



Company: Noble Energy  
Well: Walker 4-25  
API: 05-123-24666  
Rig Name: Production / Lightning  
State/County: Colorado/Weld  
Latitude: 40.345, Longitude: -104.672  
GRID North is 0.530 Degrees East of True North  
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Service Company : Vaughn Energy Services

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: 4-25-01\_int.ut

Minimum Curvature Method

Report Date/Time: 2/14/2013 / 16:59

Vaughn Energy Services  
Henderson, Colorado  
(303) 853-4976  
Tom Fisher

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	0.411	229.987	99.999	-0.230	-0.274	-0.230	0.358	229.987	0.411
200.000	0.418	262.258	199.997	-0.510	-0.910	-0.510	1.043	240.750	0.230
300.000	0.153	186.083	299.996	-0.692	-1.286	-0.692	1.460	241.733	0.410
400.000	0.291	280.360	399.995	-0.778	-1.550	-0.778	1.734	243.333	0.339
500.000	0.318	335.812	499.994	-0.480	-1.913	-0.480	1.973	255.915	0.284
600.000	0.584	327.769	599.991	0.204	-2.299	0.204	2.308	275.067	0.273
700.000	0.540	315.815	699.986	0.973	-2.899	0.973	3.058	288.552	0.125
800.000	0.145	324.465	799.984	1.414	-3.301	1.414	3.591	293.189	0.397
900.000	0.599	343.020	899.982	2.017	-3.528	2.017	4.064	299.765	0.464
1000.000	0.206	342.140	999.979	2.688	-3.735	2.688	4.602	305.744	0.393
1100.000	0.469	6.638	1099.977	3.266	-3.743	3.266	4.968	311.109	0.295
1200.000	0.309	354.095	1199.975	3.942	-3.724	3.942	5.422	316.630	0.180
1300.000	0.409	348.048	1299.973	4.560	-3.825	4.560	5.952	320.006	0.107
1400.000	0.342	317.489	1399.971	5.129	-4.101	5.129	6.567	321.358	0.208
1500.000	0.522	311.747	1499.968	5.652	-4.642	5.652	7.314	320.604	0.185
1600.000	0.550	302.352	1599.964	6.212	-5.387	6.212	8.223	319.068	0.092
1700.000	0.606	301.892	1699.958	6.748	-6.241	6.748	9.192	317.235	0.056
1800.000	0.783	274.453	1799.951	7.080	-7.371	7.080	10.221	313.849	0.372
1900.000	1.089	256.038	1899.938	6.904	-8.974	6.904	11.322	307.574	0.425
2000.000	0.943	246.025	1999.922	6.341	-10.647	6.341	12.392	300.774	0.229
2100.000	0.969	236.796	2099.909	5.543	-12.107	5.543	13.316	294.600	0.156
2200.000	0.872	246.502	2199.896	4.776	-13.513	4.776	14.332	289.467	0.184
2300.000	1.397	233.507	2299.876	3.748	-15.190	3.748	15.646	283.860	0.581
2400.000	0.722	254.346	2399.859	2.853	-16.777	2.853	17.018	279.652	0.766
2500.000	0.961	220.248	2499.848	2.043	-17.925	2.043	18.041	276.503	0.544
2600.000	0.855	259.222	2599.837	1.264	-19.200	1.264	19.241	273.766	0.614
2700.000	1.095	256.147	2699.822	0.895	-20.860	0.895	20.880	272.458	0.246
2800.000	0.914	255.754	2799.807	0.470	-22.561	0.470	22.566	271.194	0.182
2900.000	0.959	283.103	2899.794	0.464	-24.149	0.464	24.154	271.101	0.445
3000.000	1.111	287.781	2999.778	0.950	-25.888	0.950	25.905	272.101	0.173

