

GyroTracer Directional:

Date: 2/22/2019
 Operator : Adrian Bruner
 API : 05-123-12284
 Well Name : **Watkins 18-1**
 Field : Noble Energy Inc
 Tool Number: 1717
 Bottom Depth : 6650.00
 Total Well Depth: 6830.00
 Latitude : 40.31033 N
 Longitude : 104.48746 W
 Grid Offset : 0.66
 Datum: NAD 83

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

Northing: 0.00 Easting: 0.00 GLE: 4596.00

Description:

Azimuth measured in degrees and referenced to local grid

Inclination measured from Vertical

Length measured in US survey feet

Lat/Long/Elevation obtained by handheld GPS at wellhead. Device error ± 9 Feet

RKB = Ground Level Elevation

Start Time: 2/22/2019 11:25

End Time: 2/22/2019 12:34

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	0.660	141.585	124.789	99.990	-0.660	0.950	0.660	1.157
200.000	0.292	161.339	132.212	199.986	-1.288	1.420	0.414	1.917
300.000	0.085	163.912	138.429	299.985	-1.668	1.479	0.223	2.229
400.000	0.343	256.605	144.628	399.984	-1.816	1.289	0.383	2.227
500.000	0.212	254.375	151.916	499.983	-1.995	1.065	0.039	2.262
600.000	0.144	248.122	160.046	599.982	-2.232	0.810	0.083	2.375
700.000	0.112	293.874	167.178	699.981	-2.494	0.568	0.141	2.558
800.000	0.473	260.534	175.916	799.980	-2.598	0.186	0.278	2.605
900.000	0.540	237.636	185.871	899.979	-2.708	-0.278	0.374	2.722
1000.000	0.293	278.723	195.377	999.976	-2.843	-0.782	0.338	2.948
1100.000	0.171	293.570	204.845	1099.974	-2.983	-1.381	0.210	3.287
1200.000	0.452	241.882	211.686	1199.972	-3.094	-1.910	0.497	3.636
1300.000	0.437	246.022	216.570	1299.970	-3.222	-2.390	0.224	4.011
1400.000	0.286	242.575	220.771	1399.968	-3.315	-2.859	0.109	4.377
1500.000	0.529	303.153	222.388	1499.967	-3.469	-3.166	0.423	4.697
1600.000	0.223	208.922	222.548	1599.966	-3.746	-3.439	0.354	5.085
1700.000	0.401	164.829	220.630	1699.964	-4.220	-3.621	0.378	5.560
1800.000	0.527	171.145	215.266	1799.960	-5.074	-3.588	0.044	6.215
1900.000	0.533	170.686	211.190	1899.955	-5.983	-3.622	0.041	6.994
2000.000	0.395	171.254	207.527	1999.950	-6.947	-3.620	0.222	7.834
2100.000	1.287	188.423	203.984	2099.939	-8.364	-3.721	0.610	9.154

2200.000	1.527	191.852	201.592	2199.908	-10.760	-4.258	0.426	11.572
2300.000	1.649	198.080	201.451	2299.867	-13.413	-5.270	0.227	14.412
2400.000	1.355	209.696	202.252	2399.831	-15.821	-6.473	0.428	17.094
2500.000	1.394	213.171	203.492	2499.800	-17.896	-7.778	0.236	19.513
2600.000	1.396	218.569	205.153	2599.772	-19.733	-9.266	0.106	21.800
2700.000	1.364	220.832	207.005	2699.747	-21.291	-10.850	0.088	23.896
2800.000	1.108	220.879	208.220	2799.728	-22.694	-12.178	0.083	25.755
2900.000	0.880	216.412	208.501	2899.718	-23.832	-12.940	0.318	27.119
3000.000	0.542	205.302	208.474	2999.711	-24.777	-13.438	0.230	28.186
3100.000	0.745	152.366	207.195	3099.705	-25.790	-13.252	0.640	28.995
3200.000	0.905	138.656	204.661	3199.694	-26.901	-12.351	0.262	29.601
3300.000	1.051	135.206	201.247	3299.674	-28.389	-11.038	0.358	30.459
3400.000	1.053	151.285	198.252	3399.653	-30.069	-9.916	0.300	31.661
3500.000	0.877	196.834	197.668	3499.643	-31.494	-10.032	0.649	33.053
3600.000	0.655	180.164	197.262	3599.633	-32.854	-10.209	0.318	34.404
3700.000	0.504	178.085	196.996	3699.626	-33.967	-10.382	0.044	35.518
3800.000	0.246	170.916	196.835	3799.623	-34.699	-10.499	0.099	36.252
3900.000	0.149	226.315	197.002	3899.621	-35.031	-10.711	0.308	36.632
4000.000	0.267	235.525	197.215	3999.620	-35.299	-10.937	0.111	36.954
4100.000	0.445	277.793	197.843	4099.619	-35.223	-11.338	0.337	37.003
4200.000	0.530	310.432	198.912	4199.616	-34.778	-11.915	0.300	36.762
4300.000	0.762	300.459	200.428	4299.610	-34.086	-12.696	0.132	36.373
4400.000	1.099	323.523	202.227	4399.600	-33.088	-13.522	0.568	35.745
4500.000	1.722	332.298	205.233	4499.570	-30.896	-14.560	0.706	34.155
4600.000	2.117	341.009	209.506	4599.515	-27.810	-15.738	0.465	31.954
4700.000	2.043	338.336	214.802	4699.447	-24.368	-16.937	0.112	29.676
4800.000	1.524	332.867	219.917	4799.401	-21.548	-18.028	0.467	28.095
4900.000	1.065	337.934	224.386	4899.374	-19.519	-19.105	0.240	27.313
5000.000	0.899	324.019	228.046	4999.358	-18.039	-20.066	0.397	26.982
5100.000	0.479	4.406	230.084	5099.351	-16.963	-20.275	0.552	26.435
5200.000	0.471	32.387	230.873	5199.348	-16.300	-20.038	0.242	25.831
5300.000	0.549	56.432	231.270	5299.344	-15.684	-19.557	0.305	25.069
5400.000	0.783	52.473	231.622	5399.338	-14.880	-18.789	0.135	23.968
5500.000	1.087	51.675	231.645	5499.328	-14.026	-17.725	0.328	22.603
5600.000	1.279	59.329	230.248	5599.304	-13.142	-15.800	0.249	20.551
5700.000	1.477	66.577	227.839	5699.274	-12.230	-13.507	0.236	18.221
5800.000	1.344	62.258	224.987	5799.241	-11.193	-11.188	0.094	15.826
5900.000	1.356	66.781	221.076	5899.211	-10.265	-8.947	0.070	13.617
6000.000	1.568	86.055	214.541	5999.175	-9.365	-6.446	0.529	11.369
6100.000	1.778	88.548	201.757	6099.131	-8.855	-3.534	0.354	9.534
6200.000	2.147	101.193	180.238	6199.069	-8.784	-0.037	0.493	8.784
6300.000	2.484	107.562	155.751	6298.983	-8.974	4.042	0.410	9.842
6400.000	3.277	96.336	137.617	6398.854	-9.880	9.016	0.933	13.375
6500.000	3.820	87.710	124.017	6498.673	-10.085	14.942	0.909	18.027
6600.000	4.643	82.883	112.853	6598.400	-9.388	22.274	0.912	24.171
6650.000	5.200	83.160	108.323	6648.206	-8.821	26.636	1.056	28.059