



Company/Rig: NOBLE ENERGY/"VESSI
WELL/API#: UPV 5-5H3/05-123-18860
DECLINATION: 8.26 DEGREES
TD AS DRILLED: 6924 FEET
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.42900, Longitude: -104.46700
Grid Convergence Applied = -0.67 degs
Grid North = True North -0.67 degs



DEPTH REFERENCE : RKB=SURFACE ELEVATION= 4676 FEET

DRILLOG GYRO SURVEY CALCULATIONS

Filename: pre-de_01.ut

Minimum Curvature Method

Report Date/Time: 6/8/2015 / 15:20

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

SURVEYOR: KEVIN MCDOWELL

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	0.270	305.692	100.000	0.138	-0.192	0.138	0.236	305.692	0.270
200.000	0.133	316.435	199.999	0.359	-0.463	0.359	0.586	307.806	0.142
300.000	0.355	332.660	299.998	0.718	-0.685	0.718	0.993	316.353	0.230
400.000	0.221	322.209	399.997	1.146	-0.946	1.146	1.486	320.469	0.143
500.000	0.476	196.720	499.996	0.900	-1.184	0.900	1.487	307.265	0.631
600.000	0.461	180.548	599.992	0.101	-1.307	0.101	1.311	274.399	0.133
700.000	0.571	186.008	699.988	-0.797	-1.363	-0.797	1.579	239.673	0.121
800.000	0.485	182.375	799.984	-1.716	-1.433	-1.716	2.236	219.855	0.093
900.000	0.314	315.945	899.983	-1.942	-1.641	-1.942	2.543	220.198	0.738
1000.000	0.701	262.729	999.979	-1.822	-2.438	-1.822	3.044	233.228	0.571
1100.000	0.295	177.474	1099.976	-2.157	-3.034	-2.157	3.722	234.587	0.737
1200.000	0.184	354.458	1199.976	-2.254	-3.038	-2.254	3.783	233.422	0.479
1300.000	0.140	218.845	1299.976	-2.189	-3.130	-2.189	3.819	235.027	0.300
1400.000	0.323	251.743	1399.975	-2.372	-3.474	-2.372	4.207	235.670	0.219
1500.000	0.170	30.094	1499.974	-2.332	-3.667	-2.332	4.346	237.545	0.464
1600.000	0.631	196.220	1599.973	-2.733	-3.747	-2.733	4.637	233.894	0.798
1700.000	0.590	230.046	1699.967	-3.592	-4.295	-3.592	5.599	230.093	0.357
1800.000	0.344	277.485	1799.964	-3.884	-4.987	-3.884	6.321	232.089	0.438

