

GyroTracer Directional:

Date: 11/14/2017
 Operator : David England
 API : 05-123-22385
 Well Number : THAYER 19-31
 Field : Noble Energy INC
 Tool Type And Number: 1213
 Total Well Depth: 7262
 Bottom Depth : 7000.00
 Latitude : 40.47
 Longitude : 104.82
 Grid Offset : 0.44

**Starting Point Coordinates (in local grid):**

Northing: 0.00 Easting: 0.00 Altitude: 4752.00

Description:

Azimuth measured in degrees and referenced to local grid

Inclination measured from Vertical

Length measured in feet

Temperature measured in Fahrenheit degrees

Start Time: 11/14/2017 10:07

End Time: 11/14/2017 11:32

Depth	Inclination	Azimuth	Closure Direction	True Depth	Coordinates		Dogleg Severity	Closure Distance	Temp
					+N/-S	+E/-W			
0.00	0.00	0.00	0.00	-4752.00	0.00	0.00	0.00	0.00	0.00
100.00	0.26	26.58	283.74	-4652.00	0.11	-0.45	0.26	0.46	70.77
200.00	0.37	94.70	1.44	-4552.00	0.31	0.01	0.36	0.31	70.36
300.00	0.31	107.53	30.89	-4452.00	0.49	0.29	0.08	0.57	70.08
400.00	0.42	115.69	54.33	-4352.00	0.49	0.68	0.16	0.84	69.83
500.00	0.21	90.90	65.58	-4252.00	0.40	0.88	0.20	0.97	69.71
600.00	0.18	81.24	73.75	-4152.00	0.36	1.23	0.04	1.28	69.63
700.00	0.23	154.80	86.04	-4052.01	0.11	1.58	0.43	1.59	69.62
800.00	0.46	137.15	99.52	-3952.01	-0.33	1.97	0.16	2.00	69.67
900.00	0.13	285.24	109.16	-3852.01	-0.73	2.10	0.53	2.22	69.80
1000.00	0.24	161.67	122.76	-3752.01	-1.35	2.10	0.35	2.49	70.11
1100.00	0.21	177.25	130.80	-3652.01	-1.85	2.15	0.13	2.84	72.65
1200.00	0.32	234.61	140.11	-3552.02	-2.43	2.03	0.28	3.17	73.10
1300.00	0.16	255.82	146.19	-3452.02	-2.83	1.90	0.19	3.41	73.60
1400.00	0.40	306.17	152.22	-3352.02	-2.86	1.51	0.36	3.23	74.09
1500.00	0.51	286.54	162.20	-3252.02	-2.67	0.86	0.18	2.81	74.62
1600.00	0.57	296.16	179.76	-3152.03	-2.20	0.01	0.14	2.20	75.26
1700.00	0.66	291.46	213.92	-3052.03	-1.52	-1.02	0.03	1.83	75.97
1800.00	0.78	306.98	247.13	-2952.04	-0.91	-2.16	0.24	2.35	76.96
1900.00	1.14	283.37	263.69	-2852.06	-0.41	-3.73	1.21	3.76	83.47
2000.00	1.24	287.87	272.01	-2752.07	0.19	-5.38	0.19	5.38	84.26
2100.00	1.00	281.28	274.57	-2652.09	0.57	-7.07	0.09	7.09	85.15
2200.00	1.24	312.89	279.47	-2552.11	1.50	-8.96	0.69	9.09	86.04
2300.00	0.92	309.12	284.21	-2452.13	2.65	-10.45	0.32	10.78	87.20
2400.00	1.00	279.46	286.57	-2352.15	3.59	-12.08	0.47	12.60	88.20
2500.00	1.17	302.08	287.87	-2252.17	4.40	-13.66	0.46	14.35	89.47
2600.00	1.21	298.56	289.11	-2152.19	5.34	-15.41	0.04	16.30	90.86
2700.00	0.94	261.72	289.26	-2052.20	5.94	-17.01	0.44	18.02	100.16
2800.00	0.97	299.65	289.88	-1952.22	6.76	-18.70	0.59	19.89	101.41
2900.00	1.13	319.18	291.70	-1852.24	7.99	-20.08	0.37	21.61	102.57
3000.00	1.28	328.29	293.97	-1752.26	9.54	-21.45	0.24	23.47	103.75
3100.00	1.41	342.38	297.02	-1652.28	11.36	-22.28	0.36	25.01	104.84
3200.00	1.01	357.55	300.16	-1552.30	13.07	-22.50	0.36	26.02	106.08
3300.00	0.75	23.16	303.29	-1452.31	14.63	-22.28	0.50	26.65	107.29
3400.00	0.50	54.17	305.80	-1352.32	15.61	-21.63	0.42	26.68	108.62
3500.00	0.52	98.80	307.65	-1252.32	15.90	-20.61	0.40	26.03	110.26
3600.00	0.96	134.87	308.35	-1152.33	15.47	-19.55	0.61	24.94	120.47
3700.00	0.76	131.10	308.12	-1052.35	14.38	-18.32	0.15	23.29	121.83

