



Company: Anadarko Petroleum
 Well: Devon 38-8
 API: 05-123-24257
 Rig Name: Production/ Canary
 State/County: Colorado/Weld
 Latitude: 40.234, Longitude: -104.794
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/1/2013 / 17:32

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

303-853-4976

SEAN BRATT

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	0.978	5.503	99.995	0.850	0.082	0.850	0.854	5.503	0.978
200.000	0.930	2.182	199.981	2.510	0.195	2.510	2.518	4.434	0.074
300.000	0.337	357.576	299.975	3.615	0.213	3.615	3.621	3.374	0.594
400.000	0.236	119.298	399.974	3.808	0.380	3.808	3.827	5.703	0.503
500.000	0.082	178.239	499.974	3.636	0.562	3.636	3.679	8.788	0.206
600.000	0.054	185.830	599.974	3.519	0.560	3.519	3.563	9.036	0.029
700.000	0.547	194.749	699.972	3.011	0.433	3.011	3.042	8.190	0.494
800.000	0.761	185.571	799.965	1.889	0.247	1.889	1.905	7.464	0.238
900.000	0.958	161.486	899.954	0.436	0.448	0.436	0.625	45.832	0.407
1000.000	1.055	163.352	999.939	-1.239	0.978	-1.239	1.579	141.732	0.103
1100.000	0.969	179.983	1099.924	-2.967	1.242	-2.967	3.217	157.290	0.305
1200.000	0.935	181.445	1199.910	-4.628	1.222	-4.628	4.786	165.214	0.042
1300.000	0.886	191.300	1299.897	-6.201	1.049	-6.201	6.290	170.395	0.164
1400.000	1.046	188.872	1399.883	-7.861	0.757	-7.861	7.898	174.498	0.165
1500.000	1.444	162.420	1499.860	-9.964	0.997	-9.964	10.014	174.286	0.689
1600.000	3.024	151.397	1599.781	-13.482	2.641	-13.482	13.738	168.918	1.630
1700.000	4.724	149.211	1699.549	-19.336	6.012	-19.336	20.249	162.729	1.706
1800.000	6.456	140.102	1799.072	-27.187	11.726	-27.187	29.608	156.669	1.941
1900.000	7.928	136.142	1898.283	-36.474	20.111	-36.474	41.651	151.128	1.553
2000.000	9.566	131.501	1997.118	-46.953	31.114	-46.953	56.326	146.469	1.782
2100.000	10.439	131.175	2095.597	-58.424	44.156	-58.424	73.233	142.919	0.875
2200.000	11.410	131.799	2193.783	-70.981	58.349	-70.981	91.885	140.579	0.978
2300.000	12.075	135.712	2291.692	-85.062	73.027	-85.062	112.109	139.353	1.037
2400.000	12.991	138.782	2389.309	-101.005	87.737	-101.005	133.790	139.021	1.133
2500.000	14.174	136.015	2486.511	-118.270	103.647	-118.270	157.259	138.770	1.349
2600.000	15.248	133.795	2583.232	-136.181	121.642	-136.181	182.598	138.227	1.213
2700.000	15.661	134.580	2679.617	-154.756	140.748	-154.756	209.187	137.714	0.463
2800.000	15.816	137.276	2775.869	-174.241	159.608	-174.241	236.294	137.510	0.747
2900.000	15.762	137.954	2872.096	-194.338	177.951	-194.338	263.503	137.520	0.192
3000.000	15.249	137.851	2968.456	-214.175	195.872	-214.175	290.236	137.556	0.513
3100.000	15.428	139.419	3064.894	-234.027	213.350	-234.027	316.681	137.646	0.452
3200.000	15.433	142.764	3161.291	-254.723	230.055	-254.723	343.233	137.913	0.890
3300.000	15.370	142.612	3257.700	-275.846	246.153	-275.846	369.706	138.256	0.075
3400.000	14.557	137.971	3354.312	-295.712	262.615	-295.712	395.490	138.392	1.448
3500.000	15.458	138.079	3450.900	-314.963	279.933	-314.963	421.384	138.370	0.901

HORIZONTAL DISPLACEMENT IS
859.706 FEET AT 138.926 DEGREES