



HOBBS OCD
MAR 25 2019
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5D Survey Report

XTO Energy

Field Name: *XTO Lea Co, NM (NAD 27 NME)*

Site Name: *Chistera 32 State 1H*

Well Name: *Chistera 32 State 1H*

Survey: *Definitive survey*

7 November 2018





Chistera 32 State 1H

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 1H	Units: US ft	North Reference: Grid	Convergence Angle: 0.35	
	Position:	Northing: 559387.70 US ft	Latitude: 32° 32' 10.32"	
		Easting: 699525.90 US ft	Longitude: -103° 41' 9.24"	
	Elevation above MSL: 3610.00 US ft		Comment:	
Slot: Chistera 32 State 1H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 559387.70 US ft	Latitude: 32° 32' 10.32"	
	+E/-W: 0.00 US ft	Easting: 699525.90 US ft	Longitude: -103° 41' 9.24"	
	Elevation above MSL: 3610.00 US ft		Comment:	
Well: Chistera 32 State 1H	Type: Main well		UWI:	
	File Number:	Comment:		
	Closure Distance: 5064.1 US ft		Closure Azimuth: 181.68°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00 US ft	+E/-W: -0.00 US ft	Az: 180.66°	

Drill floor: Survey Name: Definitive Survey
Rig Height (Drill Floor): 18.00 US ft **Elevation above MSL:** 3628.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey

Date: 23/Oct/2018 **Survey Tool:** See Survey Tool Ranges below. **Comment:** **Company:**

Magnetic Model:

Model Name: bggm2018 **Date:** 23/Oct/2018 **Field Strength:** 48023.9 nT **Declination:** 6.93° **Dip:** 60.28°

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	8010.00	MWD
MWD	8010.00	10377.00	WFT MWD SVY_1
MWD	10377.00	10955.00	WFT MWD SVY_2
MWD	10955.00	12490.00	WFT MWD SVY_3

5D Survey Report

Survey Tool Ranges:

Name	Start MD(USft)	End MD(USft)	Source Survey
MWD	12490.00	16131.00	WFT MWD SVY_4

Casing Points: (Relative to Slot centre)(TVD relative to Drill Floor)

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
8005.00	2.74	309.51	7995.13	4367.13	49.25	-5.51	559436.95	699520.39	9 5/8 in

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)

