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XTO ENERGY, INC.

Eddy County, NM
Sec 32, T25S, R29E
Lone Watie 32 State #168H

Wellbore #1

Plan: Design #2

QES Well Planning Report

25 April, 2019





Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lone Watie 32 State #168H
Company:	XTO ENERGY, INC.	TVD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Project:	Eddy County, NM	MD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Site:	Sec 32, T25S, R29E	North Reference:	Grid
Well:	Lone Watie 32 State #168H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	Eddy County, NM		
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	Sec 32, T25S, R29E		
Site Position:		Northing:	397,536.50 usft
From:	Map	Easting:	603,345.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 33.015 N
		Longitude:	103° 59' 58.639 W
		Grid Convergence:	0.18 °

Well	Lone Watie 32 State #168H		
Well Position	+N/-S	0.0 usft	Northing: 397,536.50 usft
	+E/-W	0.0 usft	Easting: 603,345.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 5' 33.015 N
			Longitude: 103° 59' 58.639 W
			Ground Level: 2,980.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	5/15/2019	6.90
			Dip Angle
			(°)
			59.77
			Field Strength
			(nT)
			47,857.80000000

Design	Design #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			175.67

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
969.9	2.70	50.48	969.8	4.0	4.9	1.00	1.00	0.00	50.48	
10,315.7	2.70	50.48	10,305.3	284.0	344.4	0.00	0.00	0.00	0.00	
11,227.9	89.50	180.05	10,895.0	-283.7	365.1	10.00	9.52	14.20	129.55	
15,718.7	89.50	180.05	10,934.2	-4,774.3	361.2	0.00	0.00	0.00	0.00	LW 32 S #168H - PBH



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Well:	Lone Watie 32 State #168H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
RUSTLER									
359.0	0.00	0.00	359.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
SALADO									
636.0	0.00	0.00	636.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 1°/100'									
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	1.00	50.48	800.0	0.6	0.7	-0.5	1.00	1.00	0.00
