usft (Akita90act)
 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)
10,675.00	83.90	349.50	10,330.48	437.94	-179.75	444.83	13.22	12.90	2.90
10,690.01	85.30	349.99	10,331.89	452.64	-182.41	459.63	9.89	9.35	3.23
Remuda North 103H LP p4									
10,706.00	86.80	350.50	10,332.99	468.36	-185.11	475.44	9.89	9.36	3.22
10,768.00	90.10	351.40	10,334.67	529.56	-194.86	536.98	5.52	5.32	1.45
10,784.73	90.10	352.10	10,334.64	546.11	-197.26	553.62	4.19	0.00	4.19
Remuda North 103H LP									
10,784.74	90.10	352.10	10,334.64	546.13	-197.26	553.64	0.00	0.00	0.00
Remuda North 103H LP p3									
10,861.00	90.10	355.30	10,334.51	621.92	-205.63	629.70	4.19	0.00	4.19
10,909.31	89.95	357.00	10,334.49	670.12	-208.87	677.99	3.53	-0.32	3.51
Remuda North 124H FTP									
10,917.68	89.92	357.29	10,334.50	678.47	-209.29	686.36	3.53	-0.32	3.51
Remuda North 904H FTP									
10,945.89	89.83	358.28	10,334.56	706.66	-210.38	714.57	3.53	-0.32	3.51
Remuda North 103H FTP - Remuda North 103H FTP p3 - Remuda North 123H FTP									
10,955.00	89.80	358.60	10,334.59	715.77	-210.63	723.68	3.53	-0.32	3.51
11,050.00	89.10	356.00	10,335.50	810.65	-215.10	818.66	2.83	-0.74	-2.74
11,145.00	89.60	353.00	10,336.58	905.20	-224.20	913.50	3.20	0.53	-3.16
11,241.00	90.20	353.00	10,336.75	1,000.48	-235.90	1,009.18	0.62	0.62	0.00
11,336.00	91.00	353.10	10,335.75	1,094.78	-247.40	1,103.86	0.85	0.84	0.11
11,430.00	90.00	356.10	10,334.93	1,188.35	-256.24	1,197.71	3.36	-1.06	3.19
11,524.00	91.30	356.30	10,333.86	1,282.13	-262.47	1,291.67	1.40	1.38	0.21
11,618.00	90.80	0.00	10,332.14	1,376.05	-265.51	1,385.63	3.97	-0.53	3.94
11,712.00	91.40	0.20	10,330.34	1,470.03	-265.34	1,479.53	0.67	0.64	0.21
11,807.00	88.50	0.70	10,330.42	1,565.02	-264.60	1,574.41	3.10	-3.05	0.53
11,901.00	88.60	0.30	10,332.80	1,658.98	-263.78	1,668.27	0.44	0.11	-0.43
11,995.00	90.50	0.30	10,333.54	1,752.98	-263.28	1,762.16	2.02	2.02	0.00
12,089.00	91.70	359.50	10,331.73	1,846.96	-263.45	1,856.07	1.53	1.28	-0.85
12,182.00	89.20	359.50	10,331.00	1,939.94	-264.26	1,949.02	2.69	-2.69	0.00
12,275.00	90.40	359.50	10,331.33	2,032.94	-265.07	2,041.97	1.29	1.29	0.00
12,369.00	88.40	359.60	10,332.31	2,126.92	-265.81	2,135.91	2.13	-2.13	0.11
12,462.00	89.00	359.50	10,334.42	2,219.90	-266.54	2,228.83	0.65	0.65	-0.11
12,557.00	91.30	0.00	10,334.17	2,314.89	-266.95	2,323.77	2.48	2.42	0.53
12,650.00	89.10	1.40	10,333.85	2,407.87	-265.82	2,416.63	2.80	-2.37	1.51
12,744.00	91.20	2.10	10,333.60	2,501.82	-262.95	2,510.39	2.35	2.23	0.74
12,838.00	88.90	0.30	10,333.52	2,595.79	-260.98	2,604.20	3.11	-2.45	-1.91
12,932.00	90.80	0.50	10,333.76	2,689.78	-260.32	2,698.09	2.03	2.02	0.21
13,025.00	89.70	0.30	10,333.36	2,782.78	-259.67	2,790.98	1.20	-1.18	-0.22
13,119.00	89.00	0.50	10,334.42	2,876.77	-259.02	2,884.87	0.77	-0.74	0.21
13,212.00	91.90	1.80	10,333.69	2,969.74	-257.15	2,977.69	3.42	3.12	1.40
13,306.00	90.90	0.30	10,331.40	3,063.69	-255.43	3,071.50	1.92	-1.06	-1.60
13,400.00	88.40	358.60	10,331.97	3,157.67	-256.33	3,165.44	3.22	-2.66	-1.81
13,493.00	90.70	358.80	10,332.70	3,250.64	-258.44	3,258.41	2.48	2.47	0.22
13,587.00	88.70	357.00	10,333.19	3,344.57	-261.88	3,352.40	2.86	-2.13	-1.91

