

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 30 State 112H - Slot REMUDA NORTH 30 STATE_112H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3090+24 @ 3114.00usft (Orion Hercules)
Site:	Remuda North_South 31 State Pad	MD Reference:	3090+24 @ 3114.00usft (Orion Hercules)
Well:	Remuda North 30 State 112H	North Reference:	Grid
Wellbore:	North 30 112H	Survey Calculation Method:	Minimum Curvature
Design:	North 30 112H (AsDrilled)	Database:	TP_EDM

Project	Eddy County, NM (NAD27) NMEZ US		
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_South 31 State Pad, centered on 123H		
Site Position:		Northing:	458,327.40 usft
From:	Map	Easting:	627,293.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32.2593878
		Longitude:	-103.9215405
		Grid Convergence:	0.22 °

Well	Remuda North 30 State 112H - Slot REMUDA NORTH 30 STATE_112H_SHL		
Well Position	+N/-S	0.00 usft	Northing: 463,892.80 usft
	+E/-W	0.00 usft	Easting: 625,582.90 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.2747045
		Longitude:	-103.9270056
		Ground Level:	3,090.00 usft

Wellbore	North 30 112H				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	06/21/18	7.01	60.04	47,829

Design	North 30 112H (AsDrilled)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	4.31	

Survey Program	Date 12/17/18				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
498.00	18,442.00	Survey #1 (North 30 112H)	MWD	MWD v3:standard declination	
18,462.00	18,462.00	Survey #2 (North 30 112H)	Projection	Projection	

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100ft)	(°/100ft)	(°/100ft)
395.00	0.90	299.00	394.97	1.89	-3.06	1.65	0.00	0.00	0.00
REMUDA NORTH 30 STATE_112H_SHL									
498.00	0.80	313.60	497.96	2.78	-4.29	2.45	0.23	-0.10	14.17
592.00	0.90	303.80	591.95	3.64	-5.38	3.23	0.19	0.11	-10.43
686.00	1.00	297.90	685.94	4.44	-6.72	3.92	0.15	0.11	-6.28
767.00	1.10	288.00	766.92	5.01	-8.08	4.39	0.26	0.12	-12.22
861.00	0.70	246.20	860.91	5.05	-9.46	4.33	0.79	-0.43	-44.47
955.00	1.20	184.00	954.90	3.84	-10.06	3.07	1.14	0.53	-66.17
1,049.00	1.90	173.60	1,048.87	1.31	-9.95	0.56	0.80	0.74	-11.06

