



Company: Anadarko Petroleum Corp.
 Well/API: Cannon Red W 3-15/05-123-16280
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/ CoreTech
 County/State: Weld/Colorado
 VS-Azi: 0.000 Degrees
 Latitude: 40.16118, Longitude: -104.76151
 All Azimuths referenced to True North
 No Grid Convergence Applied



Depth Reference : RKB= GL Elevation= 4975 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 10/30/2015 / 14:29

Lat/Long & Elevation Obtained by Handheld GPS at Wellhead

Handheld GPS Reference: NAD83/ Device Error: +/- 9 Feet

VES Survey International- Henderson Co

Surveyor: Sean Bratt / Cannon Red W 3-15

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	0.709	66.357	99.997	0.248	0.567	0.248	0.619	66.357	0.709
200.000	0.309	82.541	199.993	0.531	1.401	0.531	1.498	69.230	0.422
300.000	0.327	62.870	299.992	0.696	1.921	0.696	2.044	70.083	0.110
400.000	0.149	111.724	399.991	0.778	2.296	0.778	2.424	71.285	0.254
500.000	0.232	62.290	499.991	0.824	2.596	0.824	2.724	72.398	0.176
600.000	0.133	99.358	599.990	0.899	2.890	0.899	3.027	72.724	0.149
700.000	0.102	343.889	699.990	0.965	2.980	0.965	3.133	72.056	0.199
800.000	0.228	6.541	799.989	1.248	2.978	1.248	3.229	67.268	0.140
900.000	0.127	282.245	899.989	1.469	2.892	1.469	3.244	63.078	0.250
1000.000	0.111	355.912	999.989	1.589	2.777	1.589	3.200	60.216	0.144
1100.000	0.160	354.530	1099.989	1.826	2.757	1.826	3.306	56.485	0.049
1200.000	0.077	241.654	1199.989	1.933	2.684	1.933	3.308	54.241	0.203
1300.000	0.255	318.523	1299.988	2.068	2.478	2.068	3.228	50.153	0.249
1400.000	0.312	248.015	1399.987	2.133	2.078	2.133	2.978	44.255	0.331
1500.000	0.373	291.982	1499.986	2.153	1.523	2.153	2.637	35.284	0.263
1600.000	0.374	249.037	1599.984	2.158	0.916	2.158	2.344	23.009	0.274
1700.000	0.456	293.279	1699.981	2.198	0.246	2.198	2.212	6.395	0.321
1800.000	0.565	260.989	1799.977	2.278	-0.606	2.278	2.357	345.111	0.303

