

Company: Noble  
Lease/Well: State Schmidt/36-45



Rig Name: Production  
State/County: Colorado/Weld County



Latitude: 40.35  
GRID North is 0.58 Degrees East of True North  
VS-Azi: 0.00 Degrees

Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01.ut  
Minimum Curvature Method  
Report Date/Time: 9/10/2012 / 10:48

Vaughn Energy Services  
Rifle, Colorado  
970-456-2071

Surveyor: Garry Fowler  
State Schmidt 36-45 API# 05-123-23962

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.57	351.37	100.00	0.49	-0.07	0.49	0.50	351.37	0.57
200.00	0.41	345.98	199.99	1.33	-0.24	1.33	1.35	349.94	0.17
300.00	0.44	335.91	299.99	2.03	-0.48	2.03	2.09	346.69	0.08
400.00	0.48	333.59	399.99	2.76	-0.82	2.76	2.88	343.36	0.04
500.00	0.36	329.29	499.99	3.40	-1.17	3.40	3.60	341.01	0.12
600.00	0.37	300.62	599.98	3.84	-1.61	3.84	4.16	337.27	0.18
700.00	0.37	300.69	699.98	4.17	-2.16	4.17	4.69	332.57	0.00
800.00	0.37	301.73	799.98	4.50	-2.71	4.50	5.25	328.93	0.01
900.00	0.59	300.97	899.98	4.93	-3.43	4.93	6.01	325.22	0.23
1000.00	0.64	302.21	999.97	5.49	-4.34	5.49	7.00	321.70	0.04
1100.00	0.65	300.04	1099.96	6.07	-5.30	6.07	8.06	318.90	0.03
1200.00	0.77	297.89	1199.96	6.67	-6.38	6.67	9.23	316.26	0.13
1300.00	0.77	285.48	1299.95	7.17	-7.63	7.17	10.47	313.21	0.17
1400.00	0.78	285.54	1399.94	7.53	-8.93	7.53	11.68	310.13	0.01
1500.00	0.77	286.81	1499.93	7.91	-10.23	7.91	12.93	307.70	0.02
1600.00	0.79	288.36	1599.92	8.32	-11.53	8.32	14.22	305.81	0.03
1700.00	0.77	284.15	1699.91	8.70	-12.83	8.70	15.50	304.13	0.06
1800.00	0.65	285.98	1799.90	9.02	-14.02	9.02	16.67	302.74	0.12
1900.00	0.63	286.04	1899.90	9.33	-15.10	9.33	17.75	301.70	0.02
2000.00	0.61	287.78	1999.89	9.64	-16.13	9.64	18.79	300.86	0.03