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	-3628.00	-0.00	-0.00	-0.00	559387.70	699525.90	0.00	
258.00	1.14	353.39	257.98	-3370.02	-2.55	2.55	-0.30	559390.25	699525.60	0.44	
351.00	1.23	357.61	350.96	-3277.04	-4.46	4.47	-0.44	559392.17	699525.46	0.13	
470.00	1.06	8.32	469.94	-3158.06	-6.83	6.83	-0.34	559394.53	699525.56	0.23	
590.00	0.79	333.71	589.92	-3038.08	-8.66	8.67	-0.54	559396.37	699525.36	0.51	
640.00	0.88	324.57	639.92	-2988.08	-9.28	9.29	-0.92	559396.99	699524.98	0.32	
743.00	0.88	304.00	742.91	-2885.09	-10.36	10.38	-2.03	559398.08	699523.87	0.31	
832.00	1.67	296.44	831.88	-2796.12	-11.30	11.34	-3.76	559399.04	699522.14	0.91	
922.00	2.20	292.75	921.83	-2706.17	-12.52	12.59	-6.53	559400.29	699519.37	0.60	
1012.00	3.17	289.76	1011.73	-2616.27	-13.98	14.10	-10.46	559401.80	699515.44	1.09	
1102.00	4.13	282.56	1101.55	-2526.45	-15.46	15.65	-15.97	559403.35	699509.93	1.18	
1191.00	5.01	279.04	1190.27	-2437.73	-16.69	16.95	-22.93	559404.65	699502.97	1.04	
1281.00	5.63	279.39	1279.88	-2348.12	-17.93	18.29	-31.17	559405.99	699494.73	0.69	
1365.00	6.68	273.77	1363.39	-2264.61	-18.82	19.29	-40.11	559406.99	699485.79	1.44	
1466.00	6.90	277.11	1463.69	-2164.31	-19.82	20.42	-51.99	559408.12	699473.91	0.45	
1555.00	6.95	276.23	1552.04	-2075.96	-20.95	21.67	-62.65	559409.37	699463.25	0.13	
1645.00	5.89	273.20	1641.47	-1986.53	-21.68	22.52	-72.68	559410.22	699453.22	1.24	
1735.00	4.40	277.30	1731.11	-1896.89	-22.28	23.21	-80.71	559410.91	699445.19	1.70	
1824.00	4.31	274.82	1819.85	-1808.15	-22.92	23.93	-87.43	559411.63	699438.47	0.23	
1914.00	3.96	273.59	1909.61	-1718.39	-23.32	24.41	-93.90	559412.11	699432.00	0.40	
2003.00	1.67	282.03	1998.50	-1629.50	-23.74	24.87	-98.24	559412.57	699427.66	2.61	
2093.00	0.26	244.94	2088.49	-1539.51	-23.91	25.06	-99.71	559412.76	699426.19	1.63	
2193.00	1.32	70.04	2188.48	-1439.52	-24.21	25.35	-98.83	559413.05	699427.07	1.58	
2272.00	1.67	74.08	2267.45	-1360.55	-24.86	25.98	-96.87	559413.68	699429.03	0.46	
2362.00	1.41	80.06	2357.42	-1270.58	-25.44	26.53	-94.51	559414.23	699431.39	0.34	
2452.00	2.37	74.96	2447.37	-1180.63	-26.15	27.21	-91.63	559414.91	699434.27	1.08	
2541.00	2.99	77.59	2536.27	-1091.73	-27.17	28.18	-87.58	559415.88	699438.32	0.71	
2631.00	3.52	76.72	2626.13	-1001.87	-28.37	29.32	-82.60	559417.02	699443.30	0.59	
2721.00	3.61	71.97	2715.95	-912.05	-29.94	30.83	-77.22	559418.53	699448.68	0.34	
2810.00	4.04	73.02	2804.75	-823.25	-31.79	32.62	-71.55	559420.32	699454.35	0.49	
2900.00	4.57	73.38	2894.50	-733.50	-33.82	34.57	-65.09	559422.27	699460.81	0.59	
3079.00	5.63	75.13	3072.79	-555.21	-38.28	38.86	-49.77	559426.56	699476.13	0.60	
3153.00	6.07	77.59	3146.40	-481.60	-40.14	40.63	-42.44	559428.33	699483.46	0.68	
3165.00	6.51	75.13	3158.33	-469.67	-40.47	40.94	-41.16	559428.64	699484.74	4.30	
3246.00	6.33	78.30	3238.82	-389.18	-42.65	43.03	-32.35	559430.73	699493.55	0.49	
3339.00	4.66	77.95	3331.39	-296.61	-44.58	44.86	-23.63	559432.56	699502.27	1.80	
3429.00	4.04	79.88	3421.13	-206.87	-45.98	46.18	-16.94	559433.88	699508.96	0.71	
3518.00	3.87	74.78	3509.92	-118.08	-47.39	47.52	-10.95	559435.22	699514.95	0.44	
3608.00	3.52	81.46	3599.74	-28.26	-48.66	48.72	-5.29	559436.42	699520.61	0.62	
3787.00	3.69	75.66	3778.38	150.38	-51.03	50.97	5.72	559438.67	699531.62	0.22	
3877.00	2.73	91.30	3868.24	240.24	-51.75	51.63	10.67	559439.33	699536.57	1.43	
3966.00	2.99	99.04	3957.13	329.13	-51.39	51.22	15.08	559438.92	699540.98	0.52	
4056.00	1.49	101.32	4047.06	419.06	-50.83	50.62	18.55	559438.32	699544.45	1.67	
4145.00	1.85	107.83	4136.02	508.02	-50.20	49.96	21.05	559437.66	699546.95	0.46	
4235.00	1.41	117.32	4225.98	597.98	-49.27	49.00	23.42	559436.70	699549.32	0.57	
4325.00	1.67	116.44	4315.95	687.95	-48.20	47.91	25.58	559435.61	699551.48	0.29	
4414.00	1.67	109.76	4404.91	776.91	-47.21	46.89	27.96	559434.59	699553.86	0.22	
4504.00	1.58	106.77	4494.88	866.88	-46.44	46.09	30.38	559433.79	699556.28	0.14	

