



Company/Rig: Noble Energy/ VES  
WELL/API#: Baker State B 36-11/05-123-17429  
DECLINATION: 8.15 Degrees  
TD AS DRILLED: 6845 Feet  
COUNTY/STATE: Weld/Colorado  
VS-Azi: 0.000 Degrees  
Latitude: 40.35415, Longitude: -104.50050  
Grid North = True North -0.65 degs (NAD 27)  
Grid Correction Applied = -0.65 degs



DEPTH REFERENCE : RKB=GL/ ELEVATION= 4598 Feet

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 8/29/2016 / 14:06

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: Sean Bratt / Baker State B 36-11

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	0.318	22.028	99.999	0.257	0.104	0.257	0.278	22.028	0.318
200.000	0.317	55.534	199.998	0.671	0.436	0.671	0.800	33.014	0.183
300.000	0.111	99.451	299.997	0.812	0.760	0.812	1.112	43.105	0.249
400.000	0.035	85.028	399.997	0.798	0.886	0.798	1.192	47.972	0.078
500.000	0.109	270.755	499.997	0.802	0.821	0.802	1.148	45.679	0.143
600.000	0.140	118.091	599.997	0.746	0.835	0.746	1.119	48.228	0.242
700.000	0.073	79.433	699.997	0.700	1.006	0.700	1.225	55.174	0.095
800.000	0.111	251.343	799.997	0.680	0.977	0.680	1.190	55.139	0.184
900.000	0.166	221.474	899.997	0.541	0.789	0.541	0.957	55.563	0.089
1000.000	0.132	354.782	999.996	0.548	0.683	0.548	0.876	51.293	0.273
1100.000	0.120	283.068	1099.996	0.686	0.571	0.686	0.892	39.797	0.148
1200.000	0.164	266.093	1199.996	0.700	0.327	0.700	0.772	25.023	0.061
1300.000	0.157	275.186	1299.996	0.702	0.047	0.702	0.704	3.801	0.026
1400.000	0.209	296.116	1399.995	0.795	-0.254	0.795	0.834	342.281	0.084
1500.000	0.368	243.953	1499.994	0.734	-0.707	0.734	1.019	316.091	0.291
1600.000	0.545	259.525	1599.991	0.506	-1.463	0.506	1.548	289.089	0.214

