

Company: Anadarko Petroleum Corp.
 Well/API: Magness 34-26A / 05-123-17762
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production / VES
 County/State: Weld / Colorado
 Latitude: 40.192, Longitude: -104.854
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4807 Feet

DRILLOG GYRO SURVEY CALCULATIONS

Filename: gyro-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/27/2014 / 11:29

Lat/Long & Elevation 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	0.393	265.331	99.999	-0.028	-0.342	-0.028	0.343	265.331	0.393
200.000	0.741	286.917	199.994	0.132	-1.303	0.132	1.309	275.794	0.402
300.000	0.861	287.159	299.984	0.542	-2.639	0.542	2.694	281.605	0.120
400.000	0.541	302.525	399.977	1.017	-3.755	1.017	3.890	285.161	0.368
500.000	0.624	300.819	499.972	1.550	-4.621	1.550	4.874	288.549	0.085
600.000	0.626	301.371	599.966	2.114	-5.555	2.114	5.944	290.834	0.006
700.000	0.622	303.315	699.960	2.696	-6.475	2.696	7.013	292.608	0.022
800.000	1.286	259.093	799.947	2.782	-8.030	2.782	8.498	289.107	0.946
900.000	1.367	250.452	899.920	2.170	-10.257	2.170	10.484	281.947	0.215
1000.000	1.552	257.526	999.888	1.479	-12.702	1.479	12.788	276.640	0.258
1100.000	1.287	284.156	1099.858	1.461	-15.114	1.461	15.184	275.521	0.703
1200.000	1.915	263.990	1199.819	1.561	-17.865	1.561	17.933	274.993	0.835
1300.000	1.431	264.553	1299.776	1.267	-20.770	1.267	20.808	273.491	0.484
1400.000	2.233	252.945	1399.724	0.577	-23.876	0.577	23.882	271.385	0.879
1500.000	2.302	275.968	1499.648	0.215	-27.735	0.215	27.736	270.444	0.907
1600.000	1.771	293.814	1599.586	1.047	-31.145	1.047	31.163	271.926	0.821
1700.000	2.026	301.531	1699.531	2.596	-34.066	2.596	34.165	274.358	0.361
1800.000	2.631	282.705	1799.449	4.025	-37.812	4.025	38.026	276.077	0.968
1900.000	2.804	283.716	1899.337	5.110	-42.428	5.110	42.734	276.868	0.179
2000.000	2.495	298.113	1999.231	6.716	-46.724	6.716	47.204	278.179	0.731
2100.000	2.067	296.860	2099.151	8.556	-50.253	8.556	50.976	279.663	0.431
2200.000	2.682	282.255	2199.066	9.868	-54.148	9.868	55.040	280.328	0.858
2300.000	2.427	264.825	2298.968	10.173	-58.543	10.173	59.420	279.858	0.814
2400.000	2.235	248.317	2398.886	9.262	-62.464	9.262	63.147	278.434	0.695
2500.000	2.699	230.063	2498.795	7.030	-66.081	7.030	66.454	276.073	0.906
2600.000	2.610	239.133	2598.688	4.351	-69.840	4.351	69.976	273.565	0.429
2700.000	1.777	235.931	2698.614	2.314	-73.079	2.314	73.116	271.814	0.841
2800.000	1.906	228.426	2798.563	0.342	-75.608	0.342	75.608	270.259	0.273
2900.000	1.928	239.579	2898.507	-1.613	-78.302	-1.613	78.319	268.820	0.373
3000.000	1.782	241.203	2998.455	-3.214	-81.115	-3.214	81.178	267.731	0.155
3100.000	0.826	244.202	3098.427	-4.276	-83.126	-4.276	83.236	267.055	0.958
3200.000	1.563	267.571	3198.406	-4.648	-85.138	-4.648	85.265	266.875	0.869
3300.000	1.145	305.877	3298.379	-4.120	-87.311	-4.120	87.408	267.298	0.973

