



Company: Anadarko Petroleum
Well: Berry 8-8
API: 05-123-21688
Rig Name: Production/ CoreTech
State/County: Colorado/Weld
Latitude: 40.244, Longitude: -104.908
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: 12/24/2013 / 17:58

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	0.327	309.713	99.999	0.183	-0.220	0.183	0.286	309.713	0.327
200.000	0.400	268.347	199.998	0.355	-0.788	0.355	0.865	294.246	0.266
300.000	0.411	248.754	299.995	0.215	-1.471	0.215	1.487	278.320	0.138
400.000	0.425	267.554	399.993	0.069	-2.176	0.069	2.177	271.829	0.137
500.000	0.410	276.876	499.990	0.096	-2.901	0.096	2.903	271.904	0.069
600.000	0.706	262.166	599.985	0.055	-3.866	0.055	3.866	270.820	0.326
700.000	1.687	253.462	699.962	-0.448	-5.887	-0.448	5.904	265.651	0.996
800.000	2.359	257.797	799.899	-1.302	-9.310	-1.302	9.401	262.040	0.688
900.000	2.379	253.916	899.814	-2.312	-13.316	-2.312	13.515	260.151	0.162
1000.000	2.095	260.085	999.738	-3.202	-17.111	-3.202	17.408	259.402	0.373
1100.000	2.315	262.977	1099.664	-3.763	-20.915	-3.763	21.251	259.800	0.247
1200.000	2.344	260.221	1199.581	-4.358	-24.935	-4.358	25.313	260.087	0.116
1300.000	2.294	263.500	1299.499	-4.931	-28.939	-4.931	29.356	260.329	0.142
1400.000	2.385	259.886	1399.416	-5.523	-32.975	-5.523	33.435	260.491	0.174
1500.000	2.403	263.557	1499.329	-6.124	-37.107	-6.124	37.609	260.629	0.154
1600.000	2.167	255.425	1599.249	-6.835	-41.021	-6.835	41.586	260.540	0.400
1700.000	2.077	253.437	1699.181	-7.828	-44.588	-7.828	45.270	260.043	0.116
1800.000	1.858	250.276	1799.122	-8.892	-47.851	-8.892	48.671	259.474	0.244
1900.000	1.750	253.049	1899.072	-9.884	-50.839	-9.884	51.790	258.998	0.139
2000.000	1.462	247.889	1999.033	-10.809	-53.481	-10.809	54.563	258.573	0.322
2100.000	1.272	235.639	2099.005	-11.916	-55.580	-11.916	56.843	257.899	0.348
2200.000	1.362	230.428	2198.978	-13.300	-57.412	-13.300	58.933	256.957	0.150
2300.000	1.188	236.222	2298.953	-14.634	-59.191	-14.634	60.973	256.113	0.216
2400.000	1.357	234.841	2398.929	-15.892	-61.020	-15.892	63.056	255.402	0.171
2500.000	1.489	227.103	2498.898	-17.458	-62.940	-17.458	65.316	254.497	0.233
2600.000	1.590	234.725	2598.862	-19.143	-65.024	-19.143	67.783	253.596	0.228
2700.000	1.572	232.201	2698.824	-20.785	-67.240	-20.785	70.379	252.823	0.072
2800.000	1.633	250.068	2798.785	-22.111	-69.663	-22.111	73.087	252.391	0.501
2900.000	1.707	244.343	2898.743	-23.241	-72.345	-23.241	75.986	252.190	0.183
3000.000	1.559	242.937	2998.702	-24.505	-74.899	-24.505	78.806	251.883	0.154
3100.000	1.596	234.911	3098.665	-25.925	-77.250	-25.925	81.484	251.448	0.224
3200.000	1.127	231.759	3198.636	-27.334	-79.161	-27.334	83.748	250.951	0.475
3300.000	0.906	237.524	3298.620	-28.367	-80.600	-28.367	85.447	250.611	0.243
3400.000	0.530	252.286	3398.612	-28.932	-81.708	-28.932	86.679	250.501	0.416
3500.000	0.554	256.909	3498.608	-29.182	-82.619	-29.182	87.622	250.546	0.050