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Site:	Remuda North_South 31 State Pad	MD Reference:	3090+24 @ 3114.00usft (Orion Hercules)
Well:	Remuda North 30 State 112H	North Reference:	Grid
Wellbore:	North 30 112H	Survey Calculation Method:	Minimum Curvature
Design:	North 30 112H (AsDrilled)	Database:	TP_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)
1,143.00	2.00	172.90	1,142.81	-1.87	-9.58	-2.58	0.11	0.11	-0.74
1,237.00	2.20	177.60	1,236.75	-5.30	-9.30	-5.98	0.28	0.21	5.00
1,330.00	1.90	154.40	1,329.69	-8.47	-8.56	-9.09	0.94	-0.32	-24.95
1,425.00	1.80	147.80	1,424.64	-11.15	-7.08	-11.65	0.25	-0.11	-6.95
1,519.00	1.90	155.60	1,518.59	-13.82	-5.65	-14.21	0.29	0.11	8.30
1,613.00	2.00	158.00	1,612.54	-16.76	-4.39	-17.04	0.14	0.11	2.55
1,707.00	1.70	126.90	1,706.49	-19.12	-2.66	-19.27	1.10	-0.32	-33.09
1,802.00	1.80	116.60	1,801.45	-20.63	-0.20	-20.59	0.35	0.11	-10.84
1,896.00	1.80	121.40	1,895.40	-22.06	2.38	-21.82	0.16	0.00	5.11
1,990.00	1.90	118.60	1,989.35	-23.58	5.01	-23.14	0.14	0.11	-2.98
2,084.00	1.90	120.20	2,083.30	-25.11	7.72	-24.46	0.06	0.00	1.70
2,180.00	2.00	116.50	2,179.24	-26.66	10.60	-25.79	0.17	0.10	-3.85
2,274.00	1.10	111.90	2,273.21	-27.73	12.90	-26.68	0.97	-0.96	-4.89
2,368.00	0.40	123.80	2,367.20	-28.24	14.01	-27.11	0.76	-0.74	12.66
2,462.00	0.30	167.60	2,461.20	-28.67	14.34	-27.51	0.29	-0.11	46.60
2,557.00	0.50	180.50	2,556.20	-29.33	14.39	-28.16	0.23	0.21	13.58
2,651.00	1.30	158.30	2,650.18	-30.73	14.78	-29.53	0.91	0.85	-23.62
2,745.00	2.00	147.90	2,744.14	-33.11	16.04	-31.81	0.81	0.74	-11.06
2,839.00	1.40	151.80	2,838.10	-35.51	17.46	-34.10	0.65	-0.64	4.15
2,934.00	1.90	160.30	2,933.06	-38.01	18.54	-36.51	0.58	0.53	8.95
3,028.00	2.40	163.20	3,027.00	-41.36	19.63	-39.77	0.54	0.53	3.09
3,123.00	1.80	160.40	3,121.93	-44.67	20.71	-42.99	0.64	-0.63	-2.95
3,217.00	0.60	251.50	3,215.92	-46.22	20.73	-44.53	2.03	-1.28	96.91
3,312.00	1.20	259.40	3,310.90	-46.56	19.29	-44.98	0.64	0.63	8.32
3,407.00	0.80	203.30	3,405.89	-47.35	18.05	-45.86	1.06	-0.42	-59.05
3,501.00	0.60	114.40	3,499.89	-48.16	18.23	-46.65	1.05	-0.21	-94.57
3,596.00	0.90	90.60	3,594.88	-48.37	19.43	-46.78	0.45	0.32	-25.05
3,691.00	0.80	107.70	3,689.87	-48.58	20.81	-46.88	0.29	-0.11	18.00
3,784.00	0.80	108.70	3,782.86	-48.99	22.04	-47.19	0.02	0.00	1.08
3,879.00	0.90	101.50	3,877.85	-49.35	23.40	-47.45	0.15	0.11	-7.58
3,972.00	1.00	94.40	3,970.84	-49.56	24.93	-47.54	0.17	0.11	-7.63
4,066.00	1.00	103.10	4,064.82	-49.81	26.55	-47.67	0.16	0.00	9.26
4,161.00	1.00	99.70	4,159.81	-50.13	28.17	-47.88	0.06	0.00	-3.58
4,256.00	1.00	93.60	4,254.79	-50.33	29.81	-47.94	0.11	0.00	-6.42
4,351.00	0.90	101.70	4,349.78	-50.53	31.37	-48.03	0.18	-0.11	8.53
4,445.00	0.80	102.00	4,443.77	-50.82	32.74	-48.21	0.11	-0.11	0.32
4,539.00	0.90	95.10	4,537.76	-51.02	34.11	-48.31	0.15	0.11	-7.34
4,633.00	0.90	90.80	4,631.75	-51.09	35.59	-48.27	0.07	0.00	-4.57
4,728.00	0.70	96.30	4,726.74	-51.17	36.91	-48.25	0.23	-0.21	5.79
4,822.00	0.70	89.00	4,820.73	-51.22	38.06	-48.22	0.09	0.00	-7.77
4,917.00	0.70	100.50	4,915.72	-51.32	39.21	-48.22	0.15	0.00	12.11
5,012.00	0.90	92.80	5,010.71	-51.46	40.52	-48.27	0.24	0.21	-8.11