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	0.571	331.817	3398.368	-3.096	-88.355	-3.096	88.409	267.993	0.679
3500.000	1.422	319.145	3498.352	-1.719	-89.402	-1.719	89.418	268.899	0.874
3600.000	1.328	337.328	3598.324	0.289	-90.660	0.289	90.661	270.183	0.444
3700.000	0.759	335.544	3698.307	1.961	-91.381	1.961	91.402	271.230	0.570
3800.000	0.889	324.463	3798.297	3.196	-92.106	3.196	92.162	271.987	0.205
3900.000	1.822	320.185	3898.267	5.048	-93.575	5.048	93.711	273.088	0.937
4000.000	1.820	303.435	3998.218	7.144	-95.918	7.144	96.184	274.260	0.530
4100.000	0.947	282.429	4098.188	8.197	-98.051	8.197	98.393	274.779	0.995
4200.000	0.438	253.007	4198.181	8.263	-99.224	8.263	99.567	274.761	0.605
4300.000	0.564	258.382	4298.177	8.052	-100.072	8.052	100.395	274.600	0.134
4400.000	0.362	323.235	4398.174	8.206	-100.743	8.206	101.077	274.657	0.525
4500.000	0.826	245.603	4498.170	8.162	-101.589	8.162	101.917	274.593	0.828
4600.000	0.838	245.265	4598.159	7.558	-102.910	7.558	103.187	274.201	0.013
4700.000	0.885	263.608	4698.148	7.166	-104.342	7.166	104.588	273.929	0.278
4800.000	0.035	301.868	4798.144	7.096	-105.135	7.096	105.375	273.861	0.857
4900.000	0.497	208.010	4898.143	6.730	-105.365	6.730	105.580	273.655	0.500
5000.000	0.913	228.541	4998.135	5.820	-106.166	5.820	106.325	273.138	0.480
5100.000	0.991	228.948	5098.121	4.725	-107.415	4.725	107.519	272.519	0.079
5200.000	1.144	236.240	5198.104	3.602	-108.897	3.602	108.957	271.894	0.204
5300.000	0.770	286.865	5298.091	3.242	-110.370	3.242	110.418	271.682	0.885
5400.000	0.679	253.716	5398.084	3.271	-111.582	3.271	111.629	271.679	0.422
5500.000	0.708	255.528	5498.077	2.950	-112.748	2.950	112.787	271.499	0.036
5600.000	1.398	244.933	5598.059	2.279	-114.451	2.279	114.474	271.141	0.714
5700.000	0.780	283.327	5698.042	1.919	-116.218	1.919	116.234	270.946	0.924
5800.000	1.232	267.389	5798.026	2.027	-117.955	2.027	117.972	270.985	0.528
5900.000	1.186	281.254	5898.004	2.180	-120.044	2.180	120.063	271.040	0.296
6000.000	0.452	266.359	5997.993	2.357	-121.452	2.357	121.474	271.112	0.758
6100.000	1.309	233.787	6097.981	1.657	-122.766	1.657	122.778	270.773	0.960
6200.000	0.433	216.414	6197.969	0.678	-123.912	0.678	123.914	270.314	0.905
6300.000	1.315	195.639	6297.956	-0.731	-124.446	-0.731	124.448	269.664	0.923
6400.000	1.410	209.200	6397.928	-2.910	-125.356	-2.910	125.389	268.670	0.335
6500.000	1.243	194.188	6497.902	-5.035	-126.222	-5.035	126.322	267.716	0.384
6600.000	1.021	219.935	6597.883	-6.770	-127.059	-6.770	127.240	266.950	0.549
6700.000	0.604	273.162	6697.874	-7.424	-128.158	-7.424	128.372	266.685	0.818
6800.000	0.268	332.019	6797.871	-7.188	-128.794	-7.188	128.994	266.806	0.519
6900.000	0.539	97.323	6897.870	-7.041	-128.437	-7.041	128.629	266.862	0.728
7000.000	0.247	51.363	6997.868	-6.967	-127.802	-6.967	127.991	266.880	0.408
7100.000	0.590	4.070	7097.865	-6.319	-127.597	-6.319	127.753	267.165	0.460
7200.000	0.673	321.163	7197.859	-5.347	-127.928	-5.347	128.040	267.606	0.468
7300.000	0.126	303.692	7297.857	-4.829	-128.388	-4.829	128.479	267.846	0.554
HORIZONTAL DISPLACEMENT IS 128.479 FEET AT 267.846 DEGREES									