900.0	2.00	50.48	900.0	2.2	2.7	-2.0	1.00	1.00	0.00
EOB @ 2.70° Inc / 50.48° Azm									
969.9	2.70	50.48	969.8	4.0	4.9	-3.7	1.00	1.00	0.00
1,000.0	2.70	50.48	999.9	4.9	6.0	-4.5	0.00	0.00	0.00
1,100.0	2.70	50.48	1,099.8	7.9	9.6	-7.2	0.00	0.00	0.00
1,200.0	2.70	50.48	1,199.6	10.9	13.3	-9.9	0.00	0.00	0.00
1,300.0	2.70	50.48	1,299.5	13.9	16.9	-12.6	0.00	0.00	0.00
1,400.0	2.70	50.48	1,399.4	16.9	20.5	-15.3	0.00	0.00	0.00
1,500.0	2.70	50.48	1,499.3	19.9	24.2	-18.0	0.00	0.00	0.00
1,600.0	2.70	50.48	1,599.2	22.9	27.8	-20.8	0.00	0.00	0.00
1,700.0	2.70	50.48	1,699.1	25.9	31.4	-23.5	0.00	0.00	0.00
1,800.0	2.70	50.48	1,799.0	28.9	35.1	-26.2	0.00	0.00	0.00
1,900.0	2.70	50.48	1,898.9	31.9	38.7	-28.9	0.00	0.00	0.00
2,000.0	2.70	50.48	1,998.8	34.9	42.3	-31.6	0.00	0.00	0.00
2,100.0	2.70	50.48	2,098.6	37.9	46.0	-34.3	0.00	0.00	0.00
2,200.0	2.70	50.48	2,198.5	40.9	49.6	-37.0	0.00	0.00	0.00
2,300.0	2.70	50.48	2,298.4	43.9	53.2	-39.8	0.00	0.00	0.00
2,400.0	2.70	50.48	2,398.3	46.9	56.8	-42.5	0.00	0.00	0.00
2,500.0	2.70	50.48	2,498.2	49.9	60.5	-45.2	0.00	0.00	0.00
2,600.0	2.70	50.48	2,598.1	52.9	64.1	-47.9	0.00	0.00	0.00
2,700.0	2.70	50.48	2,698.0	55.9	67.7	-50.6	0.00	0.00	0.00
BASE SALT									
2,701.0	2.70	50.48	2,699.0	55.9	67.8	-50.6	0.00	0.00	0.00
2,800.0	2.70	50.48	2,797.9	58.9	71.4	-53.3	0.00	0.00	0.00
DELAWARE									
2,888.2	2.70	50.48	2,886.0	61.5	74.6	-55.7	0.00	0.00	0.00
2,900.0	2.70	50.48	2,897.8	61.9	75.0	-56.0	0.00	0.00	0.00
3,000.0	2.70	50.48	2,997.6	64.9	78.6	-58.7	0.00	0.00	0.00
3,100.0	2.70	50.48	3,097.5	67.9	82.3	-61.5	0.00	0.00	0.00
3,200.0	2.70	50.48	3,197.4	70.9	85.9	-64.2	0.00	0.00	0.00
3,300.0	2.70	50.48	3,297.3	73.9	89.5	-66.9	0.00	0.00	0.00
3,400.0	2.70	50.48	3,397.2	76.9	93.2	-69.6	0.00	0.00	0.00
3,500.0	2.70	50.48	3,497.1	79.8	96.8	-72.3	0.00	0.00	0.00
3,600.0	2.70	50.48	3,597.0	82.8	100.4	-75.0	0.00	0.00	0.00
3,700.0	2.70	50.48	3,696.9	85.8	104.1	-77.7	0.00	0.00	0.00
Cherry Canyon									
3,797.2	2.70	50.48	3,794.0	88.8	107.6	-80.4	0.00	0.00	0.00
3,800.0	2.70	50.48	3,796.8	88.8	107.7	-80.5	0.00	0.00	0.00
3,900.0	2.70	50.48	3,896.7	91.8	111.3	-83.2	0.00	0.00	0.00



