



Company: Noble Energy
Rig: Producton / V.E.S.

API # 05-123-14701

Date: 4/5/2013

Surveyor: Norman Cowan

VS: 0.000

Lat : 40.462

Long: -104.491

Well: Larson A25-1

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.65 Deg East of Tru

Declination: 8.35 Degrees

Depth Reference: Ground Level

Elevation: 4641 Feet

Total Depth as Drilled: 6949 Feet

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.413	115.067	-0.153	0.327	99.999	0.413	-0.153	0.361	115.067
200.000	0.141	16.213	-0.187	0.687	199.998	0.457	-0.187	0.713	105.255
300.000	0.392	23.215	0.245	0.857	299.997	0.253	0.245	0.891	74.058
400.000	0.192	65.727	0.628	1.144	399.996	0.282	0.628	1.305	61.246
500.000	0.409	321.347	0.975	1.073	499.995	0.493	0.975	1.450	47.735
600.000	0.512	16.204	1.683	0.975	599.992	0.434	1.683	1.945	30.074
700.000	0.446	50.030	2.362	1.398	699.989	0.286	2.362	2.745	30.611
800.000	0.187	2.999	2.776	1.705	799.987	0.347	2.776	3.257	31.558
900.000	0.445	59.963	3.133	2.050	899.986	0.378	3.133	3.744	33.194
1000.000	0.830	43.056	3.857	2.881	999.980	0.424	3.857	4.814	36.756
1100.000	0.299	52.363	4.546	3.582	1099.974	0.538	4.546	5.787	38.238
1200.000	0.108	56.314	4.757	3.867	1199.974	0.191	4.757	6.131	39.107
1300.000	0.244	25.686	5.002	4.038	1299.973	0.160	5.002	6.428	38.916
1400.000	0.643	81.548	5.276	4.686	1399.970	0.545	5.276	7.056	41.609
1500.000	0.331	345.338	5.638	5.168	1499.968	0.755	5.638	7.648	42.512
1600.000	0.394	63.609	6.070	5.403	1599.966	0.460	6.070	8.126	41.676
1700.000	0.405	71.808	6.333	6.047	1699.964	0.058	6.333	8.756	43.677
1800.000	0.345	46.427	6.650	6.600	1799.962	0.175	6.650	9.370	44.783
1900.000	0.143	28.983	6.967	6.879	1899.961	0.213	6.967	9.790	44.635
2000.000	0.134	107.271	7.041	7.051	1999.961	0.175	7.041	9.965	45.039
2100.000	0.164	33.180	7.126	7.241	2099.960	0.181	7.126	10.159	45.458
2200.000	0.381	79.841	7.305	7.646	2199.959	0.294	7.305	10.575	46.310
2300.000	0.446	132.430	7.100	8.261	2299.957	0.371	7.100	10.893	49.322
2400.000	0.159	98.131	6.818	8.686	2399.956	0.328	6.818	11.042	51.872
2500.000	0.445	123.289	6.585	9.149	2499.954	0.309	6.585	11.272	54.255
2600.000	0.318	147.919	6.137	9.621	2599.952	0.205	6.137	11.411	57.467
2700.000	0.453	151.624	5.554	9.956	2699.950	0.138	5.554	11.400	60.845
2800.000	0.159	159.775	5.075	10.192	2799.948	0.297	5.075	11.386	63.528
2900.000	0.299	120.616	4.812	10.465	2899.947	0.202	4.812	11.518	65.305
3000.000	0.146	180.045	4.552	10.689	2999.947	0.257	4.552	11.618	66.935
3100.000	0.107	207.666	4.342	10.646	3099.947	0.071	4.342	11.497	67.813
3200.000	0.193	201.836	4.103	10.540	3199.946	0.087	4.103	11.311	68.729
3300.000	0.360	71.009	4.049	10.774	3299.946	0.507	4.049	11.510	69.402
3400.000	0.138	131.904	4.071	11.160	3399.945	0.316	4.071	11.880	69.958
3500.000	0.379	127.791	3.789	11.511	3499.944	0.242	3.789	12.118	71.782

3600.000	0.569	183.102	3.091	11.745	3599.941	0.471	3.091	12.145	75.257
3700.000	0.111	212.309	2.513	11.666	3699.939	0.474	2.513	11.934	77.843
3800.000	0.401	242.185	2.268	11.305	3799.938	0.309	2.268	11.530	78.657
3900.000	0.692	217.395	1.625	10.629	3899.933	0.369	1.625	10.752	81.308
4000.000	0.694	257.429	1.014	9.671	3999.926	0.474	1.014	9.724	84.018
4100.000	0.963	270.585	0.890	8.240	4099.916	0.328	0.890	8.288	83.833
4200.000	0.617	255.569	0.765	6.878	4199.906	0.400	0.765	6.920	83.656
4300.000	0.946	187.920	-0.187	6.242	4299.899	0.912	-0.187	6.245	91.718
4400.000	0.862	209.950	-1.656	5.753	4399.886	0.355	-1.656	5.987	106.062
4500.000	1.343	201.189	-3.401	4.954	4499.868	0.509	-3.401	6.009	124.469
4600.000	0.811	195.624	-5.176	4.340	4599.850	0.541	-5.176	6.754	140.019
4700.000	1.419	196.817	-7.042	3.791	4699.830	0.608	-7.042	7.998	151.706
4800.000	1.093	165.698	-9.152	3.668	4799.807	0.743	-9.152	9.860	158.157
4900.000	1.109	211.142	-10.904	3.404	4899.791	0.851	-10.904	11.423	162.664
5000.000	0.755	164.378	-12.367	3.081	4999.779	0.808	-12.367	12.745	166.011
5100.000	0.973	231.785	-13.527	2.591	5099.770	0.976	-13.527	13.773	169.157
5200.000	0.458	268.036	-14.066	1.525	5199.762	0.662	-14.066	14.148	173.814
5300.000	1.275	287.895	-13.738	0.067	5299.750	0.858	-13.738	13.738	179.720
5400.000	1.686	292.747	-12.828	-2.348	5399.716	0.429	-12.828	13.041	190.371
5500.000	0.854	313.677	-11.744	-4.243	5499.691	0.939	-11.744	12.487	199.864
5600.000	0.380	293.602	-11.097	-5.086	5599.685	0.514	-11.097	12.207	204.623
5700.000	1.046	300.066	-10.507	-6.180	5699.677	0.670	-10.507	12.189	210.462
5800.000	1.497	279.448	-9.835	-8.258	5799.653	0.636	-9.835	12.842	220.020
5900.000	0.820	284.865	-9.437	-10.239	5899.632	0.685	-9.437	13.925	227.335
6000.000	1.093	300.366	-8.771	-11.754	5999.618	0.374	-8.771	14.666	233.267
6100.000	0.299	297.096	-8.171	-12.808	6099.610	0.795	-8.171	15.192	237.466
6200.000	0.279	328.698	-7.844	-13.167	6199.608	0.158	-7.844	15.326	239.216
6300.000	0.361	289.746	-7.529	-13.590	6299.607	0.227	-7.529	15.536	241.011
6400.000	0.264	3.889	-7.193	-13.870	6399.606	0.385	-7.193	15.624	242.590
6500.000	0.300	2.489	-6.701	-13.843	6499.605	0.036	-6.701	15.380	244.171
6600.000	0.239	7.757	-6.232	-13.804	6599.603	0.066	-6.232	15.145	245.702
6700.000	0.448	14.200	-5.647	-13.680	6699.602	0.212	-5.647	14.799	247.570

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