



Company/Rig: NOBLE ENERGY/ CORETECH
WELL/API#: FARR C 18-25/05-123-23727
DECLINATION: 8.3
TD AS DRILLED: 7,169 FEET
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.30860, Longitude: -104.59730
Grid North = True North -0.58 degs (NAD 27)
Grid Convergence Applied = -0.58 degs



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,822 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/21/2015 / 16:40

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: LEVI SHELDON

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.459	316.312	99.999	0.289	-0.276	0.289	0.400	316.312	0.459
200.000	0.399	316.859	199.996	0.833	-0.791	0.833	1.149	316.478	0.059
300.000	0.424	305.433	299.994	1.302	-1.331	1.302	1.861	314.367	0.086
400.000	0.204	314.469	399.992	1.641	-1.759	1.641	2.406	313.007	0.224
500.000	0.174	299.433	499.991	1.841	-2.019	1.841	2.732	312.353	0.058
600.000	0.217	282.651	599.991	1.957	-2.337	1.957	3.048	309.950	0.071
700.000	0.221	285.199	699.990	2.049	-2.707	2.049	3.395	307.121	0.011
800.000	0.254	268.031	799.989	2.092	-3.115	2.092	3.752	303.886	0.078
900.000	0.256	313.329	899.988	2.238	-3.499	2.238	4.153	302.600	0.196
1000.000	0.283	250.769	999.988	2.309	-3.894	2.309	4.528	300.667	0.281
1100.000	0.207	272.945	1099.987	2.237	-4.309	2.237	4.855	297.440	0.120
1200.000	0.163	278.807	1199.986	2.268	-4.630	2.268	5.155	296.102	0.049
1300.000	0.182	295.453	1299.986	2.358	-4.913	2.358	5.450	295.640	0.053
1400.000	0.216	304.532	1399.985	2.533	-5.212	2.533	5.795	295.923	0.047
1500.000	0.210	304.500	1499.984	2.744	-5.518	2.744	6.163	296.439	0.007
1600.000	0.154	302.717	1599.984	2.920	-5.782	2.920	6.477	296.796	0.056
1700.000	0.114	251.024	1699.984	2.960	-5.989	2.960	6.681	296.302	0.122
1800.000	0.277	154.632	1799.983	2.710	-5.980	2.710	6.565	294.377	0.311

