



COMPANY/RIG: Noble Energy/Production/CoreTech  
WELL: Gurtler 24-15J  
DECLINATION: 8.33  
TD AS DRILLED: 7185  
COUNTY/STATE: Weld/Colorado  
Latitude: 40.205, Longitude: -104.610  
GRID North is 0.580 Degrees East of True North  
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB = GL Elevation = 4807

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro.ut

Minimum Curvature Method

Report Date/Time: 10/2/2014 / 16:17

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	0.484	56.032	99.999	0.236	0.350	0.236	0.422	56.032	0.484
200.000	0.097	58.425	199.997	0.516	0.773	0.516	0.930	56.251	0.387
300.000	0.530	17.224	299.996	1.002	0.982	1.002	1.403	44.416	0.461
400.000	0.378	97.980	399.993	1.398	1.445	1.398	2.011	45.955	0.599
500.000	0.221	125.581	499.992	1.240	1.928	1.240	2.293	57.255	0.209
600.000	0.516	36.201	599.990	1.491	2.351	1.491	2.784	57.609	0.559
700.000	0.676	115.783	699.986	1.598	3.148	1.598	3.531	63.087	0.773
800.000	0.395	81.861	799.982	1.390	4.021	1.390	4.254	70.927	0.412
900.000	0.873	84.938	899.976	1.506	5.121	1.506	5.338	73.610	0.479
1000.000	0.492	137.756	999.969	1.256	6.168	1.256	6.295	78.492	0.696
1100.000	0.431	89.007	1099.966	0.945	6.833	0.945	6.898	82.128	0.385
1200.000	0.304	89.990	1199.964	0.951	7.474	0.951	7.534	82.747	0.127
1300.000	0.295	119.894	1299.963	0.823	7.962	0.823	8.004	84.099	0.155
1400.000	0.230	116.840	1399.962	0.604	8.364	0.604	8.386	85.870	0.067
1500.000	0.286	114.831	1499.961	0.408	8.770	0.408	8.779	87.333	0.057
1600.000	0.200	122.406	1599.960	0.210	9.144	0.210	9.146	88.684	0.092
1700.000	0.288	112.098	1699.959	0.022	9.524	0.022	9.524	89.867	0.098
1800.000	0.088	87.267	1799.959	-0.069	9.833	-0.069	9.833	90.401	0.212
1900.000	0.112	118.783	1899.958	-0.112	9.995	-0.112	9.996	90.643	0.059

