



Company/Rig: Noble Energy/CoreTech
WELL/API#: Dechant State H 36-19/05-123-32465
DECLINATION: 8.31
TD AS DRILLED: 7704'
COUNTY/STATE: Weld/Colorado
Latitude: 40.186, Longitude: -104.618
GRID North is 0.570 Degrees East of True North
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=Surface Elevation=4816'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 12/9/2014 / 13:57

Lat & Long Obtained By Handheld GPS At Wellhead

North Reference: Grid

Henderson, Co.

303-853-4976

Surveyor: Mark Simmons

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	0.179	214.732	100.000	-0.129	-0.089	-0.129	0.157	214.732	0.179
200.000	0.165	141.952	199.999	-0.371	-0.090	-0.371	0.382	193.571	0.205
300.000	0.199	261.465	299.999	-0.510	-0.173	-0.510	0.539	198.695	0.316
400.000	0.086	353.361	399.999	-0.462	-0.354	-0.462	0.581	217.445	0.220
500.000	0.154	171.918	499.999	-0.520	-0.343	-0.520	0.623	213.427	0.240
600.000	0.179	80.837	599.999	-0.628	-0.170	-0.628	0.651	195.150	0.238
700.000	0.147	91.711	699.998	-0.607	0.112	-0.607	0.618	169.511	0.044
800.000	0.190	70.315	799.998	-0.555	0.397	-0.555	0.683	144.425	0.076
900.000	0.306	39.582	899.997	-0.294	0.724	-0.294	0.781	112.086	0.172
1000.000	0.337	11.426	999.995	0.201	0.952	0.201	0.973	78.105	0.159
1100.000	0.234	346.020	1099.994	0.687	0.961	0.687	1.181	54.418	0.161
1200.000	0.277	302.000	1199.993	1.014	0.706	1.014	1.236	34.863	0.196
1300.000	0.453	293.017	1299.991	1.297	0.138	1.297	1.304	6.058	0.184
1400.000	0.694	286.972	1399.986	1.628	-0.805	1.628	1.816	333.675	0.248
1500.000	0.453	273.037	1499.981	1.826	-1.779	1.826	2.549	315.737	0.277
1600.000	0.431	286.625	1599.978	1.954	-2.534	1.954	3.200	307.636	0.107
1700.000	0.435	293.207	1699.975	2.211	-3.244	2.211	3.926	304.286	0.050
1800.000	0.545	288.493	1799.972	2.512	-4.043	2.512	4.760	301.850	0.117
1900.000	0.693	293.535	1899.966	2.904	-5.048	2.904	5.824	299.909	0.158

