



Company: Anadarko Petroleum Corp.
 Well/API: Moser 28-3 / 05-123-16055
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production / VES
 County/State: Weld / Colorado
 Latitude: 40.202, Longitude: -104.671
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4832 Feet

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 10/1/2014 / 19:02

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	0.440	170.555	99.999	-0.379	0.063	-0.379	0.384	170.555	0.440
200.000	0.053	273.195	199.998	-0.755	0.080	-0.755	0.759	173.933	0.454
300.000	0.452	253.562	299.997	-0.864	-0.344	-0.864	0.930	201.696	0.403
400.000	0.439	208.575	399.994	-1.312	-0.905	-1.312	1.594	214.605	0.341
500.000	0.418	288.929	499.992	-1.529	-1.434	-1.529	2.096	223.148	0.553
600.000	0.697	259.597	599.987	-1.521	-2.377	-1.521	2.822	237.390	0.390
700.000	0.405	301.257	699.983	-1.447	-3.277	-1.447	3.582	246.171	0.477
800.000	0.995	250.875	799.976	-1.548	-4.399	-1.548	4.664	250.609	0.800
900.000	0.945	256.094	899.962	-2.031	-6.020	-2.031	6.354	251.356	0.102
1000.000	0.613	249.557	999.952	-2.416	-7.322	-2.416	7.710	251.738	0.343
1100.000	0.424	251.534	1099.948	-2.720	-8.174	-2.720	8.615	251.594	0.189
1200.000	0.451	249.393	1199.945	-2.976	-8.893	-2.976	9.378	251.499	0.031
1300.000	0.828	298.494	1299.939	-2.770	-9.897	-2.770	10.277	254.366	0.632
1400.000	0.790	263.141	1399.930	-2.507	-11.216	-2.507	11.493	257.399	0.493
1500.000	0.733	257.255	1499.921	-2.731	-12.524	-2.731	12.818	257.700	0.097
1600.000	0.768	268.972	1599.913	-2.884	-13.817	-2.884	14.115	258.212	0.157
1700.000	0.621	292.219	1699.906	-2.691	-14.988	-2.691	15.228	259.822	0.315
1800.000	0.766	271.634	1799.898	-2.467	-16.158	-2.467	16.345	261.319	0.286
1900.000	1.122	285.694	1899.885	-2.183	-17.768	-2.183	17.902	262.995	0.423
2000.000	1.715	308.657	1999.854	-0.983	-19.880	-0.983	19.904	267.169	0.810
2100.000	1.822	309.251	2099.807	0.957	-22.280	0.957	22.300	272.461	0.108
2200.000	1.443	289.054	2199.767	2.374	-24.701	2.374	24.815	275.491	0.683
2300.000	1.374	292.260	2299.737	3.239	-27.000	3.239	27.194	276.841	0.105
2400.000	1.975	295.567	2399.694	4.437	-29.664	4.437	29.994	278.507	0.609
2500.000	2.248	292.791	2499.626	5.941	-33.027	5.941	33.557	280.197	0.291
2600.000	2.374	309.894	2599.545	8.028	-36.423	8.028	37.298	282.430	0.698
2700.000	2.386	297.432	2699.460	10.316	-39.860	10.316	41.173	284.510	0.517
2800.000	2.330	297.737	2799.375	12.220	-43.506	12.220	45.190	285.690	0.058
2900.000	2.214	296.082	2899.297	14.016	-47.040	14.016	49.083	286.591	0.133
3000.000	1.872	281.072	2999.234	15.178	-50.378	15.178	52.615	286.767	0.632
3100.000	2.079	295.910	3099.175	16.285	-53.612	16.285	56.031	286.896	0.550
3200.000	1.967	300.738	3199.113	17.954	-56.719	17.954	59.493	287.565	0.204
3300.000	1.599	303.176	3299.064	19.595	-59.362	19.595	62.513	288.268	0.375