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
3600.000	0.543	255.720	3598.603	-29.409	-83.549	-29.409	88.574	250.608	0.016
3700.000	0.536	250.412	3698.599	-29.682	-84.449	-29.682	89.513	250.634	0.050
3800.000	0.639	250.943	3798.594	-30.021	-85.417	-30.021	90.539	250.635	0.104
3900.000	0.981	232.144	3898.584	-30.729	-86.620	-30.729	91.909	250.468	0.428
4000.000	1.248	222.371	3998.565	-32.058	-88.029	-32.058	93.685	249.989	0.327
4100.000	1.297	229.502	4098.540	-33.598	-89.624	-33.598	95.714	249.450	0.166
4200.000	1.181	228.605	4198.517	-35.014	-91.257	-35.014	97.744	249.009	0.118
4300.000	0.983	223.454	4298.499	-36.318	-92.620	-36.318	99.486	248.589	0.220
4400.000	1.224	206.955	4398.481	-37.892	-93.694	-37.892	101.066	247.980	0.396
4500.000	1.133	205.702	4498.459	-39.735	-94.606	-39.735	102.612	247.218	0.094
4600.000	1.182	201.469	4598.439	-41.586	-95.413	-41.586	104.082	246.450	0.099
4700.000	0.813	204.609	4698.424	-43.191	-96.086	-43.191	105.347	245.796	0.373
4800.000	0.748	215.826	4798.414	-44.365	-96.763	-44.365	106.449	245.369	0.166
4900.000	0.717	203.846	4898.406	-45.466	-97.398	-45.466	107.488	244.976	0.156
5000.000	0.791	204.633	4998.398	-46.667	-97.939	-46.667	108.489	244.523	0.075
5100.000	0.511	207.087	5098.391	-47.692	-98.430	-47.692	109.375	244.149	0.282
5200.000	0.657	209.378	5198.386	-48.588	-98.914	-48.588	110.204	243.839	0.148
5300.000	0.707	218.764	5298.379	-49.569	-99.582	-49.569	111.237	243.537	0.122
5400.000	0.862	220.077	5398.369	-50.626	-100.452	-50.626	112.488	243.253	0.156
5500.000	1.097	242.365	5498.355	-51.645	-101.785	-51.645	114.137	243.097	0.443
5600.000	1.243	244.516	5598.334	-52.556	-103.612	-52.556	116.179	243.104	0.152
5700.000	1.089	246.377	5698.314	-53.403	-105.461	-53.403	118.211	243.143	0.158
5800.000	0.806	246.307	5798.300	-54.067	-106.976	-54.067	119.863	243.188	0.282
5900.000	0.650	232.712	5898.292	-54.693	-108.072	-54.693	121.123	243.157	0.232
6000.000	0.527	223.794	5998.286	-55.369	-108.841	-55.369	122.115	243.037	0.153
6100.000	0.506	221.899	6098.282	-56.030	-109.455	-56.030	122.962	242.892	0.027
6200.000	0.184	141.134	6198.281	-56.483	-109.649	-56.483	123.342	242.746	0.510
6300.000	0.389	173.822	6298.280	-56.946	-109.512	-56.946	123.433	242.526	0.254
6400.000	0.112	268.519	6398.279	-57.286	-109.573	-57.286	123.644	242.399	0.414
6500.000	0.142	98.746	6498.279	-57.307	-109.549	-57.307	123.633	242.385	0.253
6600.000	0.215	220.422	6598.278	-57.469	-109.549	-57.469	123.707	242.319	0.314
6700.000	0.230	100.603	6698.278	-57.648	-109.473	-57.648	123.724	242.229	0.385
6800.000	0.179	286.219	6798.278	-57.642	-109.425	-57.642	123.679	242.221	0.409
6900.000	0.221	122.464	6898.278	-57.702	-109.412	-57.702	123.695	242.194	0.396
7000.000	0.358	66.406	6998.276	-57.680	-108.963	-57.680	123.288	242.105	0.298
<div> <div>HORIZONTAL DISPLACEMENT IS</div> <div>123.288 FEET AT 242.105 DEGREES</div> </div>									