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.000	0.536	159.703	1899.981	2.053	-5.714	2.053	6.072	289.760	0.262
2000.000	0.502	111.994	1999.977	1.450	-5.145	1.450	5.346	285.735	0.421
2100.000	0.568	111.258	2099.973	1.106	-4.277	1.106	4.417	284.496	0.066
2200.000	0.538	95.058	2199.968	0.884	-3.347	0.884	3.462	284.804	0.159
2300.000	0.942	154.628	2299.961	0.101	-2.527	0.101	2.529	272.282	0.814
2400.000	1.094	154.436	2399.945	-1.503	-1.763	-1.503	2.317	229.555	0.152
2500.000	0.426	129.068	2499.936	-2.598	-1.063	-2.598	2.807	202.241	0.732
2600.000	0.379	8.392	2599.934	-2.505	-0.726	-2.505	2.608	196.154	0.700
2700.000	0.445	1.809	2699.932	-1.789	-0.665	-1.789	1.909	200.389	0.081
2800.000	0.511	0.008	2799.928	-0.955	-0.653	-0.955	1.157	214.348	0.067
2900.000	0.518	354.710	2899.924	-0.059	-0.694	-0.059	0.697	265.146	0.048
3000.000	0.729	21.211	2999.919	0.984	-0.506	0.984	1.107	332.794	0.352
3100.000	1.033	35.390	3099.907	2.312	0.246	2.312	2.326	6.082	0.372
3200.000	0.951	43.641	3199.892	3.648	1.342	3.648	3.887	20.190	0.165
3300.000	0.499	101.165	3299.885	4.165	2.342	4.165	4.778	29.345	0.803
3400.000	0.623	166.971	3399.881	3.551	2.891	3.551	4.579	39.148	0.618
3500.000	0.892	180.750	3499.872	2.244	3.003	2.244	3.749	53.235	0.323
3600.000	1.086	179.975	3599.857	0.518	2.994	0.518	3.038	80.183	0.195
3700.000	1.284	186.293	3699.836	-1.543	2.871	-1.543	3.260	118.256	0.237
3800.000	1.601	189.554	3799.804	-4.034	2.517	-4.034	4.755	148.044	0.327
3900.000	1.748	186.221	3899.761	-6.928	2.120	-6.928	7.245	162.989	0.176
4000.000	1.898	189.932	3999.711	-10.075	1.669	-10.075	10.212	170.595	0.191
4100.000	1.957	187.821	4099.654	-13.397	1.151	-13.397	13.447	175.091	0.093
4200.000	1.860	196.627	4199.599	-16.644	0.454	-16.644	16.650	178.438	0.309
4300.000	1.716	208.826	4299.550	-19.511	-0.732	-19.511	19.525	182.150	0.406
4400.000	1.506	220.930	4399.511	-21.816	-2.315	-21.816	21.938	186.058	0.399
4500.000	1.417	219.646	4499.479	-23.761	-3.965	-23.761	24.089	189.474	0.095
4600.000	1.178	231.591	4599.453	-25.352	-5.560	-25.352	25.954	192.370	0.360
4700.000	1.039	234.124	4699.434	-26.522	-7.100	-26.522	27.456	194.987	0.147
4800.000	0.990	228.182	4799.419	-27.630	-8.479	-27.630	28.901	197.061	0.116
4900.000	0.824	217.089	4899.406	-28.779	-9.557	-28.779	30.325	198.370	0.241
5000.000	0.921	192.141	4999.395	-30.139	-10.159	-30.139	31.805	198.628	0.389
5100.000	0.937	196.911	5099.382	-31.707	-10.566	-31.707	33.421	198.431	0.079
5200.000	1.014	192.247	5199.367	-33.354	-10.992	-33.354	35.119	198.240	0.110
5300.000	0.858	197.742	5299.354	-34.932	-11.408	-34.932	36.747	198.086	0.179
5400.000	0.859	201.771	5399.343	-36.341	-11.914	-36.341	38.244	198.151	0.060
5500.000	0.939	189.884	5499.330	-37.844	-12.333	-37.844	39.803	198.050	0.202
5600.000	1.024	200.341	5599.316	-39.489	-12.784	-39.489	41.506	197.939	0.198
5700.000	1.369	211.113	5699.294	-41.349	-13.712	-41.349	43.563	198.346	0.410
5800.000	1.206	217.041	5799.269	-43.212	-14.963	-43.212	45.729	199.099	0.210

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5900.000	1.020	226.913	5899.250	-44.660	-16.247	-44.660	47.523	199.991	0.267
6000.000	0.881	235.599	5999.236	-45.702	-17.531	-45.702	48.950	200.987	0.200
6100.000	0.651	250.468	6099.227	-46.327	-18.702	-46.327	49.959	201.983	0.302
6200.000	0.410	257.044	6199.223	-46.597	-19.586	-46.597	50.546	202.798	0.249
6300.000	0.405	293.687	6299.221	-46.535	-20.258	-46.535	50.753	203.525	0.256
6400.000	0.575	320.190	6399.217	-46.008	-20.903	-46.008	50.534	204.434	0.279
6500.000	0.706	338.650	6499.211	-45.049	-21.449	-45.049	49.894	205.460	0.243
6600.000	0.759	355.156	6599.203	-43.815	-21.729	-43.815	48.907	206.378	0.217
6700.000	1.040	349.963	6699.190	-42.262	-21.943	-42.262	47.619	207.439	0.293
6800.000	0.355	21.946	6799.183	-41.081	-21.985	-41.081	46.594	208.155	0.762
6900.000	0.474	41.220	6899.180	-40.482	-21.597	-40.482	45.882	208.080	0.182
6950.000	0.488	39.339	6949.178	-40.161	-21.325	-40.161	45.472	207.968	0.042