



Company: Noble Energy
Rig: Production/VES
API # 05-123-30259

Date: 6/19/2013

Surveyor: Nick Kula

VS: 0.000

Lat : 40.23321

Long: -104.533

Well: Gutteresen State D 15-27

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid North is .620 Degrees East of

Declination: 8.46

Depth Reference: Ground Level

Elevation: 4787'

Total Depth as Drilled: 7100'

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	0.000
100.000	0.391	74.978	0.088	0.329	99.999	0.391	0.088	0.341	74.978
200.000	0.198	37.628	0.314	0.764	199.998	0.263	0.314	0.826	67.692
300.000	0.248	3.098	0.667	0.882	299.997	0.141	0.667	1.105	52.894
400.000	0.086	60.591	0.920	0.959	399.997	0.215	0.920	1.329	46.174
500.000	0.010	19.588	0.965	1.027	499.997	0.079	0.965	1.409	46.774
600.000	0.346	66.983	1.092	1.308	599.996	0.339	1.092	1.704	50.148
700.000	1.182	63.059	1.677	2.505	699.986	0.838	1.677	3.015	56.201
800.000	1.774	37.909	3.366	4.376	799.954	0.864	3.366	5.520	52.436
900.000	2.138	52.507	5.722	6.806	899.896	0.614	5.722	8.892	49.948
1000.000	2.345	62.488	7.802	10.101	999.820	0.441	7.802	12.763	52.317
1100.000	2.343	80.827	9.073	13.934	1099.737	0.747	9.073	16.627	56.930
1200.000	2.194	70.926	10.025	17.761	1199.659	0.419	10.025	20.395	60.560
1300.000	1.983	91.638	10.601	21.300	1299.594	0.779	10.601	23.792	63.541
1400.000	1.978	75.475	10.984	24.700	1399.535	0.557	10.984	27.032	66.025
1500.000	1.843	78.650	11.733	27.946	1499.480	0.171	11.733	30.310	67.225
1600.000	1.861	84.192	12.214	31.138	1599.428	0.180	12.214	33.448	68.582
1700.000	2.031	78.953	12.718	34.493	1699.370	0.246	12.718	36.763	69.760
1800.000	2.090	86.094	13.182	38.052	1799.306	0.263	13.182	40.270	70.893
1900.000	2.068	65.814	14.045	41.517	1899.241	0.732	14.045	43.829	71.309
2000.000	2.079	60.518	15.678	44.743	1999.176	0.192	15.678	47.410	70.690
2100.000	2.416	46.242	18.028	47.844	2099.099	0.650	18.028	51.128	69.353
2200.000	2.565	55.337	20.758	51.207	2199.005	0.422	20.758	55.255	67.933
2300.000	2.696	42.474	23.766	54.636	2298.901	0.603	23.766	59.581	66.492
2400.000	2.408	33.584	27.251	57.386	2398.802	0.489	27.251	63.528	64.599
2500.000	2.249	38.002	30.547	59.756	2498.719	0.240	30.547	67.111	62.924
2600.000	2.301	21.682	33.959	61.706	2598.642	0.648	33.959	70.433	61.175
2700.000	2.555	25.646	37.834	63.413	2698.552	0.304	37.834	73.841	59.179
2800.000	2.354	38.420	41.452	65.654	2798.461	0.581	41.452	77.644	57.733
2900.000	2.389	41.728	44.616	68.317	2898.375	0.141	44.616	81.595	56.852
3000.000	2.226	34.931	47.764	70.816	2998.294	0.318	47.764	85.418	56.001
3100.000	1.993	42.234	50.643	73.096	3098.227	0.355	50.643	88.926	55.285
3200.000	1.602	59.273	52.644	75.466	3198.178	0.658	52.644	92.014	55.101
3300.000	1.228	51.448	54.026	77.505	3298.147	0.420	54.026	94.477	55.121
3400.000	0.905	73.104	54.923	79.099	3398.130	0.511	54.923	96.297	55.225

3500.000	1.492	70.985	55.577	81.085	3498.108	0.589	55.577	98.303	55.573
3600.000	1.635	101.261	55.722	83.714	3598.072	0.828	55.722	100.564	56.351
3700.000	2.201	111.342	54.745	86.902	3698.016	0.657	54.745	102.708	57.790
3800.000	2.389	112.067	53.263	90.621	3797.936	0.190	53.263	105.115	59.555
3900.000	2.872	125.161	51.038	94.601	3897.831	0.768	51.038	107.490	61.653
4000.000	3.039	131.888	47.825	98.623	3997.699	0.385	47.825	109.607	64.130
4100.000	3.242	135.812	44.028	102.567	4097.548	0.295	44.028	111.617	66.768
4200.000	2.907	136.841	40.150	106.272	4197.404	0.339	40.150	113.604	69.303
4300.000	2.806	133.883	36.603	109.771	4297.280	0.179	36.603	115.713	71.559
4400.000	2.768	137.401	33.129	113.170	4397.162	0.175	33.129	117.919	73.683
4500.000	2.442	143.457	29.640	116.073	4497.059	0.427	29.640	119.797	75.675
4600.000	2.310	155.117	26.101	118.189	4596.973	0.500	26.101	121.037	77.547
4700.000	1.995	175.109	22.538	119.185	4696.904	0.809	22.538	121.298	79.292
4800.000	1.107	174.822	19.841	119.421	4796.866	0.888	19.841	121.058	80.567
4900.000	0.657	150.092	18.382	119.794	4896.855	0.580	18.382	121.196	81.276
5000.000	0.589	177.989	17.372	120.098	4996.849	0.307	17.372	121.348	81.769
5100.000	0.419	177.496	16.494	120.132	5096.845	0.170	16.494	121.259	82.182
5200.000	0.337	143.430	15.892	120.323	5196.843	0.235	15.892	121.368	82.476
5300.000	0.219	113.109	15.581	120.674	5296.842	0.185	15.581	121.676	82.643
5400.000	0.513	269.782	15.505	120.402	5396.841	0.719	15.505	121.396	82.662
5500.000	0.434	275.265	15.538	119.577	5496.837	0.091	15.538	120.582	82.597
5600.000	0.941	287.100	15.814	118.415	5596.830	0.523	15.814	119.466	82.393
5700.000	0.528	285.777	16.181	117.186	5696.821	0.413	16.181	118.298	82.139
5800.000	0.115	336.058	16.398	116.702	5796.820	0.463	16.398	117.848	82.002
5900.000	0.530	349.280	16.945	116.575	5896.818	0.419	16.945	117.800	81.730
6000.000	0.410	12.600	17.748	116.567	5996.815	0.224	17.748	117.910	81.343
6100.000	0.275	45.454	18.265	116.816	6096.813	0.233	18.265	118.235	81.113
6200.000	0.132	153.315	18.331	117.038	6196.812	0.339	18.331	118.465	81.098
6300.000	0.219	155.599	18.054	117.168	6296.812	0.088	18.054	118.551	81.240
6400.000	0.188	86.115	17.891	117.411	6396.812	0.233	17.891	118.767	81.336
6500.000	0.351	170.242	17.600	117.627	6496.811	0.381	17.600	118.937	81.490
6600.000	0.261	151.595	17.097	117.788	6596.809	0.133	17.097	119.022	81.741
6700.000	0.225	178.588	16.700	117.901	6696.808	0.119	16.700	119.078	81.938
6800.000	0.512	191.096	16.066	117.820	6796.806	0.296	16.066	118.910	82.235
6900.000	0.696	153.465	15.085	118.005	6896.801	0.427	15.085	118.965	82.715

True North