

**GyroTracer Directional:**

Date: 1/3/2019  
 Operator : Adrian Bruner  
 API : 05-123-15510  
 Well Name : **HSR Melchior 13-17**  
 Field : Noble Energy Inc  
 Tool Number: 1717  
 Bottom Depth : 6900.00  
 Total Well Depth: 7301.00  
 Latitude : 40.48085 N  
 Longitude : 104.6569 W  
 Grid Offset : 0.52  
 Datum: NAD 83

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

Northing: 0.00      Easting: 0.00      GLE: 4724.00

**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  $\pm 9$  Feet*

**RKB = Ground Level Elevation**

Start Time: 1/3/2019 8:18

End Time: 1/3/2019 9:30

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	0.200	267.180	242.700	100.000	-0.160	-0.310	0.200	0.349
200.000	0.141	299.693	252.669	199.999	-0.199	-0.637	0.145	0.667
300.000	0.323	329.561	272.934	299.998	0.047	-0.915	0.181	0.916
400.000	0.366	354.284	303.110	399.995	0.689	-1.057	0.120	1.262
500.000	0.421	351.610	319.669	499.992	1.431	-1.215	0.131	1.877
600.000	0.512	354.550	330.565	599.988	2.328	-1.314	0.125	2.673
700.000	0.629	346.532	336.681	699.982	3.415	-1.472	0.109	3.718
800.000	0.826	340.358	338.337	799.973	4.687	-1.862	0.254	5.043
900.000	0.892	328.050	337.332	899.963	5.937	-2.480	0.243	6.434
1000.000	0.925	321.101	335.757	999.952	7.192	-3.239	0.243	7.887
1100.000	0.887	315.283	333.855	1099.941	8.355	-4.101	0.089	9.307
1200.000	0.863	325.113	332.584	1199.929	9.583	-4.970	0.160	10.795
1300.000	0.792	331.756	331.436	1299.917	10.857	-5.911	0.081	12.362
1400.000	0.772	309.998	329.718	1399.901	12.138	-7.088	0.499	14.056
1500.000	1.317	317.681	327.910	1499.881	13.550	-8.497	0.333	15.994
1600.000	1.600	311.906	325.525	1599.853	15.022	-10.315	0.276	18.223
1700.000	1.514	307.147	323.484	1699.821	16.622	-12.307	0.133	20.682
1800.000	1.484	312.454	322.043	1799.786	18.313	-14.285	0.108	23.225
1900.000	1.540	310.125	320.406	1899.750	19.894	-16.455	0.041	25.817

2000.000	1.326	292.318	318.418	1999.717	21.073	-18.698	0.405	28.173
2100.000	1.397	299.736	316.885	2099.691	22.130	-20.720	0.147	30.316
2200.000	1.408	289.181	315.308	2199.666	23.017	-22.771	0.217	32.378
2300.000	1.420	286.880	313.576	2299.640	23.706	-24.914	0.086	34.390
2400.000	1.366	298.093	312.329	2399.612	24.676	-27.091	0.269	36.645
2500.000	1.465	298.042	311.655	2499.578	26.034	-29.267	0.060	39.170
2600.000	1.658	300.965	310.925	2599.542	27.395	-31.598	0.224	41.820
2700.000	1.822	300.924	310.225	2699.498	28.873	-34.136	0.408	44.709
2800.000	1.886	297.524	309.439	2799.443	30.452	-37.022	0.143	47.937
2900.000	2.083	316.539	308.990	2899.383	32.320	-39.925	0.700	51.367
3000.000	2.256	321.457	309.255	2999.315	34.822	-42.613	0.340	55.031
3100.000	2.275	324.606	310.098	3099.237	37.913	-45.027	0.160	58.863
3200.000	2.548	336.596	311.812	3199.150	41.729	-46.652	0.580	62.592
3300.000	2.522	338.330	313.442	3299.055	45.754	-48.312	0.115	66.540
3400.000	2.786	334.426	314.913	3398.952	49.922	-50.074	0.385	70.708
3500.000	2.667	326.190	315.916	3498.855	53.811	-52.117	0.456	74.911
3600.000	2.529	320.220	316.363	3598.769	57.170	-54.514	0.281	78.995
3700.000	2.637	312.700	316.272	3698.678	60.160	-57.545	0.291	83.250
3800.000	2.912	306.452	315.765	3798.567	62.959	-61.299	0.515	87.872
3900.000	3.587	307.718	315.177	3898.405	66.297	-65.888	0.569	93.469
4000.000	4.120	304.127	314.503	3998.174	70.205	-71.433	0.411	100.157
4100.000	4.974	309.123	313.886	4097.851	74.931	-77.904	0.951	108.091
4200.000	4.866	312.136	313.609	4197.474	80.526	-84.535	0.283	116.751
4300.000	4.497	319.611	313.761	4297.117	86.576	-90.404	0.703	125.173
4400.000	3.727	325.644	314.299	4396.868	92.253	-94.539	0.870	132.092
4500.000	3.347	307.050	314.599	4496.673	97.069	-98.438	1.420	138.247
4600.000	3.003	333.409	315.019	4596.514	101.685	-101.619	1.232	143.758
4700.000	2.972	343.957	315.818	4696.382	106.428	-103.431	0.580	148.408
4800.000	3.076	358.276	316.998	4796.247	111.557	-104.035	0.800	152.539
4900.000	2.920	16.845	318.492	4896.101	116.908	-103.460	0.955	156.114
5000.000	2.906	11.926	319.981	4995.961	122.079	-102.504	0.312	159.407
5100.000	2.598	11.591	321.240	5095.848	126.759	-101.772	0.202	162.559
5200.000	2.718	11.758	322.515	5195.746	131.044	-100.500	0.087	165.144
5300.000	3.335	21.845	323.969	5295.607	136.066	-98.970	0.842	168.253
5400.000	3.530	22.805	325.435	5395.415	142.103	-97.903	0.279	172.564
5500.000	3.626	11.496	326.765	5495.225	148.171	-97.091	0.715	177.148
5600.000	5.052	10.031	328.347	5594.945	155.506	-95.866	1.439	182.681
5700.000	6.570	10.306	330.347	5694.441	165.351	-94.136	1.518	190.270
5800.000	6.897	8.718	332.487	5793.737	177.030	-92.205	0.390	199.603
5900.000	5.593	14.334	334.328	5893.186	187.257	-90.007	1.448	207.765
6000.000	3.887	19.581	335.865	5992.828	195.292	-87.501	1.749	213.998
6100.000	3.433	18.514	337.007	6092.631	201.158	-85.358	0.337	218.519
6200.000	2.500	31.062	337.992	6192.502	205.654	-83.122	1.139	221.817
6300.000	2.013	30.143	338.823	6292.427	208.799	-80.890	0.572	223.920
6400.000	1.436	23.530	339.370	6392.382	211.462	-79.611	0.464	225.952
6500.000	0.888	20.491	339.711	6492.361	213.352	-78.876	0.578	227.465
6600.000	0.728	25.649	339.920	6592.353	214.495	-78.409	0.177	228.377
6700.000	0.198	30.253	340.051	6692.349	215.280	-78.138	0.474	229.022
6800.000	0.207	69.670	340.135	6792.347	215.669	-77.922	0.216	229.314
6900.000	0.410	148.600	340.166	6892.346	215.390	-77.691	0.425	228.974