

**GyroTracer Directional:**

Date: 8/16/2018  
 Operator : Adrian Bruner  
 API: 05-123-20811  
 Well Name : **L F Ranch 33-17**  
 Field : Noble Energy Inc  
 Tool Type And Number: 1717  
 Bottom Depth : 7050.00  
 Total Well Depth: 7332.00  
 Latitude : 40.31021 N  
 Longitude : 104.45939 W  
 Grid Offset : 0.00

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

Northing: 0.00      Easting: 0.00      Altitude: 4730.00

**Description:**

*Azimuth measured in degrees and referenced to True North*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 8/16/2018 14:48

End Time: 8/16/2018 16:12

Depth	Inclination	Azimuth	Closure Direction	True Depth	Coordinates		Dogleg Severity	Closure Distance
					+N/-S	+E/-W		
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.410	306.218	270.807	100.000	0.010	-0.710	0.410	0.710
200.000	0.254	253.166	278.673	199.998	0.181	-1.184	0.335	1.197
300.000	0.278	324.682	287.880	299.997	0.463	-1.435	0.299	1.508
400.000	0.749	33.642	310.638	399.993	1.118	-1.303	0.691	1.717
500.000	1.703	31.527	1.036	499.965	3.020	0.055	0.781	3.020
600.000	1.764	35.124	14.632	599.926	5.436	1.419	0.277	5.619
700.000	1.760	24.109	17.798	699.884	8.067	2.590	0.266	8.472
800.000	1.699	23.244	18.771	799.841	10.779	3.663	0.109	11.385
900.000	1.767	15.177	19.069	899.796	13.576	4.693	0.255	14.364
1000.000	1.636	19.443	18.281	999.754	16.360	5.404	0.131	17.229
1100.000	1.695	5.847	17.289	1099.710	19.260	5.995	0.397	20.172
1200.000	1.500	18.286	17.389	1199.670	21.912	6.862	0.309	22.961
1300.000	1.479	357.942	17.370	1299.630	24.584	7.690	0.544	25.758
1400.000	1.596	11.922	17.187	1399.589	27.339	8.456	0.422	28.617
1500.000	1.242	18.454	16.884	1499.554	29.883	9.070	0.390	31.229
1600.000	1.173	14.452	16.779	1599.529	32.003	9.650	0.420	33.426
1700.000	1.000	1.551	16.261	1699.511	33.891	9.886	0.294	35.303
1800.000	1.233	337.315	15.157	1799.493	35.697	9.670	0.492	36.983
1900.000	1.296	334.084	13.318	1899.470	37.690	8.922	0.190	38.731
2000.000	1.345	328.083	11.363	1999.442	39.865	8.011	0.146	40.662
2100.000	1.171	332.470	9.385	2099.412	42.029	6.947	0.171	42.600
2200.000	1.085	323.870	7.809	2199.393	43.727	5.997	0.188	44.137
2300.000	0.406	349.698	6.771	2299.385	44.710	5.309	0.596	45.024

2400.000	0.519	345.247	6.621	2399.380	45.628	5.296	0.169	45.935
2500.000	0.568	1.844	6.382	2499.376	46.507	5.202	0.190	46.797
2600.000	0.721	0.752	6.313	2599.371	47.484	5.253	0.069	47.773
2700.000	0.723	5.272	6.485	2699.366	48.437	5.506	0.089	48.749
2800.000	0.596	23.168	6.608	2799.360	49.435	5.727	0.150	49.766
2900.000	0.944	26.958	6.883	2899.352	50.621	6.110	0.289	50.988
3000.000	0.864	24.774	7.508	2999.340	51.943	6.846	0.127	52.392
3100.000	0.260	90.123	8.195	3099.333	52.811	7.605	0.757	53.356
3200.000	0.221	148.937	8.539	3199.331	52.533	7.887	0.249	53.122
3300.000	0.332	151.138	8.719	3299.330	52.169	8.000	0.088	52.779
3400.000	0.663	171.216	9.152	3399.326	51.286	8.263	0.266	51.948
3500.000	0.769	173.701	9.576	3499.319	50.122	8.456	0.114	50.830
3600.000	0.666	144.293	10.174	3599.310	48.894	8.774	0.352	49.676
3700.000	0.861	156.739	10.892	3699.302	47.687	9.177	0.228	48.562
3800.000	0.750	178.275	11.558	3799.294	46.423	9.494	0.288	47.384
3900.000	0.706	207.709	11.401	3899.284	45.149	9.104	0.415	46.058
4000.000	0.766	221.510	10.691	3999.274	44.005	8.307	0.177	44.782
4100.000	0.798	249.894	9.390	4099.265	43.280	7.157	0.416	43.868
4200.000	0.836	272.734	7.625	4199.254	43.035	5.761	0.352	43.418
4300.000	0.964	285.296	5.445	4299.240	43.494	4.146	0.240	43.691
4400.000	0.896	301.069	3.323	4399.224	44.279	2.571	0.240	44.353
4500.000	1.090	7.085	2.383	4499.209	45.820	1.907	1.106	45.859
4600.000	2.078	36.146	3.639	4599.167	48.366	3.076	1.117	48.464
4700.000	2.655	39.440	6.370	4699.074	51.701	5.772	0.594	52.022
4800.000	2.835	37.073	8.722	4798.957	55.635	8.536	0.142	56.286
4900.000	2.884	36.578	10.942	4898.832	59.625	11.527	0.110	60.729
5000.000	2.469	47.455	13.037	4998.717	63.231	14.641	0.631	64.904
5100.000	2.060	37.495	14.723	5098.635	66.178	17.390	0.612	68.424
5200.000	1.939	36.553	15.714	5198.571	69.083	19.437	0.272	71.765
5300.000	1.540	39.936	16.613	5298.531	71.236	21.254	0.529	74.339
5400.000	1.505	48.453	17.533	5398.495	73.154	23.112	0.271	76.718
5500.000	1.688	42.122	18.460	5498.457	75.096	25.069	0.206	79.170
5600.000	1.570	53.346	19.312	5598.418	77.065	27.006	0.310	81.660
5700.000	1.675	37.022	20.286	5698.373	79.054	29.221	0.476	84.282
5800.000	1.499	40.640	21.084	5798.334	80.978	31.220	0.206	86.788
5900.000	1.398	58.000	21.990	5898.298	82.552	33.336	0.513	89.029
6000.000	1.363	54.060	22.906	5998.270	83.756	35.391	0.106	90.927
6100.000	1.172	64.405	23.777	6098.245	84.780	37.351	0.225	92.643
6200.000	0.979	54.580	24.503	6198.229	85.510	38.975	0.329	93.974
6300.000	0.981	63.540	25.045	6298.213	86.458	40.398	0.183	95.431
6400.000	0.961	65.309	25.800	6398.197	87.085	42.099	0.053	96.727
6500.000	0.738	64.064	26.360	6498.185	87.764	43.490	0.247	97.948
6600.000	0.765	62.569	26.824	6598.175	88.415	44.709	0.051	99.076
6700.000	1.007	66.439	27.321	6698.163	89.105	46.032	0.116	100.293
6800.000	1.031	74.481	28.024	6798.148	89.600	47.689	0.155	101.501
6900.000	0.910	68.145	28.694	6898.134	90.049	49.288	0.110	102.655
7000.000	0.959	40.725	29.004	6998.119	91.141	50.529	0.465	104.211
7050.010	0.970	33.460	29.003	7048.122	91.876	50.934	0.139	105.050