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Design:	Design #2		

Planned 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)
4,000.0	2.70	50.48	3,996.5	94.8	115.0	-85.9	0.00	0.00	0.00
4,100.0	2.70	50.48	4,096.4	97.8	118.6	-88.6	0.00	0.00	0.00
4,200.0	2.70	50.48	4,196.3	100.8	122.2	-91.3	0.00	0.00	0.00
4,300.0	2.70	50.48	4,296.2	103.8	125.9	-94.0	0.00	0.00	0.00
4,400.0	2.70	50.48	4,396.1	106.8	129.5	-96.7	0.00	0.00	0.00
4,500.0	2.70	50.48	4,496.0	109.8	133.1	-99.5	0.00	0.00	0.00
4,600.0	2.70	50.48	4,595.9	112.8	136.8	-102.2	0.00	0.00	0.00
4,700.0	2.70	50.48	4,695.8	115.8	140.4	-104.9	0.00	0.00	0.00
4,800.0	2.70	50.48	4,795.7	118.8	144.0	-107.6	0.00	0.00	0.00
4,900.0	2.70	50.48	4,895.5	121.8	147.7	-110.3	0.00	0.00	0.00
5,000.0	2.70	50.48	4,995.4	124.8	151.3	-113.0	0.00	0.00	0.00
5,100.0	2.70	50.48	5,095.3	127.8	154.9	-115.7	0.00	0.00	0.00
5,200.0	2.70	50.48	5,195.2	130.8	158.6	-118.4	0.00	0.00	0.00
5,300.0	2.70	50.48	5,295.1	133.8	162.2	-121.2	0.00	0.00	0.00
BRUSHY CANYON									
5,392.0	2.70	50.48	5,387.0	136.5	165.5	-123.7	0.00	0.00	0.00
5,400.0	2.70	50.48	5,395.0	136.8	165.8	-123.9	0.00	0.00	0.00
5,500.0	2.70	50.48	5,494.9	139.8	169.4	-126.6	0.00	0.00	0.00
5,600.0	2.70	50.48	5,594.8	142.8	173.1	-129.3	0.00	0.00	0.00
5,700.0	2.70	50.48	5,694.7	145.8	176.7	-132.0	0.00	0.00	0.00
5,800.0	2.70	50.48	5,794.5	148.8	180.3	-134.7	0.00	0.00	0.00
5,900.0	2.70	50.48	5,894.4	151.8	184.0	-137.4	0.00	0.00	0.00
6,000.0	2.70	50.48	5,994.3	154.7	187.6	-140.2	0.00	0.00	0.00
6,100.0	2.70	50.48	6,094.2	157.7	191.2	-142.9	0.00	0.00	0.00
6,200.0	2.70	50.48	6,194.1	160.7	194.9	-145.6	0.00	0.00	0.00
6,300.0	2.70	50.48	6,294.0	163.7	198.5	-148.3	0.00	0.00	0.00
6,400.0	2.70	50.48	6,393.9	166.7	202.1	-151.0	0.00	0.00	0.00
6,500.0	2.70	50.48	6,493.8	169.7	205.8	-153.7	0.00	0.00	0.00
6,600.0	2.70	50.48	6,593.7	172.7	209.4	-156.4	0.00	0.00	0.00
BONE SPRING									
6,631.4	2.70	50.48	6,625.0	173.7	210.5	-157.3	0.00	0.00	0.00
6,700.0	2.70	50.48	6,693.5	175.7	213.0	-159.1	0.00	0.00	0.00
6,800.0	2.70	50.48	6,793.4	178.7	216.7	-161.9	0.00	0.00	0.00
6,900.0	2.70	50.48	6,893.3	181.7	220.3	-164.6	0.00	0.00	0.00
7,000.0	2.70	50.48	6,993.2	184.7	223.9	-167.3	0.00	0.00	0.00
7,100.0	2.70	50.48	7,093.1	187.7	227.6	-170.0	0.00	0.00	0.00
7,200.0	2.70	50.48	7,193.0	190.7	231.2	-172.7	0.00	0.00	0.00
7,300.0	2.70	50.48	7,292.9	193.7	234.8	-175.4	0.00	0.00	0.00
7,400.0	2.70	50.48	7,392.8	196.7	238.5	-178.1	0.00	0.00	0.00
7,500.0	2.70	50.48	7,492.7	199.7	242.1	-180.9	0.00	0.00	0.00
1ST BONE SPRING SAND									
7,576.4	2.70	50.48	7,569.0	202.0	244.9	-182.9	0.00	0.00	0.00
7,600.0	2.70	50.48	7,592.5	202.7	245.7	-183.6	0.00	0.00	0.00
7,700.0	2.70	50.48	7,692.4	205.7	249.4	-186.3	0.00	0.00	0.00
7,800.0	2.70	50.48	7,792.3	208.7	253.0	-189.0	0.00	0.00	0.00
2ND BONE SPRING CARBONATE									
7,860.7	2.70	50.48	7,853.0	210.5	255.2	-190.6	0.00	0.00	0.00
7,900.0	2.70	50.48	7,892.2	211.7	256.6	-191.7	0.00	0.00	0.00
8,000.0	2.70	50.48	7,992.1	214.7	260.3	-194.4	0.00	0.00	0.00
8,100.0	2.70	50.48	8,092.0	217.7	263.9	-197.1	0.00	0.00	0.00
8,200.0	2.70	50.48	8,191.9	220.7	267.5	-199.9	0.00	0.00	0.00
8,300.0	2.70	50.48	8,291.8	223.7	271.2	-202.6	0.00	0.00	0.00
8,400.0	2.70	50.48	8,391.7	226.7	274.8	-205.3	0.00	0.00	0.00



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Well: Lone Watie 32 State #168H
Wellbore: Wellbore #1
Design: Design #2

