

Company: Great Western Oil and Gas
 Well/API: Great Western 26-14/ 05-123-24053
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/ CoreTech
 County/State: Weld County / Colorado
 VS-Azi: 0.000 Degrees
 Latitude: 40.45485, Longitude: -104.86594
 All Azimuths referenced to True North
 No Grid Convergence Applied



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4750'

DRILLOG MS GYRO SURVEY CALCULATIONS
 Error Model: VESSI_GYROFLEX_SLICKLINE.IPM

Filename: run1-01-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 2/14/2017 / 22:55

Lat/Long Obtained By Handheld GPS At Wellhead
 Handheld GPS Reference: NAD83/Device Error: ±9 Feet
 VES Survey International - Henderson CO
 Jay Hinman
 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	0.614	270.099	99.998	0.001	-0.535	0.001	0.535	270.099	0.614
200.000	0.538	297.546	199.993	0.219	-1.487	0.219	1.503	278.372	0.283
300.000	0.777	316.191	299.987	0.925	-2.372	0.925	2.546	291.308	0.318
400.000	0.564	245.375	399.981	1.210	-3.290	1.210	3.505	290.187	0.797
500.000	0.850	283.500	499.974	1.177	-4.459	1.177	4.611	284.793	0.535
600.000	1.448	219.216	599.957	0.371	-5.979	0.371	5.990	273.555	1.323
700.000	1.756	230.849	699.918	-1.575	-7.966	-1.575	8.120	258.815	0.446
800.000	2.049	232.427	799.863	-3.633	-10.571	-3.633	11.178	251.035	0.297
900.000	2.057	226.556	899.799	-5.957	-13.291	-5.957	14.565	245.859	0.210
1000.000	2.068	227.055	999.734	-8.420	-15.915	-8.420	18.005	242.118	0.021
1100.000	2.729	228.817	1099.646	-11.217	-19.028	-11.217	22.088	239.479	0.665
1200.000	2.920	211.409	1199.526	-14.959	-22.147	-14.959	26.726	235.963	0.875
1300.000	5.806	205.701	1299.226	-21.692	-25.669	-21.692	33.607	229.800	2.915
1400.000	6.156	213.736	1398.683	-30.709	-30.840	-30.709	43.522	225.122	0.907
1500.000	8.415	219.473	1497.871	-40.817	-38.470	-40.817	56.089	223.305	2.370
1600.000	8.958	220.602	1596.724	-52.376	-48.189	-52.376	71.172	222.616	0.569
1700.000	10.109	219.035	1695.341	-65.105	-58.783	-65.105	87.716	222.079	1.180
1800.000	10.512	220.187	1793.726	-78.891	-70.197	-78.891	105.600	221.663	0.452
1900.000	12.882	220.134	1891.643	-94.384	-83.270	-94.384	125.866	221.420	2.371
2000.000	14.109	219.245	1988.880	-112.347	-98.167	-112.347	149.193	221.147	1.245
2100.000	14.982	218.164	2085.674	-131.949	-113.865	-131.949	174.287	220.792	0.914
2200.000	15.072	218.742	2182.254	-152.253	-129.989	-152.253	200.195	220.490	0.175
2300.000	15.837	216.465	2278.638	-173.368	-146.236	-173.368	226.807	220.148	0.976
2400.000	16.868	215.282	2374.592	-196.186	-162.726	-196.186	254.890	219.674	1.083
2500.000	17.223	215.034	2470.199	-220.152	-179.605	-220.152	284.121	219.208	0.363
2600.000	16.452	214.743	2565.912	-243.911	-196.174	-243.911	313.012	218.809	0.775
2700.000	15.244	214.907	2662.109	-266.329	-211.768	-266.329	340.260	218.490	1.209
2800.000	14.739	212.833	2758.706	-287.798	-226.188	-287.798	366.045	218.165	0.737
2900.000	14.421	211.327	2855.485	-309.125	-239.560	-309.125	391.084	217.774	0.494
3000.000	13.038	210.392	2952.626	-329.493	-251.742	-329.493	414.656	217.381	1.401
3100.000	14.059	212.193	3049.842	-349.502	-263.920	-349.502	437.956	217.058	1.104

