

Company: ANADARKO PETROLEUM
 Well: THOMASON X 16-3
 API: 05-123-17205
 Rig Name: PRODUCTION/CORE-TECH
 State/County: COLORADO / WELD
 Latitude: 40.144, Longitude: -104.671
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 4/29/2014 / 14:54

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

303-853-4976

NICK KULA

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	0.501	155.987	99.999	-0.399	0.178	-0.399	0.437	155.987	0.501
200.000	0.501	146.121	199.995	-1.161	0.599	-1.161	1.306	152.701	0.086
300.000	0.299	143.420	299.992	-1.733	0.998	-1.733	2.000	150.060	0.202
400.000	0.113	122.295	399.992	-1.995	1.237	-1.995	2.348	148.202	0.198
500.000	0.113	348.743	499.992	-1.951	1.301	-1.951	2.345	146.305	0.208
600.000	0.170	330.354	599.991	-1.726	1.209	-1.726	2.107	144.997	0.072
700.000	0.185	130.657	699.991	-1.702	1.258	-1.702	2.117	143.542	0.349
800.000	0.229	17.222	799.991	-1.617	1.439	-1.617	2.165	138.330	0.346
900.000	0.442	276.668	899.990	-1.382	1.115	-1.382	1.775	141.094	0.533
1000.000	1.170	258.197	999.979	-1.546	-0.268	-1.546	1.569	189.826	0.764
1100.000	1.108	224.434	1099.961	-2.445	-1.944	-2.445	3.124	218.492	0.664
1200.000	1.062	257.492	1199.944	-3.336	-3.526	-3.336	4.854	226.584	0.619
1300.000	1.021	249.066	1299.927	-3.855	-5.263	-3.855	6.524	233.775	0.158
1400.000	1.100	254.359	1399.910	-4.432	-7.019	-4.432	8.302	237.729	0.126
1500.000	0.934	260.641	1499.894	-4.824	-8.748	-4.824	9.990	241.126	0.200
1600.000	0.867	271.633	1599.882	-4.935	-10.308	-4.935	11.428	244.419	0.185
1700.000	0.945	282.308	1699.870	-4.737	-11.871	-4.737	12.781	248.244	0.185
1800.000	0.956	271.504	1799.856	-4.540	-13.510	-4.540	14.252	251.427	0.179
1900.000	0.736	282.992	1899.845	-4.373	-14.970	-4.373	15.595	253.714	0.277
2000.000	0.750	275.824	1999.837	-4.163	-16.246	-4.163	16.771	255.629	0.094
2100.000	0.454	293.090	2099.831	-3.941	-17.262	-3.941	17.706	257.140	0.344
2200.000	0.430	226.084	2199.829	-4.046	-17.896	-4.046	18.348	257.262	0.488
2300.000	0.422	255.560	2299.826	-4.398	-18.523	-4.398	19.038	256.644	0.217
2400.000	0.408	202.913	2399.824	-4.817	-19.018	-4.817	19.618	255.786	0.368
2500.000	0.699	194.787	2499.819	-5.735	-19.312	-5.735	20.145	253.461	0.301
2600.000	0.720	190.255	2599.811	-6.943	-19.579	-6.943	20.774	250.475	0.060
2700.000	0.689	184.839	2699.804	-8.161	-19.742	-8.161	21.362	247.541	0.074
2800.000	0.369	201.440	2799.799	-9.060	-19.911	-9.060	21.875	245.533	0.352
2900.000	0.317	207.027	2899.798	-9.606	-20.154	-9.606	22.326	244.516	0.062

