

VES

VAUGHN ENERGY SERVICES

Company: Noble Energy

Lease/Well: Schissler / 1-11

Location: S-1 T-4N R-65W

Rig Name: Production

State/County: Colorado / Weld County

Latitude: 40.35, Longitude: -104.61

GRID North is 0.58 Degrees East of True North

VS-Azi: 0.00 Degrees

GTI

GYRO TECHNOLOGIES, INC

FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: inrun_ed.ut

Minimum Curvature Method

Report Date/Time: 2/28/2011 / 11:15

Vaughn Energy Services

Denver, CO

720-215-1841

Robert Davis

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	0.77	315.60	100.00	0.48	-0.47	0.48	0.67	315.60	0.77
200.00	0.37	269.90	199.99	0.96	-1.26	0.96	1.58	307.26	0.58
300.00	0.17	270.34	299.99	0.96	-1.73	0.96	1.98	298.99	0.20
400.00	0.19	183.22	399.99	0.80	-1.89	0.80	2.05	292.88	0.25
500.00	0.27	176.02	499.99	0.40	-1.88	0.40	1.92	281.91	0.09
600.00	0.27	163.94	599.99	-0.07	-1.80	-0.07	1.80	267.86	0.06
700.00	0.27	163.44	699.99	-0.52	-1.67	-0.52	1.75	252.61	0.00
800.00	0.25	134.33	799.99	-0.90	-1.44	-0.90	1.70	237.94	0.13
900.00	0.30	162.65	899.99	-1.31	-1.21	-1.31	1.78	222.72	0.14
1000.00	0.20	141.00	999.98	-1.70	-1.02	-1.70	1.98	210.92	0.13
1100.00	0.18	140.06	1099.98	-1.95	-0.80	-1.95	2.11	202.33	0.03
1200.00	0.33	214.30	1199.98	-2.31	-0.86	-2.31	2.47	200.47	0.33
1300.00	0.31	192.04	1299.98	-2.81	-1.08	-2.81	3.01	201.02	0.12
1400.00	0.46	192.02	1399.98	-3.46	-1.22	-3.46	3.67	199.38	0.16
1500.00	0.48	269.26	1499.98	-3.87	-1.72	-3.87	4.23	203.95	0.59
1600.00	0.44	285.70	1599.97	-3.77	-2.50	-3.77	4.52	213.60	0.14
1700.00	0.33	276.34	1699.97	-3.63	-3.16	-3.63	4.81	221.04	0.13
1800.00	0.59	266.65	1799.97	-3.63	-3.96	-3.63	5.37	227.50	0.27
1900.00	0.55	295.11	1899.96	-3.45	-4.91	-3.45	6.00	234.87	0.28
2000.00	0.51	298.58	1999.96	-3.04	-5.74	-3.04	6.49	242.09	0.06
2100.00	0.77	346.64	2099.95	-2.18	-6.28	-2.18	6.65	250.89	0.57
2200.00	0.75	7.67	2199.95	-0.88	-6.35	-0.88	6.41	262.13	0.28
2300.00	0.77	2.07	2299.94	0.44	-6.24	0.44	6.25	274.03	0.08
2400.00	0.62	346.97	2399.93	1.64	-6.33	1.64	6.54	284.52	0.23
2500.00	0.59	350.58	2499.92	2.68	-6.54	2.68	7.07	292.26	0.05
2600.00	0.93	346.21	2599.91	3.97	-6.82	3.97	7.89	300.23	0.35
2700.00	0.88	344.61	2699.90	5.51	-7.22	5.51	9.08	307.34	0.06
2800.00	0.78	336.91	2799.89	6.87	-7.69	6.87	10.31	311.80	0.15
2900.00	1.03	329.25	2899.88	8.27	-8.41	8.27	11.80	314.51	0.28
3000.00	0.84	337.55	2999.87	9.72	-9.15	9.72	13.35	316.72	0.24
3100.00	0.88	332.24	3099.85	11.07	-9.79	11.07	14.78	318.52	0.09
3200.00	1.18	312.93	3199.84	12.45	-10.90	12.45	16.55	318.80	0.46
3300.00	1.53	326.92	3299.81	14.27	-12.38	14.27	18.89	319.05	0.48
3400.00	1.61	339.55	3399.77	16.70	-13.60	16.70	21.53	320.84	0.35

