

JUN 11 2018

SURVEY REPORT


Weatherford
RECEIVED

Report Date: 1/6/2018

Customer: XTO Energy

Job Name: MD-12847927

Well Name: Espejo Federal Com 2H

Field: Bone Spring

Rig: Frontier 26

Rig Loc: Lea Co., NM

Survey Calculation Method: Minimum Curvature

Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	182.51 deg	48258 nT	60.47 deg	6.94 deg	0.43 deg	6.51 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	0.00 ft	0.00 deg	0.00 deg	0.00 ft	0.00 ft	0.00 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144.00	0.20	141.20	144.00	-0.20	0.16	0.19	0.14
246.00	0.40	221.50	246.00	-0.60	0.03	0.60	0.41
326.00	0.40	185.20	326.00	-1.09	-0.18	1.10	0.31
425.00	0.30	141.00	424.99	-1.63	-0.05	1.63	0.28
546.00	0.30	45.70	545.99	-1.66	0.38	1.64	0.37
646.00	0.40	7.40	645.99	-1.13	0.61	1.10	0.25
746.00	0.30	49.30	745.99	-0.61	0.86	0.58	0.27
848.00	0.40	322.20	847.99	-0.16	0.84	0.12	0.48
944.00	0.10	212.80	943.99	0.04	0.59	-0.06	0.46
1039.00	0.20	141.40	1038.99	-0.16	0.65	0.13	0.20
1135.00	0.20	160.90	1134.99	-0.45	0.81	0.42	0.07
1229.00	0.40	147.70	1228.99	-0.88	1.04	0.84	0.22
1324.00	0.30	29.20	1323.98	-0.95	1.34	0.89	0.64
1419.00	0.20	151.90	1418.98	-0.88	1.53	0.81	0.46
1513.00	0.20	83.90	1512.98	-1.00	1.78	0.93	0.24
1608.00	0.10	142.70	1607.98	-1.05	1.99	0.96	0.18
1702.00	0.10	149.70	1701.98	-1.19	2.08	1.10	0.01
1797.00	0.40	303.30	1796.98	-1.08	1.85	1.00	0.52
1815.00	0.20	224.30	1814.98	-1.07	1.77	0.99	2.29
1892.00	0.30	290.50	1891.98	-1.09	1.49	1.03	0.37
1987.00	0.20	206.00	1986.98	-1.15	1.18	1.10	0.36
2080.00	0.40	174.40	2079.98	-1.62	1.14	1.57	0.27
2175.00	0.50	177.70	2174.98	-2.37	1.19	2.31	0.11
2271.00	0.30	66.00	2270.98	-2.68	1.44	2.62	0.70
2366.00	0.30	221.10	2365.97	-2.77	1.50	2.70	0.62
2459.00	0.40	191.10	2458.97	-3.27	1.28	3.21	0.22
2554.00	0.40	223.70	2553.97	-3.84	0.99	3.79	0.24
2648.00	0.40	245.50	2647.97	-4.21	0.46	4.19	0.16
2743.00	0.40	257.70	2742.97	-4.42	-0.16	4.42	0.09
2838.00	0.10	53.10	2837.97	-4.44	-0.42	4.45	0.52
2933.00	0.90	42.90	2932.96	-3.84	0.15	3.83	0.84
3029.00	1.00	66.20	3028.95	-2.95	1.43	2.89	0.41
3123.00	1.60	60.80	3122.92	-1.98	3.33	1.83	0.65
3219.00	1.50	63.80	3218.89	-0.77	5.63	0.52	0.13