Survey Report

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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)
13,680.00	90.80	357.40	10,333.60	3,437.45	-266.43	3,445.39	2.30	2.26	0.43
13,774.00	87.80	358.10	10,334.75	3,531.36	-270.12	3,539.38	3.28	-3.19	0.74
13,881.00	89.70	357.20	10,337.08	3,638.24	-274.50	3,646.34	1.96	1.78	-0.84
13,974.00	92.20	357.20	10,335.54	3,731.11	-279.05	3,739.32	2.69	2.69	0.00
14,069.00	91.30	359.60	10,332.64	3,826.02	-281.70	3,834.26	2.70	-0.95	2.53
14,163.00	89.00	0.70	10,332.39	3,920.01	-281.45	3,928.17	2.71	-2.45	1.17
14,257.00	90.20	1.20	10,333.05	4,013.99	-279.89	4,022.01	1.38	1.28	0.53
14,351.00	91.90	1.20	10,331.33	4,107.95	-277.92	4,115.81	1.81	1.81	0.00
14,444.00	90.30	1.40	10,329.54	4,200.91	-275.81	4,208.61	1.73	-1.72	0.22
14,538.00	89.30	359.80	10,329.87	4,294.90	-274.83	4,302.48	2.01	-1.06	-1.70
14,631.00	90.00	358.90	10,330.44	4,387.89	-275.88	4,395.44	1.23	0.75	-0.97
14,724.00	91.80	358.90	10,328.98	4,480.86	-277.67	4,488.41	1.94	1.94	0.00
14,819.00	90.90	358.40	10,326.74	4,575.80	-279.91	4,583.36	1.08	-0.95	-0.53
14,913.00	89.30	358.90	10,326.57	4,669.77	-282.12	4,677.35	1.78	-1.70	0.53
15,006.00	90.10	359.50	10,327.06	4,762.76	-283.42	4,770.31	1.08	0.86	0.65
15,099.00	91.70	358.90	10,325.60	4,855.74	-284.72	4,863.27	1.84	1.72	-0.65
15,193.00	89.80	359.10	10,324.37	4,949.71	-286.36	4,957.23	2.03	-2.02	0.21
15,286.00	91.00	0.00	10,323.72	5,042.70	-287.09	5,050.18	1.61	1.29	0.97
15,380.00	91.10	359.10	10,322.00	5,136.68	-287.83	5,144.11	0.96	0.11	-0.96
15,474.00	88.00	358.90	10,322.74	5,230.65	-289.47	5,238.07	3.30	-3.30	-0.21
15,568.00	88.60	358.10	10,325.53	5,324.58	-291.93	5,332.02	1.06	0.64	-0.85
15,661.00	90.00	357.40	10,326.66	5,417.50	-295.58	5,425.01	1.68	1.51	-0.75
15,755.00	90.00	358.10	10,326.66	5,511.42	-299.27	5,519.01	0.74	0.00	0.74
15,849.00	91.00	0.50	10,325.84	5,605.41	-300.42	5,612.96	2.77	1.06	2.55
15,943.00	89.70	0.30	10,325.27	5,699.40	-299.76	5,706.85	1.40	-1.38	-0.21
16,039.00	90.20	0.00	10,325.35	5,795.40	-299.51	5,802.76	0.61	0.52	-0.31
16,133.00	91.10	359.10	10,324.28	5,889.39	-300.25	5,896.70	1.35	0.96	-0.96
16,227.00	89.40	359.50	10,323.87	5,983.38	-301.40	5,990.66	1.86	-1.81	0.43
16,321.00	90.60	359.80	10,323.87	6,077.37	-301.97	6,084.61	1.32	1.28	0.32
16,413.00	89.90	0.50	10,323.47	6,169.37	-301.73	6,176.52	1.08	-0.76	0.76
16,507.00	91.40	0.20	10,322.41	6,263.36	-301.15	6,270.41	1.63	1.60	-0.32
16,601.00	89.60	359.60	10,321.59	6,357.35	-301.32	6,364.33	2.02	-1.91	-0.64
16,695.00	90.10	358.40	10,321.83	6,451.33	-302.96	6,458.30	1.38	0.53	-1.28
16,789.00	89.90	359.80	10,321.83	6,545.32	-304.44	6,552.27	1.50	-0.21	1.49
16,882.00	90.80	359.80	10,321.26	6,638.32	-304.76	6,645.21	0.97	0.97	0.00
16,976.00	89.40	0.50	10,321.10	6,732.31	-304.51	6,739.12	1.67	-1.49	0.74
17,070.00	89.70	359.30	10,321.84	6,826.31	-304.68	6,833.04	1.32	0.32	-1.28
17,164.00	90.40	358.10	10,321.76	6,920.28	-306.81	6,927.03	1.48	0.74	-1.28
17,258.00	90.20	358.60	10,321.26	7,014.24	-309.52	7,021.02	0.57	-0.21	0.53
17,351.00	90.40	359.50	10,320.78	7,107.23	-311.06	7,113.99	0.99	0.22	0.97
17,443.00	86.90	359.10	10,322.94	7,199.18	-312.18	7,205.91	3.83	-3.80	-0.43
17,535.00	87.40	359.30	10,327.52	7,291.06	-313.47	7,297.77	0.59	0.54	0.22
17,627.00	88.60	359.30	10,330.73	7,382.99	-314.59	7,389.67	1.30	1.30	0.00

