



COMPANY/RIG: Noble Energy/Production/CoreTech
WELL/API: Gemini-UPRR C 7-3/05-123-13708
DECLINATION: 8.22 Degrees
TD AS DRILLED: 7275
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.33218, Longitude: -104.59555
Grid North = True North -0.58 degs (NAD 27)
Grid Correction Applied = -0.58 degs



DEPTH REFERENCE : RKB = GL Elevation = 4850

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 6/6/2016 / 15:30

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS / Gemini-UPRR C 7-3

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	0.451	14.443	99.999	0.381	0.098	0.381	0.393	14.443	0.451
200.000	0.298	2.960	199.997	1.021	0.210	1.021	1.043	11.601	0.170
300.000	0.072	41.887	299.996	1.327	0.265	1.327	1.353	11.284	0.246
400.000	0.244	150.771	399.996	1.188	0.411	1.188	1.257	19.074	0.276
500.000	0.300	125.387	499.995	0.850	0.728	0.850	1.119	40.597	0.131
600.000	0.347	156.133	599.993	0.421	1.064	0.421	1.145	68.400	0.177
700.000	0.309	131.114	699.992	-0.033	1.390	-0.033	1.391	91.349	0.147
800.000	0.131	149.818	799.991	-0.309	1.651	-0.309	1.679	100.589	0.190
900.000	0.140	203.355	899.991	-0.519	1.660	-0.519	1.739	107.363	0.122
1000.000	0.122	226.048	999.990	-0.705	1.535	-0.705	1.689	114.670	0.054
1100.000	0.103	260.665	1099.990	-0.793	1.369	-0.793	1.582	120.104	0.069
1200.000	0.153	268.817	1199.990	-0.811	1.146	-0.811	1.404	125.286	0.053
1300.000	0.207	279.413	1299.990	-0.784	0.834	-0.784	1.145	133.232	0.063
1400.000	0.222	287.950	1399.989	-0.695	0.471	-0.695	0.840	145.850	0.036
1500.000	0.403	265.714	1499.987	-0.661	-0.064	-0.661	0.664	185.530	0.214
1600.000	0.332	293.560	1599.985	-0.572	-0.680	-0.572	0.888	229.941	0.190
1700.000	0.189	278.240	1699.984	-0.432	-1.109	-0.432	1.190	248.691	0.158
1800.000	0.219	293.132	1799.984	-0.334	-1.447	-0.334	1.485	257.019	0.061