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TVD Reference: KB=23' @ 3003.0usft (Nabors M7507)
MD Reference: KB=23' @ 3003.0usft (Nabors M7507)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
2ND BONE SPRING SAND									
8,419.4	2.70	50.48	8,411.0	227.2	275.5	-205.8	0.00	0.00	0.00
8,500.0	2.70	50.48	8,491.5	229.6	278.4	-208.0	0.00	0.00	0.00
8,600.0	2.70	50.48	8,591.4	232.6	282.1	-210.7	0.00	0.00	0.00
3RD BONE SPRING CARBONATE									
8,661.6	2.70	50.48	8,653.0	234.5	284.3	-212.4	0.00	0.00	0.00
8,700.0	2.70	50.48	8,691.3	235.6	285.7	-213.4	0.00	0.00	0.00
8,800.0	2.70	50.48	8,791.2	238.6	289.3	-216.1	0.00	0.00	0.00
8,900.0	2.70	50.48	8,891.1	241.6	292.9	-218.8	0.00	0.00	0.00
9,000.0	2.70	50.48	8,991.0	244.6	296.6	-221.6	0.00	0.00	0.00
9,100.0	2.70	50.48	9,090.9	247.6	300.2	-224.3	0.00	0.00	0.00
9,200.0	2.70	50.48	9,190.8	250.6	303.8	-227.0	0.00	0.00	0.00
9,300.0	2.70	50.48	9,290.7	253.6	307.5	-229.7	0.00	0.00	0.00
9,400.0	2.70	50.48	9,390.6	256.6	311.1	-232.4	0.00	0.00	0.00
3RD BONE SPRING SAND									
9,469.5	2.70	50.48	9,460.0	258.7	313.6	-234.3	0.00	0.00	0.00
9,500.0	2.70	50.48	9,490.4	259.6	314.7	-235.1	0.00	0.00	0.00
9,600.0	2.70	50.48	9,590.3	262.6	318.4	-237.8	0.00	0.00	0.00
9,700.0	2.70	50.48	9,690.2	265.6	322.0	-240.6	0.00	0.00	0.00
3rd BONE SPRING Red Hills Sand									
9,755.8	2.70	50.48	9,746.0	267.3	324.0	-242.1	0.00	0.00	0.00
9,800.0	2.70	50.48	9,790.1	268.6	325.6	-243.3	0.00	0.00	0.00
WOLFCAMP									
9,842.9	2.70	50.48	9,833.0	269.9	327.2	-244.4	0.00	0.00	0.00
9,900.0	2.70	50.48	9,890.0	271.6	329.3	-246.0	0.00	0.00	0.00
WOLFCAMP A									
9,965.1	2.70	50.48	9,955.0	273.5	331.6	-247.7	0.00	0.00	0.00
10,000.0	2.70	50.48	9,989.9	274.6	332.9	-248.7	0.00	0.00	0.00
10,100.0	2.70	50.48	10,089.8	277.6	336.5	-251.4	0.00	0.00	0.00
10,200.0	2.70	50.48	10,189.7	280.6	340.2	-254.1	0.00	0.00	0.00
WOLFCAMP B									
10,285.4	2.70	50.48	10,275.0	283.1	343.3	-256.4	0.00	0.00	0.00
10,300.0	2.70	50.48	10,289.6	283.6	343.8	-256.8	0.00	0.00	0.00
Build 10°/100'									
10,315.7	2.70	50.48	10,305.3	284.0	344.4	-257.3	0.00	0.00	0.00
10,350.0	2.69	129.45	10,339.5	284.1	345.6	-257.2	10.00	-0.02	230.48
10,400.0	7.02	162.91	10,389.3	280.4	347.4	-253.4	10.00	8.66	66.93
10,450.0	11.89	170.13	10,438.6	272.4	349.2	-245.3	10.00	9.73	14.44
10,500.0	16.83	173.17	10,487.1	260.1	350.9	-232.9	10.00	9.89	6.08
10,550.0	21.80	174.86	10,534.2	243.7	352.6	-216.4	10.00	9.94	3.37
10,600.0	26.78	175.94	10,579.8	223.2	354.3	-195.8	10.00	9.96	2.17
10,650.0	31.77	176.71	10,623.4	198.8	355.8	-171.4	10.00	9.97	1.53
10,700.0	36.76	177.28	10,664.7	170.7	357.3	-143.2	10.00	9.98	1.15
10,750.0	41.75	177.74	10,703.4	139.1	358.7	-111.6	10.00	9.98	0.91
Wolfcamp D									
10,778.2	44.57	177.95	10,724.0	119.8	359.4	-92.3	10.00	9.99	0.78
10,800.0	46.74	178.11	10,739.2	104.2	359.9	-76.8	10.00	9.99	0.71
10,850.0	51.74	178.43	10,771.8	66.4	361.1	-39.0	10.00	9.99	0.63
10,900.0	56.73	178.70	10,801.1	25.8	362.1	1.6	10.00	9.99	0.55
10,950.0	61.73	178.95	10,826.6	-17.1	363.0	44.4	10.00	9.99	0.49
target top									
10,994.1	66.13	179.15	10,846.0	-56.7	363.6	84.0	10.00	9.99	0.45
11,000.0	66.72	179.17	10,848.4	-62.1	363.7	89.4	10.00	9.99	0.43



