



HOBBS OCD
MAR 27 2019
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5D Survey Report

XTO Energy

Field Name: *XTO Lea Co, NM (NAD 27 NME)*
Site Name: *Chistera 32 State 2H*
Well Name: *Chistera 32 State 2H*
File number: *13373802*
Survey: *Definitive survey*

3 October 2018





Chistera 32 State 2H

Field Name: XTO Lea Co, NM (NAD 27 NME)	Map Units: US ft		Company Name: XTO Energy	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD27 / New Mexico East			
	Comment:			
Site: Chistera 32 State 2H	Units: US ft	North Reference: True	Convergence Angle: 0.35	
	Position:	Northing: 559377.70 US ft	Latitude: 32° 32' 10.14"	
		Easting: 700746.90 US ft	Longitude: -103° 40' 54.98"	
	Elevation above MSL: 3619.00 US ft		Comment:	
Slot: Chistera 32 State 2H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 559377.70 US ft	Latitude: 32° 32' 10.14"	
	+E/-W: 0.00 US ft	Easting: 700746.90 US ft	Longitude: -103° 40' 54.98"	
	Elevation above MSL: 3619.00 US ft		Comment:	
Well: Chistera 32 State 2H	Type: Main well		UWI:	
	File Number: 13373802	Comment:		
	Closure Distance: 5024.58 US ft		Closure Azimuth: 179.05°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00 US ft	+E/-W: 0.00 US ft	Az: 179.49°	

Drill floor: Survey Name: Definitive Survey

Rig Height (Well TVD Reference): Elevation above MSL: 3637.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°
18.00 US ft

Survey Name: Definitive Survey

Date: 15/Aug/2018 **Survey Tool:** See Survey **Comment:** **Company:**
Tool Ranges below.

Magnetic Model:

Model Name: IGRF **Date:** 10/Sep/2018 **Field Strength:** **Declination:** 6.89° **Dip:** 60.31°
47983.6 nT

Tie Point:

MD: 0.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** 0.00 US ft **North Offset:** -0.00 US ft **East Offset:** 0.00 US ft

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	8250.00	MWD
MWD	8250.00	10552.00	WFT MWD SVY_1
MWD	10552.00	11058.00	WFT MWD SVY_2

5D Survey Report

Survey Tool Ranges:

Name	Start MD(USft)	End MD(USft)	Source Survey
MWD	11058.00	11330.00	WFT MWD SVY_4
MWD	11330.00	11685.00	WFT MWD SVY_5
MWD	11685.00	16202.00	WFT MWD SVY_6

Casing Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Name
8300.00	1.10	273.16	8296.45	4659.45	128.68	-44.18	559506.10	700701.94	9 5/8 In