Survey Report

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Site: Remuda North 25 State Pad
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Wellbore: Lateral
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Local Co-ordinate Reference: Well Remuda North 25 State 103H - Slot N 103H
TVD Reference: 3070+30 @ 3100.00usft (Akita90act)
MD Reference: 3070+30 @ 3100.00usft (Akita90act)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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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)
17,719.00	89.30	358.20	10,332.42	7,474.95	-316.60	7,481.64	1.42	0.76	-1.20
17,810.00	90.00	358.80	10,332.97	7,565.92	-318.98	7,572.63	1.01	0.77	0.66
17,902.00	91.30	1.00	10,331.93	7,657.91	-319.14	7,664.55	2.78	1.41	2.39
17,994.00	91.20	0.30	10,329.92	7,749.88	-318.09	7,756.40	0.77	-0.11	-0.76
18,085.00	91.30	358.90	10,327.94	7,840.85	-318.73	7,847.33	1.54	0.11	-1.54
18,176.00	91.00	358.10	10,326.11	7,931.80	-321.11	7,938.30	0.94	-0.33	-0.88
18,257.63	91.36	356.93	10,324.43	8,013.34	-324.65	8,019.91	1.49	0.44	-1.43
Remuda North 103H LTP									
18,258.40	91.36	356.92	10,324.41	8,014.10	-324.69	8,020.68	1.49	0.44	-1.43
Remuda North 103H LTP p3									
18,267.00	91.40	356.80	10,324.20	8,022.69	-325.16	8,029.28	1.49	0.44	-1.43
18,316.00	89.70	355.30	10,323.73	8,071.57	-328.53	8,078.25	4.63	-3.47	-3.06
Remuda North 124H PBHL - Remuda North 704H PBHL - Remuda North 904H PBHL									
18,370.00	89.70	355.30	10,324.02	8,125.38	-332.96	8,132.20	0.00	0.00	0.00
TD @ 218°FNL,326FWL - Remuda North 103H PBHL p1 - Remuda North 103H PBHL - Remuda North 103H PBHL p3 - Remuda North 103H									

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 North 103H SL	0.00	0.00	0.00	0.00	-30.00	463,887.20	621,538.10	32° 16' 29.021 N	103° 56' 24.348 W
- actual wellpath misses target center by 30.00usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Remuda North 103H PB	0.00	0.00	10,321.00	8,143.88	-329.20	472,031.10	621,238.90	32° 17' 49.624 N	103° 56' 27.486 W
- actual wellpath misses target center by 19.12usft at 18370.00usft MD (10324.02 TVD, 8125.38 N, -332.96 E)									
- Rectangle (sides W50.00 H7,440.00 D0.00)									
Remuda North 103H BH	0.00	0.00	10,324.02	8,125.38	-332.96	472,012.60	621,235.14	32° 17' 49.441 N	103° 56' 27.530 W
- actual wellpath hits target center									
- Point									
Remuda North 103H FT	0.00	0.00	10,358.00	703.00	-278.70	464,590.20	621,289.40	32° 16' 35.986 N	103° 56' 27.214 W
- actual wellpath misses target center by 72.31usft at 10944.92usft MD (10334.55 TVD, 705.69 N, -210.35 E)									
- Point									
Remuda North 103H LTI	0.00	0.00	10,358.00	8,013.88	-328.00	471,901.10	621,240.10	32° 17' 48.337 N	103° 56' 27.477 W
- actual wellpath misses target center by 33.74usft at 18257.63usft MD (10324.43 TVD, 8013.34 N, -324.65 E)									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,607.00	10,318.43	372.45	-166.25	Wellpath Crosses Section Line @ Heel
18,370.00	10,324.02	8,125.38	-332.96	TD @ 218°FNL,326FWL

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 25 State 103H - Slot N 103H
Project:	Eddy County, NM (NAD27) NMEZ	TVD Reference:	3070+30 @ 3100.00usft (Akita90act)
Site:	Remuda North 25 State Pad	MD Reference:	3070+30 @ 3100.00usft (Akita90act)
Well:	Remuda North 25 State 103H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	TRUEPERF_EDM

Checked By: _____	Approved By: _____	Date: _____
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