



Company: NOBLE ENERGY INC

Lease/Well: SINJIN E#36-19

A.P.I.#: 05-123-30092

Rig Name: PRODUCTION

State/County: COLORADO/WELD

Latitude: 40.434, Longitude: -104.600

GRID North is 0.580 Degrees East of True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run2-01_ed.ut

Minimum Curvature Method

Report Date/Time: 11/29/2011 / 08:23

Vaughn Energy Services

Henderson, Colorado

866-835-8333

Jay Hinman

Sinjin E 36-19

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	0.181	161.061	100.000	-0.149	0.051	-0.149	0.158	161.061	0.181
200.000	0.365	246.265	199.999	-0.427	-0.189	-0.427	0.467	203.840	0.393
300.000	0.831	270.619	299.993	-0.547	-1.205	-0.547	1.323	245.573	0.521
400.000	1.027	269.814	399.980	-0.542	-2.826	-0.542	2.877	259.136	0.196
500.000	1.433	255.670	499.957	-0.855	-4.934	-0.855	5.007	260.171	0.505
600.000	1.896	247.150	599.915	-1.807	-7.670	-1.807	7.880	256.745	0.524
700.000	2.128	253.092	699.853	-2.989	-10.971	-2.989	11.371	254.759	0.311
800.000	2.373	246.793	799.776	-4.345	-14.650	-4.345	15.281	253.480	0.348
900.000	2.419	240.879	899.689	-6.188	-18.396	-6.188	19.409	251.409	0.251
1000.000	2.563	247.951	999.595	-8.054	-22.312	-8.054	23.721	250.152	0.339
1100.000	2.512	236.578	1099.497	-10.100	-26.213	-10.100	28.091	248.928	0.505
1200.000	2.313	236.920	1199.409	-12.408	-29.732	-12.408	32.217	247.348	0.200
1300.000	2.461	235.451	1299.322	-14.727	-33.191	-14.727	36.311	246.073	0.160
1400.000	2.006	232.112	1399.246	-17.019	-36.340	-17.019	40.128	244.905	0.473
1500.000	1.819	227.875	1499.190	-19.158	-38.898	-19.158	43.361	243.779	0.234
1600.000	1.109	229.317	1599.157	-20.854	-40.810	-20.854	45.829	242.933	0.712
1700.000	1.037	231.269	1699.139	-22.051	-42.249	-22.051	47.657	242.439	0.081
1800.000	1.212	231.811	1799.120	-23.271	-43.786	-23.271	49.586	242.011	0.176
1900.000	0.835	237.496	1899.104	-24.316	-45.232	-24.316	51.354	241.738	0.391
2000.000	0.696	298.467	1999.096	-24.418	-46.380	-24.418	52.415	242.234	0.786
2100.000	1.444	310.617	2099.078	-23.308	-47.871	-23.308	53.244	244.039	0.778
2200.000	1.553	310.345	2199.044	-21.610	-49.861	-21.610	54.342	246.568	0.109
2300.000	1.717	305.355	2299.003	-19.866	-52.115	-19.866	55.773	249.134	0.217
2400.000	1.803	306.954	2398.956	-18.054	-54.594	-18.054	57.502	251.701	0.099
2500.000	1.682	298.795	2498.910	-16.401	-57.137	-16.401	59.444	253.984	0.275
2600.000	1.694	292.876	2598.867	-15.119	-59.785	-15.119	61.667	255.808	0.175
2700.000	1.724	286.328	2698.822	-14.122	-62.591	-14.122	64.164	257.286	0.198
2800.000	1.814	288.327	2798.775	-13.201	-65.538	-13.201	66.854	258.611	0.109
2900.000	1.402	299.964	2898.735	-12.092	-68.100	-12.092	69.166	259.931	0.524
3000.000	1.003	318.461	2998.713	-10.826	-69.741	-10.826	70.576	261.176	0.552
3100.000	0.651	8.102	3098.704	-9.609	-70.241	-9.609	70.895	262.210	0.764
3200.000	0.732	27.890	3198.697	-8.482	-69.862	-8.482	70.375	263.078	0.251
3300.000	0.932	34.538	3298.686	-7.247	-69.102	-7.247	69.481	264.013	0.221
3400.000	1.023	43.319	3398.672	-5.927	-68.028	-5.927	68.286	265.020	0.175

