

COMPANY/RIG: Noble Energy/Production/CoreTech

WELL: Lamp H 26-1

DECLINATION: 8.33

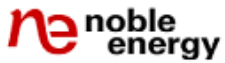
TD AS DRILLED: 7845

COUNTY/STATE: Weld/Colorado

Latitude: 40.200, Longitude: -104.622

GRID North is 0.570 Degrees East of True North

VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB = GL Elevation = 4855

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyorun.ut

Minimum Curvature Method

Report Date/Time: 10/20/2014 / 14:22

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS

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	0.273	77.521	100.000	0.051	0.232	0.051	0.238	77.521	0.273
200.000	0.418	86.519	199.998	0.125	0.829	0.125	0.838	81.421	0.154
300.000	0.263	98.725	299.996	0.112	1.420	0.112	1.424	85.476	0.170
400.000	0.173	125.699	399.995	-0.011	1.769	-0.011	1.769	90.343	0.134
500.000	0.132	298.796	499.995	-0.043	1.791	-0.043	1.792	91.387	0.304
600.000	0.418	152.399	599.994	-0.312	1.860	-0.312	1.885	99.511	0.533
700.000	0.909	178.541	699.988	-1.428	2.049	-1.428	2.497	124.876	0.565
800.000	1.025	178.187	799.973	-3.115	2.097	-3.115	3.755	146.044	0.116
900.000	0.933	169.047	899.959	-4.808	2.280	-4.808	5.321	154.625	0.181
1000.000	1.082	148.162	999.944	-6.410	2.933	-6.410	7.049	155.410	0.393
1100.000	1.219	142.178	1099.924	-8.052	4.083	-8.052	9.028	153.109	0.182
1200.000	1.032	165.158	1199.905	-9.763	4.966	-9.763	10.954	153.037	0.484
1300.000	1.539	192.849	1299.880	-11.943	4.899	-11.943	12.909	157.698	0.788
1400.000	1.263	200.762	1399.850	-14.283	4.209	-14.283	14.890	163.580	0.336
1500.000	1.415	303.336	1499.834	-14.635	2.787	-14.635	14.898	169.219	2.092
1600.000	2.644	325.395	1599.771	-12.058	0.445	-12.058	12.066	177.886	1.435
1700.000	3.399	330.475	1699.631	-7.579	-2.326	-7.579	7.928	197.061	0.800
1800.000	4.226	339.733	1799.410	-1.543	-5.063	-1.543	5.293	253.055	1.029
1900.000	5.224	353.162	1899.072	6.434	-6.882	6.434	9.421	313.075	1.483