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	0.366	244.077	1999.958	-0.299	9.793	-0.299	9.798	91.748	0.440
2100.000	0.440	232.052	2099.955	-0.675	9.203	-0.675	9.228	94.192	0.112
2200.000	0.337	247.314	2199.953	-1.024	8.629	-1.024	8.690	96.769	0.145
2300.000	0.714	288.171	2299.949	-0.943	7.766	-0.943	7.823	96.926	0.509
2400.000	0.276	16.379	2399.946	-0.518	7.242	-0.518	7.261	94.093	0.757
2500.000	0.743	321.584	2499.942	0.221	6.907	0.221	6.911	88.169	0.626
2600.000	0.848	346.609	2599.933	1.449	6.333	1.449	6.497	77.114	0.360
2700.000	0.626	323.467	2699.925	2.608	5.836	2.608	6.393	65.925	0.367
2800.000	0.998	317.237	2799.915	3.686	4.920	3.686	6.148	53.158	0.382
2900.000	0.954	318.230	2899.900	4.947	3.774	4.947	6.222	37.341	0.048
3000.000	0.814	321.100	2999.888	6.120	2.773	6.120	6.719	24.376	0.146
3100.000	0.789	358.617	3099.879	7.362	2.310	7.362	7.716	17.423	0.516
3200.000	0.754	4.449	3199.870	8.707	2.345	8.707	9.017	15.072	0.086
3300.000	1.051	43.971	3299.858	10.023	3.032	10.023	10.472	16.833	0.671
3400.000	1.009	64.444	3399.843	11.063	4.463	11.063	11.929	21.971	0.368
3500.000	0.922	59.303	3499.828	11.853	5.949	11.853	13.263	26.652	0.123
3600.000	0.788	63.142	3599.817	12.575	7.255	12.575	14.518	29.981	0.145
3700.000	0.702	59.046	3699.809	13.201	8.394	13.201	15.644	32.451	0.101
3800.000	0.422	85.685	3799.804	13.544	9.288	13.544	16.423	34.439	0.376
3900.000	0.559	76.245	3899.800	13.688	10.129	13.688	17.028	36.502	0.158
4000.000	0.374	51.058	3999.797	14.009	10.857	14.009	17.723	37.775	0.272
4100.000	0.355	82.819	4099.795	14.253	11.418	14.253	18.262	38.698	0.200
4200.000	0.554	29.968	4199.792	14.710	11.967	14.710	18.963	39.128	0.442
4300.000	0.696	79.971	4299.787	15.235	12.806	15.235	19.902	40.051	0.544
4400.000	1.587	85.157	4399.766	15.457	14.785	15.457	21.390	43.726	0.896
4500.000	1.977	87.099	4499.718	15.662	17.888	15.662	23.775	48.797	0.394
4600.000	2.708	84.754	4599.633	15.965	21.963	15.965	27.152	53.987	0.737
4700.000	2.477	91.752	4699.531	16.115	26.475	16.115	30.994	58.672	0.392
4800.000	1.728	82.415	4799.464	16.248	30.129	16.248	34.231	61.663	0.820
4900.000	0.797	79.362	4899.438	16.575	32.308	16.575	36.312	62.840	0.933
5000.000	0.129	43.518	4999.434	16.786	33.070	16.786	37.086	63.089	0.697
5100.000	0.204	58.593	5099.434	16.960	33.300	16.960	37.370	63.009	0.086
5200.000	0.619	189.765	5199.432	16.521	33.360	16.521	37.227	63.654	0.769
5300.000	0.679	202.509	5299.426	15.441	33.042	15.441	36.472	64.952	0.156
5400.000	1.112	203.564	5399.413	14.004	32.427	14.004	35.321	66.642	0.433
5500.000	0.978	202.672	5499.397	12.327	31.710	12.327	34.021	68.757	0.135
5600.000	1.450	210.961	5599.374	10.454	30.730	10.454	32.459	71.212	0.502
5700.000	1.079	216.442	5699.350	8.612	29.519	8.612	30.750	73.737	0.389
5800.000	0.668	221.091	5799.338	7.414	28.577	7.414	29.523	75.455	0.417
5900.000	0.509	207.429	5899.333	6.581	27.989	6.581	28.752	76.769	0.211

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	0.182	196.186	5999.331	6.034	27.740	6.034	28.389	77.728	0.332
6100.000	0.416	92.048	6099.330	5.868	28.059	5.868	28.666	78.187	0.494
6200.000	0.416	159.097	6199.328	5.516	28.552	5.516	29.080	79.066	0.460
6300.000	0.430	97.952	6299.325	5.125	29.053	5.125	29.502	79.997	0.431
6400.000	0.130	154.669	6399.324	4.970	29.474	4.970	29.890	80.429	0.375
6500.000	0.570	135.651	6499.322	4.512	29.870	4.512	30.209	81.411	0.449
6600.000	0.810	161.637	6599.315	3.485	30.441	3.485	30.639	83.470	0.389
6700.000	1.101	193.711	6699.302	1.880	30.436	1.880	30.494	86.466	0.597
6800.000	0.955	247.728	6799.288	0.630	29.436	0.630	29.443	88.773	0.943
6900.000	0.564	218.596	6899.279	-0.070	28.358	-0.070	28.358	90.141	0.538
6950.000	0.651	244.086	6949.276	-0.386	27.949	-0.386	27.952	90.792	0.562