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Survey									
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5,106.00	0.90	105.30	5,104.70	-51.69	41.97	-48.39	0.21	0.00	13.30
5,201.00	0.80	107.30	5,199.69	-52.08	43.32	-48.68	0.11	-0.11	2.11
5,296.00	1.00	107.30	5,294.68	-52.53	44.75	-49.02	0.21	0.21	0.00
5,391.00	1.00	112.90	5,389.67	-53.10	46.30	-49.47	0.10	0.00	5.89
5,486.00	1.00	111.80	5,484.65	-53.73	47.84	-49.98	0.02	0.00	-1.16
5,579.00	1.10	122.10	5,577.64	-54.50	49.35	-50.64	0.23	0.11	11.08
5,673.00	1.10	122.60	5,671.62	-55.47	50.87	-51.49	0.01	0.00	0.53
5,768.00	1.20	111.90	5,766.60	-56.33	52.56	-52.22	0.25	0.11	-11.26
5,862.00	1.10	121.80	5,860.58	-57.17	54.24	-52.93	0.24	-0.11	10.53
5,956.00	1.10	123.60	5,954.56	-58.15	55.76	-53.79	0.04	0.00	1.91
6,050.00	1.10	127.80	6,048.55	-59.20	57.23	-54.73	0.09	0.00	4.47
6,144.00	1.30	130.10	6,142.53	-60.44	58.75	-55.85	0.22	0.21	2.45
6,238.00	1.30	126.00	6,236.50	-61.75	60.43	-57.04	0.10	0.00	-4.36
6,332.00	1.30	131.00	6,330.48	-63.08	62.10	-58.23	0.12	0.00	5.32
6,427.00	1.40	137.90	6,425.45	-64.65	63.69	-59.68	0.20	0.11	7.26
6,522.00	1.40	141.40	6,520.42	-66.42	65.19	-61.33	0.09	0.00	3.68
6,617.00	1.30	151.40	6,615.40	-68.27	66.43	-63.08	0.27	-0.11	10.53
6,711.00	1.90	139.90	6,709.36	-70.40	67.95	-65.09	0.72	0.64	-12.23
6,805.00	2.20	118.80	6,803.30	-72.46	70.53	-66.95	0.86	0.32	-22.45
6,899.00	2.20	99.30	6,897.23	-73.62	73.89	-67.86	0.79	0.00	-20.74
6,993.00	2.80	85.50	6,991.14	-73.73	77.96	-67.66	0.90	0.64	-14.68
7,087.00	3.30	82.20	7,085.01	-73.18	82.93	-66.74	0.56	0.53	-3.51
7,182.00	4.20	96.40	7,179.81	-73.20	89.10	-66.30	1.35	0.95	14.95
7,277.00	4.90	100.10	7,274.51	-74.30	96.55	-66.83	0.80	0.74	3.89
7,371.00	5.10	95.80	7,368.15	-75.43	104.66	-67.35	0.45	0.21	-4.57
7,465.00	4.90	98.20	7,461.79	-76.42	112.79	-67.73	0.31	-0.21	2.55
7,560.00	4.90	100.70	7,556.45	-77.75	120.79	-68.45	0.22	0.00	2.63
7,655.00	5.20	102.40	7,651.08	-79.43	128.98	-69.51	0.35	0.32	1.79
7,750.00	5.20	106.60	7,745.69	-81.58	137.31	-71.03	0.40	0.00	4.42
7,843.00	4.00	91.30	7,838.39	-82.86	144.60	-71.76	1.83	-1.29	-16.45
7,937.00	3.90	77.40	7,932.17	-82.24	150.99	-70.66	1.02	-0.11	-14.79
8,032.00	3.40	85.90	8,026.98	-81.33	156.96	-69.31	0.77	-0.53	8.95
8,126.00	3.30	86.50	8,120.81	-80.97	162.44	-68.53	0.11	-0.11	0.64
8,220.00	3.70	98.60	8,214.64	-81.26	168.14	-68.39	0.89	0.43	12.87
8,314.00	3.60	103.80	8,308.45	-82.41	174.00	-69.10	0.37	-0.11	5.53
8,409.00	3.20	102.40	8,403.28	-83.70	179.49	-69.97	0.43	-0.42	-1.47
8,501.00	3.00	98.00	8,495.15	-84.58	184.38	-70.49	0.34	-0.22	-4.78
8,597.00	3.90	99.60	8,590.97	-85.48	190.09	-70.95	0.94	0.94	1.67
8,692.00	4.20	102.30	8,685.74	-86.76	196.67	-71.73	0.37	0.32	2.84
8,787.00	4.00	98.60	8,780.49	-87.99	203.35	-72.46	0.35	-0.21	-3.89
8,882.00	3.40	100.60	8,875.29	-89.01	209.39	-73.02	0.65	-0.63	2.11
8,976.00	3.30	98.30	8,969.13	-89.91	214.81	-73.51	0.18	-0.11	-2.45
9,071.00	3.30	97.00	9,063.98	-90.64	220.23	-73.83	0.08	0.00	-1.37

