



Weatherford®

SURVEY REPORT

Report Date: 10/13/2017
 Customer: XTO Energy
 Job Name: MD-12672020
 Well Name: Perla Negra Federal Com 7H

Field: Bone Spring
 Rig: Frontier 26
 Rig Loc: Lea County, NM

Survey Calculation Method: **Minimum Curvature**

Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	1.36 deg	48258 nT	60.45 deg	6.97 deg	0.44 deg	6.53 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
170.00	0.60	329.51	170.00	0.77	-0.45	0.76	0.35
231.00	0.58	324.59	230.99	1.29	-0.79	1.27	0.09
330.00	0.56	319.02	329.99	2.07	-1.40	2.03	0.06
424.00	0.58	327.26	423.98	2.81	-1.96	2.77	0.09
520.00	0.63	324.98	519.98	3.66	-2.52	3.59	0.06
618.00	0.56	325.98	617.97	4.49	-3.10	4.42	0.07
713.00	0.88	321.52	712.97	5.45	-3.82	5.36	0.34
807.00	0.77	329.34	806.96	6.56	-4.59	6.45	0.17
907.00	0.95	322.08	906.94	7.79	-5.44	7.66	0.21
1003.00	0.91	319.44	1002.93	9.00	-6.42	8.84	0.06
1100.00	0.80	321.46	1099.92	10.11	-7.35	9.93	0.12
1194.00	1.00	306.16	1193.91	11.11	-8.42	10.91	0.33
1289.00	1.28	261.52	1288.89	11.44	-10.14	11.20	0.95
1384.00	1.35	257.51	1383.87	11.04	-12.28	10.75	0.12
1481.00	1.11	236.50	1480.85	10.28	-14.18	9.94	0.52
1576.00	0.84	237.38	1575.83	9.39	-15.53	9.02	0.28
1671.00	0.64	221.15	1670.82	8.62	-16.47	8.23	0.30
1765.00	0.47	216.13	1764.82	7.91	-17.04	7.51	0.19
1825.00	0.36	250.80	1824.82	7.65	-17.36	7.24	0.45
1945.00	0.66	302.39	1944.81	7.90	-18.30	7.46	0.43
2041.00	0.51	309.01	2040.81	8.46	-19.10	8.01	0.17
2135.00	0.64	315.75	2134.80	9.10	-19.79	8.63	0.16
2231.00	0.38	304.09	2230.80	9.67	-20.43	9.18	0.29
2325.00	0.38	302.52	2324.80	10.01	-20.95	9.51	0.01
2419.00	0.63	300.75	2418.79	10.44	-21.66	9.92	0.27
2513.00	0.35	292.50	2512.79	10.81	-22.37	10.28	0.31
2608.00	0.56	89.04	2607.79	10.93	-22.17	10.40	0.94
2702.00	0.82	109.59	2701.78	10.71	-21.08	10.21	0.38
2798.00	0.77	84.41	2797.77	10.55	-19.79	10.07	0.36
2894.00	1.12	80.65	2893.76	10.76	-18.22	10.33	0.37
2989.00	1.29	81.80	2988.74	11.07	-16.25	10.68	0.18
3083.00	1.22	75.50	3082.72	11.47	-14.23	11.13	0.16
3176.00	1.33	66.49	3175.69	12.15	-12.28	11.85	0.25
3271.00	1.26	71.38	3270.67	12.92	-10.28	12.67	0.14

