

Company: Anadarko Petroleum Corp.  
 Well/API: Endsley 32-1J5/05-123-17932  
 Tool Type: North Seeking Rate Gyro  
 Rig Name: Production / VESSI  
 County/State: Weld/Colorado  
 Latitude: 40.188, Longitude: -104.680  
 Directions are relative to True North  
 VS-Azi: 0.000 Degrees



**FIELD COPY ONLY (NOT DEFINITIVE)**

Depth Reference : RKB = GL Elevation = 4887 Feet

**DRILLOG GYRO SURVEY CALCULATIONS**

Filename: strapdown-de\_01.ut  
 Minimum Curvature Method  
 Report Date/Time: 2/27/2015 / 18:51  
 Lat/Long Obtained By Handheld GPS At Wellhead  
 Handheld GPS Reference: NAD83/Device Error: +/- 9 Feet  
 VES Survey International - Henderson, CO  
 Kevin McDowell  
 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	0.638	281.001	99.998	0.106	-0.546	0.106	0.556	281.001	0.638
200.000	0.256	105.198	199.996	0.154	-0.876	0.154	0.890	279.947	0.893
300.000	0.486	303.518	299.995	0.329	-1.014	0.329	1.066	287.987	0.734
400.000	0.213	105.805	399.995	0.513	-1.189	0.513	1.295	293.335	0.692
500.000	0.235	162.888	499.994	0.266	-0.949	0.266	0.986	285.655	0.215
600.000	0.161	294.434	599.994	0.128	-1.017	0.128	1.025	277.176	0.363
700.000	0.287	39.739	699.993	0.378	-0.985	0.378	1.055	291.021	0.364
800.000	0.403	28.010	799.991	0.881	-0.660	0.881	1.101	323.164	0.135
900.000	0.442	45.815	899.989	1.460	-0.218	1.460	1.476	351.503	0.136
1000.000	0.082	345.618	999.987	1.799	0.041	1.799	1.799	1.297	0.408
1100.000	0.095	178.477	1099.987	1.785	0.025	1.785	1.786	0.805	0.177
1200.000	0.260	135.262	1199.987	1.541	0.187	1.541	1.552	6.915	0.201
1300.000	0.263	44.492	1299.986	1.543	0.507	1.543	1.625	18.188	0.372
1400.000	0.237	342.609	1399.985	1.904	0.606	1.904	1.998	17.646	0.258
1500.000	0.203	209.879	1499.985	1.949	0.456	1.949	2.001	13.166	0.403
1600.000	0.322	273.754	1599.984	1.814	0.088	1.814	1.816	2.767	0.295
1700.000	0.119	168.921	1699.984	1.730	-0.172	1.730	1.739	354.306	0.371
1800.000	0.321	246.923	1799.983	1.518	-0.410	1.518	1.573	344.887	0.318
1900.000	0.180	191.533	1899.982	1.255	-0.699	1.255	1.436	330.878	0.264
2000.000	0.564	222.911	1999.980	0.740	-1.065	0.740	1.297	304.795	0.421
2100.000	0.825	228.172	2099.973	-0.100	-1.937	-0.100	1.940	267.034	0.269
2200.000	0.539	277.382	2199.966	-0.520	-2.940	-0.520	2.986	259.967	0.625
2300.000	0.418	298.169	2299.963	-0.287	-3.729	-0.287	3.740	265.592	0.210
2400.000	0.770	219.528	2399.959	-0.634	-4.478	-0.634	4.523	261.947	0.801
2500.000	0.855	203.624	2499.949	-1.836	-5.205	-1.836	5.520	250.572	0.240
2600.000	1.061	163.164	2599.936	-3.406	-5.236	-3.406	6.247	236.957	0.690
2700.000	1.109	187.085	2699.918	-5.253	-5.087	-5.253	7.313	224.085	0.452
2800.000	1.107	185.110	2799.900	-7.176	-5.293	-7.176	8.917	216.414	0.038
2900.000	0.596	191.529	2899.888	-8.647	-5.483	-8.647	10.239	212.377	0.519
3000.000	0.508	199.568	2999.884	-9.575	-5.735	-9.575	11.161	210.922	0.117
3100.000	0.270	323.453	3099.882	-9.803	-6.024	-9.803	11.506	211.572	0.696
3200.000	0.777	270.760	3199.878	-9.604	-6.842	-9.604	11.792	215.466	0.649
3300.000	0.546	322.761	3299.872	-9.216	-7.808	-9.216	12.079	220.273	0.616
3400.000	1.039	277.492	3399.863	-8.719	-8.995	-8.719	12.527	225.895	0.761