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
3000.000	0.209	202.595	2999.797	-10.021	-20.350	-10.021	22.683	243.783	0.110
3100.000	0.275	272.279	3099.796	-10.179	-20.660	-10.179	23.031	243.770	0.282
3200.000	0.221	300.146	3199.795	-10.073	-21.066	-10.073	23.350	244.445	0.131
3300.000	0.323	295.519	3299.794	-9.855	-21.487	-9.855	23.639	245.361	0.104
3400.000	0.335	297.385	3399.792	-9.599	-22.001	-9.599	24.003	246.428	0.017
3500.000	0.416	314.426	3499.790	-9.210	-22.520	-9.210	24.330	247.756	0.137
3600.000	0.529	302.793	3599.787	-8.706	-23.167	-8.706	24.749	249.403	0.148
3700.000	0.381	21.331	3699.784	-8.147	-23.434	-8.147	24.810	250.830	0.587
3800.000	0.404	120.055	3799.783	-8.014	-23.008	-8.014	24.364	250.796	0.596
3900.000	0.708	115.933	3899.778	-8.461	-22.147	-8.461	23.708	249.091	0.306
4000.000	0.702	154.523	3999.771	-9.284	-21.328	-9.284	23.261	246.475	0.466
4100.000	0.788	169.693	4099.763	-10.514	-20.941	-10.514	23.432	243.340	0.214
4200.000	0.920	153.823	4199.752	-11.910	-20.464	-11.910	23.678	239.800	0.270
4300.000	1.242	157.284	4299.734	-13.630	-19.691	-13.630	23.949	235.309	0.329
4400.000	1.699	138.449	4399.701	-15.740	-18.289	-15.740	24.130	229.284	0.660
4500.000	1.918	121.944	4499.652	-17.735	-15.886	-17.735	23.809	221.852	0.562
4600.000	2.091	112.297	4599.591	-19.312	-12.778	-19.312	23.157	213.491	0.379
4700.000	2.155	103.978	4699.523	-20.459	-9.265	-20.459	22.459	204.364	0.315
4800.000	2.264	93.987	4799.449	-21.050	-5.470	-21.050	21.749	194.565	0.400
4900.000	1.819	109.687	4899.386	-21.722	-2.004	-21.722	21.815	185.272	0.711
5000.000	2.061	93.614	4999.329	-22.371	1.285	-22.371	22.407	176.712	0.593
5100.000	2.417	92.130	5099.252	-22.562	5.187	-22.562	23.151	167.053	0.360
5200.000	2.621	111.861	5199.158	-23.492	9.416	-23.492	25.309	158.159	0.886
5300.000	2.340	124.898	5299.065	-25.511	13.212	-25.511	28.729	152.621	0.628
5400.000	1.971	140.488	5398.995	-28.006	15.980	-28.006	32.244	150.291	0.689
5500.000	1.741	158.785	5498.943	-30.748	17.624	-30.748	35.441	150.180	0.632
5600.000	1.380	183.248	5598.907	-33.367	18.105	-33.367	37.962	151.515	0.749
5700.000	1.174	179.279	5698.882	-35.593	18.050	-35.593	39.908	153.110	0.224
5800.000	0.861	181.185	5798.866	-37.369	18.047	-37.369	41.499	154.222	0.315
5900.000	0.803	235.528	5898.857	-38.517	17.454	-38.517	42.287	155.623	0.762
6000.000	0.953	238.866	5998.845	-39.344	16.164	-39.344	42.535	157.665	0.158
6100.000	0.596	263.206	6098.836	-39.835	14.936	-39.835	42.543	159.447	0.478
6200.000	0.936	261.162	6198.827	-40.022	13.612	-40.022	42.274	161.217	0.341
6300.000	0.885	230.611	6298.815	-40.638	12.208	-40.638	42.432	163.280	0.482
6400.000	0.654	286.873	6398.807	-40.962	11.065	-40.962	42.430	164.884	0.753
6500.000	0.634	285.767	6498.801	-40.646	9.986	-40.646	41.855	166.197	0.024
6600.000	0.969	304.652	6598.791	-40.015	8.759	-40.015	40.962	167.654	0.422
6700.000	1.106	329.822	6698.775	-38.700	7.578	-38.700	39.435	168.921	0.471
6800.000	1.593	330.570	6798.747	-36.656	6.410	-36.656	37.212	170.080	0.488
6900.000	2.357	314.532	6898.688	-34.003	4.262	-34.003	34.269	172.856	0.936
7000.000	2.349	304.070	6998.604	-31.413	1.098	-31.413	31.432	177.998	0.429
HORIZONTAL DISPLACEMENT IS 31.432 FEET AT 177.998 DEGREES									