Well Planning Report



Database: EDM 5000.1 Single User Db
Company: XTO ENERGY, INC.
Project: Eddy County, NM
Site: Sec 32, T25S, R29E
Well: Lone Watie 32 State #168H
Wellbore: Wellbore #1
Design: Design #2

Local Co-ordinate Reference: Well Lone Watie 32 State #168H
TVD Reference: KB=23' @ 3003.0usft (Nabors M7507)
MD Reference: KB=23' @ 3003.0usft (Nabors M7507)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
WOLFCAMP E									
11,046.5	71.37	179.37	10,865.0	-105.6	364.2	132.7	10.00	9.99	0.42
11,050.0	71.72	179.38	10,866.1	-108.8	364.3	136.0	10.00	9.99	0.40
11,100.0	76.72	179.58	10,879.7	-156.9	364.7	184.0	10.00	9.99	0.39
11,150.0	81.71	179.76	10,889.0	-206.0	365.0	233.0	10.00	9.99	0.38
11,200.0	86.71	179.95	10,894.1	-255.8	365.1	282.6	10.00	9.99	0.37
EOC @ 89.50° Inc / 180.05° Azm / 10895.0' TVD									
11,227.9	89.50	180.05	10,895.0	-283.7	365.1	310.4	10.00	9.99	0.36
11,300.0	89.50	180.05	10,895.6	-355.7	365.1	382.3	0.00	0.00	0.00
11,400.0	89.50	180.05	10,896.5	-455.7	365.0	482.0	0.00	0.00	0.00
11,500.0	89.50	180.05	10,897.4	-555.7	364.9	581.7	0.00	0.00	0.00
11,600.0	89.50	180.05	10,898.3	-655.7	364.8	681.4	0.00	0.00	0.00
11,700.0	89.50	180.05	10,899.1	-755.7	364.7	781.1	0.00	0.00	0.00
11,800.0	89.50	180.05	10,900.0	-855.7	364.6	880.8	0.00	0.00	0.00
11,900.0	89.50	180.05	10,900.9	-955.7	364.5	980.5	0.00	0.00	0.00
12,000.0	89.50	180.05	10,901.7	-1,055.7	364.4	1,080.2	0.00	0.00	0.00
12,100.0	89.50	180.05	10,902.6	-1,155.7	364.4	1,179.9	0.00	0.00	0.00
12,200.0	89.50	180.05	10,903.5	-1,255.7	364.3	1,279.6	0.00	0.00	0.00
12,300.0	89.50	180.05	10,904.4	-1,355.7	364.2	1,379.3	0.00	0.00	0.00
12,400.0	89.50	180.05	10,905.2	-1,455.7	364.1	1,479.0	0.00	0.00	0.00
12,500.0	89.50	180.05	10,906.1	-1,555.7	364.0	1,578.7	0.00	0.00	0.00
12,600.0	89.50	180.05	10,907.0	-1,655.7	363.9	1,678.4	0.00	0.00	0.00
12,700.0	89.50	180.05	10,907.9	-1,755.7	363.8	1,778.1	0.00	0.00	0.00
12,800.0	89.50	180.05	10,908.7	-1,855.7	363.7	1,877.8	0.00	0.00	0.00
12,900.0	89.50	180.05	10,909.6	-1,955.7	363.7	1,977.5	0.00	0.00	0.00
13,000.0	89.50	180.05	10,910.5	-2,055.7	363.6	2,077.2	0.00	0.00	0.00
target base									
13,060.2	89.50	180.05	10,911.0	-2,115.8	363.5	2,137.2	0.00	0.00	0.00
13,100.0	89.50	180.05	10,911.3	-2,155.7	363.5	2,177.0	0.00	0.00	0.00
13,200.0	89.50	180.05	10,912.2	-2,255.7	363.4	2,276.7	0.00	0.00	0.00