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Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
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
4593.00	1.06	114.33	4583.85	955.85	-45.77	45.40	32.31	559433.10	699558.21	0.61	
4683.00	1.58	102.38	4673.83	1045.83	-45.18	44.79	34.28	559432.49	699560.18	0.65	
4773.00	1.06	139.12	4763.81	1135.81	-44.31	43.90	36.03	559431.60	699561.93	1.07	
4863.00	0.53	149.84	4853.80	1225.80	-43.33	42.91	36.79	559430.61	699562.69	0.61	
4952.00	0.26	86.56	4942.80	1314.80	-42.99	42.56	37.20	559430.26	699563.10	0.53	
5042.00	0.70	85.15	5032.79	1404.79	-43.06	42.62	37.95	559430.32	699563.85	0.49	
5132.00	0.53	119.25	5122.79	1494.79	-42.91	42.46	38.86	559430.16	699564.76	0.44	
5221.00	0.53	79.35	5211.78	1583.78	-42.79	42.34	39.62	559430.04	699565.52	0.41	
5311.00	0.44	135.95	5301.78	1673.78	-42.63	42.17	40.27	559429.87	699566.17	0.52	
5401.00	0.18	141.58	5391.78	1763.78	-42.27	41.81	40.60	559429.51	699566.50	0.29	
5540.00	0.44	258.65	5530.78	1902.78	-41.99	41.53	40.21	559429.23	699566.11	0.39	
5579.00	0.26	209.78	5569.78	1941.78	-41.88	41.43	40.02	559429.13	699565.92	0.85	
5669.00	0.26	167.59	5659.78	2031.78	-41.51	41.05	39.96	559428.75	699565.86	0.21	
5758.00	0.26	249.68	5748.78	2120.78	-41.24	40.78	39.82	559428.48	699565.72	0.38	
5848.00	0.53	321.40	5838.78	2210.78	-41.49	41.04	39.37	559428.74	699565.27	0.57	
5938.00	0.35	330.02	5928.77	2300.77	-42.05	41.60	38.97	559429.30	699564.87	0.21	
6027.00	0.70	283.26	6017.77	2389.77	-42.40	41.96	38.30	559429.66	699564.20	0.59	
6117.00	0.88	317.01	6107.76	2479.76	-43.02	42.59	37.30	559430.29	699563.20	0.54	
6296.00	1.23	300.48	6286.73	2658.73	-44.97	44.57	34.71	559432.27	699560.61	0.26	
6386.00	0.97	278.86	6376.71	2748.71	-45.56	45.18	33.12	559432.88	699559.02	0.54	
6476.00	1.58	286.95	6466.69	2838.69	-46.01	45.66	31.18	559433.36	699557.08	0.71	
6565.00	1.41	326.85	6555.66	2927.66	-47.27	46.93	29.41	559434.63	699555.31	1.16	
6655.00	1.41	277.46	6645.64	3017.64	-48.32	48.00	27.70	559435.70	699553.60	1.31	
6744.00	1.06	283.61	6734.62	3106.62	-48.63	48.34	25.82	559436.04	699551.72	0.42	
6834.00	1.67	275.70	6824.59	3196.59	-48.94	48.67	23.70	559436.37	699549.60	0.71	
6923.00	1.06	288.53	6913.57	3285.57	-49.30	49.06	21.63	559436.76	699547.53	0.76	
7013.00	1.06	283.79	7003.55	3375.55	-49.75	49.52	20.04	559437.22	699545.94	0.10	
7102.00	1.06	245.99	7092.54	3464.54	-49.59	49.38	18.48	559437.08	699544.38	0.77	
7192.00	1.14	264.80	7182.52	3554.52	-49.15	48.96	16.83	559436.66	699542.73	0.41	
7281.00	1.30	257.59	7271.50	3643.50	-48.83	48.66	14.96	559436.36	699540.86	0.25	
7371.00	0.97	255.31	7361.48	3733.48	-48.40	48.25	13.23	559435.95	699539.13	0.37	
7461.00	3.69	265.68	7451.40	3823.40	-47.95	47.84	9.60	559435.54	699535.50	3.05	
7551.00	1.41	270.95	7541.31	3913.31	-47.70	47.64	5.61	559435.34	699531.51	2.54	
7640.00	1.23	247.05	7630.28	4002.28	-47.32	47.29	3.63	559434.99	699529.53	0.65	
7730.00	1.41	249.68	7720.26	4092.26	-46.54	46.52	1.71	559434.22	699527.61	0.21	
7820.00	1.23	272.36	7810.24	4182.24	-46.17	46.18	-0.30	559433.88	699525.60	0.61	
7909.00	1.79	296.97	7899.21	4271.21	-46.82	46.85	-2.49	559434.55	699523.41	0.95	
7999.00	2.81	315.25	7989.13	4361.13	-48.99	49.05	-5.30	559436.75	699520.60	1.38	
8005.00	2.74	309.51	7995.13	4367.13	-49.18	49.25	-5.51	559436.95	699520.39	4.78	9 5/8 in
8010.00	2.70	304.53	8000.12	4372.12	-49.32	49.39	-5.70	559437.09	699520.20	4.78	Tie on
8136.00	2.80	302.99	8125.98	4497.98	-52.62	52.75	-10.73	559440.45	699515.17	0.10	
8225.00	2.75	300.22	8214.87	4586.87	-54.84	55.01	-14.39	559442.71	699511.51	0.16	
8315.00	2.28	324.76	8304.79	4676.79	-57.35	57.56	-17.29	559445.26	699508.61	1.29	
8405.00	2.35	315.94	8394.71	4766.71	-60.12	60.35	-19.61	559448.05	699506.29	0.40	
8494.00	2.08	331.55	8483.65	4855.65	-62.82	63.08	-21.65	559450.78	699504.25	0.74	
8584.00	1.89	320.05	8573.59	4945.59	-65.38	65.65	-23.38	559453.35	699502.52	0.49	
8674.00	2.66	309.72	8663.52	5035.52	-67.82	68.12	-25.94	559455.82	699499.96	0.97	
8763.00	3.79	312.38	8752.38	5124.38	-71.08	71.43	-29.70	559459.13	699496.20	1.28	
8853.00	3.94	338.26	8842.18	5214.18	-75.92	76.30	-33.04	559464.00	699492.86	1.93	
8942.00	3.52	321.67	8931.00	5303.00	-80.87	81.29	-35.87	559468.99	699490.03	1.30	
9032.00	2.97	324.98	9020.85	5392.85	-84.91	85.36	-38.92	559473.06	699486.98	0.65	
9122.00	3.10	340.35	9110.73	5482.73	-89.09	89.56	-41.08	559477.26	699484.82	0.91	
9211.00	2.97	346.53	9199.60	5571.60	-93.58	94.07	-42.42	559481.77	699483.48	0.40	
9301.00	2.66	338.83	9289.49	5661.49	-97.78	98.29	-43.72	559485.99	699482.18	0.54	
9391.00	3.51	340.04	9379.36	5751.36	-102.30	102.83	-45.41	559490.53	699480.49	0.95	
9481.00	3.37	333.86	9469.20	5841.20	-107.23	107.79	-47.52	559495.49	699478.38	0.44	
9570.00	2.81	346.24	9558.07	5930.07	-111.68	112.26	-49.19	559499.96	699476.71	0.98	
9660.00	2.57	336.61	9647.97	6019.97	-115.66	116.25	-50.52	559503.95	699475.38	0.57	

