



Company/Rig: NOBLE ENERGY / PRODUCTION

WELL/API#: SINJIN E36-15 / 05-123-16308

DECLINATION: 8.31 DEGREES

TD AS DRILLED: 7040 FEET

COUNTY/STATE: WELD/ COLORADO

Latitude: 40.436, Longitude: -104.609

GRID North is 0.580 Degrees East of True North

VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4641 FEET

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 1/22/2015 / 10:18

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

SURVEYOR: NORMAN COWAN

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	0.329	66.091	99.999	0.116	0.263	0.116	0.287	66.091	0.329
200.000	0.453	174.938	199.998	-0.161	0.560	-0.161	0.583	106.043	0.641
300.000	0.252	118.809	299.996	-0.661	0.788	-0.661	1.029	129.999	0.376
400.000	0.565	136.469	399.994	-1.125	1.320	-1.125	1.735	130.425	0.334
500.000	0.367	242.627	499.992	-1.630	1.375	-1.630	2.133	139.838	0.755
600.000	0.855	224.113	599.986	-2.313	0.571	-2.313	2.382	166.123	0.520
700.000	0.522	250.727	699.979	-2.999	-0.378	-2.999	3.022	187.177	0.453
800.000	1.010	320.146	799.971	-2.473	-1.372	-2.473	2.828	209.026	0.960
900.000	1.091	10.958	899.956	-0.861	-1.756	-0.861	1.956	243.867	0.904
1000.000	0.970	358.632	999.940	0.919	-1.595	0.919	1.841	299.954	0.252
1100.000	1.216	309.194	1099.924	2.436	-2.438	2.436	3.446	314.975	0.941
1200.000	1.548	320.947	1199.895	4.155	-4.112	4.155	5.846	315.305	0.435
1300.000	1.513	300.471	1299.860	5.874	-6.100	5.874	8.468	313.917	0.545
1400.000	1.794	308.790	1399.819	7.524	-8.458	7.524	11.320	311.655	0.369
1500.000	2.160	324.965	1499.760	10.047	-10.760	10.047	14.721	313.039	0.663
1600.000	1.766	332.227	1599.701	12.953	-12.559	12.953	18.042	315.885	0.465
1700.000	2.265	327.918	1699.639	15.991	-14.327	15.991	21.470	318.142	0.521
1800.000	1.708	316.798	1799.579	18.752	-16.397	18.752	24.909	318.833	0.675
1900.000	1.585	316.435	1899.538	20.840	-18.370	20.840	27.780	318.605	0.123