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-3637.00	-0.00	-0.00	0.00	559377.70	700746.90	0.00	
117.00	0.66	75.09	117.00	-3520.00	-0.17	0.17	0.65	559377.88	700747.55	0.56	
178.00	0.92	90.39	177.99	-3459.01	-0.25	0.26	1.48	559377.97	700748.38	0.55	
237.00	0.88	85.29	236.98	-3400.02	-0.27	0.29	2.41	559378.01	700749.30	0.15	
296.00	0.92	52.33	295.98	-3341.02	-0.59	0.62	3.23	559378.34	700750.13	0.87	
327.00	0.97	54.53	326.97	-3310.03	-0.89	0.93	3.64	559378.65	700750.54	0.20	
419.00	1.01	71.93	418.96	-3218.04	-1.58	1.63	5.05	559379.36	700751.94	0.33	
476.00	0.84	62.26	475.95	-3161.05	-1.93	1.98	5.90	559379.72	700752.78	0.40	
539.00	0.62	60.15	538.95	-3098.05	-2.30	2.36	6.60	559380.10	700753.48	0.35	
600.00	0.53	89.33	599.94	-3037.06	-2.47	2.53	7.17	559380.28	700754.05	0.50	
691.00	0.40	42.49	690.94	-2946.06	-2.70	2.77	7.80	559380.52	700754.69	0.43	
753.00	0.00	0.00	752.94	-2884.06	-2.86	2.93	7.95	559380.68	700754.83	0.65	
839.00	0.18	248.68	838.94	-2798.06	-2.81	2.88	7.82	559380.63	700754.71	0.21	
930.00	0.13	303.61	929.94	-2707.06	-2.82	2.89	7.60	559380.63	700754.49	0.16	
1022.00	0.53	334.90	1021.94	-2615.06	-3.26	3.33	7.34	559381.07	700754.22	0.46	
1111.00	0.53	315.56	1110.94	-2526.06	-3.93	4.00	6.87	559381.74	700753.75	0.20	
1201.00	0.79	280.14	1200.93	-2436.07	-4.35	4.40	5.97	559382.14	700752.85	0.52	
1291.00	1.10	275.66	1290.92	-2346.08	-4.56	4.60	4.50	559382.32	700751.37	0.35	
1380.00	0.79	237.73	1379.91	-2257.09	-4.33	4.35	3.13	559382.07	700750.01	0.76	
1463.00	0.60	292.30	1462.90	-2174.10	-4.19	4.21	2.25	559381.93	700749.12	0.79	
1555.00	0.20	19.60	1554.90	-2082.10	-4.53	4.55	1.86	559382.26	700748.73	0.68	
1646.00	0.40	278.50	1645.90	-1991.10	-4.73	4.74	1.59	559382.45	700748.47	0.53	
1736.00	0.04	176.30	1735.90	-1901.10	-4.75	4.76	1.29	559382.47	700748.16	0.46	
1825.00	0.50	306.70	1824.90	-1812.10	-4.95	4.96	0.98	559382.67	700747.85	0.59	
1915.00	0.10	275.30	1914.89	-1722.11	-5.20	5.20	0.58	559382.91	700747.45	0.46	
2008.00	0.20	64.70	2007.89	-1629.11	-5.27	5.28	0.65	559382.98	700747.52	0.31	
2095.00	0.50	1.00	2094.89	-1542.11	-5.72	5.72	0.79	559383.43	700747.66	0.52	
2186.00	0.50	351.30	2185.89	-1451.11	-6.51	6.51	0.74	559384.22	700747.60	0.09	
2275.00	0.60	19.10	2274.89	-1362.11	-7.33	7.34	0.83	559385.04	700747.69	0.32	
2365.00	0.20	354.10	2364.88	-1272.12	-7.93	7.94	0.97	559385.64	700747.82	0.47	
2454.00	0.60	43.90	2453.88	-1183.12	-8.42	8.43	1.28	559386.14	700748.13	0.56	
2544.00	1.30	32.90	2543.87	-1093.13	-9.61	9.63	2.16	559387.34	700749.00	0.80	
2634.00	1.10	45.30	2633.85	-1003.15	-11.06	11.09	3.33	559388.81	700750.16	0.36	
2723.00	1.90	48.20	2722.82	-914.18	-12.63	12.67	5.04	559390.40	700751.86	0.90	
2813.00	2.20	47.80	2812.76	-824.24	-14.76	14.83	7.43	559392.57	700754.24	0.33	
2902.00	2.60	42.70	2901.68	-735.32	-17.37	17.46	10.06	559395.22	700756.86	0.51	
2992.00	2.50	46.70	2991.59	-645.41	-20.19	20.31	12.88	559398.08	700759.65	0.23	
3081.00	3.10	42.40	3080.49	-556.51	-23.27	23.41	15.91	559401.21	700762.67	0.71	
3171.00	3.50	45.10	3170.34	-466.66	-26.98	27.15	19.50	559404.97	700766.23	0.48	
3236.00	4.10	44.30	3235.19	-401.81	-30.01	30.21	22.53	559408.05	700769.24	0.93	
3338.00	4.18	48.10	3336.93	-300.07	-35.06	35.31	27.84	559413.18	700774.52	0.28	
3431.00	4.18	47.32	3429.68	-207.32	-39.57	39.87	32.85	559417.77	700779.51	0.06	