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	0.694	198.614	1699.986	-0.154	-2.124	-0.154	2.130	265.842	0.641
1800.000	0.549	249.304	1799.981	-0.898	-2.766	-0.898	2.908	252.013	0.548
1900.000	0.610	260.640	1899.976	-1.154	-3.740	-1.154	3.914	252.850	0.130
2000.000	0.668	264.666	1999.969	-1.295	-4.846	-1.295	5.016	255.038	0.073
2100.000	0.638	280.963	2099.963	-1.243	-5.972	-1.243	6.100	258.241	0.187
2200.000	0.574	321.156	2199.958	-0.747	-6.833	-0.747	6.874	263.760	0.421
2300.000	0.575	352.317	2299.953	0.140	-7.214	0.140	7.216	271.114	0.309
2400.000	0.178	339.047	2399.951	0.782	-7.337	0.782	7.378	276.084	0.404
2500.000	0.162	24.319	2499.950	1.055	-7.334	1.055	7.410	278.187	0.131
2600.000	0.110	5.944	2599.950	1.279	-7.266	1.279	7.378	279.984	0.067
2700.000	0.399	33.786	2699.949	1.664	-7.063	1.664	7.256	283.254	0.306
2800.000	0.343	71.121	2799.947	2.050	-6.586	2.050	6.897	287.287	0.243
2900.000	0.647	75.786	2899.943	2.285	-5.755	2.285	6.192	291.656	0.306
3000.000	0.492	104.273	2999.938	2.318	-4.792	2.318	5.323	295.813	0.318
3100.000	0.431	185.641	3099.936	1.838	-4.413	1.838	4.781	292.611	0.603
3200.000	0.608	285.068	3199.933	1.602	-4.963	1.602	5.215	287.890	0.801
3300.000	1.594	283.709	3299.914	2.069	-6.826	2.069	7.133	286.865	0.986
3400.000	2.360	273.202	3399.854	2.514	-10.233	2.514	10.538	283.803	0.845
3500.000	2.694	259.856	3499.757	2.215	-14.603	2.215	14.770	278.626	0.674
3600.000	2.624	279.834	3599.652	2.192	-19.171	2.192	19.296	276.523	0.925
3700.000	2.647	291.982	3699.547	3.447	-23.568	3.447	23.819	278.322	0.558
3800.000	2.109	312.089	3799.462	5.545	-27.074	5.545	27.636	281.574	0.985
3900.000	1.881	323.166	3899.402	8.091	-29.423	8.091	30.516	285.376	0.447
4000.000	1.441	346.224	3999.361	10.626	-30.706	10.626	32.493	289.088	0.791
4100.000	0.630	316.877	4099.344	12.249	-31.382	12.249	33.687	291.321	0.944
4200.000	0.319	66.059	4199.342	12.763	-31.503	12.763	33.990	292.055	0.794
4300.000	0.802	80.943	4299.337	12.986	-30.557	12.986	33.202	293.024	0.500
4400.000	1.696	70.288	4399.312	13.595	-28.473	13.595	31.552	295.524	0.921
4500.000	1.631	67.860	4499.270	14.631	-25.762	14.631	29.626	299.594	0.096
4600.000	2.123	66.800	4599.216	15.897	-22.742	15.897	27.747	304.954	0.493
4700.000	1.900	46.003	4699.156	17.778	-19.847	17.778	26.645	311.852	0.758
4800.000	1.564	63.165	4799.111	19.545	-17.437	19.545	26.193	318.262	0.614
4900.000	1.453	94.521	4899.078	20.061	-14.956	20.061	25.023	323.294	0.822
5000.000	1.642	111.528	4999.042	19.435	-12.360	19.435	23.033	327.545	0.494
5100.000	1.569	140.875	5099.004	17.848	-10.164	17.848	20.539	330.340	0.816
5200.000	1.694	124.290	5198.964	15.953	-8.079	15.953	17.882	333.142	0.486
5300.000	1.851	153.766	5298.918	13.672	-6.144	13.672	14.989	335.802	0.914
5400.000	2.311	155.385	5398.852	10.391	-4.590	10.391	11.359	336.165	0.464
5500.000	2.228	164.925	5498.774	6.680	-3.245	6.680	7.427	334.092	0.386

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	1.321	151.161	5598.725	3.793	-2.183	3.793	4.377	330.078	0.996
5700.000	1.501	187.795	5698.697	1.486	-1.805	1.486	2.338	309.461	0.903
5800.000	1.192	209.670	5798.670	-0.716	-2.497	-0.716	2.598	254.011	0.594
5900.000	1.027	210.191	5898.651	-2.394	-3.463	-2.394	4.210	235.342	0.164
6000.000	0.518	158.243	5998.643	-3.589	-3.746	-3.589	5.187	226.230	0.817
6100.000	0.637	170.271	6098.638	-4.556	-3.485	-4.556	5.736	217.407	0.170
6200.000	0.427	213.569	6198.634	-5.415	-3.597	-5.415	6.501	213.591	0.439
6300.000	0.183	255.880	6298.632	-5.765	-3.957	-5.765	6.992	214.469	0.317
6400.000	0.397	150.304	6398.631	-6.105	-3.940	-6.105	7.266	212.841	0.480
6500.000	0.337	144.966	6498.629	-6.647	-3.600	-6.647	7.559	208.437	0.069
6600.000	0.527	131.123	6598.626	-7.191	-3.084	-7.191	7.824	203.214	0.215