



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-23163
Date: 5/3/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.45525
Long: -104.42019

Well: Wells Ranch 33-27
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.7 Degree
Declination: 8.43
Depth Reference: Ground Level
Elevation: 4820'
Total Depth as Drilled: 7074'

Lat & Long obtained by handheld GPS at wellhead

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000
100.000	0.606	230.495	-0.337	-0.408	99.998	0.606	-0.337	0.529
200.000	0.249	235.311	-0.797	-0.995	199.995	0.359	-0.797	1.275
300.000	0.324	232.541	-1.092	-1.398	299.994	0.076	-1.092	1.774
400.000	0.439	191.816	-1.640	-1.701	399.992	0.287	-1.640	2.363
500.000	0.188	159.591	-2.169	-1.722	499.990	0.298	-2.169	2.769
600.000	0.319	185.215	-2.599	-1.690	599.989	0.170	-2.599	3.101
700.000	0.191	186.019	-3.042	-1.733	699.988	0.128	-3.042	3.501
800.000	0.415	158.124	-3.545	-1.616	799.987	0.262	-3.545	3.896
900.000	0.104	96.560	-3.892	-1.391	899.986	0.377	-3.892	4.133
1000.000	0.192	145.411	-4.040	-1.206	999.986	0.146	-4.040	4.216
1100.000	0.258	176.763	-4.403	-1.098	1099.985	0.137	-4.403	4.538
1200.000	0.468	38.773	-4.309	-0.830	1199.984	0.682	-4.309	4.389
1300.000	0.144	126.778	-4.066	-0.474	1299.983	0.485	-4.066	4.094
1400.000	0.354	37.819	-3.897	-0.184	1399.982	0.380	-3.897	3.902
1500.000	0.333	42.613	-3.440	0.203	1499.980	0.036	-3.440	3.446
1600.000	0.417	29.960	-2.910	0.581	1599.978	0.118	-2.910	2.968
1700.000	0.250	141.854	-2.766	0.898	1699.977	0.561	-2.766	2.908
1800.000	0.486	107.299	-3.064	1.437	1799.975	0.314	-3.064	3.384
1900.000	0.237	58.754	-3.083	2.020	1899.973	0.374	-3.083	3.685
2000.000	0.783	94.004	-3.023	2.878	1999.969	0.605	-3.023	4.174
2100.000	0.908	93.997	-3.126	4.350	2099.958	0.125	-3.126	5.357
2200.000	1.462	96.432	-3.324	6.408	2199.936	0.556	-3.324	7.219
2300.000	1.169	96.330	-3.580	8.690	2299.910	0.293	-3.580	9.398
2400.000	0.930	107.235	-3.932	10.479	2399.893	0.311	-3.932	11.192
2500.000	0.828	133.193	-4.668	11.781	2499.882	0.407	-4.668	12.672
2600.000	1.062	115.963	-5.568	13.141	2599.868	0.366	-5.568	14.272
2700.000	0.912	112.185	-6.274	14.712	2699.853	0.163	-6.274	15.994
2800.000	0.860	112.948	-6.868	16.140	2799.841	0.054	-6.868	17.540
2900.000	0.831	123.279	-7.558	17.437	2899.830	0.155	-7.558	19.004
3000.000	0.585	116.885	-8.187	18.499	2999.823	0.258	-8.187	20.230
3100.000	0.793	148.438	-9.008	19.317	3099.816	0.425	-9.008	21.314
3200.000	0.764	133.377	-10.055	20.164	3199.807	0.206	-10.055	22.532
3300.000	1.092	182.052	-11.466	20.614	3299.795	0.821	-11.466	23.589
3400.000	1.352	204.232	-13.493	20.096	3399.773	0.535	-13.493	24.206

3500.000	1.456	187.381	-15.828	19.449	3499.743	0.424	-15.828	25.076
3600.000	1.500	191.839	-18.369	19.017	3599.710	0.123	-18.369	26.440
3700.000	1.488	201.046	-20.862	18.283	3699.676	0.240	-20.862	27.739
3800.000	1.149	214.282	-22.902	17.251	3799.650	0.454	-22.902	28.673
3900.000	1.578	223.041	-24.737	15.747	3899.621	0.475	-24.737	29.324
4000.000	1.562	206.675	-26.961	14.196	3999.584	0.447	-26.961	30.470
4100.000	1.818	203.254	-29.636	12.958	4099.541	0.275	-29.636	32.345
4200.000	2.066	201.116	-32.774	11.682	4199.483	0.259	-32.774	34.794
4300.000	2.000	198.781	-36.108	10.471	4299.420	0.106	-36.108	37.596
4400.000	2.477	218.242	-39.458	8.572	4399.345	0.890	-39.458	40.378
4500.000	2.406	228.316	-42.551	5.667	4499.255	0.434	-42.551	42.926
4600.000	2.486	245.830	-44.834	2.120	4599.165	0.749	-44.834	44.884
4700.000	2.706	246.050	-46.680	-2.015	4699.062	0.220	-46.680	46.724
4800.000	2.120	249.751	-48.279	-5.907	4798.973	0.606	-48.279	48.639
4900.000	2.036	253.475	-49.424	-9.345	4898.908	0.159	-49.424	50.300
5000.000	1.818	249.050	-50.496	-12.529	4998.851	0.264	-50.496	52.027
5100.000	1.754	258.230	-51.376	-15.509	5098.803	0.293	-51.376	53.665
5200.000	1.029	239.386	-52.145	-17.780	5198.773	0.848	-52.145	55.093
5300.000	1.073	230.806	-53.194	-19.278	5298.756	0.163	-53.194	56.579
5400.000	1.305	229.299	-54.528	-20.867	5398.735	0.235	-54.528	58.385
5500.000	1.260	211.488	-56.208	-22.305	5498.710	0.400	-56.208	60.472
5600.000	1.345	184.110	-58.316	-22.963	5598.685	0.622	-58.316	62.674
5700.000	1.254	179.909	-60.580	-23.045	5698.659	0.132	-60.580	64.816
5800.000	1.248	150.460	-62.622	-22.507	5798.637	0.636	-62.622	66.543
5900.000	1.462	143.565	-64.595	-21.213	5898.609	0.269	-64.595	67.989
6000.000	1.275	133.325	-66.385	-19.645	5998.580	0.307	-66.385	69.231
6100.000	1.374	113.282	-67.623	-17.734	6098.554	0.471	-67.623	69.909
6200.000	1.559	118.738	-68.751	-15.440	6198.521	0.231	-68.751	70.463
6300.000	1.316	104.837	-69.699	-13.137	6298.490	0.423	-69.699	70.926
6400.000	1.899	108.037	-70.506	-10.451	6398.450	0.590	-70.506	71.276
6500.000	2.075	94.975	-71.176	-7.073	6498.391	0.484	-71.176	71.526
6600.000	1.962	96.666	-71.532	-3.569	6598.329	0.127	-71.532	71.621
6700.000	2.207	92.666	-71.820	0.055	6698.262	0.285	-71.820	71.820
6800.000	1.961	89.195	-71.885	3.690	6798.196	0.276	-71.885	71.980

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Cbrg

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230.495
231.314
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226.052
218.457
213.036
209.670
204.503
199.666
196.622
194.005
190.899
186.643
182.696
176.630
168.711
162.025
154.868
146.770
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193.935
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190.674
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177.062