3524.00	2.60	36.70	3522.52	-114.48	-43.53	43.86	36.61	559421.78	700783.24	1.82	
3615.00	2.07	19.55	3613.44	-23.56	-46.72	47.06	38.39	559424.99	700785.00	0.96	
3698.00	2.07	12.95	3696.39	59.39	-49.58	49.93	39.23	559427.87	700785.82	0.29	
3789.00	1.76	351.90	3787.34	150.34	-52.57	52.92	39.40	559430.86	700785.97	0.84	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	Comment
3879.00	1.80	341.75	3877.29	240.29	-55.28	55.63	38.76	559433.57	700785.32	0.35	
3969.00	1.63	346.68	3967.25	330.25	-57.88	58.22	38.02	559436.15	700784.57	0.25	
4058.00	1.63	352.70	4056.22	419.22	-60.37	60.71	37.57	559438.63	700784.10	0.19	
4148.00	1.70	353.70	4146.18	509.18	-62.97	63.30	37.26	559441.23	700783.77	0.08	
4237.00	1.49	353.00	4235.14	598.14	-65.43	65.76	36.98	559443.69	700783.47	0.24	
4327.00	1.63	353.18	4325.11	688.11	-67.87	68.20	36.68	559446.12	700783.16	0.16	
4417.00	1.41	359.51	4415.08	778.08	-70.25	70.57	36.52	559448.50	700782.99	0.31	
4507.00	1.36	4.69	4505.05	868.05	-72.42	72.75	36.60	559450.67	700783.05	0.15	
4596.00	1.14	333.49	4594.03	957.03	-74.26	74.59	36.29	559452.51	700782.73	0.79	
4686.00	1.19	332.44	4684.01	1047.01	-75.90	76.22	35.46	559454.14	700781.89	0.06	
4775.00	1.58	324.18	4772.99	1135.99	-77.73	78.03	34.31	559455.94	700780.73	0.49	
4865.00	1.54	325.23	4862.95	1225.95	-79.74	80.03	32.90	559457.93	700779.31	0.05	
4954.00	1.54	331.38	4951.92	1314.92	-81.78	82.07	31.64	559459.96	700778.04	0.19	
5043.00	1.76	329.01	5040.89	1403.89	-84.01	84.29	30.36	559462.17	700776.75	0.26	
5133.00	1.58	356.60	5130.85	1493.85	-86.44	86.71	29.58	559464.59	700775.95	0.91	
5223.00	1.67	338.50	5220.81	1583.81	-88.91	89.17	29.02	559467.05	700775.38	0.58	
5313.00	1.67	338.50	5310.78	1673.78	-91.36	91.61	28.06	559469.48	700774.40	0.00	
5402.00	1.80	324.70	5399.73	1762.73	-93.72	93.96	26.78	559471.82	700773.11	0.49	
5491.00	1.85	316.70	5488.69	1851.69	-95.92	96.14	24.99	559473.99	700771.30	0.29	
5585.00	1.89	313.10	5582.64	1945.64	-98.10	98.31	22.82	559476.14	700769.11	0.13	
5675.00	1.63	317.00	5672.60	2035.60	-100.07	100.26	20.86	559478.08	700767.15	0.32	
5764.00	2.02	314.20	5761.55	2124.55	-102.10	102.28	18.87	559480.09	700765.14	0.45	
5850.00	2.11	308.70	5847.50	2210.50	-104.17	104.32	16.55	559482.12	700762.81	0.25	
5943.00	2.11	309.60	5940.43	2303.43	-106.36	106.48	13.89	559484.27	700760.14	0.04	
6029.00	1.76	296.10	6026.38	2389.38	-107.97	108.07	11.49	559485.84	700757.73	0.67	
6119.00	2.11	294.20	6116.33	2479.33	-109.28	109.36	8.74	559487.11	700754.97	0.40	
6210.00	2.02	293.30	6207.27	2570.27	-110.63	110.68	5.73	559488.42	700751.96	0.11	
6299.00	1.80	294.50	6296.22	2659.22	-111.85	111.88	3.02	559489.60	700749.24	0.25	
6389.00	2.15	288.50	6386.17	2749.17	-113.00	113.01	0.13	559490.70	700746.34	0.45	
6478.00	1.98	279.90	6475.11	2838.11	-113.82	113.80	-2.96	559491.48	700743.24	0.40	
6568.00	2.02	278.00	6565.06	2928.06	-114.34	114.29	-6.07	559491.95	700740.14	0.09	
6658.00	2.11	280.32	6655.00	3018.00	-114.88	114.80	-9.27	559492.45	700736.93	0.14	
6747.00	1.93	281.28	6743.94	3106.94	-115.50	115.39	-12.35	559493.01	700733.85	0.21	
6837.00	2.20	274.69	6833.89	3196.89	-115.96	115.83	-15.56	559493.43	700730.64	0.40	
6927.00	1.89	268.89	6923.83	3286.83	-116.10	115.94	-18.76	559493.52	700727.43	0.41	
7014.00	1.93	267.40	7010.78	3373.78	-116.04	115.85	-21.66	559493.41	700724.53	0.07	
7104.00	2.11	265.29	7100.72	3463.72	-115.86	115.64	-24.82	559493.19	700721.37	0.22	