Survey Report

Company: XTO Energy

Local Co-ordinate Reference:

Well Remuda North 30 State 112H - Slot
REMUDA NORTH 30 STATE_112H_SHL

Project: Eddy County, NM (NAD27) NMEZ US

TVD Reference:

3090+24 @ 3114.00usft (Orion Hercules)

Site: Remuda North_South 31 State Pad

MD Reference:

3090+24 @ 3114.00usft (Orion Hercules)

Well: Remuda North 30 State 112H

North Reference:

Grid

Wellbore: North 30 112H

Survey Calculation Method:

Minimum Curvature

Design: North 30 112H (AsDrilled)

Database:

TP_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)
9,166.00	2.80	86.80	9,158.84	-90.84	225.26	-73.66	0.77	-0.53	-10.74
9,260.00	2.70	87.00	9,252.73	-90.60	229.76	-73.07	0.11	-0.11	0.21
9,286.00	2.70	88.40	9,278.70	-90.55	230.99	-72.93	0.25	0.00	5.38
9,378.00	2.80	89.00	9,370.60	-90.45	235.40	-72.50	0.11	0.11	0.65
9,473.00	3.60	98.70	9,465.45	-90.86	240.67	-72.51	1.01	0.84	10.21
9,566.00	3.50	89.60	9,558.27	-91.28	246.39	-72.51	0.61	-0.11	-9.78
9,662.00	3.70	90.70	9,654.08	-91.30	252.42	-72.07	0.22	0.21	1.15
9,757.00	3.20	97.10	9,748.91	-91.66	258.12	-72.01	0.66	-0.53	6.74
9,836.00	3.40	95.70	9,827.78	-92.17	262.64	-72.17	0.27	0.25	-1.77
9,857.00	3.40	95.10	9,848.74	-92.29	263.88	-72.19	0.17	0.00	-2.86
9,952.00	5.60	65.80	9,943.46	-90.64	270.91	-70.02	3.28	2.32	-30.84
9,997.00	9.40	40.70	9,988.07	-86.95	275.31	-66.01	10.96	8.44	-55.78
10,047.00	15.40	46.50	10,036.89	-79.27	282.80	-57.80	12.24	12.00	11.60
10,092.00	20.70	48.50	10,079.66	-69.88	293.10	-47.66	11.86	11.78	4.44
10,142.00	26.50	50.10	10,125.46	-56.86	308.29	-33.53	11.67	11.60	3.20
10,187.00	29.30	42.10	10,165.24	-42.24	323.38	-17.82	10.38	6.22	-17.78
10,236.00	32.50	32.40	10,207.30	-22.22	338.48	3.28	12.06	6.53	-19.80
10,281.00	37.60	26.40	10,244.14	0.31	351.08	26.69	13.67	11.33	-13.33
10,330.00	42.80	21.80	10,281.56	29.18	363.92	56.45	12.21	10.61	-9.39
10,375.00	48.00	22.50	10,313.15	58.84	376.00	86.93	11.61	11.56	1.56
10,424.00	53.50	25.30	10,344.14	93.50	391.40	122.65	12.06	11.22	5.71
10,469.00	57.10	26.20	10,369.76	126.81	407.47	157.08	8.17	8.00	2.00
10,518.00	61.90	23.90	10,394.62	165.06	425.33	196.55	10.60	9.80	-4.69
10,563.00	67.60	25.10	10,413.81	202.07	442.21	234.73	12.89	12.67	2.67
10,612.00	69.80	20.50	10,431.62	244.15	459.88	278.02	9.83	4.49	-9.39
10,656.00	72.30	18.00	10,445.91	283.43	473.59	318.22	7.82	5.68	-5.68
10,705.00	77.40	15.90	10,458.71	328.66	487.36	364.36	11.20	10.41	-4.29
10,749.00	79.45	15.61	10,467.54	370.14	499.06	406.60	4.71	4.67	-0.67
Wellpath Crosses Unit Line @ Heel									
10,750.00	79.50	15.60	10,467.72	371.09	499.33	407.57	4.71	4.67	-0.66
10,799.00	81.20	15.40	10,475.93	417.64	512.24	454.95	3.49	3.47	-0.41
10,811.82	81.43	14.92	10,477.87	429.87	515.55	467.40	4.14	1.77	-3.78
REMUDA NORTH 30 STATE_112H_LP p4 (41°FSL,151°FEL)									
10,844.00	82.00	13.70	10,482.51	460.73	523.42	498.76	4.14	1.78	-3.78
10,894.00	83.20	13.40	10,488.95	508.93	535.04	547.70	2.47	2.40	-0.60
10,939.00	83.60	13.40	10,494.12	552.41	545.40	591.84	0.89	0.89	0.00
10,988.00	85.10	12.40	10,498.94	599.94	556.28	640.05	3.67	3.06	-2.04
11,033.00	87.50	12.10	10,501.85	643.82	565.81	684.52	5.37	5.33	-0.67
11,083.00	88.90	12.10	10,503.42	692.69	576.28	734.04	2.80	2.80	0.00
11,112.00	88.56	12.47	10,504.06	721.02	582.45	762.75	1.73	-1.17	1.28
Wellpath Crosses FTP 118°F:									
11,129.68	88.35	12.70	10,504.54	738.26	586.30	780.24	1.73	-1.17	1.28
REMUDA NORTH 30 STATE_112H_FTP (380°FSL38°FEL)									