13,300.0	89.50	180.05	10,913.1	-2,355.7	363.3	2,376.4	0.00	0.00	0.00
13,400.0	89.50	180.05	10,914.0	-2,455.7	363.2	2,476.1	0.00	0.00	0.00
13,500.0	89.50	180.05	10,914.8	-2,555.7	363.1	2,575.8	0.00	0.00	0.00
13,600.0	89.50	180.05	10,915.7	-2,655.7	363.0	2,675.5	0.00	0.00	0.00
13,700.0	89.50	180.05	10,916.6	-2,755.6	363.0	2,775.2	0.00	0.00	0.00
13,800.0	89.50	180.05	10,917.5	-2,855.6	362.9	2,874.9	0.00	0.00	0.00
13,900.0	89.50	180.05	10,918.3	-2,955.6	362.8	2,974.6	0.00	0.00	0.00
14,000.0	89.50	180.05	10,919.2	-3,055.6	362.7	3,074.3	0.00	0.00	0.00
14,100.0	89.50	180.05	10,920.1	-3,155.6	362.6	3,174.0	0.00	0.00	0.00
14,200.0	89.50	180.05	10,920.9	-3,255.6	362.5	3,273.7	0.00	0.00	0.00
14,300.0	89.50	180.05	10,921.8	-3,355.6	362.4	3,373.4	0.00	0.00	0.00
14,400.0	89.50	180.05	10,922.7	-3,455.6	362.4	3,473.1	0.00	0.00	0.00
14,500.0	89.50	180.05	10,923.6	-3,555.6	362.3	3,572.8	0.00	0.00	0.00
14,600.0	89.50	180.05	10,924.4	-3,655.6	362.2	3,672.5	0.00	0.00	0.00
14,700.0	89.50	180.05	10,925.3	-3,755.6	362.1	3,772.2	0.00	0.00	0.00
14,800.0	89.50	180.05	10,926.2	-3,855.6	362.0	3,871.9	0.00	0.00	0.00
14,900.0	89.50	180.05	10,927.1	-3,955.6	361.9	3,971.6	0.00	0.00	0.00
15,000.0	89.50	180.05	10,927.9	-4,055.6	361.8	4,071.3	0.00	0.00	0.00
15,100.0	89.50	180.05	10,928.8	-4,155.6	361.7	4,171.0	0.00	0.00	0.00
15,200.0	89.50	180.05	10,929.7	-4,255.6	361.7	4,270.7	0.00	0.00	0.00
15,300.0	89.50	180.05	10,930.5	-4,355.6	361.6	4,370.5	0.00	0.00	0.00
15,400.0	89.50	180.05	10,931.4	-4,455.6	361.5	4,470.2	0.00	0.00	0.00
15,500.0	89.50	180.05	10,932.3	-4,555.6	361.4	4,569.9	0.00	0.00	0.00



Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lone Watie 32 State #168H
Company:	XTO ENERGY, INC.	TVD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Project:	Eddy County, NM	MD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Site:	Sec 32, T25S, R29E	North Reference:	Grid
Well:	Lone Watie 32 State #168H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned 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)
15,600.0	89.50	180.05	10,933.2	-4,655.6	361.3	4,669.6	0.00	0.00	0.00
15,700.0	89.50	180.05	10,934.0	-4,755.6	361.2	4,769.3	0.00	0.00	0.00
TD @ 15718.7' MD / 10934.2' TVD									
15,718.7	89.50	180.05	10,934.2	-4,774.3	361.2	4,787.9	0.00	0.00	0.00