7197.00	1.71	283.22	7193.67	3556.67	-116.06	115.82	-27.88	559493.35	700718.31	0.77	
7289.00	0.27	318.37	7285.66	3648.66	-116.55	116.30	-29.36	559493.81	700716.83	1.63	
7386.00	1.19	336.30	7382.65	3745.65	-117.65	117.39	-29.92	559494.90	700716.26	0.97	
7465.00	1.19	336.30	7461.63	3824.63	-119.16	118.89	-30.58	559496.40	700715.60	0.00	
7555.00	1.27	331.65	7551.61	3914.61	-120.90	120.62	-31.43	559498.13	700714.74	0.14	
7644.00	1.49	319.25	7640.59	4003.59	-122.65	122.37	-32.65	559499.87	700713.50	0.42	
7734.00	1.19	312.84	7730.56	4093.56	-124.19	123.89	-34.10	559501.38	700712.04	0.37	
7823.00	1.45	310.73	7819.54	4182.54	-125.57	125.25	-35.63	559502.73	700710.50	0.30	
7912.00	1.10	290.43	7908.52	4271.52	-126.61	126.29	-37.29	559503.76	700708.84	0.64	
8002.00	1.14	283.22	7998.50	4361.50	-127.13	126.79	-38.97	559504.25	700707.16	0.16	
8091.00	0.97	302.55	8087.48	4450.48	-127.76	127.40	-40.46	559504.85	700705.66	0.44	
8181.00	1.14	287.88	8177.47	4540.47	-128.45	128.09	-41.96	559505.53	700704.16	0.35	
8250.00	1.10	288.00	8246.46	4609.46	-128.88	128.50	-43.24	559505.93	700702.87	0.06	
8300.00	1.10	273.16	8296.45	4659.45	-129.06	128.68	-44.18	559506.10	700701.94	0.57	Tie On
8320.00	1.12	267.39	8316.44	4679.44	-129.07	128.68	-44.56	559506.10	700701.55	0.57	9 5/8 in First WFT SVY
8409.00	1.16	269.28	8405.42	4768.42	-129.03	128.63	-46.33	559506.04	700699.78	0.06	
8498.00	0.99	355.96	8494.41	4857.41	-129.80	129.38	-47.29	559506.79	700698.82	1.66	
8588.00	2.10	41.27	8584.38	4947.38	-131.80	131.40	-46.25	559508.81	700699.84	1.74	
8678.00	2.32	90.34	8674.32	5037.32	-133.01	132.63	-43.35	559510.06	700702.74	2.05	
8767.00	1.44	114.91	8763.28	5126.28	-132.50	132.14	-40.53	559509.59	700705.56	1.32	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	Comment
8857.00	1.90	69.96	8853.24	5216.24	-132.51	132.18	-38.10	559509.64	700707.99	1.50	
8947.00	1.40	55.44	8943.20	5306.20	-133.63	133.31	-35.80	559510.79	700710.29	0.72	
9036.00	2.18	66.05	9032.16	5395.16	-134.91	134.62	-33.35	559512.11	700712.72	0.95	
9126.00	2.39	107.90	9122.09	5485.09	-135.00	134.74	-30.00	559512.25	700716.07	1.83	
9216.00	2.53	125.81	9212.01	5575.01	-133.23	133.00	-26.61	559510.53	700719.48	0.86	
9305.00	1.44	118.54	9300.96	5663.96	-131.52	131.31	-24.03	559508.86	700722.07	1.25	
9395.00	2.12	67.87	9390.92	5753.92	-131.59	131.40	-21.49	559508.97	700724.60	1.82	
9484.00	2.03	49.59	9479.86	5842.86	-133.20	133.04	-18.77	559510.63	700727.32	0.75	
9574.00	2.03	95.41	9569.81	5932.81	-134.06	133.93	-15.97	559511.53	700730.11	1.76	
9664.00	1.75	101.46	9659.76	6022.76	-133.61	133.50	-13.03	559511.12	700733.05	0.38	
9754.00	1.95	94.64	9749.72	6112.72	-133.19	133.11	-10.16	559510.74	700735.92	0.33	
9843.00	0.91	87.41	9838.69	6201.69	-133.08	133.01	-7.95	559510.66	700738.14	1.18	
9933.00	0.42	45.58	9928.68	6291.68	-133.33	133.28	-7.00	559510.93	700739.09	0.73	
10023.00	1.28	55.55	10018.67	6381.67	-134.12	134.08	-5.93	559511.74	700740.15	0.97	
10112.00	2.71	36.54	10107.61	6470.61	-136.36	136.33	-3.86	559514.00	700742.21	1.75	
10202.00	2.95	38.37	10197.50	6560.50	-139.86	139.86	-1.16	559517.55	700744.89	0.28	
10292.00	2.81	13.90	10287.39	6650.39	-143.80	143.81	0.81	559521.52	700746.83	1.36	
10381.00	2.47	14.57	10376.30	6739.30	-147.76	147.79	1.82	559525.49	700747.81	0.38	
10471.00	2.19	18.59	10466.23	6829.23	-151.26	151.29	2.85	559529.01	700748.83	0.36	
