

**GyroTracer Directional:**

Date: 1/17/2019  
 Operator : Adrian Bruner  
 API : 05-123-35418  
 Well Name : **Front Range D 9-32D**  
 Field : Noble Energy Inc  
 Tool Number: 1717  
 Bottom Depth : 7300.00  
 Total Well Depth: 7800.00  
 Latitude : 40.23615 N  
 Longitude : 104.5649 W  
 Grid Offset : 0.60  
 Datum: NAD 83

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

Northing: 0.00 Easting: 0.00 GLE: 4719.00

**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: 1/17/2019 12:37

End Time: 1/17/2019 14:33

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	0.340	73.112	63.435	100.000	0.270	0.540	0.340	0.604
200.000	0.432	323.023	43.570	199.999	0.626	0.596	0.638	0.864
300.000	2.131	294.851	317.905	299.970	1.556	-1.406	1.791	2.097
400.000	3.940	285.076	295.923	399.823	3.165	-6.512	1.867	7.241
500.000	4.894	286.629	290.231	499.508	5.217	-14.156	0.967	15.087
600.000	5.693	300.039	291.683	599.071	9.004	-22.646	1.473	24.371
700.000	6.690	318.864	297.428	698.462	16.100	-31.022	2.242	34.951
800.000	7.270	326.378	303.878	797.721	25.760	-38.367	1.068	46.212
900.000	7.888	336.881	310.224	896.811	37.694	-44.566	1.520	58.369
1000.000	9.246	348.090	316.642	995.722	51.729	-48.846	2.140	71.147
1100.000	10.630	357.101	323.497	1094.192	68.988	-51.054	2.079	85.825
1200.000	12.235	2.050	329.961	1192.258	88.533	-51.195	1.889	102.270
1300.000	14.390	5.250	335.938	1289.613	111.294	-49.696	2.245	121.885
1400.000	16.694	6.429	341.286	1385.987	137.782	-46.675	2.335	145.473
1500.000	16.996	3.702	345.282	1481.556	167.081	-43.888	0.841	172.749
1600.000	16.170	357.533	347.385	1577.482	195.315	-43.711	1.926	200.146
1700.000	16.890	355.156	348.414	1673.387	223.556	-45.833	0.982	228.206
1800.000	15.830	354.245	349.135	1769.175	252.147	-48.395	1.110	256.749
1900.000	15.848	354.120	349.604	1865.418	279.153	-51.216	0.031	283.813