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
3315.00	1.90	66.10	3314.85	0.43	8.21	-0.79	0.42
3409.00	1.60	56.00	3408.80	1.79	10.72	-2.26	0.46
3503.00	1.50	52.20	3502.77	3.28	12.78	-3.84	0.15
3597.00	1.60	53.90	3596.73	4.81	14.81	-5.45	0.12
3691.00	1.90	49.80	3690.69	6.59	17.06	-7.33	0.35
3786.00	2.00	46.60	3785.63	8.74	19.47	-9.59	0.16
3881.00	2.00	46.60	3880.58	11.02	21.88	-11.97	0.00
3976.00	1.80	47.90	3975.52	13.16	24.19	-14.21	0.22
4098.00	2.04	43.78	4097.46	16.01	27.12	-17.18	0.23
4128.00	1.95	42.06	4127.44	16.78	27.83	-17.98	0.36
4220.00	1.58	31.80	4219.39	19.02	29.54	-20.29	0.53
4315.00	1.60	30.36	4314.36	21.27	30.90	-22.61	0.05
4408.00	1.66	31.45	4407.32	23.54	32.26	-24.93	0.07
4504.00	0.94	16.73	4503.29	25.48	33.22	-26.91	0.82
4599.00	0.70	304.10	4598.29	26.56	32.96	-27.97	1.04
4695.00	0.80	283.74	4694.28	27.04	31.82	-28.41	0.29
4791.00	0.78	282.97	4790.27	27.35	30.54	-28.66	0.02
4885.00	0.63	287.87	4884.26	27.65	29.42	-28.91	0.17
4980.00	0.55	274.21	4979.26	27.85	28.47	-29.07	0.17
5076.00	0.60	279.65	5075.25	27.96	27.51	-29.14	0.08
5170.00	0.51	278.15	5169.25	28.11	26.61	-29.24	0.10
5265.00	0.38	281.76	5264.25	28.23	25.89	-29.34	0.14
5360.00	0.47	284.03	5359.24	28.39	25.20	-29.46	0.10
5454.00	0.98	252.83	5453.24	28.24	24.06	-29.27	0.67
5550.00	1.07	250.91	5549.22	27.71	22.43	-28.66	0.10
5645.00	0.93	259.81	5644.21	27.28	20.83	-28.17	0.22
5740.00	0.92	263.73	5739.19	27.06	19.31	-27.88	0.07
5835.00	0.77	276.23	5834.18	27.05	17.92	-27.81	0.25
5931.00	0.89	226.23	5930.17	26.60	16.74	-27.31	0.74
6025.00	0.98	218.70	6024.16	25.47	15.71	-26.13	0.16
6119.00	0.94	220.72	6118.15	24.26	14.71	-24.88	0.06
6214.00	0.92	218.23	6213.14	23.07	13.72	-23.65	0.05
6310.00	0.95	220.26	6309.12	21.86	12.73	-22.39	0.05
6404.00	0.85	219.25	6403.11	20.72	11.79	-21.22	0.11
6500.00	0.88	218.63	6499.10	19.59	10.88	-20.05	0.03
6595.00	0.82	215.41	6594.09	18.47	10.03	-18.89	0.08
6691.00	0.80	231.17	6690.08	17.49	9.11	-17.87	0.23
6786.00	0.70	244.08	6785.07	16.82	8.07	-17.16	0.21
6882.00	0.85	216.25	6881.06	15.99	7.12	-16.29	0.42
6979.00	0.84	207.62	6978.05	14.78	6.37	-15.04	0.13
7074.00	0.80	195.04	7073.04	13.52	5.87	-13.77	0.19
7169.00	0.76	197.96	7168.03	12.28	5.51	-12.51	0.06
7263.00	0.66	203.41	7262.03	11.19	5.10	-11.41	0.13
7358.00	0.66	198.86	7357.02	10.17	4.70	-10.37	0.06
7454.00	0.72	187.18	7453.01	9.05	4.45	-9.24	0.16
7549.00	0.94	182.57	7548.00	7.68	4.34	-7.86	0.24
7645.00	0.78	183.32	7643.99	6.24	4.27	-6.42	0.17
7741.00	0.45	258.64	7739.99	5.51	3.86	-5.68	0.83
7837.00	0.51	256.87	7835.99	5.34	3.07	-5.47	0.06
7933.00	0.35	244.80	7931.98	5.12	2.39	-5.22	0.19