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
3500.000	1.110	57.435	3498.655	-4.757	-66.600	-4.757	66.769	265.915	0.276
3600.000	1.478	61.422	3598.629	-3.619	-64.651	-3.619	64.752	266.796	0.378
3700.000	1.554	66.040	3698.594	-2.451	-62.279	-2.451	62.328	267.746	0.144
3800.000	2.034	63.805	3798.545	-1.117	-59.448	-1.117	59.458	268.924	0.485
3900.000	1.907	87.158	3898.487	-0.251	-56.193	-0.251	56.194	269.744	0.807
4000.000	1.786	117.333	3998.438	-0.884	-53.146	-0.884	53.154	269.047	0.968
4100.000	1.979	121.561	4098.384	-2.503	-50.290	-2.503	50.353	267.150	0.238
4200.000	2.198	135.374	4198.318	-4.772	-47.472	-4.772	47.711	264.260	0.547
4300.000	2.361	144.060	4298.239	-7.804	-44.916	-7.804	45.589	260.143	0.382
4400.000	1.865	147.631	4398.171	-10.846	-42.836	-10.846	44.188	255.791	0.513
4500.000	1.477	139.343	4498.128	-13.198	-41.125	-13.198	43.191	252.207	0.457
4600.000	0.984	108.250	4598.106	-14.444	-39.471	-14.444	42.031	249.900	0.813
4700.000	0.684	40.222	4698.097	-14.257	-38.270	-14.257	40.839	249.568	0.965
4800.000	1.291	29.912	4798.082	-12.825	-37.323	-12.825	39.464	251.037	0.630
4900.000	1.418	16.172	4898.054	-10.660	-36.416	-10.660	37.944	253.684	0.348
5000.000	1.157	5.906	4998.029	-8.467	-35.968	-8.467	36.951	256.754	0.347
5100.000	0.874	350.830	5098.013	-6.710	-35.985	-6.710	36.605	259.438	0.387
5200.000	0.895	354.420	5198.002	-5.180	-36.183	-5.180	36.552	261.853	0.059
5300.000	1.038	355.423	5297.987	-3.500	-36.331	-3.500	36.499	264.498	0.144
5400.000	1.233	350.250	5397.968	-1.536	-36.585	-1.536	36.618	267.595	0.220
5500.000	0.497	344.730	5497.956	-0.058	-36.882	-0.058	36.882	269.909	0.740
5600.000	0.370	309.697	5597.953	0.566	-37.244	0.566	37.248	270.870	0.287
5700.000	0.375	285.292	5697.951	0.858	-37.807	0.858	37.817	271.300	0.157
5800.000	0.608	289.425	5797.947	1.121	-38.623	1.121	38.640	271.662	0.236
5900.000	0.924	310.292	5897.938	1.818	-39.739	1.818	39.780	272.620	0.416
6000.000	1.215	320.021	5997.921	3.152	-41.035	3.152	41.156	274.393	0.343
6100.000	1.071	350.612	6097.902	4.887	-41.869	4.887	42.153	276.658	0.619
6200.000	0.660	46.852	6197.892	6.203	-41.601	6.203	42.061	278.480	0.893
6300.000	0.758	105.093	6297.885	6.424	-40.543	6.424	41.049	279.004	0.695
6400.000	1.386	146.243	6397.869	5.247	-39.233	5.247	39.582	277.617	0.956
6500.000	1.874	160.773	6497.828	2.698	-38.022	2.698	38.118	274.058	0.636
6600.000	2.207	135.610	6597.767	-0.222	-36.137	-0.222	36.138	269.648	0.946
6700.000	2.414	128.448	6697.686	-2.907	-33.141	-2.907	33.268	264.987	0.355
6800.000	2.792	123.627	6797.582	-5.566	-29.464	-5.566	29.985	259.303	0.436
6850.000	3.246	126.996	6847.513	-7.092	-27.319	-7.092	28.224	255.447	0.975

HORIZONTAL DISPLACEMENT IS
28.224 FEET AT 255.447 DEGREES