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Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											Comment
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)	Eastings (US ft)	DLS (°/100US ft)	
9749.00	2.34	322.50	9736.89	6108.89	-118.91	119.52	-52.42	559507.22	699473.48	0.72	
9839.00	2.42	325.07	9826.82	6198.82	-121.90	122.54	-54.62	559510.24	699471.28	0.15	
9929.00	1.47	302.74	9916.76	6288.76	-124.06	124.72	-56.68	559512.42	699469.22	1.33	
10018.00	2.42	332.27	10005.71	6377.71	-126.32	127.00	-58.52	559514.70	699467.38	1.52	
10108.00	1.91	345.97	10095.65	6467.65	-129.44	130.14	-59.76	559517.84	699466.14	0.80	
10198.00	1.50	301.23	10185.61	6557.61	-131.49	132.21	-61.13	559519.91	699464.77	1.50	
10287.00	2.41	327.94	10274.56	6646.56	-133.66	134.40	-63.12	559522.10	699462.78	1.42	
10377.00	2.44	337.81	10364.48	6736.48	-137.02	137.77	-64.85	559525.47	699461.05	0.46	
10467.00	1.97	339.48	10454.42	6826.42	-140.22	141.00	-66.12	559528.70	699459.78	0.53	
10542.00	1.46	355.94	10529.38	6901.38	-142.38	143.16	-66.64	559530.86	699459.26	0.94	
10641.00	7.59	195.17	10628.13	7000.13	-137.30	138.09	-68.44	559525.79	699457.46	9.07	
10686.00	14.77	190.45	10672.25	7044.25	-128.75	129.57	-70.26	559517.27	699455.64	16.07	
10731.00	21.99	188.72	10714.93	7086.93	-114.74	115.59	-72.58	559503.29	699453.32	16.09	
10775.00	28.76	188.80	10754.66	7126.66	-96.09	96.96	-75.45	559484.66	699450.45	15.39	
10820.00	31.79	187.95	10793.52	7165.52	-73.61	74.52	-78.75	559462.22	699447.15	6.80	
10865.00	33.55	187.21	10831.40	7203.40	-49.49	50.44	-81.95	559438.14	699443.95	4.01	
10910.00	37.71	186.80	10867.97	7239.97	-23.44	24.43	-85.14	559412.13	699440.76	9.26	
10955.00	40.93	186.63	10902.77	7274.77	4.91	-3.89	-88.47	559383.81	699437.43	7.16	
11013.00	43.52	184.05	10945.72	7317.72	43.75	-42.69	-92.08	559345.01	699433.82	5.37	
11055.00	45.01	181.80	10975.80	7347.80	73.04	-71.96	-93.57	559315.74	699432.33	5.15	
11103.00	46.09	179.83	11009.42	7381.42	107.30	-106.22	-94.05	559281.48	699431.85	3.69	
11145.00	45.64	179.38	11038.66	7410.66	137.44	-136.36	-93.84	559251.34	699432.06	1.32	
11189.00	49.68	177.10	11068.29	7440.29	169.92	-168.86	-92.82	559218.84	699433.08	9.95	
11234.00	54.91	173.42	11095.81	7467.81	205.34	-204.31	-89.84	559183.39	699436.06	13.30	
11279.00	58.60	173.17	11120.48	7492.48	242.65	-241.68	-85.45	559146.02	699440.45	8.21	
11324.00	59.56	173.47	11143.60	7515.60	280.94	-280.03	-80.96	559107.67	699444.94	2.21	
11369.00	63.22	175.46	11165.15	7537.15	320.21	-319.34	-77.16	559068.36	699448.74	9.01	
11414.00	69.12	176.29	11183.32	7555.32	361.21	-360.38	-74.21	559027.32	699451.69	13.22	
11458.00	75.94	176.64	11196.52	7568.52	403.04	-402.24	-71.62	558985.46	699454.28	15.52	