10552.00	1.65	10.25	10547.18	6910.18	-153.87	153.91	3.56	559531.63	700749.51	0.75	
10610.00	0.55	29.87	10605.17	6968.17	-154.93	154.97	3.84	559532.69	700749.80	1.98	
10655.00	6.34	177.83	10650.08	7013.08	-152.63	152.67	4.04	559530.39	700750.01	15.14	
10700.00	13.44	180.36	10694.39	7057.39	-144.91	144.95	4.11	559522.67	700750.12	15.80	
10745.00	19.67	184.10	10737.50	7100.50	-132.12	132.15	3.53	559509.87	700749.62	14.04	
10790.00	22.67	182.04	10779.46	7142.46	-115.90	115.93	2.68	559493.64	700748.87	6.87	
10835.00	24.57	179.70	10820.69	7183.69	-97.88	97.91	2.42	559475.62	700748.72	4.71	
10879.00	26.56	178.48	10860.38	7223.38	-78.89	78.92	2.73	559456.64	700749.15	4.68	
10924.00	30.64	178.34	10899.88	7262.88	-57.36	57.39	3.33	559435.11	700749.88	9.07	
10969.00	31.76	177.03	10938.37	7301.37	-34.06	34.10	4.27	559411.83	700750.97	2.91	
11013.00	31.36	175.23	10975.86	7338.86	-11.08	11.13	5.83	559388.86	700752.66	2.33	
11058.00	31.91	177.16	11014.18	7377.18	12.48	-12.42	7.39	559365.33	700754.37	2.56	
11106.00	32.90	181.26	11054.71	7417.71	38.19	-38.13	7.73	559339.62	700754.87	5.02	
11151.00	35.50	181.11	11091.92	7454.92	63.47	-63.41	7.21	559314.33	700754.50	5.78	
11196.00	38.62	178.75	11127.83	7490.83	90.59	-90.52	7.26	559287.22	700754.72	7.62	
11241.00	43.43	174.52	11161.78	7524.78	120.06	-119.98	9.05	559257.77	700756.68	12.34	
11285.00	48.48	172.58	11192.36	7555.36	151.50	-151.40	12.62	559226.38	700760.45	11.91	
11330.00	51.19	175.08	11221.38	7584.38	185.72	-185.58	16.30	559192.22	700764.34	7.37	
11371.00	56.20	176.97	11245.65	7608.65	218.68	-218.53	18.57	559159.29	700766.81	12.77	
11416.00	63.88	177.96	11268.11	7631.11	257.62	-257.45	20.28	559120.38	700768.76	17.17	
11461.00	70.40	179.96	11285.58	7648.58	299.06	-298.88	21.02	559078.95	700769.75	15.06	
11506.00	75.66	180.45	11298.71	7661.71	342.08	-341.91	20.86	559035.93	700769.85	11.74	
11551.00	79.95	180.59	11308.21	7671.21	386.05	-385.88	20.46	558991.95	700769.72	9.54	
11596.00	82.29	181.88	11315.16	7678.16	430.48	-430.33	19.50	558947.50	700769.03	5.92	
11685.00	87.41	181.00	11323.15	7686.15	519.04	-518.91	17.28	558858.91	700767.35	5.84	
11716.00	88.95	181.84	11324.13	7687.13	550.01	-549.88	16.51	558827.93	700766.77	5.66	
11805.00	91.54	181.23	11323.75	7686.75	638.94	-638.84	14.13	558738.96	700764.93	2.99	
11895.00	93.01	177.20	11320.18	7683.18	728.85	-728.74	15.36	558649.07	700766.71	4.76	
11985.00	94.69	175.69	11314.13	7677.13	818.51	-818.36	20.92	558559.48	700772.83	2.51	
12075.00	96.09	174.62	11305.68	7668.68	907.85	-907.64	28.49	558470.25	700780.94	1.95	
12164.00	95.32	174.54	11296.83	7659.83	996.09	-995.80	36.86	558382.14	700789.84	0.87	
12254.00	90.77	174.94	11292.05	7655.05	1085.63	-1085.27	45.09	558292.73	700798.63	5.07	
12433.00	83.83	178.02	11300.48	7663.48	1264.05	-1263.60	56.08	558114.46	700810.70	4.24	
12523.00	85.94	178.35	11308.51	7671.51	1353.66	-1353.19	58.91	558024.89	700814.09	2.37	
12613.00	87.76	178.02	11313.45	7676.45	1443.50	-1443.01	61.76	557935.10	700817.48	2.06	
12702.00	88.04	178.60	11316.71	7679.71	1532.42	-1531.91	64.38	557846.21	700820.65	0.72	
12792.00	89.86	177.71	11318.36	7681.36	1622.38	-1621.84	67.28	557756.30	700824.10	2.25	
12882.00	89.93	177.79	11318.53	7681.53	1712.34	-1711.77	70.81	557666.39	700828.18	0.12	
12971.00	91.33	177.98	11317.55	7680.55	1801.29	-1800.71	74.10	557577.48	700832.01	1.59	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	Comment