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
3364.00	1.25	62.03	3363.65	13.72	-8.42	13.52	0.22
3459.00	1.09	56.68	3458.63	14.70	-6.75	14.54	0.20
3554.00	1.06	53.99	3553.61	15.72	-5.28	15.59	0.06
3648.00	1.13	92.77	3647.59	16.18	-3.65	16.09	0.78
3743.00	1.13	107.04	3742.58	15.86	-1.82	15.82	0.30
3839.00	1.04	94.95	3838.56	15.51	-0.05	15.50	0.26
3932.00	1.04	89.51	3931.54	15.44	1.64	15.48	0.11
4013.00	0.97	94.72	4012.53	15.39	3.06	15.46	0.14
4148.00	0.69	88.07	4147.52	15.33	5.01	15.44	0.22
4244.00	0.64	75.82	4243.51	15.48	6.10	15.62	0.16
4340.00	0.71	70.03	4339.50	15.81	7.18	15.98	0.10
4436.00	0.29	188.77	4435.50	15.78	7.71	15.95	0.92
4532.00	1.46	251.54	4531.49	15.15	6.51	15.30	1.41
4628.00	1.50	240.08	4627.46	14.13	4.26	14.23	0.31
4725.00	1.39	252.47	4724.43	13.15	2.04	13.19	0.34
4821.00	1.61	255.68	4820.39	12.46	-0.38	12.45	0.25
4917.00	1.25	252.19	4916.36	11.81	-2.68	11.74	0.39
5013.00	1.25	249.00	5012.34	11.11	-4.66	11.00	0.07
5109.00	1.60	258.30	5108.31	10.47	-6.95	10.30	0.44
5205.00	1.22	251.87	5204.28	9.88	-9.23	9.65	0.43
5302.00	1.55	254.49	5301.25	9.20	-11.48	8.93	0.35
5397.00	0.66	224.82	5396.24	8.47	-13.10	8.16	1.08
5494.00	0.76	205.32	5493.23	7.49	-13.77	7.17	0.27
5590.00	1.09	205.34	5589.22	6.09	-14.43	5.75	0.34
5686.00	1.05	203.94	5685.20	4.47	-15.18	4.10	0.05
5782.00	0.84	225.51	5781.19	3.17	-16.04	2.79	0.43
5878.00	0.94	196.61	5877.18	1.92	-16.77	1.52	0.47
5974.00	1.38	203.96	5973.16	0.11	-17.46	-0.31	0.48
6070.00	0.53	187.71	6069.14	-1.39	-17.99	-1.81	0.92
6166.00	0.07	51.09	6165.14	-1.79	-18.00	-2.22	0.61
6261.00	0.28	5.09	6260.14	-1.52	-17.94	-1.95	0.25
6356.00	0.58	330.28	6355.14	-0.87	-18.16	-1.30	0.41
6449.00	0.55	210.98	6448.13	-0.85	-18.62	-1.29	1.05
6544.00	0.22	239.51	6543.13	-1.33	-19.01	-1.78	0.39
6638.00	0.29	194.16	6637.13	-1.65	-19.23	-2.11	0.22
6735.00	0.60	297.16	6734.13	-1.66	-19.74	-2.13	0.75
6830.00	0.55	309.04	6829.12	-1.15	-20.53	-1.63	0.14
6924.00	0.78	295.10	6923.12	-0.59	-21.46	-1.10	0.30
7020.00	0.85	272.70	7019.11	-0.28	-22.77	-0.82	0.34
7117.00	0.80	279.77	7116.10	-0.13	-24.15	-0.70	0.12
7213.00	0.16	192.78	7212.10	-0.15	-24.84	-0.74	0.84
7309.00	0.28	237.27	7308.09	-0.40	-25.07	-1.00	0.21
7405.00	0.70	219.00	7404.09	-0.99	-25.64	-1.60	0.46
7502.00	0.07	152.50	7501.09	-1.50	-25.98	-2.12	0.70
7598.00	0.45	252.78	7597.09	-1.66	-26.31	-2.29	0.49
7694.00	0.20	350.90	7693.09	-1.61	-26.70	-2.24	0.54
7790.00	0.14	279.40	7789.09	-1.43	-26.84	-2.06	0.21
7887.00	0.36	350.01	7886.09	-1.11	-27.01	-1.75	0.35
7983.00	0.00	0.00	7982.08	-0.81	-27.07	-1.45	0.38
8079.00	0.35	162.67	8078.08	-1.09	-26.98	-1.73	0.36