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									
LW 32 S #168H - FTP	0.00	0.00	10,895.0	4.3	365.3	397,540.80	603,710.30	32° 5' 33.046 N	103° 59' 54.393 W
- plan misses target center by 70.5usft at 10960.9usft MD (10831.7 TVD, -26.7 N, 363.1 E)									
- Point									
LW 32 S #168H - PBHL	0.50	180.05	10,934.2	-4,774.3	361.2	392,762.20	603,706.20	32° 4' 45.756 N	103° 59' 54.613 W
- plan hits target center									
- Rectangle (sides W100.0 H4,779.3 D0.0)									
LW 32 S #168H - LTP	0.00	0.00	10,934.2	-4,644.3	361.2	392,892.20	603,706.20	32° 4' 47.042 N	103° 59' 54.608 W
- plan misses target center by 1.1usft at 15588.7usft MD (10933.1 TVD, -4644.3 N, 361.3 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
359.0	359.0	RUSTLER			
636.0	636.0	SALADO			
2,701.0	2,699.0	BASE SALT			
2,888.2	2,886.0	DELAWARE			
3,797.2	3,794.0	Cherry Canyon			
5,392.0	5,387.0	BRUSHY CANYON			
6,631.4	6,625.0	BONE SPRING			
7,576.4	7,569.0	1ST BONE SPRING SAND			
7,860.7	7,853.0	2ND BONE SPRING CARBONATE			
8,419.4	8,411.0	2ND BONE SPRING SAND			
8,661.6	8,653.0	3RD BONE SPRING CARBONATE			
9,469.5	9,460.0	3RD BONE SPRING SAND			
9,755.8	9,746.0	3rd BONE SPRING Red Hills Sand			
9,842.9	9,833.0	WOLFCAMP			
9,965.1	9,955.0	WOLFCAMP A			
10,285.4	10,275.0	WOLFCAMP B			
10,778.2	10,724.0	Wolfcamp D			
10,994.1	10,846.0	target top			
11,046.5	10,865.0	WOLFCAMP E			
13,060.2	10,911.0	target base			



Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lone Watie 32 State #168H
Company:	XTO ENERGY, INC.	TVD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Project:	Eddy County, NM	MD Reference:	KB=23' @ 3003.0usft (Nabors M7507)
Site:	Sec 32, T25S, R29E	North Reference:	Grid
Well:	Lone Watie 32 State #168H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
700.0	700.0	0.0	0.0	Build 1°/100'
969.9	969.8	4.0	4.9	EOB @ 2.70° Inc / 50.48° Azm
10,315.7	10,305.3	284.0	344.4	Build 10°/100'
11,227.9	10,895.0	-283.7	365.1	EOC @ 89.50° Inc / 180.05° Azm / 10895.0' TVD
15,718.7	10,934.2	-4,774.3	361.2	TD @ 15718.7' MD / 10934.2' TVD

Lone Watie 32 State 168H

Wolfcamp E, 1.0 Mile Lateral

County: Eddy
SHL: 336' FNL, 695' FEL
Sec 32, T 25S, R 29E
BHL: 200' FSL, 330' FEL
Sec 32, T 25S, R 29E
Area: NMOCD State



AFE # 1900810
XTO ID # 2182911001
API # 30-015-45772
Permit 264457
Elevation GL 2980', KB 3003' (23' AGL)
Rig: Nabors M7507 (23' KB)

