



Company/Rig: NOBLE ENERGY/ CORETECH  
WELL/API#: LOLOFF B 26-33/05-123-26070  
DECLINATION: 8.27  
TD AS DRILLED: 6,965 FEET  
COUNTY/STATE: WELD/COLORADO  
Latitude: 40.367, Longitude: -104.526  
GRID North is 0.630 Degrees East of True North  
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,632 FEET

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-02-de\_01.ut

Minimum Curvature Method

Report Date/Time: 12/3/2014 / 14:21

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	0.699	324.009	99.998	0.493	-0.358	0.493	0.610	324.009	0.699
200.000	0.802	318.960	199.989	1.514	-1.176	1.514	1.917	322.169	0.122
300.000	0.837	317.779	299.979	2.583	-2.126	2.583	3.346	320.541	0.040
400.000	0.758	315.227	399.969	3.594	-3.083	3.594	4.735	319.373	0.087
500.000	0.744	295.505	499.961	4.343	-4.135	4.343	5.997	316.405	0.258
600.000	0.765	294.367	599.952	4.898	-5.329	4.898	7.238	312.587	0.025
700.000	0.758	296.945	699.943	5.473	-6.526	5.473	8.517	309.983	0.035
800.000	0.755	294.404	799.934	6.045	-7.716	6.045	9.801	308.076	0.034
900.000	0.804	297.912	899.925	6.645	-8.936	6.645	11.136	306.637	0.068
1000.000	0.819	301.117	999.915	7.343	-10.168	7.343	12.542	305.837	0.048
1100.000	0.834	305.511	1099.905	8.135	-11.372	8.135	13.982	305.579	0.065
1200.000	0.847	313.418	1199.894	9.066	-12.501	9.066	15.442	305.950	0.117
1300.000	0.863	320.389	1299.883	10.153	-13.517	10.153	16.906	306.912	0.105
1400.000	0.821	329.726	1399.872	11.353	-14.359	11.353	18.305	308.331	0.143
1500.000	0.958	354.311	1499.860	12.804	-14.803	12.804	19.572	310.857	0.402
1600.000	0.913	352.716	1599.847	14.426	-14.987	14.426	20.802	313.907	0.052
1700.000	0.884	349.691	1699.835	15.975	-15.226	15.975	22.069	316.376	0.055
1800.000	0.864	351.318	1799.823	17.480	-15.478	17.480	23.348	318.476	0.032
1900.000	0.885	346.931	1899.812	18.978	-15.767	18.978	24.673	320.281	0.070

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
2000.000	0.960	343.020	1999.799	20.532	-16.186	20.532	26.145	321.750	0.098
2100.000	1.087	339.719	2099.783	22.223	-16.760	22.223	27.835	322.978	0.140
2200.000	1.465	338.772	2199.758	24.305	-17.551	24.305	29.980	324.166	0.378
2300.000	1.634	342.516	2299.721	26.857	-18.443	26.857	32.580	325.522	0.197
2400.000	1.544	345.926	2399.683	29.524	-19.199	29.524	35.218	326.965	0.131
2500.000	1.352	344.880	2499.651	31.970	-19.834	31.970	37.623	328.185	0.194
2600.000	1.184	341.647	2599.626	34.090	-20.467	34.090	39.762	329.020	0.183
2700.000	1.215	341.724	2699.604	36.076	-21.125	36.076	41.806	329.648	0.031
2800.000	0.832	346.148	2799.588	37.788	-21.631	37.788	43.541	330.212	0.390
2900.000	0.724	17.261	2899.579	39.096	-21.617	39.096	44.675	331.061	0.430
3000.000	0.650	44.667	2999.572	40.104	-21.031	40.104	45.283	332.327	0.334
3100.000	0.624	75.284	3099.566	40.646	-20.105	40.646	45.346	333.681	0.337
3200.000	0.706	99.797	3199.560	40.679	-18.971	40.679	44.885	334.998	0.294
3300.000	0.325	120.772	3299.556	40.429	-18.120	40.429	44.304	335.859	0.419
3400.000	0.229	303.418	3399.555	40.394	-18.043	40.394	44.240	335.931	0.553
3500.000	0.565	262.235	3499.553	40.437	-18.698	40.437	44.551	335.185	0.421
3600.000	0.712	272.201	3599.547	40.395	-19.808	40.395	44.990	333.879	0.184
3700.000	0.798	264.011	3699.538	40.346	-21.121	40.346	45.540	332.368	0.137
3800.000	1.044	265.561	3799.525	40.203	-22.722	40.203	46.179	330.526	0.247
3900.000	0.957	265.408	3899.510	40.065	-24.462	40.065	46.943	328.594	0.087
4000.000	1.150	262.327	3999.493	39.864	-26.289	39.864	47.752	326.597	0.202
4100.000	1.925	275.158	4099.456	39.881	-28.956	39.881	49.285	324.019	0.843
4200.000	2.470	277.372	4199.382	40.309	-32.766	40.309	51.946	320.894	0.552
4300.000	2.723	280.950	4299.280	41.037	-37.235	41.037	55.411	317.781	0.300
4400.000	2.816	277.258	4399.163	41.798	-42.003	41.798	59.257	314.860	0.201
4500.000	3.476	270.996	4499.012	42.161	-47.471	42.161	63.491	311.610	0.744
4600.000	4.235	275.239	4598.785	42.551	-54.180	42.551	68.892	308.145	0.810
4700.000	3.967	270.331	4698.529	42.908	-61.316	42.908	74.838	304.984	0.442
4800.000	3.186	268.251	4798.334	42.843	-67.552	42.843	79.993	302.384	0.791
4900.000	2.489	267.825	4898.211	42.676	-72.499	42.676	84.127	300.483	0.697
5000.000	1.673	254.535	4998.144	42.205	-76.076	42.205	86.999	299.020	0.943
5100.000	1.095	223.145	5098.116	41.118	-78.136	41.118	88.295	297.755	0.933
5200.000	1.111	174.158	5198.100	39.457	-78.691	39.457	88.029	296.630	0.915
5300.000	1.182	154.922	5298.080	37.558	-78.155	37.558	86.711	295.667	0.389
5400.000	0.590	116.194	5398.069	36.397	-77.256	36.397	85.400	295.226	0.810
5500.000	0.524	68.600	5498.064	36.336	-76.368	36.336	84.572	295.446	0.454
5600.000	0.373	72.752	5598.061	36.600	-75.630	36.600	84.021	295.824	0.154
5700.000	0.286	76.756	5698.060	36.754	-75.076	36.754	83.590	296.084	0.090
5800.000	0.314	80.509	5798.058	36.856	-74.563	36.856	83.175	296.303	0.034
5900.000	0.398	40.416	5898.056	37.165	-74.068	37.165	82.870	296.646	0.256

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
6000.000	0.382	20.758	5998.054	37.741	-73.725	37.741	82.824	297.109	0.134
6100.000	0.320	0.120	6098.052	38.332	-73.607	38.332	82.989	297.509	0.140
6200.000	0.451	358.080	6198.050	39.004	-73.619	39.004	83.313	297.915	0.132
6300.000	0.522	3.927	6298.046	39.852	-73.601	39.852	83.698	298.434	0.087
6400.000	0.283	359.707	6398.044	40.553	-73.571	40.553	84.008	298.864	0.241
6500.000	0.465	342.824	6498.042	41.187	-73.692	41.187	84.421	299.201	0.211
6600.000	0.267	37.900	6598.040	41.758	-73.669	41.758	84.681	299.546	0.381
6700.000	0.374	164.473	6698.039	41.628	-73.438	41.628	84.416	299.546	0.574