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 30 State 112H - Slot REMUDA NORTH 30 STATE_112H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3090+24 @ 3114.00usft (Orion Hercules)
Site:	Remuda North_South 31 State Pad	MD Reference:	3090+24 @ 3114.00usft (Orion Hercules)
Well:	Remuda North 30 State 112H	North Reference:	Grid
Wellbore:	North 30 112H	Survey Calculation Method:	Minimum Curvature
Design:	North 30 112H (AsDrilled)	Database:	TP_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)
11,177.00	87.80	13.30	10,506.12	784.35	596.94	826.99	1.73	-1.17	1.28
11,271.00	87.90	12.90	10,509.65	875.83	618.23	919.82	0.44	0.11	-0.43
11,365.00	88.40	12.90	10,512.68	967.41	639.20	1,012.72	0.53	0.53	0.00
11,460.00	89.40	9.20	10,514.51	1,060.62	657.40	1,107.02	4.03	1.05	-3.89
11,556.00	88.40	6.30	10,516.35	1,155.71	670.35	1,202.82	3.19	-1.04	-3.02
11,650.00	88.30	2.70	10,519.06	1,249.37	677.72	1,296.77	3.83	-0.11	-3.83
11,745.00	88.90	358.50	10,521.38	1,344.31	678.71	1,391.52	4.46	0.63	-4.42
11,839.00	90.60	358.20	10,521.79	1,438.27	676.01	1,485.01	1.84	1.81	-0.32
11,934.00	87.00	356.80	10,523.78	1,533.14	671.86	1,579.30	4.07	-3.79	-1.47
12,027.00	87.10	356.30	10,528.57	1,625.85	666.27	1,671.32	0.55	0.11	-0.54
12,121.00	89.70	356.40	10,531.19	1,719.61	660.29	1,764.37	2.77	2.77	0.11
12,214.00	90.50	356.50	10,531.03	1,812.43	654.54	1,856.50	0.87	0.86	0.11
12,309.00	89.70	359.60	10,530.86	1,907.37	651.30	1,950.92	3.37	-0.84	3.26
12,404.00	90.80	0.30	10,530.45	2,002.36	651.22	2,045.64	1.37	1.16	0.74
12,498.00	91.00	359.80	10,528.97	2,096.35	651.30	2,139.37	0.57	0.21	-0.53
12,592.00	89.80	359.40	10,528.32	2,190.35	650.65	2,233.05	1.35	-1.28	-0.43
12,686.00	88.10	358.50	10,530.04	2,284.31	648.92	2,326.62	2.05	-1.81	-0.96
12,781.00	87.30	357.70	10,533.85	2,379.18	645.78	2,420.98	1.19	-0.84	-0.84