2000.000	16.270	353.765	349.974	1961.483	306.764	-54.236	0.438	311.521
2100.000	15.802	354.057	350.266	2057.604	334.172	-57.325	0.478	339.053
2200.000	15.720	354.391	350.568	2153.861	361.145	-59.993	0.092	366.095
2300.000	15.540	354.742	350.832	2250.167	387.943	-62.613	0.212	392.963
2400.000	16.564	357.776	351.206	2346.259	415.559	-64.287	1.320	420.502
2500.000	17.404	357.332	351.639	2441.874	444.822	-65.377	0.847	449.601
2600.000	18.167	356.976	351.981	2537.124	475.234	-66.947	0.772	479.927
2700.000	20.010	357.849	352.358	2631.414	508.504	-68.230	1.879	513.062
2800.000	20.307	355.743	352.651	2725.309	542.858	-70.010	0.787	547.353
2900.000	20.658	355.741	352.825	2818.997	577.718	-72.726	0.359	582.278
3000.000	20.530	356.810	353.030	2912.624	612.775	-74.916	0.384	617.337
3100.000	18.940	357.449	353.226	3006.881	646.113	-76.748	1.611	650.655
3200.000	18.513	357.290	353.437	3101.438	678.624	-78.080	0.425	683.101
3300.000	17.760	356.832	353.588	3196.613	709.268	-79.707	0.761	713.733
3400.000	18.160	354.009	353.674	3291.759	739.948	-82.034	0.960	744.481
3500.000	19.391	355.577	353.716	3386.429	772.012	-85.010	1.337	776.678
3600.000	19.237	357.133	353.842	3480.823	804.971	-86.855	0.546	809.643
3700.000	18.366	358.184	353.950	3575.555	836.944	-88.698	0.932	841.631
3800.000	19.362	0.124	354.143	3670.257	869.053	-89.148	1.170	873.613
3900.000	21.395	358.241	354.339	3763.775	904.447	-89.650	2.185	908.879
4000.000	21.533	354.960	354.428	3856.722	941.262	-91.824	1.209	945.730
4100.000	20.046	355.720	354.449	3950.295	976.389	-94.898	1.532	980.990
4200.000	19.900	356.399	354.517	4044.340	1010.316	-96.981	0.259	1014.960
4300.000	19.053	354.851	354.567	4138.293	1044.476	-99.346	0.996	1049.190
4400.000	18.180	356.241	354.585	4233.182	1075.920	-101.985	0.983	1080.743
4500.000	18.380	356.517	354.634	4328.164	1107.133	-103.991	0.213	1112.006
4600.000	19.278	353.353	354.636	4422.784	1139.341	-106.969	1.368	1144.351
4700.000	17.115	352.813	354.593	4517.750	1170.413	-110.783	2.183	1175.644
4800.000	14.983	355.579	354.600	4613.858	1197.917	-113.233	2.261	1203.257
4900.000	13.231	358.707	354.620	4710.932	1221.844	-115.065	1.895	1227.250
5000.000	11.590	0.689	354.722	4808.613	1243.233	-114.846	1.672	1248.526
5100.000	10.741	2.175	354.828	4906.739	1262.482	-114.278	0.884	1267.644
5200.000	10.160	2.248	354.933	5005.111	1280.436	-113.543	0.593	1285.460
5300.000	7.913	2.226	355.018	5103.951	1295.574	-112.949	2.259	1300.488
5400.000	5.539	2.403	355.083	5203.241	1307.418	-112.465	2.332	1312.246
5500.000	4.090	357.975	355.116	5302.870	1315.976	-112.444	1.493	1320.771
5600.000	2.937	358.983	355.140	5402.676	1322.108	-112.413	1.171	1326.878
5700.000	1.287	340.508	355.133	5502.600	1325.849	-112.888	1.723	1330.646
5800.000	0.353	347.075	355.119	5602.593	1326.901	-113.302	1.002	1331.730
5900.000	0.158	35.928	355.120	5702.591	1327.533	-113.347	0.350	1332.363
6000.000	0.177	13.674	355.134	5802.589	1327.965	-113.047	0.095	1332.768
6100.000	0.415	34.147	355.149	5902.588	1328.301	-112.742	0.244	1333.077
6200.000	0.353	43.328	355.163	6002.586	1328.701	-112.444	0.073	1333.450
6300.000	0.389	75.995	355.180	6102.585	1329.025	-112.061	0.227	1333.741
6400.000	0.459	68.185	355.202	6202.583	1329.312	-111.580	0.104	1333.987
6500.000	0.336	42.307	355.226	6302.581	1329.686	-111.038	0.199	1334.314
6600.000	0.523	55.512	355.257	6402.577	1329.961	-110.343	0.109	1334.530
6700.000	0.410	36.767	355.290	6502.574	1330.352	-109.607	0.216	1334.859

6800.000	0.536	49.135	355.323	6602.569	1330.949	-108.878	0.161	1335.395
6900.000	0.844	44.932	355.360	6702.561	1331.875	-108.097	0.264	1336.255
7000.000	0.613	19.152	355.388	6802.553	1332.976	-107.524	0.536	1337.306
7100.000	0.691	10.738	355.407	6902.548	1333.896	-107.148	0.181	1338.192
7200.000	0.608	7.605	355.423	7002.542	1334.858	-106.872	0.103	1339.130
7300.000	0.690	40.380	355.441	7102.538	1335.642	-106.497	0.379	1339.881