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
8174.00	0.45	176.35	8173.08	-1.74	-26.87	-2.38	0.14
8270.00	0.55	172.59	8269.08	-2.57	-26.78	-3.21	0.11
8366.00	0.63	258.10	8365.07	-3.14	-27.24	-3.78	0.84
8462.00	0.72	287.73	8461.07	-3.06	-28.33	-3.73	0.37
8558.00	0.60	302.59	8557.06	-2.61	-29.33	-3.30	0.22
8654.00	0.60	314.73	8653.06	-1.98	-30.11	-2.70	0.13
8750.00	0.56	340.44	8749.05	-1.19	-30.63	-1.91	0.27
8846.00	2.17	66.04	8845.03	-0.01	-29.12	-0.70	2.29
8942.00	1.53	96.36	8940.98	0.59	-26.19	-0.03	1.20
9036.00	0.75	155.13	9034.96	-0.11	-24.68	-0.69	1.39
9118.00	0.84	133.75	9116.95	-1.01	-24.02	-1.58	0.38
9213.00	0.88	128.52	9211.94	-1.95	-22.95	-2.49	0.09
9309.00	0.64	285.59	9307.94	-2.26	-22.89	-2.80	1.55
9411.00	1.88	321.60	9409.91	-0.80	-24.47	-1.38	1.39
9505.00	1.50	320.92	9503.87	1.37	-26.21	0.74	0.40
9599.00	1.65	304.61	9597.84	3.09	-28.10	2.42	0.50
9693.00	1.48	290.62	9691.80	4.29	-30.35	3.56	0.44
9788.00	1.44	292.61	9786.77	5.18	-32.60	4.40	0.07
9883.00	1.35	279.53	9881.74	5.82	-34.80	4.99	0.35
9930.00	3.14	320.86	9928.71	6.91	-36.16	6.05	4.91
9978.00	7.21	343.60	9976.51	10.82	-37.84	9.92	9.33
10025.00	10.13	355.80	10022.97	17.78	-38.98	16.85	7.31
10072.00	13.78	359.59	10068.94	27.50	-39.32	26.56	7.94
10119.00	17.99	358.59	10114.14	40.36	-39.54	39.41	8.98
10166.00	21.68	1.07	10158.34	56.30	-39.56	55.34	8.05
10197.00	23.45	5.91	10186.97	68.16	-38.81	67.22	8.27
10228.00	25.62	7.79	10215.17	80.94	-37.27	80.03	7.44
10260.00	28.81	7.53	10243.62	95.44	-35.32	94.58	9.98
10292.00	33.92	7.65	10270.94	111.95	-33.12	111.13	15.97
10323.00	39.33	7.52	10295.81	130.27	-30.68	129.51	17.45
10355.00	44.18	7.30	10319.67	151.40	-27.94	150.69	15.16
10387.00	49.04	6.99	10341.65	174.46	-25.05	173.82	15.20
10418.00	53.15	6.70	10361.12	198.41	-22.18	197.83	13.28
10450.00	57.66	6.08	10379.28	224.58	-19.25	224.06	14.18
10481.00	62.98	5.88	10394.62	251.36	-16.44	250.90	17.17
10512.00	67.46	5.73	10407.61	279.35	-13.60	278.95	14.46
10544.00	71.63	6.72	10418.79	309.15	-10.35	308.82	13.35
10575.00	75.07	6.99	10427.68	338.64	-6.80	338.38	11.13
10607.00	79.09	7.05	10434.83	369.59	-2.99	369.41	12.56
10639.00	82.00	6.26	10440.09	400.93	0.67	400.84	9.41
10686.00	85.59	5.72	10445.16	447.40	5.54	447.40	7.72
10733.00	87.55	3.43	10447.98	494.16	9.28	494.24	6.41
10780.00	88.53	1.25	10449.58	541.09	11.20	541.20	5.08
10828.00	89.16	0.71	10450.55	589.07	12.02	589.19	1.73
10922.00	92.66	359.76	10449.06	683.04	12.41	683.14	3.86
11016.00	93.43	0.20	10444.07	776.91	12.37	776.98	0.94
11110.00	92.38	1.32	10439.30	870.78	13.62	870.85	1.63
11204.00	91.12	4.10	10436.43	964.62	18.06	964.77	3.25
11299.00	89.51	1.04	10435.91	1059.50	22.32	1059.74	3.64
11394.00	89.65	0.75	10436.60	1154.49	23.80	1154.73	0.34