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
8029.00	0.64	261.36	8027.98	4.92	1.60	-4.98	0.33
8124.00	0.71	269.38	8122.97	4.83	0.48	-4.85	0.12
8220.00	0.65	342.09	8218.97	5.34	-0.28	-5.32	0.84
8316.00	1.00	314.66	8314.96	6.45	-1.04	-6.40	0.54
8410.00	0.59	287.58	8408.95	7.17	-2.09	-7.07	0.58
8505.00	0.41	276.46	8503.94	7.36	-2.89	-7.22	0.21
8601.00	0.85	286.87	8599.94	7.60	-3.91	-7.42	0.47
8697.00	0.91	291.09	8695.93	8.08	-5.31	-7.84	0.09
8791.00	2.54	307.72	8789.88	9.63	-7.65	-9.28	1.80
8885.00	2.90	319.15	8883.78	12.70	-10.85	-12.21	0.69
8980.00	1.61	331.41	8978.70	15.69	-13.06	-15.10	1.44
9074.00	0.77	60.07	9072.69	17.16	-13.15	-16.57	1.88
9148.00	0.42	58.28	9146.68	17.56	-12.49	-16.99	0.47
9167.00	0.53	61.78	9165.68	17.63	-12.35	-17.08	0.60
9262.00	0.16	116.48	9260.68	17.78	-11.84	-17.25	0.48
9356.00	0.42	177.44	9354.68	17.38	-11.71	-16.85	0.39
9451.00	1.23	192.66	9449.67	16.04	-11.92	-15.50	0.88
9547.00	1.32	197.75	9545.64	13.98	-12.48	-13.42	0.15
9643.00	0.70	203.04	9641.63	12.39	-13.05	-11.80	0.65
9739.00	0.60	200.58	9737.62	11.38	-13.45	-10.78	0.11
9834.00	0.55	205.19	9832.62	10.50	-13.82	-9.88	0.07
9930.00	0.63	218.86	9928.61	9.67	-14.35	-9.03	0.17
10025.00	1.04	286.73	10023.60	9.51	-15.50	-8.82	1.04
10084.00	0.69	279.90	10082.60	9.73	-16.37	-9.00	0.62
10127.00	0.85	219.25	10125.59	9.52	-16.82	-8.78	1.84
10222.00	2.55	196.56	10220.55	6.95	-17.87	-6.16	1.89
10254.00	6.43	203.68	10252.45	4.63	-18.80	-3.80	12.23
10286.00	10.39	204.46	10284.10	0.36	-20.71	0.55	12.38
10318.00	14.30	204.73	10315.35	-5.86	-23.56	6.89	12.22
10349.00	18.49	205.45	10345.08	-13.78	-27.28	14.96	13.53
10381.00	21.82	207.87	10375.12	-23.62	-32.24	25.01	10.73
10413.00	24.48	213.25	10404.54	-34.43	-38.65	36.09	10.61
10444.00	27.41	215.87	10432.42	-45.58	-46.36	47.57	10.15
10476.00	29.30	217.49	10460.58	-57.77	-55.44	60.14	6.38
10509.00	30.59	219.08	10489.17	-70.69	-65.65	73.50	4.59
10541.00	32.96	219.00	10516.37	-83.78	-76.26	87.04	7.41
10573.00	34.02	218.34	10543.06	-97.57	-87.29	101.30	3.50
10604.00	35.72	218.00	10568.49	-111.50	-98.25	115.70	5.52
10636.00	37.28	216.86	10594.22	-126.62	-109.81	131.30	5.32
10668.00	39.31	216.02	10619.33	-142.57	-121.59	147.76	6.55
10700.00	41.48	213.54	10643.70	-159.60	-133.40	165.29	8.44
10732.00	44.23	210.32	10667.16	-178.08	-144.90	184.25	10.98
10763.00	46.78	206.35	10688.89	-197.54	-155.37	204.15	12.29
10795.00	49.49	204.37	10710.24	-219.07	-165.57	226.11	9.64
10827.00	53.28	204.83	10730.21	-241.80	-175.98	249.28	11.90
10859.00	57.17	205.12	10748.46	-265.62	-187.08	273.56	12.18
10890.00	60.54	204.41	10764.49	-289.71	-198.19	298.12	11.05
10922.00	63.86	202.67	10779.41	-315.66	-209.48	324.53	11.44
10954.00	66.17	200.56	10792.93	-342.63	-220.16	351.94	9.37
10986.00	68.83	198.69	10805.18	-370.47	-230.09	380.19	9.91