12,875.00	89.60	357.90	10,536.39	2,473.07	642.17	2,514.34	2.46	2.45	0.21
12,970.00	90.60	359.30	10,536.23	2,568.04	639.85	2,608.86	1.81	1.05	1.47
13,063.00	91.60	358.80	10,534.44	2,661.01	638.31	2,701.45	1.20	1.08	-0.54
13,157.00	92.70	358.90	10,530.92	2,754.92	636.42	2,794.96	1.18	1.17	0.11
13,252.00	89.90	358.60	10,528.76	2,849.86	634.35	2,889.48	2.96	-2.95	-0.32
13,345.00	90.20	358.50	10,528.68	2,942.83	632.00	2,982.01	0.34	0.32	-0.11
13,440.00	91.60	358.50	10,527.19	3,037.79	629.51	3,076.50	1.47	1.47	0.00
13,536.00	91.10	358.80	10,524.93	3,133.73	627.25	3,172.01	0.61	-0.52	0.31
13,631.00	89.50	358.90	10,524.43	3,228.71	625.34	3,266.57	1.69	-1.68	0.11
13,726.00	88.40	358.30	10,526.17	3,323.66	623.02	3,361.09	1.32	-1.16	-0.63
13,821.00	89.10	358.70	10,528.24	3,418.61	620.54	3,455.57	0.85	0.74	0.42
13,915.00	92.40	0.70	10,527.01	3,512.58	620.04	3,549.24	4.10	3.51	2.13
14,008.00	93.00	0.50	10,522.63	3,605.47	621.02	3,641.95	0.68	0.65	-0.22
14,104.00	92.20	0.10	10,518.28	3,701.37	621.52	3,737.61	0.93	-0.83	-0.42
14,197.00	92.80	359.80	10,514.22	3,794.28	621.44	3,830.25	0.72	0.65	-0.32
14,292.00	89.70	359.10	10,512.15	3,889.24	620.53	3,924.88	3.35	-3.26	-0.74
14,386.00	88.60	359.20	10,513.54	3,983.22	619.13	4,018.48	1.18	-1.17	0.11
14,480.00	91.20	0.80	10,513.71	4,077.21	619.13	4,112.21	3.25	2.77	1.70
14,574.00	89.00	0.00	10,513.54	4,171.20	619.79	4,205.98	2.49	-2.34	-0.85
14,670.00	89.10	359.90	10,515.13	4,267.19	619.70	4,301.69	0.15	0.10	-0.10
14,764.00	91.00	359.90	10,515.05	4,361.18	619.54	4,395.41	2.02	2.02	0.00
14,858.00	90.40	359.10	10,513.90	4,455.17	618.72	4,489.07	1.06	-0.64	-0.85
14,953.00	91.30	359.70	10,512.49	4,550.15	617.72	4,583.71	1.14	0.95	0.63
15,048.00	90.30	359.00	10,511.17	4,645.14	616.65	4,678.34	1.28	-1.05	-0.74
15,141.00	90.70	359.60	10,510.36	4,738.12	615.51	4,770.98	0.78	0.43	0.65