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	0.470	278.079	1899.982	-0.201	-2.030	-0.201	2.040	264.347	0.265
2000.000	0.426	288.239	1999.979	-0.027	-2.789	-0.027	2.789	269.446	0.091
2100.000	0.645	285.924	2099.974	0.244	-3.683	0.244	3.691	273.786	0.220
2200.000	0.799	292.702	2199.966	0.667	-4.867	0.667	4.913	277.805	0.176
2300.000	0.639	292.544	2299.959	1.150	-6.025	1.150	6.133	280.805	0.160
2400.000	0.649	295.443	2399.952	1.607	-7.051	1.607	7.232	282.837	0.034
2500.000	0.659	285.038	2499.946	1.999	-8.117	1.999	8.360	283.836	0.119
2600.000	0.624	248.962	2599.940	1.953	-9.181	1.953	9.386	282.009	0.399
2700.000	0.748	255.534	2699.933	1.594	-10.321	1.594	10.444	278.781	0.147
2800.000	0.797	250.925	2799.924	1.204	-11.611	1.204	11.673	275.919	0.079
2900.000	0.724	254.616	2899.915	0.809	-12.878	0.809	12.903	273.594	0.088
3000.000	0.805	266.313	2999.906	0.596	-14.188	0.596	14.201	272.406	0.176
3100.000	0.695	271.536	3099.897	0.567	-15.496	0.567	15.506	272.096	0.130
3200.000	0.592	265.887	3199.891	0.546	-16.617	0.546	16.626	271.883	0.121
3300.000	0.770	282.308	3299.884	0.653	-17.789	0.653	17.801	272.101	0.262
3400.000	0.657	281.002	3399.876	0.905	-19.007	0.905	19.029	272.726	0.114
3500.000	0.063	1.930	3499.874	1.069	-19.568	1.069	19.597	273.128	0.650
3600.000	0.579	41.585	3599.872	1.502	-19.231	1.502	19.290	274.467	0.532
3700.000	0.699	37.940	3699.866	2.361	-18.521	2.361	18.671	277.265	0.127
3800.000	0.793	43.249	3799.857	3.346	-17.672	3.346	17.986	280.721	0.116
3900.000	0.871	46.646	3899.847	4.371	-16.645	4.371	17.210	284.715	0.092
4000.000	0.828	43.200	3999.836	5.420	-15.598	5.420	16.513	289.162	0.066
4100.000	0.720	31.648	4099.827	6.482	-14.773	6.482	16.133	293.689	0.190
4200.000	0.546	17.945	4199.821	7.469	-14.297	7.469	16.131	297.584	0.230
4300.000	0.529	11.899	4299.816	8.374	-14.055	8.374	16.361	300.785	0.059
4400.000	0.562	349.225	4399.812	9.307	-14.052	9.307	16.855	303.518	0.217
4500.000	0.528	337.973	4499.807	10.216	-14.317	10.216	17.588	305.512	0.112
4600.000	0.655	340.477	4599.802	11.182	-14.680	11.182	18.454	307.297	0.130
4700.000	0.346	310.755	4699.798	11.918	-15.100	11.918	19.236	308.283	0.394
4800.000	0.471	268.703	4799.796	12.106	-15.740	12.106	19.857	307.564	0.316
4900.000	0.740	235.879	4899.791	11.734	-16.686	11.734	20.398	305.116	0.428
5000.000	1.322	226.443	4999.774	10.577	-18.056	10.577	20.926	300.361	0.604
5100.000	0.904	222.132	5099.755	9.197	-19.421	9.197	21.489	295.340	0.426
5200.000	0.690	211.044	5199.745	8.096	-20.261	8.096	21.819	291.781	0.263
5300.000	0.545	199.696	5299.740	7.132	-20.732	7.132	21.924	288.985	0.189
5400.000	0.599	201.335	5399.735	6.198	-21.082	6.198	21.974	286.383	0.056
5500.000	0.934	188.829	5499.726	4.906	-21.397	4.906	21.953	282.913	0.373
5600.000	1.215	193.261	5599.708	3.068	-21.766	3.068	21.981	278.023	0.293
5700.000	1.109	204.300	5699.687	1.154	-22.407	1.154	22.437	272.948	0.247
5800.000	1.021	203.687	5799.670	-0.544	-23.163	-0.544	23.170	268.655	0.089

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
5900.000	1.461	201.240	5899.646	-2.547	-23.983	-2.547	24.118	263.937	0.443
6000.000	2.068	194.050	5999.599	-5.485	-24.882	-5.485	25.480	257.568	0.645
6100.000	2.177	188.855	6099.530	-9.112	-25.613	-9.112	27.185	250.416	0.221
6200.000	2.175	186.247	6199.458	-12.875	-26.112	-12.875	29.113	243.753	0.099
6300.000	2.145	182.488	6299.387	-16.630	-26.399	-16.630	31.201	237.791	0.145
6400.000	2.224	191.787	6399.315	-20.399	-26.877	-20.399	33.742	232.802	0.363
6500.000	2.228	187.256	6499.239	-24.227	-27.519	-24.227	36.664	228.640	0.176
6600.000	1.938	196.216	6599.173	-27.780	-28.237	-27.780	39.611	225.468	0.435
6700.000	1.788	200.066	6699.121	-30.869	-29.244	-30.869	42.522	223.452	0.196
6800.000	1.954	183.082	6799.068	-34.036	-29.871	-34.036	45.285	221.271	0.576
6900.000	2.547	164.799	6898.992	-37.882	-29.380	-37.882	47.940	217.796	0.924
7000.000	2.514	148.551	6998.896	-41.897	-27.653	-41.897	50.200	213.426	0.716