

Company: Anadarko Petroleum

Well: Anderson 16-27

API #: 05-123-22004

Rig Name: Production/Core-Tech

State/County: Colorado/Weld

Latitude: 40.191, Longitude: -104.982

Directions are relative to True North

VS-Azi: 0.000 Degrees



Depth Reference : RKB= Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-02-de_01.ut

Minimum Curvature Method

Report Date/Time: 6/23/2014 / 14:07

VES Survey International

Henderson, Colorado

303-853-4976

Surveyor: Mark Simmons

Anderson 16-27 / API 05-123-22004

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	0.904	260.667	99.996	-0.128	-0.779	-0.128	0.789	260.667	0.904
200.000	0.771	258.926	199.985	-0.385	-2.218	-0.385	2.251	260.146	0.136
300.000	0.776	247.984	299.976	-0.768	-3.506	-0.768	3.589	257.640	0.148
400.000	0.684	216.533	399.968	-1.501	-4.489	-1.501	4.733	251.505	0.405
500.000	0.668	209.280	499.961	-2.489	-5.129	-2.489	5.701	244.110	0.087
600.000	0.654	221.333	599.955	-3.427	-5.791	-3.427	6.729	239.387	0.139
700.000	0.689	230.605	699.948	-4.237	-6.633	-4.237	7.870	237.430	0.114
800.000	0.646	240.597	799.941	-4.895	-7.588	-4.895	9.030	237.175	0.124
900.000	0.758	240.296	899.934	-5.499	-8.654	-5.499	10.253	237.564	0.113
1000.000	0.812	244.256	999.924	-6.135	-9.866	-6.135	11.618	238.127	0.076
1100.000	0.828	258.057	1099.914	-6.592	-11.211	-6.592	13.005	239.545	0.198
1200.000	0.973	272.366	1199.902	-6.706	-12.766	-6.706	14.420	242.285	0.266
1300.000	0.991	267.137	1299.887	-6.715	-14.478	-6.715	15.959	245.119	0.091
1400.000	0.889	255.963	1399.874	-6.946	-16.094	-6.946	17.529	246.656	0.210
1500.000	0.998	266.664	1499.860	-7.185	-17.716	-7.185	19.117	247.925	0.207
1600.000	1.081	260.988	1599.844	-7.383	-19.517	-7.383	20.867	249.279	0.132
1700.000	1.086	262.693	1699.826	-7.651	-21.389	-7.651	22.716	250.317	0.033
1800.000	1.210	266.364	1799.806	-7.839	-23.383	-7.839	24.662	251.467	0.144
1900.000	1.198	275.429	1899.784	-7.807	-25.477	-7.807	26.647	252.964	0.191
2000.000	1.247	289.668	1999.761	-7.342	-27.543	-7.342	28.505	255.075	0.307