11503.00	79.66	177.24	11206.03	7578.03	446.93	-446.16	-69.28	558941.54	699456.62	8.37	
11548.00	81.08	177.13	11213.56	7585.56	491.21	-490.47	-67.10	558897.23	699458.80	3.16	
11593.00	80.94	176.80	11220.59	7592.59	535.56	-534.85	-64.74	558852.85	699461.16	0.79	
11638.00	80.44	176.33	11227.87	7599.87	579.86	-579.18	-62.08	558808.52	699463.82	1.52	
11683.00	79.95	176.22	11235.53	7607.53	624.07	-623.43	-59.20	558764.27	699466.70	1.12	
11728.00	79.45	176.44	11243.58	7615.58	668.22	-667.61	-56.37	558720.09	699469.53	1.21	
11772.00	78.82	176.24	11251.87	7623.87	711.31	-710.74	-53.61	558676.96	699472.29	1.50	
11817.00	78.52	176.15	11260.71	7632.71	755.30	-754.76	-50.68	558632.94	699475.22	0.69	
11862.00	80.66	177.28	11268.84	7640.84	799.45	-798.95	-48.15	558588.75	699477.75	5.36	
11907.00	83.07	179.16	11275.21	7647.21	843.95	-843.47	-46.77	558544.23	699479.13	6.77	
11952.00	84.19	179.55	11280.20	7652.20	888.66	-888.18	-46.26	558499.52	699479.64	2.63	
11997.00	87.48	180.91	11283.47	7655.47	933.53	-933.06	-46.45	558454.64	699479.45	7.91	
12042.00	88.95	180.87	11284.87	7656.87	978.51	-978.03	-47.14	558409.67	699478.76	3.27	
12086.00	92.10	180.72	11284.47	7656.47	1022.50	-1022.02	-47.75	558365.68	699478.15	7.17	
12131.00	92.31	180.07	11282.74	7654.74	1067.47	-1066.98	-48.06	558320.72	699477.84	1.52	
12221.00	92.59	180.79	11278.89	7650.89	1157.38	-1156.90	-48.74	558230.80	699477.16	0.86	
12311.00	92.03	183.51	11275.26	7647.26	1247.27	-1246.75	-52.11	558140.95	699473.79	3.08	
12400.00	92.24	183.27	11271.95	7643.95	1336.11	-1335.54	-57.37	558052.16	699468.53	0.36	
12490.00	92.52	183.01	11268.21	7640.21	1425.95	-1425.32	-62.30	557962.38	699463.60	0.42	
12582.00	93.64	182.83	11263.27	7635.27	1517.74	-1517.07	-66.98	557870.63	699458.92	1.23	
12672.00	92.31	183.14	11258.60	7630.60	1607.54	-1606.82	-71.66	557780.88	699454.24	1.52	
12762.00	91.54	182.90	11255.57	7627.57	1697.41	-1696.65	-76.40	557691.05	699449.50	0.90	
12851.00	91.61	182.48	11253.13	7625.13	1786.32	-1785.52	-80.57	557602.18	699445.33	0.48	
12941.00	91.89	181.89	11250.38	7622.38	1876.25	-1875.41	-84.00	557512.29	699441.90	0.73	
13031.00	92.10	181.33	11247.25	7619.25	1966.18	-1965.32	-86.53	557422.38	699439.37	0.66	
13120.00	92.59	181.45	11243.60	7615.60	2055.10	-2054.22	-88.69	557333.48	699437.21	0.57	
13210.00	91.75	180.58	11240.20	7612.20	2145.03	-2144.14	-90.28	557243.56	699435.62	1.34	
13300.00	92.03	180.53	11237.23	7609.23	2234.98	-2234.08	-91.15	557153.62	699434.75	0.32	
13390.00	92.52	180.64	11233.66	7605.66	2324.91	-2324.01	-92.07	557063.69	699433.83	0.56	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											Comment
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)	
13479.00	91.05	181.34	11230.88	7602.88	2413.87	-2412.95	-93.61	556974.75	699432.29	1.83	