****Add'l Regulatory paperwork in WellView****

TVD	Geology	Casing & Cement	Wellhead 10k (Tech Data Sheet)	Hole Size	General Notes
359'	Rustler	30" Conductor @ 90' Tail (200% OH excess) 827 sx 14.8ppg class C Top of Tail @ 0'	511' MD	17 1/2 Surface	Notify NMOCD prior to spud, run csg, cmt, BOP Test Drill out with 8.4-8.7 ppg FW mud Mud Log from Surface Inc/Az survey every stand Pump Hi-Vis Sweeps to clean hole Some lost returns in Corral Canyon offsets. Set Casing ~125-150' into Rustler Confirm w/ Samples
636'	Top of Salt	Lead (150% OH excess) 856 sx 12.8ppg class C 35/65 Poz Top of Lead @ 0' Tail (100% OH excess) 290 sx 14.8ppg class C Top of Tail @ 2200'	2799' MD	12 1/4 Int. 1	RU H ₂ S package No FIT test required. Drill out with 10.0-10.2 ppg brine Ensure well drifts to the NE (30 - 70 azm) Maintain <1.5° DLS and maximum 3° Inc Inc/Az survey every stand
2,699'	Base of Salt	9-5/8" 40# HCL-80 BTC 0' - 611' 9-5/8" 40# J-55 BTC 611' - 2799'			Set casing ~100' through base of salt above Delaware FMT
2,886'	Delaware	7" Marker Joints @ 5450' MD & 9315' MD Integrated casing run w/ torque turn 1st Lead (100% OH excess) 288 sx 10.4 Trident Lightweight Top of Lead @ 2500 2nd Lead (250% OH excess) 1267 sx 12.2ppg class H 50/50 Poz Top of Lead @ 6000 Tail (100% OH excess) 277 sx 14.2ppg class H 35/65 Poz Top of Tail @ 9900'	Top of Liner 10200' MD KOP 10315' MD	8 3/4 Int. 2 Curve	FIT to 12.0 ppg EMW Drill out with 9.0 ppg cut brine (as low as possible) Inc/Az survey every stand PU Gamma on drill out Ensure well drifts to the NE (30 - 70 azm) Maintain <1.5° DLS and maximum 3° Inc When to slide: Direction is not within window / Inc > 3 deg / OIMS chart Slides between 7-15'. NO GREATER w/o approval Lost returns on offsets in Brushy Canyon (~5400') SEND SEPARATION CALCULATOR EVERY 500' Do Not Slide During Transitions at all costs Bring cement 300' into the previous casing shoe. Send final surveys to Engineer & Directional Co.
3,794'	Cherry Canyon		10900' MD		Kickoff 8 3/4" Curve - Target to set 7" @ ~60° Hole conditions will dictate where we set the 7"
5,387'	Brushy Canyon				Leak Off Test for Liner Top Displace with 12.5-13.0 ppg OBM Swap to OBM w/ directional BHA as per Tech Data Sheet Maintain 13.0-13.2 ppg MW in the curve / lateral
6,450'	Basal Brushy Canyon				Survey every 30' in curve Survey every stand in lateral Contact Engineer before trips / Clean-Up Cycles
6,625'	Bone Spring Producer in section (Avalon)				Anti-Collision SF <1.2 for following offsets N/A
7,569'	1st Bone Spring Sand				4,491' Lateral 89.5° Inc, 180.50° azm
7,853'	2nd Bone Spring Carb				
8,411'	2nd Bone Spring Sand				
8,653'	3rd Bone Spring Carb				
9,460'	3rd Bone Spring Sand				
9,833'	Wolfcamp Shale Wolfcamp X				
	Wolfcamp Y				
9,955'	Wolfcamp A	7" 32# P-110 EB BTC			
10,275'	Wolfcamp B	4 1/2" Marker Joint @ 13475' Integrated casing run w/ torque turn Tail (30% OH excess) 550 sx 14.2ppg class H 35/65 Poz Top of Tail @ 10200' Single Toe Sleeve @ ~15580		6 Curve	
10,305'	KOP (TVD)				
10,724'	Wolfcamp D				
10,865'	Wolfcamp E				
10,895'	Wolfcamp E Target (Landing TVD)				
10,934'	TVD @ BHL	4-1/2" 13.5# HCP-110 GBCD	EOC 11228' MD	6 Lateral	
			15,719' MD 10,934' TVD @ BHL 4,788' VS		

Approvals

Prepared by: Jared Bouzek, Drilling Engineer

Date

Reviewed by: Drilling Engineer

Date

Reviewed by: Mike Bergeron, Drilling Superintendent

Date

Approved by: Kendal Decker, Drilling Manager

Date