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
1900.000	0.709	282.433	1899.960	-3.711	-5.888	-3.711	6.960	237.776	0.368
2000.000	0.421	1.159	1999.956	-3.211	-6.485	-3.211	7.236	243.659	0.750
2100.000	0.488	233.223	2099.955	-3.099	-6.819	-3.099	7.490	245.562	0.818
2200.000	0.521	147.714	2199.952	-3.738	-6.917	-3.738	7.863	241.615	0.685
2300.000	0.834	238.122	2299.947	-4.506	-7.292	-4.506	8.572	238.287	0.986
2400.000	0.834	212.562	2399.937	-5.503	-8.302	-5.503	9.960	236.459	0.369
2500.000	0.986	175.042	2499.925	-6.973	-8.619	-6.973	11.087	231.025	0.603
2600.000	0.965	232.095	2599.913	-8.348	-9.209	-8.348	12.429	227.809	0.932
2700.000	1.009	195.714	2699.899	-9.713	-10.112	-9.713	14.021	226.154	0.618
2800.000	0.820	251.311	2799.888	-10.790	-11.028	-10.790	15.429	225.627	0.869
2900.000	1.177	205.226	2899.874	-11.948	-12.144	-11.948	17.036	225.466	0.848
3000.000	1.148	205.162	2999.854	-13.784	-13.008	-13.784	18.952	223.341	0.029
3100.000	1.249	246.605	3099.834	-15.123	-14.434	-15.123	20.906	223.664	0.853
3200.000	1.171	249.562	3199.811	-15.913	-16.392	-15.913	22.845	225.849	0.100
3300.000	0.821	198.087	3299.798	-16.951	-17.571	-16.951	24.415	226.030	0.920
3400.000	0.893	182.662	3399.787	-18.410	-17.830	-18.410	25.629	224.083	0.241
3500.000	0.948	199.515	3499.774	-19.968	-18.142	-19.968	26.979	222.257	0.275
3600.000	0.870	148.237	3599.763	-21.392	-18.019	-21.392	27.970	220.108	0.789
3700.000	1.411	129.976	3699.743	-22.829	-16.676	-22.829	28.271	216.148	0.645
3800.000	1.764	109.003	3799.705	-24.121	-14.277	-24.121	28.029	210.621	0.674
3900.000	1.872	139.152	3899.657	-25.858	-11.753	-25.858	28.404	204.442	0.951
4000.000	2.084	165.190	3999.600	-28.852	-10.219	-28.852	30.608	199.504	0.915
4100.000	2.259	147.597	4099.529	-32.274	-8.698	-32.274	33.426	195.083	0.686
4200.000	3.059	119.851	4199.424	-35.267	-5.327	-35.267	35.667	188.590	1.493
4300.000	2.450	131.892	4299.309	-38.022	-1.422	-38.022	38.049	182.141	0.838
4400.000	2.025	139.087	4399.233	-40.785	1.326	-40.785	40.806	178.137	0.508
4500.000	1.919	99.243	4499.178	-42.389	4.137	-42.389	42.590	174.426	1.348
4600.000	2.071	92.599	4599.118	-42.740	7.594	-42.740	43.409	169.925	0.276
4700.000	2.429	93.311	4699.041	-42.944	11.515	-42.944	44.461	164.990	0.359
4800.000	2.526	113.105	4798.949	-43.932	15.658	-43.932	46.638	160.384	0.857
4900.000	2.651	124.996	4898.848	-46.123	19.579	-46.123	50.106	156.999	0.550
5000.000	2.565	115.704	4998.744	-48.419	23.489	-48.419	53.816	154.121	0.431
5100.000	1.821	113.593	5098.671	-50.026	26.961	-50.026	56.828	151.678	0.748
5200.000	1.543	100.089	5198.628	-50.897	29.742	-50.897	58.950	149.700	0.482
5300.000	1.650	75.083	5298.590	-50.762	32.459	-50.762	60.253	147.404	0.699
5400.000	1.891	82.600	5398.542	-50.179	35.487	-50.179	61.459	144.732	0.334
5500.000	1.519	98.018	5498.499	-50.152	38.435	-50.152	63.186	142.534	0.587
5600.000	1.541	98.056	5598.463	-50.525	41.080	-50.525	65.118	140.887	0.022
5700.000	1.767	86.507	5698.421	-50.619	43.950	-50.619	67.037	139.034	0.402
5800.000	1.820	69.157	5798.373	-49.960	46.974	-49.960	68.576	136.765	0.544

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
5900.000	1.940	89.400	5898.320	-49.378	50.151	-49.378	70.380	134.555	0.671
6000.000	1.289	80.882	5998.280	-49.182	52.955	-49.182	72.270	132.884	0.692
6100.000	1.768	100.472	6098.245	-49.284	55.582	-49.284	74.285	131.563	0.703
6200.000	1.575	96.418	6198.202	-49.718	58.465	-49.718	76.747	130.377	0.227
6300.000	1.681	75.083	6298.163	-49.494	61.248	-49.494	78.746	128.941	0.612
6400.000	1.718	100.397	6398.120	-49.387	64.141	-49.387	80.951	127.595	0.746
6500.000	1.664	125.011	6498.078	-50.490	66.804	-50.490	83.738	127.082	0.723
6600.000	1.617	126.027	6598.037	-52.153	69.134	-52.153	86.600	127.030	0.055
6700.000	1.785	97.348	6697.995	-53.182	71.820	-53.182	89.367	126.520	0.858
6740.000	1.896	103.204	6737.974	-53.413	73.083	-53.413	90.521	126.162	0.546