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
11488.00	90.98	0.25	10436.09	1248.48	24.62	1248.72	1.51
11583.00	90.42	1.04	10434.93	1343.47	25.69	1343.70	1.02
11676.00	91.61	1.02	10433.28	1436.44	27.37	1436.68	1.28
11771.00	91.75	1.81	10430.49	1531.37	29.71	1531.64	0.84
11865.00	90.00	3.16	10429.06	1625.26	33.79	1625.61	2.35
11960.00	91.12	3.52	10428.13	1720.09	39.32	1720.54	1.24
12054.00	90.07	3.06	10427.15	1813.93	44.71	1814.48	1.22
12148.00	90.56	3.18	10426.64	1907.79	49.83	1908.44	0.54
12242.00	89.51	2.45	10426.58	2001.68	54.45	2002.40	1.36
12336.00	89.58	1.26	10427.33	2095.62	57.49	2096.40	1.27
12430.00	90.77	0.84	10427.04	2189.60	59.21	2190.39	1.34
12524.00	92.03	0.86	10424.74	2283.56	60.61	2284.36	1.34
12618.00	90.49	0.93	10422.68	2377.53	62.07	2378.33	1.64
12711.00	90.84	1.21	10421.60	2470.50	63.81	2471.32	0.48
12806.00	92.45	1.30	10418.87	2565.44	65.89	2566.28	1.70
12900.00	91.47	0.82	10415.65	2659.37	67.63	2660.22	1.16
12994.00	90.00	0.62	10414.45	2753.35	68.81	2754.21	1.58
13088.00	91.26	0.37	10413.42	2847.34	69.62	2848.19	1.37
13205.00	90.56	359.89	10411.56	2964.32	69.89	2965.15	0.73
13300.00	89.65	0.14	10411.38	3059.32	69.91	3060.12	0.99
13394.00	87.76	0.89	10413.51	3153.29	70.76	3154.08	2.16
13488.00	88.18	0.42	10416.84	3247.22	71.83	3248.01	0.67
13583.00	88.60	359.89	10419.51	3342.18	72.09	3342.95	0.71
13677.00	89.23	359.39	10421.29	3436.16	71.50	3436.89	0.86
13771.00	90.35	358.46	10421.63	3530.14	69.73	3530.81	1.55
13866.00	90.42	0.09	10420.99	3625.13	68.53	3625.74	1.72
13960.00	91.26	2.90	10419.61	3719.08	70.98	3719.72	3.12
14054.00	91.96	2.99	10416.97	3812.92	75.81	3813.64	0.75
14149.00	90.28	3.09	10415.12	3907.76	80.85	3908.58	1.77
14242.00	91.05	2.65	10414.04	4000.64	85.50	4001.54	0.95
14336.00	91.61	2.14	10411.86	4094.53	89.43	4095.50	0.81
14430.00	90.07	1.99	10410.48	4188.46	92.82	4189.48	1.65
14524.00	90.70	1.50	10409.85	4282.41	95.68	4283.47	0.85
14618.00	91.33	1.15	10408.18	4376.37	97.85	4377.46	0.77
14711.00	90.56	1.92	10406.65	4469.32	100.34	4470.44	1.17
14806.00	90.77	2.01	10405.54	4564.26	103.60	4565.43	0.24
14901.00	91.54	1.84	10403.63	4659.19	106.79	4660.41	0.83
14995.00	92.52	1.41	10400.30	4753.09	109.45	4754.35	1.14
15061.00	92.87	0.92	10397.20	4819.00	110.80	4820.27	0.91
Projected to Total Depth:							
15126.00	92.87	0.92	10393.94	4883.91	111.84	4885.19	0.00

* Weatherford surveys from 170.00 ft MD to 15061.00 ft MD.*

* TD at 15126.00 ft MD.*

* The total correction is 6.53 deg relative to Grid North.*