Survey Report

Company: XTO Energy

Local Co-ordinate Reference:

Well Remuda North 30 State 112H - Slot
REMUDA NORTH 30 STATE_112H_SHL

Project: Eddy County, NM (NAD27) NMEZ US

TVD Reference:

3090+24 @ 3114.00usft (Orion Hercules)

Site: Remuda North_South 31 State Pad

MD Reference:

3090+24 @ 3114.00usft (Orion Hercules)

Well: Remuda North 30 State 112H

North Reference:

Grid

Wellbore: North 30 112H

Survey Calculation Method:

Minimum Curvature

Design: North 30 112H (AsDrilled)

Database:

TP_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)
15,234.00	91.80	0.20	10,508.33	4,831.10	615.35	4,863.68	1.35	1.18	0.65
15,328.00	92.00	0.20	10,505.21	4,925.05	615.68	4,957.39	0.21	0.21	0.00
15,423.00	92.20	0.10	10,501.73	5,019.98	615.92	5,052.08	0.24	0.21	-0.11
15,516.00	90.40	359.60	10,499.62	5,112.95	615.68	5,144.77	2.01	-1.94	-0.54
15,610.00	91.00	359.70	10,498.47	5,206.95	615.11	5,238.45	0.65	0.64	0.11
15,704.00	90.00	359.60	10,497.65	5,300.94	614.53	5,332.13	1.07	-1.06	-0.11
15,799.00	90.60	359.90	10,497.15	5,395.94	614.12	5,426.83	0.71	0.63	0.32
15,894.00	90.60	359.20	10,496.16	5,490.93	613.37	5,521.50	0.74	0.00	-0.74
15,989.00	90.10	359.10	10,495.58	5,585.92	611.96	5,616.11	0.54	-0.53	-0.11
16,082.00	89.80	359.00	10,495.66	5,678.90	610.42	5,708.72	0.34	-0.32	-0.11
16,176.00	90.00	358.50	10,495.82	5,772.88	608.37	5,802.27	0.57	0.21	-0.53
16,270.00	90.90	358.40	10,495.08	5,866.84	605.83	5,895.78	0.96	0.96	-0.11
16,364.00	91.00	357.80	10,493.53	5,960.78	602.71	5,989.21	0.65	0.11	-0.64
16,459.00	91.30	358.20	10,491.62	6,055.70	599.40	6,083.62	0.53	0.32	0.42
16,554.00	89.00	358.30	10,491.37	6,150.65	596.50	6,178.08	2.42	-2.42	0.11
16,648.00	89.60	358.50	10,492.52	6,244.60	593.87	6,271.58	0.67	0.64	0.21
16,744.00	89.60	358.50	10,493.19	6,340.57	591.36	6,367.08	0.00	0.00	0.00
16,838.00	89.90	0.50	10,493.60	6,434.56	590.54	6,460.74	2.15	0.32	2.13
16,932.00	88.50	0.00	10,494.91	6,528.55	590.95	6,554.50	1.58	-1.49	-0.53
17,026.00	90.30	0.40	10,495.90	6,622.54	591.28	6,648.24	1.96	1.91	0.43
17,120.00	90.20	0.20	10,495.49	6,716.53	591.77	6,742.01	0.24	-0.11	-0.21
17,215.00	89.10	359.40	10,496.07	6,811.53	591.44	6,836.72	1.43	-1.16	-0.84
17,309.00	91.10	1.20	10,495.90	6,905.52	591.93	6,930.48	2.86	2.13	1.91
17,404.00	91.70	1.10	10,493.58	7,000.47	593.84	7,025.30	0.64	0.63	-0.11
17,500.00	90.60	0.50	10,491.65	7,096.44	595.18	7,121.10	1.31	-1.15	-0.62
17,594.00	89.70	359.60	10,491.41	7,190.44	595.26	7,214.84	1.35	-0.96	-0.96
17,688.00	90.20	359.90	10,491.49	7,284.44	594.85	7,308.54	0.62	0.53	0.32
17,783.00	90.60	0.20	10,490.83	7,379.43	594.93	7,403.28	0.53	0.42	0.32
17,877.00	90.10	359.60	10,490.25	7,473.43	594.77	7,497.00	0.83	-0.53	-0.64
17,971.00	90.80	359.90	10,489.51	7,567.43	594.36	7,590.69	0.81	0.74	0.32
18,067.00	91.60	359.80	10,487.50	7,663.41	594.11	7,686.38	0.84	0.83	-0.10
18,161.00	92.20	0.00	10,484.39	7,757.35	593.94	7,780.05	0.67	0.64	0.21
18,255.00	87.50	358.90	10,484.63	7,851.32	593.04	7,873.69	5.14	-5.00	-1.17
18,349.00	87.70	358.90	10,488.57	7,945.22	591.24	7,967.19	0.21	0.21	0.00
18,409.58	88.29	358.51	10,490.69	8,005.75	589.87	8,027.44	1.16	0.97	-0.65
REMUDA NORTH 30 STATE_112H_LTP (330'FNL38'FEL)									
18,411.00	88.30	358.50	10,490.73	8,007.17	589.83	8,028.85	1.16	0.97	-0.65
Wellpath Crosses LTP 62'FEL									
18,442.00	88.60	358.30	10,491.57	8,038.14	588.97	8,059.67	1.16	0.97	-0.64
18,462.00	88.60	358.30	10,492.06	8,058.13	588.37	8,079.56	0.00	0.00	0.00
REMUDA NORTH 30 STATE_112H_PBHL p3 (200'FNL38'FEL)									