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
2100.000	1.268	296.342	2099.737	-6.484	-29.560	-6.484	30.263	257.627	0.148
2200.000	1.144	302.899	2199.715	-5.451	-31.389	-5.451	31.859	260.148	0.185
2300.000	1.219	293.664	2299.694	-4.482	-33.202	-4.482	33.503	262.312	0.204
2400.000	1.145	291.617	2399.673	-3.687	-35.105	-3.687	35.298	264.004	0.085
2500.000	1.224	286.424	2499.651	-3.017	-37.058	-3.017	37.181	265.346	0.133
2600.000	1.047	296.809	2599.632	-2.303	-38.898	-2.303	38.966	266.612	0.270
2700.000	1.115	290.173	2699.614	-1.555	-40.626	-1.555	40.656	267.807	0.142
2800.000	1.225	287.534	2799.593	-0.898	-42.559	-0.898	42.568	268.792	0.123
2900.000	1.215	290.111	2899.571	-0.211	-44.574	-0.211	44.575	269.729	0.056
3000.000	1.208	294.052	2999.548	0.583	-46.532	0.583	46.536	270.718	0.084
3100.000	1.295	293.446	3099.524	1.462	-48.531	1.462	48.553	271.725	0.088
3200.000	1.428	292.939	3199.496	2.397	-50.715	2.397	50.771	272.706	0.134
3300.000	1.482	296.602	3299.464	3.462	-53.018	3.462	53.131	273.736	0.107
3400.000	1.432	306.054	3399.432	4.776	-55.184	4.776	55.390	274.946	0.245
3500.000	0.924	295.726	3499.410	5.861	-56.921	5.861	57.222	275.879	0.548
3600.000	0.248	278.994	3599.405	6.245	-57.862	6.245	58.198	276.160	0.690
3700.000	0.244	262.071	3699.404	6.250	-58.287	6.250	58.621	276.120	0.073
3800.000	0.233	264.798	3799.403	6.202	-58.700	6.202	59.026	276.031	0.016
3900.000	0.121	224.107	3899.402	6.108	-58.975	6.108	59.290	275.913	0.162
4000.000	0.684	323.223	3999.400	6.511	-59.405	6.511	59.761	276.254	0.713
4100.000	1.076	327.393	4099.388	7.780	-60.269	7.780	60.769	277.355	0.397
4200.000	1.188	328.278	4199.369	9.453	-61.320	9.453	62.044	278.763	0.113
4300.000	1.298	330.833	4299.345	11.323	-62.417	11.323	63.436	280.282	0.123
4400.000	1.309	324.872	4399.319	13.247	-63.626	13.247	64.991	281.761	0.136
4500.000	1.272	319.607	4499.294	15.026	-65.003	15.026	66.717	283.016	0.124
4600.000	1.100	310.345	4599.273	16.493	-66.453	16.493	68.469	283.938	0.257
4700.000	1.118	309.550	4699.254	17.735	-67.937	17.735	70.214	284.631	0.024
4800.000	0.708	311.059	4799.241	18.762	-69.155	18.762	71.655	285.179	0.410
4900.000	0.785	310.483	4899.232	19.613	-70.142	19.613	72.833	285.622	0.077
5000.000	1.002	318.088	4999.220	20.708	-71.247	20.708	74.196	286.207	0.247
5100.000	1.307	323.821	5099.200	22.280	-72.505	22.280	75.851	287.082	0.326
5200.000	1.157	316.588	5199.177	23.934	-73.872	23.934	77.652	287.952	0.216
5300.000	1.174	318.933	5299.156	25.440	-75.239	25.440	79.423	288.681	0.051
5400.000	1.124	317.744	5399.136	26.938	-76.571	26.938	81.171	289.382	0.056
5500.000	1.078	329.230	5499.118	28.472	-77.712	28.472	82.764	290.122	0.225
5600.000	0.989	345.946	5599.102	30.118	-78.403	30.118	83.989	291.014	0.313
5700.000	0.976	343.932	5699.087	31.774	-78.849	31.774	85.010	291.948	0.037
5800.000	0.812	341.023	5799.075	33.263	-79.315	33.263	86.007	292.752	0.170
5900.000	0.864	319.388	5899.064	34.505	-80.036	34.505	87.157	293.322	0.319
6000.000	0.726	337.965	5999.055	35.665	-80.765	35.665	88.289	293.826	0.291
6100.000	0.759	318.977	6099.046	36.753	-81.437	36.753	89.347	294.290	0.247
6200.000	1.005	298.413	6199.035	37.670	-82.644	37.670	90.824	294.504	0.397

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
6300.000	1.055	336.193	6299.020	38.930	-83.787	38.930	92.389	294.921	0.669
6400.000	1.093	328.189	6399.002	40.582	-84.661	40.582	93.885	295.611	0.155
6500.000	1.240	305.274	6498.982	42.017	-86.048	42.017	95.758	296.027	0.486
6600.000	1.630	311.760	6598.950	43.590	-87.992	43.590	98.197	296.353	0.421
6700.000	1.706	315.942	6698.908	45.606	-90.088	45.606	100.974	296.851	0.144
6800.000	2.156	316.751	6798.851	48.046	-92.412	48.046	104.156	297.471	0.451
6900.000	2.397	330.870	6898.773	51.243	-94.719	51.243	107.692	298.414	0.608
7000.000	2.226	319.257	6998.692	54.541	-97.004	54.541	111.286	299.347	0.498
7100.000	1.351	326.001	7098.642	56.990	-98.931	56.990	114.172	299.944	0.898
7200.000	0.666	311.386	7198.627	58.351	-100.026	58.351	115.802	300.258	0.726