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
11018.00	71.07	196.20	10816.15	-399.14	-239.09	409.23	10.12
11050.00	73.18	194.50	10825.97	-428.51	-247.15	438.92	8.31
11082.00	75.86	193.18	10834.51	-458.45	-254.52	469.16	9.27
11113.00	77.60	191.78	10841.63	-487.91	-261.04	498.87	7.13
11145.00	78.60	191.05	10848.22	-518.60	-267.24	529.81	3.84
11177.00	79.23	191.05	10854.38	-549.42	-273.26	560.86	1.97
11208.00	80.87	189.89	10859.73	-579.45	-278.81	591.10	6.45
11240.00	83.06	187.91	10864.21	-610.75	-283.71	622.59	9.19
11272.00	84.26	187.14	10867.74	-642.28	-287.87	654.27	4.45
11319.00	86.36	183.50	10871.58	-688.91	-292.21	701.04	8.92
11365.00	87.13	182.29	10874.20	-734.77	-294.53	746.97	3.11
11461.00	89.16	181.37	10877.30	-830.67	-297.59	842.90	2.32
11555.00	89.72	181.39	10878.22	-924.64	-299.86	936.88	0.60
11651.00	89.51	184.38	10878.87	-1020.50	-304.69	1032.87	3.12
11746.00	90.21	184.72	10879.10	-1115.20	-312.22	1127.81	0.82
11842.00	89.65	183.90	10879.22	-1210.93	-319.44	1223.76	1.03
11937.00	89.65	183.58	10879.80	-1305.72	-325.64	1318.73	0.34
12031.00	90.42	184.06	10879.74	-1399.51	-331.90	1412.71	0.97
12126.00	89.65	183.29	10879.68	-1494.32	-337.99	1507.69	1.15
12219.00	87.69	181.77	10881.84	-1587.19	-342.09	1600.65	2.67
12313.00	87.83	181.71	10885.51	-1681.08	-344.94	1694.57	0.16
12406.00	88.74	181.60	10888.30	-1774.00	-347.63	1787.52	0.99
12501.00	89.86	181.89	10889.46	-1868.95	-350.52	1882.50	1.22
12595.00	90.70	181.45	10889.00	-1962.90	-353.26	1976.49	1.01
12690.00	89.30	182.57	10889.00	-2057.84	-356.59	2071.48	1.89
12786.00	89.44	182.87	10890.05	-2153.73	-361.15	2167.48	0.34
12881.00	90.28	182.38	10890.29	-2248.63	-365.50	2262.48	1.02
12976.00	89.51	181.93	10890.46	-2343.56	-369.07	2357.47	0.94
13072.00	90.21	181.66	10890.69	-2439.51	-372.08	2453.46	0.78
13167.00	88.67	182.29	10891.62	-2534.45	-375.35	2548.45	1.75
13263.00	89.02	181.80	10893.56	-2630.36	-378.78	2644.43	0.63
13359.00	90.14	181.45	10894.26	-2726.32	-381.50	2740.41	1.22
13454.00	89.02	181.71	10894.96	-2821.28	-384.12	2835.40	1.21
13549.00	89.58	181.64	10896.12	-2916.23	-386.89	2930.38	0.59
13645.00	89.09	182.58	10897.23	-3012.16	-390.43	3026.37	1.10
13740.00	89.72	182.46	10898.22	-3107.06	-394.61	3121.36	0.68
13835.00	90.63	182.18	10897.93	-3201.98	-398.45	3216.36	1.00
13931.00	88.60	183.27	10898.57	-3297.87	-403.01	3312.35	2.40
14027.00	88.81	183.15	10900.74	-3393.69	-408.39	3408.32	0.25
14112.00	89.44	182.85	10902.04	-3478.56	-412.84	3493.31	0.82
14218.00	87.62	183.12	10904.76	-3584.38	-418.35	3599.26	1.74
14310.00	87.76	182.93	10908.47	-3676.18	-423.21	3691.18	0.26
14406.00	88.95	182.58	10911.23	-3772.03	-427.82	3787.14	1.29
14500.00	87.83	183.41	10913.87	-3865.86	-432.73	3881.10	1.48
14595.00	88.39	183.54	10917.00	-3960.63	-438.48	3976.03	0.61
14690.00	88.95	183.13	10919.20	-4055.44	-444.01	4071.00	0.73
14785.00	89.09	182.62	10920.83	-4150.31	-448.77	4165.98	0.56
14880.00	89.72	182.77	10921.82	-4245.20	-453.24	4260.98	0.68
14976.00	90.63	182.51	10921.52	-4341.10	-457.66	4356.97	0.99
15071.00	89.72	182.21	10921.23	-4436.01	-461.57	4451.97	1.01

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
15167.00	90.00	181.79	10921.47	-4531.95	-464.92	4547.97	0.53
15262.00	87.76	182.28	10923.32	-4626.87	-468.29	4642.94	2.41
15358.00	87.97	182.18	10926.90	-4722.73	-472.03	4738.87	0.24
15454.00	88.74	181.84	10929.66	-4818.63	-475.39	4834.83	0.88
15549.00	89.23	181.55	10931.34	-4913.57	-478.20	4929.80	0.60
15643.00	89.79	181.20	10932.14	-5007.54	-480.46	5023.78	0.70
15737.00	90.49	180.78	10931.91	-5101.53	-482.08	5117.75	0.87
15832.00	91.33	180.51	10930.40	-5196.51	-483.15	5212.68	0.93
15930.00	92.24	180.02	10927.35	-5294.46	-483.60	5310.56	1.05
Projected to Total Depth:							
15994.00	92.24	180.02	10924.85	-5358.41	-483.63	5374.45	0.00

* Weatherford surveys from 4098.00 ft MD to 15930.00 ft MD.*

* TD at 15994.00 ft MD.*

* The total correction is 6.51 deg relative to Grid North.*