



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01_ed.ut

Minimum Curvature Method

Report Date/Time: 8/2/2011 / 11:03

Vaughn Energy Services

Rifle, Colorado

866-835-8333

Jay Hinman

Wells Ranch USX AA 35-11/ 05-123-26146

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	0.052	103.366	100.000	-0.010	0.044	-0.010	0.045	103.366	0.052
200.000	0.220	16.503	200.000	0.164	0.143	0.164	0.217	41.142	0.224
300.000	0.314	93.424	299.999	0.332	0.471	0.332	0.576	54.838	0.340
400.000	0.662	117.364	399.995	0.050	1.257	0.050	1.258	87.732	0.396
500.000	0.603	130.324	499.989	-0.556	2.171	-0.556	2.242	104.368	0.154
600.000	0.425	113.967	599.985	-1.047	2.911	-1.047	3.094	109.786	0.229
700.000	0.554	104.434	699.982	-1.318	3.718	-1.318	3.944	109.524	0.152
800.000	0.459	112.474	799.978	-1.592	4.556	-1.592	4.826	109.260	0.118
900.000	0.521	110.312	899.974	-1.903	5.353	-1.903	5.681	109.571	0.064
1000.000	0.564	120.706	999.969	-2.312	6.203	-2.312	6.620	110.445	0.107
1100.000	0.520	119.770	1099.965	-2.789	7.020	-2.789	7.554	111.668	0.046
1200.000	0.626	140.414	1199.960	-3.435	7.761	-3.435	8.488	113.872	0.230
1300.000	0.749	109.251	1299.953	-4.071	8.726	-4.071	9.629	115.011	0.388
1400.000	0.876	118.015	1399.943	-4.646	10.018	-4.646	11.043	114.879	0.178
1500.000	0.687	95.783	1499.934	-5.065	11.289	-5.065	12.373	114.165	0.354
1600.000	0.385	96.523	1599.930	-5.164	12.219	-5.164	13.265	112.909	0.302
1700.000	0.692	91.635	1699.925	-5.219	13.156	-5.219	14.154	111.638	0.311
1800.000	0.849	104.457	1799.916	-5.421	14.478	-5.421	15.460	110.529	0.232
1900.000	1.204	131.509	1899.900	-6.302	15.982	-6.302	17.180	111.522	0.591
2000.000	0.936	146.927	1999.883	-7.683	17.214	-7.683	18.851	114.052	0.391
2100.000	1.208	125.776	2099.866	-8.984	18.515	-8.984	20.580	115.883	0.476
2200.000	1.399	125.965	2199.840	-10.317	20.358	-10.317	22.823	116.874	0.191
2300.000	1.690	112.909	2299.804	-11.608	22.704	-11.608	25.499	117.079	0.455
2400.000	1.975	117.027	2399.753	-12.965	25.597	-12.965	28.693	116.862	0.314
2500.000	1.714	123.618	2499.701	-14.576	28.378	-14.576	31.903	117.187	0.336
2600.000	1.372	129.313	2599.664	-16.162	30.550	-16.162	34.562	117.881	0.375
2700.000	1.009	127.329	2699.643	-17.455	32.176	-17.455	36.606	118.479	0.365
2800.000	0.814	127.656	2799.630	-18.423	33.439	-18.423	38.178	118.852	0.195
2900.000	0.862	127.354	2899.619	-19.313	34.599	-19.313	39.625	119.170	0.048
3000.000	0.781	118.616	2999.609	-20.096	35.795	-20.096	41.051	119.310	0.149
3100.000	0.710	128.025	3099.601	-20.804	36.882	-20.804	42.345	119.426	0.141
3200.000	0.714	175.095	3199.594	-21.806	37.423	-21.806	43.313	120.229	0.568
3300.000	1.035	286.219	3299.587	-22.174	36.609	-22.174	42.801	121.204	1.453
3400.000	2.504	1.296	3399.546	-19.738	35.791	-19.738	40.873	118.875	2.451

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
3500.000	1.512	334.860	3499.486	-16.359	35.280	-16.359	38.888	114.877	1.333
3600.000	1.237	325.954	3599.457	-14.270	34.115	-14.270	36.979	112.699	0.347
3700.000	0.991	323.951	3699.438	-12.676	33.002	-12.676	35.353	111.012	0.250
3800.000	0.570	334.105	3799.429	-11.530	32.276	-11.530	34.274	109.659	0.441
3900.000	0.569	304.315	3899.424	-10.803	31.649	-10.803	33.442	108.847	0.293
4000.000	0.652	309.670	3999.418	-10.160	30.801	-10.160	32.433	108.256	0.101
4100.000	0.656	349.594	4099.412	-9.234	30.259	-9.234	31.637	106.969	0.447
4200.000	0.576	339.217	4199.406	-8.201	29.978	-8.201	31.079	105.299	0.137
4300.000	0.603	341.409	4299.401	-7.232	29.632	-7.232	30.501	103.716	0.035
4400.000	0.927	355.469	4399.392	-5.928	29.400	-5.928	29.992	101.399	0.372
4500.000	0.849	97.926	4499.385	-5.224	30.070	-5.224	30.520	99.855	1.385
4600.000	1.255	51.912	4599.370	-4.651	31.665	-4.651	32.005	98.355	0.903
4700.000	0.668	25.094	4699.356	-3.448	32.774	-3.448	32.955	96.005	0.724
4800.000	1.485	344.051	4799.338	-1.674	32.665	-1.674	32.708	92.934	1.075
4900.000	1.597	320.527	4899.303	0.648	31.423	0.648	31.429	88.819	0.638
5000.000	1.294	277.890	4999.274	1.879	29.418	1.879	29.478	86.346	1.088
5100.000	0.584	248.567	5099.260	1.848	27.826	1.848	27.887	86.201	0.835
5200.000	0.695	233.661	5199.254	1.302	26.863	1.302	26.894	87.225	0.199
5300.000	0.875	214.527	5299.245	0.314	25.941	0.314	25.943	89.307	0.315
5400.000	0.462	194.871	5399.238	-0.704	25.406	-0.704	25.415	91.588	0.467
5500.000	0.731	181.878	5499.233	-1.731	25.281	-1.731	25.340	93.916	0.299
5600.000	0.659	156.830	5599.225	-2.897	25.487	-2.897	25.651	96.484	0.309
5700.000	0.431	162.309	5699.221	-3.783	25.827	-3.783	26.103	98.334	0.233
5800.000	0.475	156.376	5799.218	-4.522	26.108	-4.522	26.496	99.826	0.065
5900.000	0.713	159.994	5899.212	-5.486	26.487	-5.486	27.049	101.703	0.240
6000.000	0.537	214.156	5999.207	-6.459	26.436	-6.459	27.214	103.729	0.590
6100.000	0.245	188.268	6099.205	-7.058	26.142	-7.058	27.078	105.109	0.335
6200.000	0.315	186.009	6199.204	-7.543	26.083	-7.543	27.151	106.130	0.071
6300.000	0.265	252.416	6299.203	-7.887	25.833	-7.887	27.010	106.977	0.321
6400.000	0.177	231.175	6399.202	-8.053	25.492	-8.053	26.734	107.532	0.119
6500.000	0.134	239.403	6499.201	-8.210	25.271	-8.210	26.571	107.997	0.048
6600.000	0.363	216.886	6599.200	-8.522	24.981	-8.522	26.395	108.837	0.245
6700.000	0.393	225.278	6699.198	-9.017	24.547	-9.017	26.151	110.170	0.063

HORIZONTAL DISPLACEMENT IS
26.151 FEET AT 110.170 DEGREES