13061.00	90.70	178.99	11315.95	7678.95	1891.26	-1890.66	76.48	557487.54	700834.94	1.32	
13151.00	91.12	179.43	11314.52	7677.52	1981.25	-1980.64	77.72	557397.57	700836.73	0.68	
13241.00	87.34	180.84	11315.73	7678.73	2071.22	-2070.61	77.51	557307.60	700837.07	4.48	
13330.00	88.60	179.97	11318.89	7681.89	2160.15	-2159.55	76.88	557218.66	700836.98	1.72	
13420.00	88.32	179.62	11321.31	7684.31	2250.12	-2249.52	77.20	557128.70	700837.86	0.50	
13510.00	83.27	180.29	11327.90	7690.90	2339.84	-2339.25	77.27	557038.97	700838.48	5.66	
13599.00	83.97	182.24	11337.79	7700.79	2428.24	-2427.67	75.32	556950.54	700837.06	2.32	
13689.00	85.45	181.38	11346.09	7709.09	2517.78	-2517.24	72.49	556860.95	700834.78	1.90	
13779.00	85.87	180.72	11352.90	7715.90	2607.49	-2606.96	70.84	556771.22	700833.69	0.87	
13869.00	86.36	181.04	11359.00	7722.00	2697.26	-2696.74	69.47	556681.43	700832.86	0.65	
13958.00	86.43	180.75	11364.60	7727.60	2786.05	-2785.56	68.08	556592.61	700832.01	0.33	
14048.00	87.20	179.89	11369.60	7732.60	2875.90	-2875.42	67.58	556502.75	700832.06	1.28	
14138.00	88.53	178.70	11372.95	7735.95	2965.84	-2965.34	68.68	556412.83	700833.72	1.98	
14227.00	89.79	178.33	11374.25	7737.25	3054.81	-3054.30	70.99	556323.89	700836.57	1.48	
14317.00	91.26	177.64	11373.43	7736.43	3144.77	-3144.24	74.15	556233.97	700840.28	1.80	
14407.00	92.66	178.72	11370.35	7733.35	3234.69	-3234.14	77.01	556144.09	700843.69	1.96	
14496.00	92.80	180.20	11366.11	7729.11	3323.59	-3323.03	77.85	556055.21	700845.07	1.67	
14586.00	94.34	179.49	11360.51	7723.51	3413.41	-3412.85	78.09	555965.39	700845.86	1.88	
14676.00	92.17	180.11	11355.40	7718.40	3503.26	-3502.70	78.40	555875.54	700846.72	2.51	
14765.00	93.01	180.16	11351.38	7714.38	3592.16	-3591.61	78.19	555786.64	700847.06	0.95	
14855.00	94.34	179.61	11345.61	7708.61	3681.97	-3681.42	78.37	555696.83	700847.79	1.60	
14945.00	94.76	178.75	11338.47	7701.47	3771.69	-3771.13	79.66	555607.13	700849.62	1.06	
15034.00	94.06	180.28	11331.62	7694.62	3860.42	-3859.86	80.41	555518.41	700850.91	1.89	
15124.00	94.06	179.22	11325.25	7688.25	3950.19	-3949.63	80.80	555428.64	700851.85	1.17	
15214.00	95.46	178.42	11317.78	7680.78	4039.87	-4039.30	82.65	555338.98	700854.25	1.79	
15304.00	93.22	179.94	11310.97	7673.97	4129.60	-4129.02	83.93	555249.27	700856.08	3.01	
15393.00	94.06	180.45	11305.32	7668.32	4218.42	-4217.84	83.63	555160.45	700856.32	1.10	
15483.00	93.22	180.47	11299.61	7662.61	4308.22	-4307.65	82.91	555070.63	700856.15	0.93	
15573.00	93.36	180.19	11294.44	7657.44	4398.06	-4397.50	82.39	554980.78	700856.18	0.35	
15662.00	93.85	180.09	11288.85	7651.85	4486.88	-4486.33	82.17	554891.96	700856.51	0.56	
15752.00	93.15	180.85	11283.35	7646.35	4576.70	-4576.16	81.43	554802.13	700856.32	1.15	
15841.00	93.99	180.83	11277.81	7640.81	4665.50	-4664.97	80.13	554713.30	700855.56	0.94	
15931.00	94.27	180.09	11271.33	7634.33	4755.25	-4754.74	79.41	554623.54	700855.39	0.88	
16021.00	95.60	179.31	11263.59	7626.59	4844.92	-4844.40	79.88	554533.88	700856.40	1.71	
16111.00	97.44	178.85	11253.37	7616.37	4934.33	-4933.80	81.32	554444.49	700858.39	2.11	
16144.00	98.14	178.91	11248.89	7611.89	4967.02	-4966.49	81.95	554411.80	700859.22	2.13	Last WFT SVY
16202.00	98.14	178.91	11240.68	7603.68	5024.43	-5023.89	83.05	554354.41	700860.67	0.00	PTB