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
2100.00	0.54	287.84	2099.89	9.95	-17.08	9.95	19.77	300.20	0.07
2200.00	0.37	286.42	2199.88	10.18	-17.84	10.18	20.54	299.71	0.17
2300.00	0.23	280.98	2299.88	10.31	-18.35	10.31	21.05	299.33	0.15
2400.00	0.25	194.88	2399.88	10.14	-18.60	10.14	21.18	298.59	0.33
2500.00	0.27	184.17	2499.88	9.69	-18.67	9.69	21.03	297.42	0.05
2600.00	0.26	183.44	2599.88	9.22	-18.70	9.22	20.85	296.25	0.02
2700.00	0.46	184.89	2699.88	8.60	-18.75	8.60	20.63	294.64	0.20
2800.00	0.53	197.37	2799.87	7.76	-18.92	7.76	20.45	292.29	0.13
2900.00	0.55	199.34	2899.87	6.86	-19.22	6.86	20.41	289.63	0.03
3000.00	0.42	212.81	2999.86	6.09	-19.58	6.09	20.51	287.29	0.17
3100.00	0.39	222.47	3099.86	5.54	-20.01	5.54	20.76	285.47	0.08
3200.00	0.27	229.39	3199.86	5.14	-20.41	5.14	21.05	284.13	0.13
3300.00	0.39	234.34	3299.86	4.79	-20.87	4.79	21.41	282.92	0.13
3400.00	0.42	257.31	3399.86	4.51	-21.50	4.51	21.97	281.84	0.17
3500.00	0.60	266.88	3499.85	4.40	-22.38	4.40	22.81	281.11	0.19
3600.00	0.69	279.92	3599.85	4.47	-23.49	4.47	23.91	280.78	0.17
3700.00	0.91	284.87	3699.84	4.78	-24.85	4.78	25.30	280.89	0.23
3800.00	1.20	283.11	3799.82	5.22	-26.64	5.22	27.15	281.09	0.30
3900.00	1.29	284.47	3899.80	5.74	-28.75	5.74	29.32	281.29	0.09
4000.00	1.29	289.65	3999.77	6.40	-30.89	6.40	31.55	281.70	0.12
4100.00	1.35	288.33	4099.74	7.15	-33.07	7.15	33.83	282.19	0.07
4200.00	1.63	287.03	4199.71	7.93	-35.54	7.93	36.42	282.58	0.28
4300.00	1.69	292.44	4299.67	8.91	-38.26	8.91	39.28	283.11	0.17
4400.00	1.79	309.51	4399.62	10.47	-40.83	10.47	42.15	284.38	0.53
4500.00	1.68	314.99	4499.58	12.50	-43.07	12.50	44.85	286.18	0.20
4600.00	1.55	322.94	4599.54	14.62	-44.92	14.62	47.24	288.02	0.26
4700.00	1.49	323.61	4699.50	16.74	-46.51	16.74	49.43	289.79	0.06
4800.00	1.21	322.42	4799.47	18.62	-47.93	18.62	51.42	291.24	0.28
4900.00	1.20	325.06	4899.45	20.32	-49.17	20.32	53.20	292.45	0.06
5000.00	1.13	316.12	4999.43	21.89	-50.46	21.89	55.00	293.46	0.19
5100.00	0.80	320.36	5099.42	23.14	-51.59	23.14	56.54	294.16	0.34
5200.00	0.54	330.11	5199.41	24.08	-52.26	24.08	57.54	294.74	0.28
5300.00	0.45	4.07	5299.41	24.88	-52.47	24.88	58.07	295.37	0.30
5400.00	0.37	6.63	5399.40	25.59	-52.40	25.59	58.32	296.03	0.08
5500.00	0.52	39.95	5499.40	26.26	-52.07	26.26	58.32	296.76	0.29
5600.00	0.52	56.29	5599.40	26.86	-51.41	26.86	58.00	297.59	0.15
5700.00	0.57	54.11	5699.39	27.40	-50.63	27.40	57.57	298.42	0.06
5800.00	0.58	53.59	5799.39	27.99	-49.82	27.99	57.14	299.33	0.01
5900.00	0.78	51.86	5899.38	28.71	-48.87	28.71	56.68	300.43	0.20
6000.00	0.87	52.15	5999.37	29.60	-47.74	29.60	56.17	301.80	0.09
6100.00	0.92	56.98	6099.36	30.50	-46.47	30.50	55.59	303.28	0.09
6200.00	1.16	54.65	6199.34	31.52	-44.97	31.52	54.92	305.03	0.25

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
6300.00	1.38	55.08	6299.32	32.80	-43.16	32.80	54.21	307.23	0.22
6400.00	1.67	69.20	6399.28	34.00	-40.81	34.00	53.12	309.80	0.48
6500.00	2.18	62.26	6499.23	35.41	-37.76	35.41	51.76	313.16	0.56
6600.00	3.09	54.21	6599.12	37.87	-33.89	37.87	50.82	318.17	0.98
6700.00	3.02	37.25	6698.98	41.54	-30.11	41.54	51.31	324.06	0.90
6800.00	2.36	27.77	6798.87	45.45	-27.56	45.45	53.16	328.77	0.79
6900.00	1.58	21.34	6898.81	48.56	-26.10	48.56	55.13	331.75	0.81