

Company: Anadarko Petroleum Corp.
 Well/API: Seng 33-7/05-123-23947
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/Summit
 County/State: Weld/Colorado
 Latitude: 40.064, Longitude: -104.704
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4987

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 8/14/2014 / 09:26

Lat/Long & Elevation Obtained By Handheld GPS At Wellhead
 Handheld GPS Reference: NAD83/Device Error: ±9 Feet
 VES Survey International - Henderson CO
 Gregg Wilson
 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	0.544	35.821	99.998	0.385	0.278	0.385	0.475	35.821	0.544
200.000	0.468	41.963	199.995	1.074	0.829	1.074	1.357	37.668	0.093
300.000	0.565	63.825	299.991	1.596	1.545	1.596	2.221	44.075	0.218
400.000	0.716	83.414	399.984	1.885	2.608	1.885	3.218	54.143	0.264
500.000	0.744	81.937	499.976	2.047	3.871	2.047	4.379	62.127	0.034
600.000	1.240	78.294	599.961	2.358	5.574	2.358	6.052	67.068	0.499
700.000	1.425	84.778	699.934	2.691	7.871	2.691	8.319	71.128	0.239
800.000	1.473	88.208	799.902	2.844	10.394	2.844	10.776	74.697	0.099
900.000	1.539	85.556	899.868	2.988	13.018	2.988	13.356	77.071	0.097
1000.000	1.497	90.140	999.832	3.089	15.663	3.089	15.965	78.843	0.129
1100.000	1.259	87.783	1099.803	3.128	18.067	3.128	18.336	80.176	0.245
1200.000	0.918	97.629	1199.785	3.065	19.959	3.065	20.193	81.271	0.387
1300.000	0.723	92.252	1299.775	2.933	21.384	2.933	21.584	82.189	0.210
1400.000	0.442	76.093	1399.770	3.001	22.388	3.001	22.589	82.365	0.323
1500.000	0.361	69.941	1499.767	3.202	23.059	3.202	23.280	82.094	0.092
1600.000	0.389	70.828	1599.765	3.422	23.676	3.422	23.922	81.776	0.029
1700.000	0.408	59.608	1699.763	3.713	24.304	3.713	24.586	81.313	0.080
1800.000	0.316	54.476	1799.761	4.053	24.835	4.053	25.164	80.730	0.097
1900.000	0.244	28.828	1899.760	4.400	25.162	4.400	25.544	80.081	0.143
2000.000	0.359	353.279	1999.758	4.898	25.228	4.898	25.699	79.014	0.214
2100.000	0.370	347.747	2099.756	5.524	25.123	5.524	25.723	77.599	0.037
2200.000	0.406	335.158	2199.754	6.161	24.905	6.161	25.656	76.106	0.092
2300.000	0.426	330.125	2299.751	6.804	24.571	6.804	25.496	74.521	0.042
2400.000	0.551	38.363	2399.749	7.504	24.685	7.504	25.800	73.090	0.558
2500.000	0.966	42.205	2499.740	8.506	25.549	8.506	26.928	71.587	0.417
2600.000	1.175	44.477	2599.722	9.862	26.834	9.862	28.589	69.821	0.214
2700.000	1.472	33.490	2699.695	11.665	28.261	11.665	30.574	67.572	0.390
2800.000	1.491	29.343	2799.662	13.870	29.608	13.870	32.696	64.898	0.109
2900.000	1.240	48.411	2899.634	15.723	31.054	15.723	34.808	63.147	0.516
3000.000	1.356	74.563	2999.609	16.756	33.004	16.756	37.014	63.084	0.598
3100.000	1.455	64.220	3099.579	17.623	35.288	17.623	39.444	63.463	0.272
3200.000	1.915	45.039	3199.537	19.355	37.613	19.355	42.301	62.770	0.722
3300.000	2.568	38.163	3299.460	22.297	40.180	22.297	45.952	60.972	0.705