Formation Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	
Rustler	1374.09	0.80	240.96	1374.00	-2263.00	4.40	3.20	559382.11	700750.08	
Salado / Top Salt	1507.10	0.33	309.11	1507.00	-2130.00	4.38	1.93	559382.09	700748.81	
Base Salt	3186.69	3.64	44.88	3186.00	-451.00	27.84	20.19	559405.67	700766.92	
Yates	3414.28	4.18	47.46	3413.00	-224.00	39.04	31.96	559416.94	700778.62	
Seven Rivers	3615.56	2.07	19.51	3614.00	-23.00	47.08	38.40	559425.01	700785.01	
Capitan Reef Equivalent	3785.66	1.77	352.78	3784.00	147.00	52.82	39.41	559430.76	700785.99	
Delaware Sand	4953.08	1.54	331.32	4951.00	1314.00	82.04	31.65	559459.94	700778.05	
Cherry Canyon Marker	5557.35	1.88	314.14	5555.00	1918.00	97.68	23.47	559475.52	700769.78	
Brushy Canyon	6708.03	2.01	280.84	6705.00	3068.00	115.13	-11.03	559492.77	700735.16	
Basal Brushy Canyon	8118.52	1.01	297.56	8115.00	4478.00	127.64	-40.88	559505.09	700705.24	
Base Brushy Canyon Sands	8366.57	1.14	268.40	8363.00	4726.00	128.64	-45.48	559506.06	700700.63	
Bone Spring	8408.58	1.16	269.27	8405.00	4768.00	128.63	-46.32	559506.04	700699.79	
First Bone Spring	9378.07	1.90	74.19	9374.00	5737.00	131.21	-22.06	559508.77	700724.04	

5D Survey Report

Formation Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)
Second Bone Spring	9950.32	0.58	49.77	9946.00	6309.00	133.38	-6.88	559511.03	700739.20
Base Second Bone Spring 'B'	10331.65	2.66	14.18	10327.00	6690.00	145.65	1.27	559523.35	700747.28
Third Bone Spring	10938.11	30.99	177.92	10912.00	7275.00	50.17	3.57	559427.89	700750.16