Survey Report

Company: XTO Energy	Local Co-ordinate Reference: Well Remuda North 30 State 112H - Slot REMUDA NORTH 30 STATE_112H_SHL
Project: Eddy County, NM (NAD27) NMEZ US	TVD Reference: 3090+24 @ 3114.00usft (Orion Hercules)
Site: Remuda North_South 31 State Pad	MD Reference: 3090+24 @ 3114.00usft (Orion Hercules)
Well: Remuda North 30 State 112H	North Reference: Grid
Wellbore: North 30 112H	Survey Calculation Method: Minimum Curvature
Design: North 30 112H (AsDrilled)	Database: TP_EDM

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									
REMUDA NORTH 30 S1	0.00	0.00	0.00	0.00	0.00	463,892.80	625,582.90	32.2747045	-103.9270056
- actual wellpath misses target center by 394.99usft at 395.00usft MD (394.97 TVD, 1.89 N, -3.06 E)									
- Point									
REMUDA NORTH 30 S1	0.00	0.00	10,492.0 6	8,058.13	588.37	471,950.93	626,171.27	32.2968493	-103.9250027
- actual wellpath hits target center									
- Point									
REMUDA NORTH 30 S1	0.00	0.00	10,494.0 0	8,136.20	613.90	472,029.00	626,196.80	32.2970636	-103.9249192
- actual wellpath misses target center by 82.16usft at 18462.00usft MD (10492.06 TVD, 8058.13 N, 588.37 E)									
- Rectangle (sides W100.00 H7,416.00 D0.00)									
REMUDA NORTH 30 S1	0.00	0.00	10,494.0 0	8,006.20	614.90	471,899.00	626,197.80	32.2967063	-103.9249175
- actual wellpath misses target center by 25.25usft at 18409.58usft MD (10490.69 TVD, 8005.75 N, 589.87 E)									
- Point									
REMUDA NORTH 30 S1	0.00	0.00	10,539.0 0	719.80	662.10	464,612.60	626,245.00	32.2766762	-103.9248546
- actual wellpath misses target center by 85.29usft at 11129.10usft MD (10504.52 TVD, 737.70 N, 586.18 E)									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,749.00	10,467.54	370.14	499.06	Wellpath Crosses Unit Line @ Heel
11,112.00	10,504.06	721.02	582.45	Wellpath Crosses FTP 118'FE:
18,411.00	10,490.73	8,007.17	589.83	Wellpath Crosses LTP 62'FEL

Checked By: _____	Approved By: _____	Date: _____
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