



Company: Anadarko Petroleum Corp.
 Well/API: Bell L 12-8 / 05-123-15710
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production / Coretech
 County/State: Weld County / Colorado
 Latitude: 40.242, Longitude: -104.717
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4994 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 12/24/2014 / 16:00

Lat/Long Obtained By Handheld GPS At Wellhead
 Handheld GPS Reference: NAD83/Device Error: ±9 Feet
 VES Survey International - Henderson CO
 Norman Cowan
 303-853-4976

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	0.218	317.057	100.000	0.139	-0.129	0.139	0.190	317.057	0.218
200.000	0.108	312.813	199.999	0.342	-0.328	0.342	0.474	316.211	0.110
300.000	0.280	298.305	299.999	0.523	-0.613	0.523	0.805	310.449	0.178
400.000	0.222	307.848	399.998	0.758	-0.982	0.758	1.240	307.662	0.072
500.000	0.538	281.659	499.996	0.971	-1.595	0.971	1.867	301.352	0.352
600.000	0.523	290.645	599.991	1.227	-2.482	1.227	2.769	296.315	0.084
700.000	0.425	289.853	699.988	1.514	-3.258	1.514	3.593	294.930	0.099
800.000	0.737	66.510	799.985	1.897	-3.017	1.897	3.563	302.160	1.086
900.000	0.227	80.010	899.981	2.188	-2.231	2.188	3.125	314.434	0.519
1000.000	0.179	128.154	999.981	2.125	-1.913	2.125	2.859	318.011	0.171
1100.000	0.033	242.600	1099.981	2.015	-1.816	2.015	2.713	317.981	0.196
1200.000	0.199	200.728	1199.980	1.839	-1.903	1.839	2.647	314.016	0.176
1300.000	0.340	226.222	1299.979	1.471	-2.179	1.471	2.629	304.013	0.182
1400.000	0.307	222.603	1399.978	1.068	-2.575	1.068	2.788	292.531	0.039
1500.000	0.412	236.953	1499.976	0.675	-3.057	0.675	3.131	282.453	0.138
1600.000	0.431	216.519	1599.973	0.177	-3.583	0.177	3.587	272.823	0.151
1700.000	0.462	224.963	1699.970	-0.411	-4.091	-0.411	4.112	264.266	0.072
1800.000	0.518	231.326	1799.966	-0.979	-4.729	-0.979	4.830	258.309	0.079
1900.000	0.445	227.976	1899.963	-1.521	-5.371	-1.521	5.582	254.186	0.079
2000.000	0.488	224.441	1999.960	-2.085	-5.958	-2.085	6.312	250.708	0.052
2100.000	0.398	230.125	2099.957	-2.613	-6.523	-2.613	7.027	248.173	0.100
2200.000	0.372	217.320	2199.954	-3.094	-6.986	-3.094	7.641	246.117	0.090
2300.000	0.275	230.244	2299.953	-3.505	-7.368	-3.505	8.159	244.557	0.121
2400.000	0.447	204.470	2399.951	-4.014	-7.714	-4.014	8.696	242.511	0.232
2500.000	0.377	190.151	2499.948	-4.693	-7.934	-4.693	9.218	239.397	0.124
2600.000	0.415	190.061	2599.946	-5.373	-8.055	-5.373	9.682	236.296	0.038
2700.000	0.287	201.606	2699.944	-5.962	-8.210	-5.962	10.147	234.014	0.145
2800.000	0.262	216.800	2799.943	-6.378	-8.439	-6.378	10.578	232.920	0.077
2900.000	0.475	248.794	2899.941	-6.711	-8.962	-6.711	11.196	233.176	0.288
3000.000	0.745	264.731	2999.935	-6.920	-9.996	-6.920	12.158	235.306	0.317
3100.000	0.762	268.814	3099.927	-6.994	-11.309	-6.994	13.297	238.265	0.056
3200.000	0.952	264.707	3199.915	-7.084	-12.800	-7.084	14.630	241.038	0.200
3300.000	0.632	306.367	3299.906	-6.834	-14.072	-6.834	15.643	244.097	0.638

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
3400.000	0.586	295.907	3399.901	-6.283	-14.976	-6.283	16.241	247.239	0.120
3500.000	0.578	314.149	3499.896	-5.709	-15.797	-5.709	16.797	250.132	0.185
3600.000	0.843	303.996	3599.888	-4.946	-16.769	-4.946	17.483	253.565	0.293
3700.000	1.226	319.639	3699.872	-3.720	-18.072	-3.720	18.450	258.369	0.473
3800.000	1.674	321.714	3799.839	-1.758	-19.670	-1.758	19.748	264.893	0.451
3900.000	2.010	325.258	3899.788	0.830	-21.574	0.830	21.590	272.202	0.355
4000.000	2.117	326.048	3999.723	3.803	-23.605	3.803	23.910	279.152	0.111
4100.000	2.335	328.227	4099.647	7.067	-25.709	7.067	26.663	285.370	0.234
4200.000	2.368	321.308	4199.563	10.411	-28.074	10.411	29.942	290.348	0.286
HORIZONTAL DISPLACEMENT IS 29.942 FEET AT 290.348 DEGREES									