



Company/Rig: Noble Energy/ CoreTech
WELL/API#: Carpio 22-41/05-123-15668
DECLINATION: 8.27 Degrees
TD AS DRILLED: 7000 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.46935, Longitude: -104.52856
Grid North = True North -0.63 degs (NAD 27)
Grid Convergence Applied = -0.63 degs



DEPTH REFERENCE : RKB=GL/ ELEVATION= 4698 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut
Minimum Curvature Method
Report Date/Time: 10/12/2015 / 12:56

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD
NORTH REFERENCE: GRID
HENDERSON, COLORADO
303-853-4976
Surveyor: Sean Bratt / Carpio 22-41

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	0.414	308.070	99.999	0.223	-0.284	0.223	0.361	308.070	0.414
200.000	0.166	98.411	199.998	0.424	-0.426	0.424	0.601	314.917	0.564
300.000	0.194	355.970	299.998	0.572	-0.294	0.572	0.643	332.780	0.281
400.000	0.503	163.070	399.997	0.321	-0.178	0.321	0.367	330.936	0.694
500.000	0.545	178.127	499.993	-0.575	-0.035	-0.575	0.576	183.462	0.143
600.000	0.535	190.034	599.989	-1.510	-0.101	-1.510	1.513	183.812	0.112
700.000	0.579	195.056	699.984	-2.457	-0.313	-2.457	2.477	187.263	0.065
800.000	0.570	231.539	799.979	-3.254	-0.834	-3.254	3.359	194.370	0.360
900.000	0.733	198.201	899.973	-4.171	-1.423	-4.171	4.407	198.836	0.405
1000.000	0.737	192.302	999.965	-5.407	-1.760	-5.407	5.686	198.027	0.076
1100.000	0.437	228.963	1099.960	-6.286	-2.184	-6.286	6.655	199.162	0.467
1200.000	0.411	207.815	1199.957	-6.853	-2.639	-6.853	7.344	201.061	0.158
1300.000	0.223	236.946	1299.956	-7.276	-2.969	-7.276	7.859	202.199	0.242
1400.000	0.361	247.624	1399.954	-7.502	-3.424	-7.502	8.247	204.530	0.148
1500.000	0.081	237.559	1499.953	-7.660	-3.775	-7.660	8.540	206.233	0.282
1600.000	0.356	270.125	1599.953	-7.697	-4.145	-7.697	8.742	208.301	0.291
1700.000	0.398	292.624	1699.951	-7.563	-4.775	-7.563	8.944	212.269	0.153
1800.000	0.360	267.473	1799.948	-7.443	-5.410	-7.443	9.202	216.010	0.169

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	0.644	258.344	1899.944	-7.571	-6.275	-7.571	9.833	219.653	0.294
2000.000	0.634	257.315	1999.938	-7.806	-7.366	-7.806	10.733	223.338	0.015
2100.000	0.446	226.321	2099.934	-8.197	-8.188	-8.197	11.585	224.969	0.341
2200.000	0.354	305.351	2199.932	-8.287	-8.721	-8.287	12.030	226.461	0.514
2300.000	0.203	208.862	2299.931	-8.263	-9.058	-8.263	12.261	227.626	0.427
2400.000	0.424	333.803	2399.930	-8.087	-9.307	-8.087	12.329	229.012	0.565
2500.000	0.417	338.428	2499.928	-7.416	-9.604	-7.416	12.134	232.323	0.035
2600.000	0.272	48.569	2599.926	-6.920	-9.559	-6.920	11.801	234.098	0.414
2700.000	0.438	314.416	2699.925	-6.496	-9.654	-6.496	11.636	236.065	0.532
2800.000	0.217	55.245	2799.924	-6.121	-9.772	-6.121	11.530	237.938	0.524
2900.000	0.476	307.364	2899.923	-5.761	-9.946	-5.761	11.494	239.921	0.580
3000.000	0.161	260.903	2999.921	-5.531	-10.415	-5.531	11.792	242.029	0.383
3100.000	0.349	323.875	3099.920	-5.307	-10.733	-5.307	11.973	243.688	0.311
3200.000	0.177	32.309	3199.919	-4.931	-10.830	-4.931	11.899	245.520	0.328
3300.000	0.453	353.921	3299.918	-4.408	-10.789	-4.408	11.655	247.778	0.333
3400.000	0.432	332.211	3399.915	-3.682	-11.007	-3.682	11.606	251.503	0.168
3500.000	0.410	337.869	3499.912	-3.017	-11.317	-3.017	11.712	255.071	0.047
3600.000	0.202	20.495	3599.911	-2.521	-11.390	-2.521	11.666	257.521	0.295
3700.000	0.347	345.923	3699.910	-2.062	-11.402	-2.062	11.587	259.749	0.214
3800.000	0.334	333.575	3799.908	-1.507	-11.605	-1.507	11.703	262.599	0.074
3900.000	0.158	334.672	3899.907	-1.122	-11.794	-1.122	11.847	264.566	0.176
4000.000	0.159	43.256	3999.907	-0.896	-11.758	-0.896	11.792	265.641	0.178
4100.000	0.266	2.506	4099.906	-0.564	-11.653	-0.564	11.667	267.231	0.179
4200.000	0.512	6.056	4199.904	0.113	-11.596	0.113	11.596	270.557	0.247
4300.000	0.182	76.221	4299.902	0.595	-11.394	0.595	11.410	272.990	0.482
4400.000	0.738	81.329	4399.898	0.730	-10.603	0.730	10.628	273.940	0.557
4500.000	0.594	15.868	4499.893	1.326	-9.825	1.326	9.914	277.684	0.730
4600.000	0.477	338.474	4599.889	2.211	-9.836	2.211	10.081	282.668	0.360
4700.000	0.214	52.172	4699.887	2.712	-9.841	2.712	10.208	285.410	0.465
4800.000	0.742	221.058	4799.885	2.339	-10.119	2.339	10.385	283.013	0.954
4900.000	0.694	217.988	4899.877	1.373	-10.917	1.373	11.003	277.167	0.062
5000.000	0.332	214.979	4999.873	0.658	-11.456	0.658	11.475	273.288	0.363