



COMPANY/RIG: Noble Energy/Production/VES
WELL/API: Feit 1-4/05-123-17447
DECLINATION: 8.13 Degrees
TD AS DRILLED: 6866 Feet
COUNTY/STATE: Weld/Colorado
VS-Azi: 0.000 Degrees
Latitude: 40.34739, Longitude: -104.50581
Grid North = True North -0.64 degs (NAD 27)
Grid Correction Applied = -0.64 degs



DEPTH REFERENCE : RKB = GL Elevation = 4601

DRILLOG GYRO SURVEY CALCULATIONS

Filename: gyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 11/15/2016 / 10:41

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JUSTIN WILLIAMS / Feit 1-4

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	0.591	15.544	99.998	0.497	0.138	0.497	0.516	15.544	0.591
200.000	0.397	8.268	199.994	1.337	0.326	1.337	1.376	13.718	0.204
300.000	0.342	340.840	299.992	1.962	0.278	1.962	1.981	8.077	0.183
400.000	0.373	288.540	399.991	2.347	-0.128	2.347	2.350	356.883	0.316
500.000	0.337	58.178	499.990	2.605	-0.186	2.605	2.612	355.914	0.642
600.000	0.176	341.308	599.989	2.906	0.015	2.906	2.906	0.289	0.343
700.000	0.545	245.965	699.987	2.858	-0.469	2.858	2.896	350.689	0.588
800.000	0.525	125.028	799.985	2.401	-0.527	2.401	2.459	347.614	0.931
900.000	0.452	305.344	899.984	2.366	-0.474	2.366	2.413	348.682	0.977
1000.000	0.067	316.740	999.983	2.636	-0.835	2.636	2.766	342.430	0.387
1100.000	0.610	105.758	1099.981	2.534	-0.363	2.534	2.560	351.856	0.668
1200.000	0.701	96.685	1199.975	2.319	0.757	2.319	2.439	18.085	0.138
1300.000	0.409	200.062	1299.972	1.912	1.243	1.912	2.280	33.019	0.890
1400.000	0.624	85.204	1399.969	1.622	1.663	1.622	2.323	45.704	0.878
1500.000	0.568	121.782	1499.964	1.407	2.627	1.407	2.980	61.825	0.378
1600.000	0.455	359.701	1599.962	1.543	3.046	1.543	3.414	63.134	0.897

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
1700.000	0.433	54.652	1699.960	2.159	3.352	2.159	3.987	57.217	0.410
1800.000	0.455	47.938	1799.957	2.643	3.955	2.643	4.757	56.242	0.056
1900.000	0.287	29.210	1899.955	3.128	4.372	3.128	5.376	54.418	0.205
2000.000	0.626	1.273	1999.951	3.892	4.506	3.892	5.955	49.181	0.396
2100.000	1.289	25.848	2099.937	5.451	5.009	5.451	7.402	42.581	0.765
2200.000	0.656	12.560	2199.922	7.021	5.624	7.021	8.996	38.692	0.668
2300.000	1.021	41.752	2299.912	8.245	6.341	8.245	10.401	37.564	0.551
2400.000	0.718	26.002	2399.901	9.472	7.209	9.472	11.903	37.273	0.383
2500.000	1.299	7.289	2499.885	11.160	7.627	11.160	13.517	34.352	0.661
2600.000	1.169	34.080	2599.862	13.129	8.343	13.129	15.556	32.434	0.586
2700.000	1.200	44.878	2699.841	14.716	9.654	14.716	17.600	33.264	0.225
2800.000	1.122	18.278	2799.821	16.389	10.700	16.389	19.572	33.140	0.540
2900.000	1.337	50.309	2899.799	18.064	11.905	18.064	21.634	33.387	0.709
3000.000	1.032	89.366	2999.780	18.819	13.704	18.819	23.279	36.061	0.843
3100.000	0.933	143.990	3099.767	18.170	15.083	18.170	23.614	39.696	0.906
3200.000	0.558	108.349	3199.759	17.358	16.024	17.358	23.623	42.711	0.579
3300.000	0.373	330.377	3299.757	17.488	16.325	17.488	23.924	43.029	0.872
3400.000	0.750	301.564	3399.752	18.114	15.606	18.114	23.910	40.746	0.459
3500.000	1.358	305.494	3499.735	19.145	14.084	19.145	23.767	36.339	0.612
3600.000	1.285	304.645	3599.708	20.470	12.196	20.470	23.828	30.786	0.075
3700.000	0.395	302.636	3699.697	21.294	10.983	21.294	23.960	27.283	0.891
3800.000	0.299	318.833	3799.695	21.676	10.521	21.676	24.095	25.890	0.136
3900.000	0.727	68.005	3899.692	22.110	10.937	22.110	24.668	26.320	0.872
4000.000	0.223	33.350	3999.688	22.511	11.633	22.511	25.339	27.329	0.558
4100.000	0.819	35.718	4099.684	23.253	12.157	23.253	26.240	27.601	0.596
4200.000	0.106	47.749	4199.680	23.895	12.642	23.895	27.034	27.882	0.716
4300.000	0.362	71.947	4299.679	24.055	13.011	24.055	27.348	28.407	0.269
4400.000	0.937	71.518	4399.672	24.412	14.086	24.412	28.185	29.986	0.575
4500.000	1.253	50.193	4499.654	25.371	15.701	25.371	29.837	31.752	0.510
4600.000	1.384	53.292	4599.628	26.792	17.509	26.792	32.006	33.165	0.149
4700.000	0.685	52.742	4699.611	27.876	18.953	27.876	33.709	34.211	0.699
4800.000	0.628	38.844	4799.604	28.665	19.772	28.665	34.823	34.597	0.169
4900.000	1.343	60.081	4899.589	29.676	21.131	29.676	36.431	35.454	0.791
5000.000	1.313	32.244	4999.563	31.229	22.758	31.229	38.642	36.083	0.640
5100.000	1.957	44.978	5099.522	33.407	24.577	33.407	41.473	36.342	0.736
5200.000	1.798	40.596	5199.469	35.806	26.805	35.806	44.728	36.819	0.214
5300.000	2.223	42.106	5299.407	38.436	29.127	38.436	48.226	37.154	0.428
5400.000	1.615	52.095	5399.351	40.741	31.539	40.741	51.522	37.744	0.692
5500.000	2.194	32.557	5499.296	43.220	33.681	43.220	54.794	37.929	0.862

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
5600.000	2.957	30.616	5599.194	47.053	36.024	47.053	59.260	37.438	0.768
5700.000	2.151	25.394	5699.094	50.967	38.142	50.967	63.659	36.810	0.838
5800.000	3.136	28.598	5798.987	55.064	40.256	55.064	68.210	36.170	0.996
5900.000	3.082	32.755	5898.840	59.726	43.020	59.726	73.606	35.765	0.232
6000.000	2.964	21.970	5998.701	64.384	45.441	64.384	78.805	35.214	0.580
6100.000	2.266	26.667	6098.597	68.549	47.296	68.549	83.282	34.604	0.730
6200.000	3.206	23.495	6198.482	72.880	49.298	72.880	87.987	34.076	0.951
6300.000	3.044	14.293	6298.334	78.017	51.068	78.017	93.245	33.208	0.526
6350.000	3.115	7.798	6348.262	80.649	51.580	80.649	95.733	32.601	0.712