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
3500.00	1.62	324.91	3499.73	19.17	-14.90	19.17	24.28	322.14	0.41
3600.00	1.58	322.25	3599.70	21.42	-16.56	21.42	27.07	322.29	0.09
3700.00	1.47	319.69	3699.66	23.48	-18.23	23.48	29.72	322.18	0.13
3800.00	1.67	322.89	3799.62	25.61	-19.93	25.61	32.46	322.11	0.22
3900.00	1.42	318.11	3899.59	27.69	-21.64	27.69	35.14	322.00	0.28
4000.00	1.43	311.67	3999.56	29.45	-23.40	29.45	37.61	321.53	0.16
4100.00	1.43	312.91	4099.52	31.12	-25.24	31.12	40.07	320.96	0.03
4200.00	1.14	288.48	4199.50	32.29	-27.10	32.29	42.15	320.00	0.61
4300.00	1.37	302.10	4299.48	33.24	-29.05	33.24	44.15	318.84	0.37
4400.00	1.23	319.51	4399.45	34.69	-30.76	34.69	46.36	318.43	0.42
4500.00	1.04	330.21	4499.43	36.29	-31.91	36.29	48.32	318.68	0.28
4600.00	0.95	308.00	4599.42	37.59	-33.01	37.59	50.03	318.71	0.39
4700.00	0.63	288.87	4699.41	38.28	-34.19	38.28	51.32	318.23	0.41
4800.00	0.85	358.21	4799.40	39.19	-34.73	39.19	52.37	318.46	0.86
4900.00	1.41	11.50	4899.38	41.13	-34.51	41.13	53.69	320.01	0.61
5000.00	1.28	6.45	4999.35	43.44	-34.14	43.44	55.25	321.84	0.17
5100.00	1.49	2.05	5099.32	45.85	-33.97	45.85	57.06	323.47	0.24
5200.00	0.99	11.27	5199.30	48.00	-33.75	48.00	58.68	324.89	0.54
5300.00	0.88	1.33	5299.29	49.61	-33.56	49.61	59.90	325.92	0.20
5400.00	0.69	8.88	5399.28	50.97	-33.45	50.97	60.97	326.72	0.21
5500.00	0.84	26.97	5499.27	52.22	-33.03	52.22	61.79	327.69	0.28
5600.00	1.07	86.49	5599.26	52.93	-31.76	52.93	61.73	329.03	0.97
5700.00	1.34	108.67	5699.24	52.62	-29.72	52.62	60.43	330.54	0.54
5800.00	0.94	95.96	5799.22	52.16	-27.80	52.16	59.10	331.95	0.47
5900.00	0.99	102.36	5899.20	51.89	-26.13	51.89	58.10	333.27	0.12
6000.00	1.17	99.71	5999.18	51.53	-24.29	51.53	56.97	334.76	0.18
6100.00	1.13	90.52	6099.16	51.35	-22.29	51.35	55.98	336.53	0.19
6200.00	1.11	54.02	6199.15	51.91	-20.52	51.91	55.82	338.43	0.70
6300.00	0.84	71.10	6299.13	52.71	-19.05	52.71	56.05	340.13	0.39
6400.00	0.80	48.16	6399.12	53.42	-17.83	53.42	56.31	341.54	0.33
6500.00	1.09	41.31	6499.11	54.60	-16.68	54.60	57.09	343.01	0.31
6600.00	1.61	48.64	6599.08	56.25	-14.99	56.25	58.21	345.07	0.55
6700.00	1.77	54.95	6699.04	58.07	-12.67	58.07	59.43	347.69	0.24
6800.00	1.02	68.01	6799.01	59.29	-10.58	59.29	60.22	349.88	0.81
6900.00	1.56	50.09	6898.98	60.49	-8.72	60.49	61.12	351.80	0.67
7000.00	2.43	55.39	6998.92	62.57	-5.93	62.57	62.85	354.59	0.89
7050.00	2.53	45.60	7048.87	63.94	-4.27	63.94	64.08	356.18	0.87
HORIZONTAL DISPLACEMENT IS 64.08 FEET AT 356.18 DEGREES									