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
3100.000	0.782	282.528	3099.764	1.394	-27.477	1.394	27.512	272.904	0.339
3200.000	0.367	211.567	3199.760	1.269	-28.311	1.269	28.339	272.566	0.748
3300.000	0.434	123.686	3299.758	0.786	-28.164	0.786	28.175	271.598	0.558
3400.000	0.602	102.223	3399.754	0.465	-27.336	0.465	27.340	270.974	0.254
3500.000	0.723	91.388	3499.747	0.338	-26.191	0.338	26.194	270.740	0.174
3600.000	1.235	56.837	3599.733	0.912	-24.659	0.912	24.675	272.119	0.759
3700.000	1.675	51.088	3699.701	2.420	-22.620	2.420	22.749	276.106	0.463
3800.000	1.477	47.047	3799.663	4.216	-20.539	4.216	20.967	281.600	0.227
3900.000	1.521	38.347	3899.629	6.135	-18.772	6.135	19.749	288.098	0.231
4000.000	1.643	38.278	3999.591	8.301	-17.061	8.301	18.973	295.945	0.122
4100.000	1.483	52.125	4099.554	10.221	-15.151	10.221	18.276	304.004	0.409
4200.000	1.663	66.728	4199.516	11.589	-12.796	11.589	17.264	312.166	0.438
4300.000	2.022	72.234	4299.465	12.701	-9.784	12.701	16.032	322.392	0.400
4400.000	2.216	80.820	4399.396	13.547	-6.195	13.547	14.896	335.426	0.372
4500.000	2.419	76.208	4499.315	14.359	-2.236	14.359	14.532	351.147	0.275
4600.000	2.299	71.260	4599.230	15.507	1.713	15.507	15.601	6.304	0.236
4700.000	1.990	60.254	4699.160	17.012	5.120	17.012	17.766	16.749	0.514
4800.000	1.680	49.248	4799.109	18.830	7.737	18.830	20.358	22.338	0.468
4900.000	1.973	62.316	4899.059	20.587	10.372	20.587	23.052	26.739	0.507
5000.000	1.780	60.674	4999.005	22.147	13.250	22.147	25.808	30.891	0.200
5100.000	1.451	57.056	5098.965	23.596	15.667	23.596	28.324	33.582	0.344
5200.000	1.014	63.069	5198.942	24.686	17.518	24.686	30.270	35.361	0.455
5300.000	1.060	41.236	5298.926	25.783	18.917	25.783	31.978	36.269	0.395
5400.000	0.815	60.754	5398.913	26.826	20.148	26.826	33.549	36.909	0.400
5500.000	0.348	58.280	5498.907	27.333	21.026	27.333	34.485	37.570	0.467
5600.000	0.243	90.071	5598.906	27.492	21.497	27.492	34.899	38.023	0.191
5700.000	0.440	54.637	5698.904	27.715	22.023	27.715	35.399	38.472	0.280
5800.000	0.422	69.557	5798.901	28.066	22.681	28.066	36.085	38.943	0.113
5900.000	0.519	63.412	5898.898	28.397	23.431	28.397	36.816	39.527	0.109
6000.000	0.370	49.823	5998.895	28.808	24.082	28.808	37.548	39.895	0.182
6100.000	0.524	52.939	6098.892	29.291	24.694	29.291	38.312	40.132	0.157
6200.000	0.256	92.346	6198.890	29.558	25.282	29.558	38.896	40.542	0.365
6300.000	0.350	16.028	6298.889	29.842	25.590	29.842	39.312	40.613	0.382
6400.000	0.316	347.388	6398.887	30.405	25.614	30.405	39.756	40.111	0.168
6500.000	0.560	9.909	6498.884	31.156	25.637	31.156	40.348	39.450	0.293
6600.000	0.238	2.121	6598.881	31.845	25.729	31.845	40.940	38.937	0.325
6700.000	0.052	268.249	6698.881	32.051	25.692	32.051	41.077	38.715	0.247
6800.000	0.378	37.205	6798.880	32.312	25.846	32.312	41.378	38.655	0.412

HORIZONTAL DISPLACEMENT IS  
41.378 FEET AT 38.655 DEGREES