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
2000.000	1.330	320.800	1999.505	22.741	-20.056	22.741	30.322	318.590	0.278
2100.000	1.504	339.451	2099.475	24.869	-21.251	24.869	32.712	319.486	0.490
2200.000	0.943	321.775	2199.452	26.744	-22.220	26.744	34.770	320.279	0.670
2300.000	1.192	341.474	2299.435	28.377	-23.060	28.377	36.565	320.902	0.440
2400.000	0.787	341.043	2399.420	30.013	-23.613	30.013	38.189	321.806	0.405
2500.000	0.969	347.976	2499.408	31.490	-24.013	31.490	39.601	322.673	0.210
2600.000	1.524	323.529	2599.385	33.387	-24.980	33.387	41.697	323.197	0.757
2700.000	1.493	319.773	2699.350	35.451	-26.611	35.451	44.328	323.106	0.104
2800.000	2.019	296.541	2799.304	37.233	-29.029	37.233	47.212	322.058	0.875
2900.000	1.831	283.131	2899.248	38.383	-32.161	38.383	50.076	320.041	0.487
3000.000	1.941	311.943	2999.196	39.878	-34.977	39.878	53.044	318.746	0.944
3100.000	1.843	337.979	3099.143	42.500	-36.839	42.500	56.244	319.081	0.857
3200.000	0.930	345.158	3199.113	44.775	-37.650	44.775	58.501	319.941	0.927
3300.000	0.755	53.336	3299.105	45.953	-37.329	45.953	59.204	320.912	0.955
3400.000	1.495	67.438	3399.085	46.846	-35.597	46.846	58.836	322.770	0.785
3500.000	2.292	84.360	3499.030	47.543	-32.403	47.543	57.535	325.724	0.966
3600.000	2.107	98.025	3598.957	47.483	-28.593	47.483	55.428	328.945	0.555
3700.000	2.727	80.551	3698.869	47.617	-24.427	47.617	53.517	332.843	0.956
3800.000	2.838	81.397	3798.751	48.378	-19.632	48.378	52.210	337.912	0.119
3900.000	2.365	88.406	3898.648	48.806	-15.121	48.806	51.094	342.786	0.569
4000.000	1.412	94.221	3998.593	48.772	-11.830	48.772	50.187	346.366	0.971
4100.000	1.448	74.172	4098.562	49.026	-9.386	49.026	49.917	349.162	0.499
4200.000	0.534	67.206	4198.546	49.551	-7.741	49.551	50.152	351.121	0.920
4300.000	0.437	0.083	4298.543	50.113	-7.311	50.113	50.644	351.700	0.543
4400.000	0.722	25.295	4398.538	51.065	-7.041	51.065	51.548	352.149	0.376
4500.000	0.677	2.504	4498.531	52.225	-6.746	52.225	52.659	352.640	0.280
4600.000	0.989	8.738	4598.520	53.668	-6.589	53.668	54.071	353.001	0.324
4700.000	1.239	36.717	4698.502	55.388	-5.811	55.388	55.692	354.010	0.591
4800.000	1.290	12.419	4798.478	57.354	-4.923	57.354	57.565	355.094	0.535
4900.000	0.944	349.714	4898.460	59.264	-4.828	59.264	59.460	355.343	0.555
5000.000	1.071	23.007	4998.445	60.934	-4.610	60.934	61.108	355.674	0.590
5100.000	1.151	18.906	5098.426	62.745	-3.919	62.745	62.867	356.426	0.113
5200.000	0.646	348.959	5198.414	64.248	-3.701	64.248	64.355	356.703	0.674
5300.000	0.898	327.887	5298.405	65.465	-4.226	65.465	65.602	356.307	0.376
5400.000	1.650	332.050	5398.380	67.401	-5.317	67.401	67.610	355.489	0.757
5500.000	1.788	338.598	5498.335	70.125	-6.561	70.125	70.431	354.655	0.240
5600.000	4.245	340.470	5598.189	75.066	-8.368	75.066	75.531	353.639	2.458
5700.000	3.773	354.759	5697.946	81.831	-9.906	81.831	82.428	353.098	1.101
5800.000	2.554	358.736	5797.792	87.335	-10.255	87.335	87.935	353.303	1.239
5900.000	1.650	8.390	5897.724	90.987	-10.095	90.987	91.545	353.669	0.967

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
6000.000	1.005	355.500	5997.697	93.286	-9.953	93.286	93.815	353.910	0.707
6100.000	0.915	167.890	6097.692	93.379	-9.854	93.379	93.897	353.976	1.916
6200.000	0.212	211.213	6197.687	92.440	-9.783	92.440	92.956	353.959	0.775
6300.000	0.529	157.565	6297.685	91.855	-9.702	91.855	92.366	353.971	0.438
6400.000	0.347	139.420	6397.682	91.199	-9.329	91.199	91.674	354.159	0.227
6500.000	0.432	125.210	6497.680	90.751	-8.824	90.751	91.179	354.447	0.128
6600.000	0.200	182.477	6597.678	90.360	-8.523	90.360	90.761	354.612	0.365
6700.000	0.319	229.475	6697.677	90.004	-8.743	90.004	90.428	354.452	0.234
6800.000	0.720	192.636	6797.673	89.210	-9.092	89.210	89.672	354.181	0.502