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	1.031	302.571	3399.037	20.843	-61.288	20.843	64.736	288.782	0.569
3500.000	1.089	282.417	3499.020	21.532	-62.975	21.532	66.554	288.876	0.375
3600.000	1.016	320.726	3599.005	22.423	-64.465	22.423	68.253	289.179	0.694
3700.000	0.877	313.817	3698.991	23.639	-65.578	23.639	69.709	289.823	0.179
3800.000	1.163	323.704	3798.975	24.987	-66.731	24.987	71.256	290.528	0.335
3900.000	1.177	323.268	3898.954	26.628	-67.946	26.628	72.978	291.400	0.016
4000.000	1.128	329.274	3998.934	28.296	-69.063	28.296	74.635	292.280	0.130
4100.000	1.056	345.948	4098.916	30.036	-69.789	30.036	75.978	293.286	0.324
4200.000	0.492	369.8	4198.907	31.358	-69.985	31.358	76.689	294.136	0.606
4300.000	0.989	349.220	4298.898	32.635	-70.119	32.635	77.342	294.958	0.527
4400.000	1.031	345.858	4398.883	34.356	-70.500	34.356	78.426	295.981	0.073
4500.000	0.959	299.539	4498.869	35.641	-71.448	35.641	79.844	296.512	0.785
4600.000	1.063	283.379	4598.854	36.268	-73.079	36.268	81.583	296.395	0.303
4700.000	0.851	283.315	4698.840	36.654	-74.704	36.654	83.212	296.135	0.213
4800.000	0.775	303.389	4798.830	37.197	-75.991	37.197	84.606	296.081	0.293
4900.000	0.342	336.107	4898.825	37.842	-76.676	37.842	85.505	296.268	0.521
5000.000	0.514	310.912	4998.823	38.555	-76.712	38.555	85.856	296.684	0.304
5100.000	0.806	335.508	5098.816	39.636	-76.919	39.636	86.530	297.262	0.488
5200.000	0.900	299.068	5198.806	40.658	-77.897	40.658	87.869	297.562	0.541
5300.000	0.921	318.228	5298.793	41.639	-79.119	41.639	89.407	297.757	0.304
5400.000	1.292	312.585	5398.775	43.002	-80.485	43.002	91.252	298.115	0.386
5500.000	1.870	300.577	5498.736	44.595	-82.720	44.595	93.975	298.330	0.663
5600.000	1.543	326.046	5598.693	46.542	-84.876	46.542	96.799	298.738	0.817
5700.000	0.619	331.531	5698.674	48.133	-85.885	48.133	98.453	299.268	0.929
5800.000	0.985	346.57	5798.666	49.315	-85.654	49.315	98.836	299.931	0.896
5900.000	1.147	87.587	5898.651	50.064	-84.165	50.064	97.930	300.746	0.961
6000.000	1.817	92.531	5998.617	50.037	-81.581	50.037	95.704	301.522	0.682
6100.000	1.454	93.344	6098.576	49.893	-78.731	49.893	93.208	302.363	0.364
6200.000	1.781	61.345	6198.538	50.564	-76.100	50.564	91.367	303.602	0.946
6300.000	2.091	78.939	6298.482	51.659	-72.946	51.659	89.386	305.306	0.666
6400.000	1.333	57.326	6398.438	52.637	-70.177	52.637	87.724	306.872	0.983
6500.000	2.124	45.402	6498.392	54.566	-67.878	54.566	87.091	308.795	0.865
6600.000	1.436	49.435	6598.343	56.682	-65.607	56.682	86.701	310.826	0.699
6700.000	1.240	25.105	6698.316	58.477	-64.195	58.477	86.837	312.331	0.596
6800.000	1.174	13.290	6798.294	60.454	-63.501	60.454	87.676	313.592	0.257
6900.000	1.795	0.580	6898.260	63.017	-63.249	63.017	89.284	314.894	0.699
7000.000	2.540	7.759	6998.188	66.778	-62.934	66.778	91.761	316.697	0.792
7150.000	2.357	18.994	7148.052	72.987	-61.482	72.987	95.432	319.890	0.342
HORIZONTAL DISPLACEMENT IS 95.432 FEET AT 319.890 DEGREES									