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
3200.000	14.815	211.218	3146.684	-370.715	-277.017	-370.715	462.783	216.769	0.794
3300.000	15.021	213.953	3243.314	-392.398	-290.881	-392.398	488.455	216.549	0.734
3400.000	14.399	213.372	3340.036	-413.532	-304.959	-413.532	513.818	216.407	0.639
3500.000	14.277	214.078	3436.921	-434.129	-318.708	-434.129	538.556	216.284	0.213
3600.000	17.042	214.025	3533.200	-456.491	-333.819	-456.491	565.526	216.177	2.765
3700.000	17.866	215.904	3628.596	-481.062	-351.015	-481.062	595.510	216.117	0.999
3800.000	17.759	213.969	3723.803	-506.135	-368.532	-506.135	626.090	216.059	0.602
3900.000	17.293	213.812	3819.161	-531.133	-385.324	-531.133	656.183	215.960	0.468
4000.000	15.442	210.622	3915.106	-554.942	-400.378	-554.942	684.297	215.810	2.057
4100.000	15.716	216.615	4011.438	-577.271	-415.238	-577.271	711.101	215.728	1.632
4200.000	14.855	217.406	4107.900	-598.324	-431.103	-598.324	737.456	215.773	0.886
4300.000	14.645	217.009	4204.604	-618.601	-446.499	-618.601	762.908	215.821	0.233
4400.000	14.516	214.186	4301.385	-639.063	-461.150	-639.063	788.075	215.814	0.722
4500.000	13.253	214.868	4398.461	-658.835	-474.746	-658.835	812.064	215.776	1.274
4600.000	12.694	210.872	4495.910	-677.671	-486.937	-677.671	834.473	215.699	1.057
4700.000	13.258	211.523	4593.356	-696.876	-498.570	-696.876	856.860	215.581	0.583
4800.000	14.716	211.023	4690.389	-717.537	-511.112	-717.537	880.962	215.463	1.462
4900.000	14.406	209.879	4787.177	-739.208	-523.855	-739.208	906.009	215.324	0.422
5000.000	14.222	209.991	4884.073	-760.633	-536.192	-760.633	930.626	215.181	0.187
5100.000	12.258	208.253	4981.410	-780.626	-547.359	-780.626	953.403	215.037	2.003
5200.000	10.308	207.632	5079.473	-797.905	-556.534	-797.905	972.822	214.896	1.954
5300.000	7.896	204.144	5178.207	-812.101	-563.494	-812.101	988.450	214.756	2.473
5400.000	6.228	201.913	5277.445	-823.402	-568.328	-823.402	1000.494	214.614	1.690
5500.000	4.918	203.196	5376.970	-832.375	-572.041	-832.375	1009.990	214.498	1.315
5600.000	4.211	216.211	5476.655	-839.278	-575.899	-839.278	1017.864	214.457	1.250
5700.000	3.438	216.118	5576.432	-844.663	-579.836	-844.663	1024.532	214.468	0.773
5800.000	2.555	215.973	5676.294	-848.889	-582.912	-848.889	1029.757	214.476	0.884
5900.000	2.385	217.258	5776.201	-852.348	-585.481	-852.348	1034.063	214.485	0.179
6000.000	1.837	221.833	5876.133	-855.198	-587.809	-855.198	1037.730	214.502	0.573
6100.000	1.294	213.975	5976.095	-857.329	-589.509	-857.329	1040.448	214.513	0.582
6200.000	1.108	204.388	6076.073	-859.145	-590.539	-859.145	1042.529	214.503	0.273
6300.000	1.004	206.633	6176.056	-860.809	-591.331	-860.809	1044.349	214.487	0.111
6400.000	0.758	221.725	6276.045	-862.086	-592.164	-862.086	1045.873	214.485	0.337
6450.000	0.734	243.786	6326.040	-862.474	-592.672	-862.474	1046.481	214.496	0.573
<div> <div>HORIZONTAL DISPLACEMENT IS</div> <div>1046.481 FEET AT 214.496 DEGREES</div> </div>									