



Company: Noble Energy
Rig: Production/VES
API # 05-123-26815

Date: 3/27/13

Surveyor: Levi Sheldon

VS: 0.000

Lat : 40.47746

Long: -104.435

Well: Wells Ranch AA 21-01

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid North is 0.69 East of True No

Declination: 8.45

Depth Reference: Ground Level

Elevation: 4,703 Feet

Total Depth as Drilled: 6,933 Feet

Lat & Long obtained by handheld GPS at wellhead

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.758	238.321	-0.347	-0.563	99.997	0.758	-0.347	0.662	238.321
200.000	0.307	219.537	-0.901	-1.296	199.993	0.478	-0.901	1.579	235.191
300.000	0.353	150.561	-1.376	-1.316	299.991	0.376	-1.376	1.904	223.711
400.000	0.386	159.914	-1.961	-1.048	399.989	0.069	-1.961	2.224	208.131
500.000	0.486	129.187	-2.545	-0.604	499.986	0.250	-2.545	2.616	193.351
600.000	0.337	157.311	-3.084	-0.162	599.984	0.247	-3.084	3.088	183.010
700.000	0.112	135.664	-3.425	0.019	699.983	0.236	-3.425	3.425	179.676
800.000	0.373	95.139	-3.524	0.412	799.982	0.297	-3.524	3.548	173.330
900.000	0.498	101.375	-3.639	1.162	899.979	0.133	-3.639	3.820	162.284
1000.000	0.465	115.649	-3.900	1.954	999.976	0.124	-3.900	4.362	153.389
1100.000	0.502	120.916	-4.301	2.696	1099.972	0.058	-4.301	5.076	147.920
1200.000	0.618	98.801	-4.609	3.605	1199.968	0.243	-4.609	5.852	141.965
1300.000	0.354	118.031	-4.837	4.411	1299.964	0.308	-4.837	6.546	137.634
1400.000	0.434	91.382	-4.991	5.062	1399.962	0.198	-4.991	7.109	134.592
1500.000	0.538	86.389	-4.970	5.910	1499.958	0.112	-4.970	7.722	130.065
1600.000	0.432	92.396	-4.956	6.755	1599.954	0.117	-4.956	8.378	126.268
1700.000	0.507	83.365	-4.921	7.572	1699.951	0.105	-4.921	9.030	123.021
1800.000	0.460	68.082	-4.720	8.384	1799.948	0.137	-4.720	9.621	119.378
1900.000	0.727	90.031	-4.570	9.392	1899.942	0.346	-4.570	10.445	115.949
2000.000	0.937	95.620	-4.651	10.840	1999.932	0.224	-4.651	11.795	113.221
2100.000	0.975	112.631	-5.058	12.438	2099.918	0.285	-5.058	13.427	112.129
2200.000	1.387	94.625	-5.483	14.429	2199.897	0.550	-5.483	15.435	110.806
2300.000	1.482	96.515	-5.727	16.920	2299.865	0.106	-5.727	17.863	108.700
2400.000	1.454	87.641	-5.822	19.472	2399.833	0.229	-5.822	20.324	106.645
2500.000	1.427	71.989	-5.384	21.924	2499.802	0.393	-5.384	22.576	103.798
2600.000	1.278	57.184	-4.395	24.045	2599.774	0.379	-4.395	24.444	100.358
2700.000	1.147	49.259	-3.137	25.741	2699.752	0.212	-3.137	25.931	96.949
2800.000	1.039	38.276	-1.772	27.061	2799.734	0.235	-1.772	27.119	93.746
2900.000	0.870	26.261	-0.379	27.959	2899.720	0.261	-0.379	27.962	90.777
3000.000	0.758	13.519	0.944	28.449	2999.710	0.212	0.944	28.465	88.099
3100.000	0.884	13.483	2.337	28.784	3099.699	0.126	2.337	28.879	85.358
3200.000	0.908	13.838	3.857	29.153	3199.687	0.024	3.857	29.407	82.464
3300.000	1.754	21.240	6.052	29.897	3299.659	0.862	6.052	30.503	78.556
3400.000	2.065	14.088	9.226	30.890	3399.604	0.391	9.226	32.238	73.371

3500.000	2.113	9.896	12.789	31.645	3499.537	0.160	12.789	34.132	67.994
3600.000	1.784	4.915	16.156	32.095	3599.480	0.370	16.156	35.932	63.281
3700.000	1.353	5.338	18.882	32.339	3699.442	0.431	18.882	37.447	59.720
3800.000	0.739	0.573	20.701	32.455	3799.425	0.619	20.701	38.495	57.468
3900.000	0.747	357.401	21.997	32.432	3899.416	0.042	21.997	39.188	55.853
4000.000	0.244	336.238	22.843	32.316	3999.412	0.526	22.843	39.574	54.746
4100.000	0.347	226.148	22.828	32.012	4099.412	0.488	22.828	39.318	54.508
4200.000	0.503	254.736	22.502	31.370	4199.409	0.259	22.502	38.606	54.348
4300.000	0.422	267.941	22.373	30.578	4299.406	0.134	22.373	37.889	53.808
4400.000	0.480	280.078	22.433	29.798	4399.403	0.112	22.433	37.298	53.025
4500.000	0.713	319.456	22.980	28.980	4499.398	0.458	22.980	36.985	51.588
4600.000	1.448	352.369	24.704	28.408	4599.380	0.933	24.704	37.648	48.989
4700.000	2.331	5.591	27.980	28.439	4699.325	0.979	27.980	39.895	45.466
4800.000	2.010	24.864	31.595	29.374	4799.254	0.792	31.595	43.140	42.914
4900.000	1.976	24.076	34.760	30.815	4899.194	0.043	34.760	46.452	41.557
5000.000	1.705	32.181	37.593	32.310	4999.142	0.375	37.593	49.570	40.678
5100.000	1.307	32.029	39.819	33.708	5099.108	0.398	39.819	52.171	40.248
5200.000	1.207	31.674	41.683	34.866	5199.084	0.100	41.683	54.342	39.911
5300.000	1.374	37.819	43.526	36.154	5299.058	0.217	43.526	56.583	39.714
5400.000	1.110	79.119	44.656	37.840	5399.037	0.910	44.656	58.533	40.277
5500.000	1.605	112.108	44.312	40.089	5499.010	0.905	44.312	59.755	42.135
5600.000	1.834	130.105	42.754	42.610	5598.965	0.583	42.754	60.362	44.903
5700.000	1.564	119.709	41.047	45.019	5698.922	0.409	41.047	60.923	47.642
5800.000	1.021	117.197	39.964	46.996	5798.896	0.546	39.964	61.691	49.623
5900.000	0.860	119.787	39.184	48.440	5898.882	0.166	39.184	62.304	51.030
6000.000	0.446	105.435	38.707	49.467	5998.876	0.442	38.707	62.811	51.957
6100.000	0.388	136.755	38.357	50.074	6098.873	0.232	38.357	63.077	52.548
6200.000	0.106	128.925	38.052	50.378	6198.872	0.283	38.052	63.134	52.935
6300.000	0.288	12.874	38.239	50.506	6298.872	0.348	38.239	63.349	52.870
6400.000	0.044	64.142	38.501	50.597	6398.871	0.263	38.501	63.579	52.731
6500.000	0.467	303.994	38.745	50.293	6498.870	0.491	38.745	63.487	52.390
6600.000	0.381	175.364	38.642	49.982	6598.869	0.765	38.642	63.178	52.291
6700.000	0.461	121.472	38.101	50.352	6698.866	0.388	38.101	63.143	52.885

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