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	7.127	351.907	1998.487	17.097	-8.297	17.097	19.004	334.112	1.908
2100.000	8.152	346.343	2097.599	30.128	-10.845	30.128	32.021	340.203	1.263
2200.000	8.963	347.042	2196.485	44.609	-14.265	44.609	46.834	342.266	0.818
2300.000	10.482	342.886	2295.048	60.895	-18.689	60.895	63.698	342.938	1.672
2400.000	11.290	336.196	2393.251	78.544	-25.317	78.544	82.524	342.134	1.498
2500.000	12.274	332.816	2491.145	96.956	-34.124	96.956	102.786	340.610	1.202
2600.000	13.588	332.565	2588.606	116.838	-44.393	116.838	124.988	339.196	1.315
2700.000	14.629	331.860	2685.589	138.400	-55.761	138.400	149.211	338.056	1.055
2800.000	14.763	333.027	2782.318	160.890	-67.496	160.890	174.475	337.241	0.325
2900.000	14.486	332.265	2879.078	183.316	-79.095	183.316	199.652	336.661	0.337
3000.000	14.463	334.337	2975.904	205.642	-90.324	205.642	224.604	336.287	0.518
3100.000	14.036	333.368	3072.827	227.738	-101.168	227.738	249.198	336.048	0.489
3200.000	13.691	333.064	3169.914	249.128	-111.965	249.128	273.132	335.800	0.352
3300.000	13.263	329.325	3267.162	269.545	-123.178	269.545	296.357	335.440	0.971
3400.000	12.720	332.118	3364.603	289.143	-134.179	289.143	318.760	335.106	0.830
3500.000	13.281	335.601	3462.041	309.335	-144.073	309.335	341.241	335.026	0.964
3600.000	13.975	332.438	3559.226	330.501	-154.405	330.501	364.790	334.959	1.018
3700.000	13.253	337.135	3656.419	351.769	-164.447	351.769	388.310	334.945	1.320
3800.000	14.262	339.541	3753.549	373.873	-173.207	373.873	412.046	335.143	1.160
3900.000	14.387	338.535	3850.441	396.977	-182.059	396.977	436.733	335.363	0.278
4000.000	15.648	338.216	3947.023	421.062	-191.610	421.062	462.610	335.531	1.264
4100.000	14.980	337.694	4043.472	445.543	-201.520	445.543	488.998	335.663	0.682
4200.000	12.712	335.388	4140.561	467.505	-211.009	467.505	512.919	335.708	2.334
4300.000	13.134	333.869	4238.028	487.708	-220.595	487.708	535.277	335.662	0.542
4400.000	13.937	328.726	4335.253	508.203	-231.851	508.203	558.592	335.477	1.446
4500.000	13.925	324.785	4432.314	528.327	-245.042	528.327	582.387	335.118	0.949
4600.000	14.380	327.818	4529.280	548.667	-258.594	548.667	606.553	334.765	0.870
4700.000	14.756	333.290	4626.070	570.554	-270.933	570.554	631.614	334.599	1.426
4800.000	13.735	328.516	4722.997	592.055	-282.857	592.055	656.153	334.464	1.556
4900.000	13.970	325.120	4820.090	612.081	-295.960	612.081	679.879	334.195	0.846
5000.000	13.065	327.104	4917.320	631.474	-309.002	631.474	703.023	333.926	1.016
5100.000	13.305	334.102	5014.690	651.316	-320.167	651.316	725.755	333.823	1.613
5200.000	14.394	340.076	5111.786	673.354	-329.429	673.354	749.619	333.930	1.796
5300.000	11.650	339.737	5209.206	694.515	-337.162	694.515	772.029	334.105	2.745
5400.000	9.765	338.363	5307.460	711.871	-343.786	711.871	790.537	334.223	1.902
5500.000	7.892	342.995	5406.272	726.320	-348.921	726.320	805.783	334.341	2.002
5600.000	6.054	340.726	5505.529	737.863	-352.670	737.863	817.813	334.454	1.859
5700.000	4.747	338.160	5605.083	746.682	-355.950	746.682	827.184	334.512	1.329
5800.000	2.574	338.829	5704.873	752.617	-358.300	752.617	833.553	334.542	2.174
5900.000	1.456	0.728	5804.811	755.981	-359.095	755.981	836.933	334.592	1.338

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	1.048	33.089	5904.788	758.018	-358.579	758.018	838.552	334.684	0.800
6100.000	0.780	80.511	6004.777	758.896	-357.409	758.896	838.847	334.782	0.775
6200.000	1.111	83.806	6104.763	759.113	-355.774	759.113	838.348	334.889	0.335
6300.000	1.226	96.269	6204.742	759.101	-353.747	759.101	837.479	335.014	0.278
6400.000	1.310	88.892	6304.718	759.006	-351.540	759.006	836.463	335.148	0.183
6500.000	1.609	75.323	6404.686	759.384	-349.039	759.384	835.759	335.315	0.455
6600.000	1.886	76.602	6504.639	760.121	-346.081	760.121	835.198	335.520	0.280
6700.000	1.449	74.799	6604.596	760.834	-343.260	760.834	834.683	335.717	0.440
6800.000	0.742	114.508	6704.579	760.897	-341.450	760.897	833.998	335.832	0.998
6900.000	0.530	81.249	6804.573	760.698	-340.405	760.698	833.389	335.892	0.417
7000.000	0.384	3.803	6904.570	761.103	-339.925	761.103	833.563	335.933	0.583
7100.000	0.433	23.574	7004.568	761.785	-339.752	761.785	834.115	335.963	0.149