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
3500.000	0.941	333.125	3499.850	-7.868	-10.265	-7.868	12.934	232.530	0.928
3600.000	0.998	10.219	3599.837	-6.279	-10.482	-6.279	12.218	239.078	0.619
3700.000	0.959	320.311	3699.824	-4.777	-10.862	-4.777	11.866	246.260	0.827
3800.000	0.876	17.600	3799.813	-3.404	-11.165	-3.404	11.672	253.043	0.883
3900.000	1.468	16.873	3899.792	-1.450	-10.562	-1.450	10.661	262.183	0.592
4000.000	1.612	21.759	3999.756	1.082	-9.669	1.082	9.729	276.384	0.195
4100.000	1.543	350.851	4099.720	3.717	-9.362	3.717	10.073	291.656	0.843
4200.000	1.642	26.227	4199.684	6.331	-8.943	6.331	10.957	305.298	0.972
4300.000	1.651	54.646	4299.644	8.450	-7.135	8.450	11.059	319.825	0.808
4400.000	0.928	84.254	4399.619	9.365	-5.153	9.365	10.689	331.176	0.961
4500.000	1.199	137.203	4499.604	8.678	-3.637	8.678	9.410	337.262	0.979
4600.000	1.537	172.299	4599.577	6.582	-2.747	6.582	7.132	337.350	0.885
4700.000	2.117	196.703	4699.527	3.484	-3.098	3.484	4.662	318.362	0.958
4800.000	2.137	230.861	4799.462	0.538	-5.075	0.538	5.104	276.055	1.249
4900.000	2.876	242.670	4899.367	-1.790	-8.750	-1.790	8.931	258.436	0.897
5000.000	2.711	234.286	4999.248	-4.322	-12.898	-4.322	13.603	251.473	0.440
5100.000	2.161	244.439	5099.158	-6.516	-16.519	-6.516	17.758	248.472	0.696
5200.000	1.898	116.363	5199.129	-8.066	-16.736	-8.066	18.579	244.269	3.652
5300.000	1.245	140.786	5299.092	-9.643	-14.565	-9.643	17.468	236.492	0.922
5400.000	1.240	245.302	5399.078	-10.938	-14.861	-10.938	18.452	233.648	1.965
5500.000	1.216	267.428	5499.055	-11.437	-16.905	-11.437	20.410	235.919	0.472
5600.000	0.894	245.802	5599.039	-11.805	-18.677	-11.805	22.095	237.705	0.507
5700.000	1.212	230.719	5699.022	-12.794	-20.207	-12.794	23.917	237.661	0.419
5800.000	1.884	206.085	5798.986	-14.940	-21.749	-14.940	26.386	235.513	0.931
5900.000	2.829	202.670	5898.900	-18.694	-23.423	-18.694	29.969	231.406	0.955
6000.000	0.611	0.834	5998.866	-20.439	-24.367	-20.439	31.804	230.010	3.404
6100.000	1.053	301.159	6098.857	-19.431	-25.145	-19.431	31.778	232.306	0.912
6200.000	1.268	264.518	6198.837	-19.061	-27.033	-19.061	33.078	234.813	0.758
6300.000	0.971	312.568	6298.820	-18.593	-28.759	-18.593	34.246	237.117	0.951
6400.000	1.802	292.516	6398.791	-17.418	-30.836	-17.418	35.415	240.540	0.950
6500.000	1.842	284.358	6498.740	-16.417	-33.846	-16.417	37.617	244.124	0.262
6600.000	1.764	306.808	6598.692	-15.097	-36.635	-15.097	39.624	247.605	0.706
6700.000	1.921	333.849	6698.642	-12.670	-38.606	-12.670	40.632	251.831	0.875
6800.000	2.297	327.167	6798.574	-9.482	-40.432	-9.482	41.528	256.802	0.448
6900.000	2.474	312.841	6898.489	-6.330	-43.100	-6.330	43.563	261.644	0.620
7000.000	2.368	305.679	6998.400	-3.658	-46.361	-3.658	46.505	265.489	0.320
7100.000	1.555	290.896	7098.341	-1.969	-49.307	-1.969	49.347	267.714	0.951
7200.000	1.867	303.599	7198.296	-0.583	-51.932	-0.583	51.936	269.357	0.489

HORIZONTAL DISPLACEMENT IS  
51.936 FEET AT 269.357 DEGREES