3800.00	0.56	145.66	306.88	-952.35	13.30	-17.73	0.30	22.16	123.28
3900.00	0.45	152.80	305.38	-852.36	12.34	-17.38	0.13	21.31	124.70
4000.00	0.70	161.83	303.25	-752.37	11.29	-17.23	0.22	20.60	126.07
4100.00	0.81	186.83	301.09	-652.37	10.43	-17.30	0.43	20.20	127.56
4200.00	0.35	188.26	299.56	-552.37	9.87	-17.41	0.21	20.01	129.05
4300.00	0.36	204.18	297.78	-452.37	9.37	-17.78	0.10	20.10	130.56
4400.00	0.43	280.80	296.43	-352.38	9.17	-18.46	0.41	20.61	141.14
4500.00	0.45	270.35	295.24	-252.38	8.98	-19.05	0.10	21.06	142.55
4600.00	0.58	249.00	294.55	-152.38	8.91	-19.52	0.24	21.46	143.90
4700.00	0.55	266.08	293.40	-52.38	8.77	-20.25	0.17	22.07	145.29
4800.00	0.76	265.79	291.99	47.61	8.63	-21.36	0.18	23.04	146.76
4900.00	0.71	273.47	291.11	147.60	8.68	-22.49	0.18	24.11	148.34
5000.00	0.92	282.00	290.36	247.59	8.87	-23.90	0.22	25.49	149.93
5100.00	0.81	292.99	290.06	347.58	9.26	-25.35	0.19	26.99	151.54
5200.00	1.01	269.36	289.24	447.57	9.41	-26.95	0.97	28.55	161.50
5300.00	1.02	271.79	288.33	547.55	9.47	-28.59	0.13	30.12	162.97
5400.00	1.27	291.57	288.16	647.54	9.95	-30.33	0.49	31.92	164.51
5500.00	1.31	309.31	289.21	747.51	11.21	-32.16	0.42	34.06	165.77
5600.00	1.39	310.92	290.67	847.48	12.79	-33.91	0.10	36.24	167.26
5700.00	1.36	331.52	292.54	947.46	14.67	-35.35	0.52	38.27	168.81
5800.00	1.34	333.86	294.67	1047.43	16.70	-36.35	0.11	40.00	170.58
5900.00	1.19	327.73	296.28	1147.41	18.49	-37.45	1.13	41.76	181.35
6000.00	1.37	337.89	298.13	1247.38	20.47	-38.30	0.33	43.42	182.61
6100.00	1.55	352.05	300.57	1347.35	22.89	-38.75	0.44	45.01	184.04
6200.00	1.63	345.92	302.90	1447.31	25.52	-39.45	0.13	46.98	185.72
6300.00	1.62	345.84	305.48	1547.27	28.43	-39.89	0.03	48.98	187.53
6400.00	0.70	313.96	306.13	1647.25	29.98	-41.06	1.03	50.84	189.41
6500.00	0.51	284.93	306.09	1747.24	30.44	-41.77	0.33	51.69	191.38
6600.00	0.48	250.99	305.43	1847.24	30.42	-42.76	0.27	52.47	202.98
6700.00	0.74	262.01	304.47	1947.23	30.12	-43.87	0.22	53.21	204.40
6800.00	1.00	267.58	303.53	2047.22	30.08	-45.39	0.27	54.45	205.93
6900.00	1.22	319.59	302.93	2147.20	30.47	-47.05	0.97	56.06	207.55
7000.00	1.99	321.73	303.55	2247.16	32.63	-49.22	0.75	59.05	209.90