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	0.482	320.779	1999.961	3.471	-5.868	3.471	6.818	300.603	0.344
2100.000	0.761	354.386	2099.955	4.457	-6.199	4.457	7.635	305.717	0.448
2200.000	0.986	7.413	2199.943	5.971	-6.153	5.971	8.574	314.140	0.299
2300.000	0.895	25.959	2299.930	7.526	-5.700	7.526	9.441	322.861	0.316
2400.000	1.259	15.502	2399.912	9.287	-5.065	9.287	10.578	331.395	0.412
2500.000	1.385	14.953	2499.886	11.514	-4.459	11.514	12.347	338.829	0.127
2600.000	1.789	26.499	2599.847	14.078	-3.451	14.078	14.495	346.227	0.513
2700.000	1.813	15.373	2699.798	17.000	-2.335	17.000	17.160	352.178	0.350
2800.000	1.771	20.878	2799.750	19.969	-1.365	19.969	20.016	356.089	0.177
2900.000	1.747	20.998	2899.702	22.836	-0.269	22.836	22.837	359.326	0.024
3000.000	1.694	24.500	2999.657	25.604	0.891	25.604	25.619	1.992	0.118
3100.000	1.549	48.635	3099.618	27.842	2.518	27.842	27.956	5.168	0.693
3200.000	1.446	63.462	3199.585	29.299	4.661	29.299	29.668	9.039	0.400
3300.000	1.280	66.802	3299.556	30.302	6.816	30.302	31.060	12.676	0.184
3400.000	1.324	84.765	3399.531	30.848	8.993	30.848	32.132	16.253	0.409
3500.000	1.321	87.149	3499.504	31.011	11.295	31.011	33.004	20.014	0.055
3600.000	1.263	90.113	3599.479	31.066	13.549	31.066	33.892	23.565	0.088
3700.000	0.969	98.576	3699.460	30.937	15.488	30.937	34.598	26.593	0.337
3800.000	0.785	106.549	3799.448	30.616	16.981	30.616	35.010	29.014	0.220
3900.000	1.059	116.224	3899.435	30.013	18.467	30.013	35.239	31.604	0.314
4000.000	1.061	99.746	3999.418	29.448	20.208	29.448	35.715	34.459	0.304
4100.000	1.305	81.553	4099.397	29.458	22.247	29.458	36.915	37.060	0.445
4200.000	1.630	62.798	4199.365	30.276	24.638	30.276	39.034	39.138	0.576
4300.000	1.735	43.222	4299.323	32.030	26.940	32.030	41.853	40.067	0.581
4400.000	1.419	25.359	4399.285	34.252	28.508	34.252	44.563	39.770	0.581
4500.000	1.454	25.289	4499.254	36.518	29.580	36.518	46.995	39.008	0.035
4600.000	1.476	8.105	4599.222	38.941	30.303	38.941	49.342	37.890	0.438
4700.000	2.081	353.593	4699.173	42.020	30.283	42.020	51.795	35.779	0.749
4800.000	2.313	352.810	4799.100	45.826	29.827	45.826	54.678	33.059	0.234
4900.000	2.378	351.184	4899.016	49.879	29.257	49.879	57.826	30.394	0.093
5000.000	2.087	358.526	4998.940	53.749	28.892	53.749	61.022	28.259	0.408
5100.000	1.650	0.507	5098.887	57.009	28.858	57.009	63.897	26.849	0.442
5200.000	1.263	6.815	5198.854	59.543	29.001	59.543	66.230	25.969	0.418
5300.000	1.101	3.138	5298.833	61.597	29.185	61.597	68.162	25.352	0.179
5400.000	0.779	354.292	5398.820	63.234	29.170	63.234	69.637	24.764	0.352
5500.000	0.718	334.773	5498.811	64.477	28.835	64.477	70.631	24.095	0.261
5600.000	1.003	306.543	5598.800	65.564	27.865	65.564	71.240	23.026	0.503
5700.000	1.760	305.940	5698.770	66.987	25.919	66.987	71.826	21.153	0.757
5800.000	2.129	306.063	5798.713	68.982	23.174	68.982	72.770	18.570	0.369
5900.000	2.201	306.267	5898.641	71.211	20.124	71.211	74.000	15.780	0.073

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	2.277	302.994	5998.565	73.429	16.909	73.429	75.351	12.968	0.149
6100.000	2.759	300.593	6098.468	75.736	13.171	75.736	76.873	9.866	0.493
6200.000	2.970	310.509	6198.344	78.644	9.130	78.644	79.172	6.622	0.538
6300.000	3.309	304.164	6298.194	81.947	4.772	81.947	82.086	3.333	0.485
6400.000	3.072	288.105	6398.041	84.401	-0.163	84.401	84.401	359.889	0.921
6500.000	2.983	273.643	6497.903	85.399	-5.307	85.399	85.563	356.444	0.767
6600.000	3.134	257.867	6597.762	84.990	-10.576	84.990	85.645	352.907	0.852
6700.000	3.121	251.719	6697.613	83.561	-15.833	83.561	85.048	349.271	0.335
6800.000	3.902	252.486	6797.425	81.683	-21.663	81.683	84.507	345.147	0.782
6900.000	3.935	251.193	6897.191	79.553	-28.155	79.553	84.389	340.510	0.095
7000.000	3.959	254.255	6996.954	77.510	-34.726	77.510	84.934	335.867	0.212
7100.000	3.776	257.763	7096.726	75.876	-41.267	75.876	86.372	331.459	0.299
7200.000	3.216	258.270	7196.540	74.607	-47.231	74.607	88.301	327.663	0.560
7300.000	3.188	252.794	7296.384	73.214	-52.635	73.214	90.171	324.287	0.307
7400.000	2.619	253.387	7396.255	71.738	-57.481	71.738	91.926	321.296	0.570
7450.000	2.465	260.789	7446.206	71.240	-59.637	71.240	92.907	320.066	0.725