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
1900.000	0.723	296.160	1899.972	2.479	-1.659	2.479	2.983	326.208	0.417
2000.000	0.626	284.928	1999.965	2.898	-2.754	2.898	3.998	316.464	0.164
2100.000	0.892	292.809	2099.956	3.341	-3.999	3.341	5.211	309.873	0.285
2200.000	0.807	299.888	2199.945	3.994	-5.328	3.994	6.658	306.855	0.135
2300.000	0.935	297.614	2299.933	4.723	-6.662	4.723	8.166	305.336	0.132
2400.000	1.029	299.246	2399.919	5.540	-8.168	5.540	9.869	304.146	0.098
2500.000	0.737	297.704	2499.907	6.277	-9.521	6.277	11.404	303.398	0.293
2600.000	0.683	305.946	2599.899	6.926	-10.573	6.926	12.639	303.229	0.116
2700.000	0.850	306.766	2699.890	7.720	-11.649	7.720	13.975	303.532	0.167
2800.000	0.721	310.960	2799.880	8.576	-12.718	8.576	15.339	303.992	0.141
2900.000	0.895	314.132	2899.871	9.532	-13.753	9.532	16.734	304.724	0.180
3000.000	1.017	307.516	2999.857	10.616	-15.018	10.616	18.391	305.257	0.164
3100.000	1.040	307.240	3099.841	11.706	-16.444	11.706	20.185	305.445	0.023
3200.000	1.573	286.960	3199.815	12.655	-18.479	12.655	22.397	304.404	0.698
3300.000	1.729	284.154	3299.773	13.424	-21.255	13.424	25.139	302.276	0.175
3400.000	1.974	292.550	3399.721	14.454	-24.308	14.454	28.280	300.736	0.365
3500.000	2.086	292.735	3499.658	15.817	-27.577	15.817	31.791	299.837	0.112
3600.000	2.315	288.862	3599.585	17.173	-31.166	17.173	35.584	298.856	0.273
3700.000	2.501	287.492	3699.496	18.482	-35.158	18.482	39.720	297.730	0.195
3800.000	2.530	295.343	3799.400	20.083	-39.234	20.083	44.075	297.107	0.345
3900.000	2.841	299.830	3899.290	22.260	-43.378	22.260	48.756	297.165	0.375
4000.000	2.990	293.739	3999.161	24.542	-47.915	24.542	53.834	297.122	0.344
4100.000	2.880	296.616	4099.030	26.717	-52.548	26.717	58.950	296.951	0.184
4200.000	2.872	299.070	4198.904	29.060	-56.984	29.060	63.966	297.020	0.123
4300.000	2.998	296.510	4298.773	31.445	-61.514	31.445	69.085	297.076	0.182
4400.000	3.063	294.367	4398.633	33.714	-66.287	33.714	74.369	296.958	0.131
4500.000	2.921	290.876	4498.497	35.725	-71.102	35.725	79.572	296.677	0.231
4600.000	2.964	287.866	4598.365	37.426	-75.943	37.426	84.664	296.235	0.160
4700.000	3.019	284.217	4698.229	38.866	-80.956	38.866	89.802	295.645	0.198
4800.000	2.848	281.106	4798.098	39.991	-85.946	39.991	94.795	294.953	0.233
4900.000	3.030	280.431	4897.966	40.948	-90.983	40.948	99.773	294.231	0.185
5000.000	3.031	281.284	4997.827	41.944	-96.175	41.944	104.923	293.563	0.045
5100.000	3.081	279.796	5097.684	42.918	-101.415	42.918	110.122	292.938	0.094
5200.000	3.091	280.024	5197.539	43.845	-106.718	43.845	115.374	292.335	0.016
5300.000	2.610	282.460	5297.415	44.805	-111.597	44.805	120.255	291.875	0.496
5400.000	2.604	283.552	5397.312	45.829	-116.028	45.829	124.751	291.553	0.050
5500.000	1.965	289.342	5497.232	46.929	-119.854	46.929	128.714	291.383	0.679
5600.000	1.793	311.178	5597.180	48.526	-122.649	48.526	131.900	291.586	0.731
5700.000	1.614	333.915	5697.136	50.821	-124.445	50.821	134.422	292.214	0.694
5800.000	1.600	349.100	5797.098	53.456	-125.328	53.456	136.252	293.100	0.425

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
5900.000	1.466	353.021	5897.062	56.096	-125.748	56.096	137.693	294.042	0.170
6000.000	1.698	2.316	5997.024	58.847	-125.843	58.847	138.922	295.062	0.345
6100.000	1.675	19.742	6096.981	61.703	-125.289	61.703	139.659	296.219	0.511
6200.000	1.899	18.214	6196.932	64.653	-124.278	64.653	140.089	297.485	0.228
6300.000	1.863	25.260	6296.879	67.696	-123.066	67.696	140.457	298.814	0.234
6400.000	1.779	28.896	6396.828	70.525	-121.623	70.525	140.591	300.108	0.143
6500.000	1.796	40.021	6496.780	73.084	-119.865	73.084	140.388	301.371	0.347
6600.000	1.731	40.283	6596.733	75.436	-117.881	75.436	139.952	302.616	0.066
6700.000	1.143	56.362	6696.701	77.140	-116.074	77.140	139.369	303.607	0.707
6800.000	0.779	81.781	6796.687	77.790	-114.571	77.790	138.484	304.175	0.553
6900.000	0.643	79.888	6896.680	77.986	-113.346	77.986	137.583	304.529	0.138
7000.000	0.307	106.996	6996.676	78.006	-112.537	78.006	136.929	304.728	0.395