13569.00	90.84	180.90	11229.40	7601.40	2503.85	-2502.92	-95.36	556884.78	699430.54	0.54	
13659.00	91.19	180.56	11227.80	7599.80	2593.84	-2592.90	-96.51	556794.80	699429.39	0.54	
13748.00	91.54	180.51	11225.68	7597.68	2682.81	-2681.87	-97.34	556705.83	699428.56	0.40	
13838.00	91.61	180.13	11223.21	7595.21	2772.77	-2771.83	-97.84	556615.87	699428.06	0.43	
13928.00	91.61	179.83	11220.68	7592.68	2862.73	-2861.80	-97.81	556525.90	699428.09	0.33	
14018.00	92.10	179.57	11217.77	7589.77	2952.67	-2951.75	-97.34	556435.95	699428.56	0.62	
14107.00	90.63	179.73	11215.65	7587.65	3041.63	-3040.72	-96.80	556346.98	699429.10	1.66	
14196.00	90.49	179.79	11214.78	7586.78	3130.61	-3129.71	-96.43	556257.99	699429.47	0.17	
14286.00	90.42	179.76	11214.06	7586.06	3220.60	-3219.71	-96.07	556167.99	699429.83	0.08	
14376.00	90.70	179.73	11213.18	7585.18	3310.59	-3309.70	-95.67	556078.00	699430.23	0.31	
14466.00	90.84	179.44	11211.98	7583.98	3400.56	-3399.69	-95.02	555988.01	699430.88	0.36	
14555.00	90.56	178.60	11210.89	7582.89	3489.52	-3488.67	-93.50	555899.03	699432.40	0.99	
14645.00	91.40	178.30	11209.35	7581.35	3579.44	-3578.62	-91.06	555809.08	699434.84	0.99	
14735.00	91.89	179.59	11206.76	7578.76	3669.36	-3668.57	-89.41	555719.13	699436.49	1.53	
14824.00	92.73	180.71	11203.18	7575.18	3758.28	-3757.50	-89.64	555630.20	699436.26	1.57	
14914.00	92.38	180.45	11199.17	7571.17	3848.19	-3847.40	-90.55	555540.30	699435.35	0.48	
15004.00	91.75	182.35	11195.92	7567.92	3938.12	-3937.31	-92.75	555450.39	699433.15	2.22	
15093.00	91.89	182.58	11193.10	7565.10	4027.03	-4026.18	-96.57	555361.52	699429.33	0.30	
15183.00	91.96	182.69	11190.07	7562.07	4116.93	-4116.04	-100.71	555271.66	699425.19	0.14	
15273.00	92.38	182.40	11186.66	7558.66	4206.81	-4205.88	-104.70	555181.82	699421.20	0.57	
15362.00	92.66	182.00	11182.75	7554.75	4295.69	-4294.73	-108.12	555092.97	699417.78	0.55	
15452.00	92.52	182.70	11178.68	7550.68	4385.56	-4384.56	-111.80	555003.14	699414.10	0.79	
15542.00	92.94	182.76	11174.40	7546.40	4475.40	-4474.36	-116.08	554913.34	699409.82	0.47	
15631.00	92.03	183.48	11170.54	7542.54	4564.23	-4563.14	-120.92	554824.56	699404.98	1.30	
15721.00	91.68	183.58	11167.63	7539.63	4654.07	-4652.93	-126.46	554734.77	699399.44	0.40	
15811.00	92.10	183.31	11164.66	7536.66	4743.92	-4742.71	-131.87	554644.99	699394.03	0.55	
15900.00	92.31	183.24	11161.23	7533.23	4832.76	-4831.50	-136.95	554556.20	699388.95	0.25	
15990.00	92.73	182.99	11157.28	7529.28	4922.59	-4921.28	-141.83	554466.42	699384.07	0.54	
16073.00	93.22	182.48	11152.97	7524.97	5005.42	-5004.08	-145.79	554383.62	699380.11	0.85	Last WFT SVY
16131.00	93.22	182.48	11149.71	7521.71	5063.30	-5061.93	-148.29	554325.77	699377.61	0.00	PTB

Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
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	1343.47	6.41	275.04	1342.00	-2286.00	19.10	-37.67	559406.80	699488.23	
Salado / Top Salt	1705.80	4.88	275.70	1702.00	-1926.00	22.95	-78.36	559410.65	699447.54	
Base Salt	3176.74	6.48	75.58	3170.00	-458.00	41.28	-39.87	559428.98	699486.03	
Yates	3381.74	4.36	78.80	3374.00	-254.00	45.53	-20.34	559433.23	699505.56	
Seven Rivers	3604.26	3.53	81.16	3596.00	-32.00	48.69	-5.52	559436.39	699520.38	
Capitan Reef Equivalent	3790.63	3.65	76.13	3782.00	154.00	51.02	5.95	559438.72	699531.85	
Delaware Sand	4892.20	0.40	138.91	4883.00	1255.00	42.71	36.92	559430.41	699562.82	
Cherry Canyon Marker	5551.22	0.37	249.82	5542.00	1914.00	41.51	40.14	559429.21	699566.04	
Brushy Canyon	6692.37	1.26	279.63	6683.00	3055.00	48.13	26.84	559435.83	699552.74	
Basal Brushy Canyon	8074.95	2.75	303.72	8065.00	4437.00	51.12	-8.26	559438.82	699517.64	
Base Brushy Canyon Sands	8318.22	2.28	324.44	8308.00	4680.00	57.66	-17.37	559445.36	699508.53	
Bone Spring	8360.25	2.31	320.26	8350.00	4722.00	58.99	-18.39	559446.69	699507.51	
First Bone Spring	9339.55	3.02	339.43	9328.00	5700.00	100.07	-44.40	559487.77	699481.50	
Second Bone Spring	9921.23	1.54	305.70	9909.00	6281.00	124.61	-56.51	559512.31	699469.39	
Base Second Bone Spring 'B'	10294.44	2.41	328.76	10282.00	6654.00	134.66	-63.29	559522.36	699462.61	
Third Bone Spring	10951.33	40.67	186.64	10900.00	7272.00	-1.51	-88.20	559386.19	699437.70	

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