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	3.112	28.366	3399.337	26.447	42.854	26.447	50.357	58.319	0.727
3500.000	3.331	23.062	3499.179	31.509	45.281	31.509	55.165	55.168	0.370
3600.000	3.400	22.982	3599.007	36.912	47.577	36.912	60.217	52.194	0.069
3700.000	3.227	24.193	3698.840	42.209	49.888	42.209	65.349	49.766	0.187
3800.000	2.904	22.963	3798.696	47.109	52.030	47.109	70.188	47.842	0.330
3900.000	2.968	24.987	3898.565	51.787	54.112	51.787	74.900	46.257	0.122
4000.000	2.750	30.295	3998.441	56.206	56.416	56.206	79.635	45.107	0.342
4100.000	2.636	26.545	4098.330	60.334	58.653	60.334	84.145	44.191	0.210
4200.000	2.569	24.811	4198.227	64.426	60.622	64.426	88.463	43.257	0.103
4300.000	2.589	18.188	4298.126	68.606	62.267	68.606	92.649	42.227	0.298
4400.000	2.628	26.655	4398.023	72.800	64.001	72.800	96.933	41.320	0.387
4500.000	2.756	37.513	4497.913	76.757	66.493	76.757	101.553	40.902	0.525
4600.000	2.429	27.355	4597.811	80.545	68.931	80.545	106.014	40.557	0.563
4700.000	2.357	18.484	4697.724	84.378	70.556	84.378	109.990	39.902	0.377
4800.000	2.391	11.791	4797.639	88.370	71.635	88.370	113.758	39.029	0.279
4900.000	2.323	27.110	4897.555	92.217	72.985	92.217	117.604	38.360	0.632
5000.000	2.493	38.273	4997.467	95.728	75.255	95.728	121.767	38.172	0.498
5100.000	2.230	46.271	5097.383	98.780	78.009	98.780	125.869	38.299	0.421
5200.000	1.764	42.215	5197.322	101.265	80.449	101.265	129.331	38.465	0.488
5300.000	1.251	38.796	5297.287	103.255	82.166	103.255	131.958	38.511	0.521
5400.000	0.974	26.645	5397.268	104.865	83.231	104.865	133.881	38.439	0.362
5500.000	0.455	6.580	5497.260	106.019	83.658	106.019	135.051	38.276	0.568
5600.000	0.359	14.683	5597.257	106.717	83.783	106.717	135.676	38.135	0.111
5700.000	0.337	12.775	5697.256	107.307	83.927	107.307	136.230	38.030	0.025
5800.000	0.301	5.229	5797.254	107.855	84.016	107.855	136.717	37.918	0.055
5900.000	0.516	329.025	5897.252	108.504	83.808	108.504	137.102	37.682	0.326
6000.000	1.498	319.214	5997.235	109.880	82.722	109.880	137.537	36.974	0.993
6100.000	1.914	288.909	6097.192	111.410	80.289	111.410	137.327	35.779	0.978
6200.000	1.160	279.757	6197.156	112.123	77.712	112.123	136.421	34.726	0.790
6300.000	1.312	239.627	6297.134	111.716	75.727	111.716	134.963	34.131	0.860
6400.000	1.496	235.454	6397.104	110.397	73.664	110.397	132.717	33.714	0.211
6500.000	1.646	233.152	6497.067	108.795	71.439	108.795	130.153	33.290	0.162
6600.000	1.836	223.736	6597.021	106.776	69.182	106.776	127.230	32.940	0.343
6700.000	1.937	225.821	6696.967	104.441	66.863	104.441	124.011	32.627	0.122
6800.000	2.078	228.834	6796.905	102.070	64.286	102.070	120.628	32.204	0.176
6900.000	2.303	226.328	6896.832	99.490	61.468	99.490	116.947	31.709	0.245
7000.000	2.410	228.178	6996.748	96.700	58.448	96.700	112.992	31.150	0.131
7100.000	2.918	227.016	7096.639	93.563	55.019	93.563	108.541	30.458	0.510
7200.000	4.198	227.457	7196.444	89.353	50.461	89.353	102.617	29.455	1.281
HORIZONTAL DISPLACEMENT IS 102.617 FEET AT 29.455 DEGREES									