

VES

VAUGHN ENERGY SERVICES

Company: Noble Energy
 Lease/Well: Sharkey / 42-35
 Location: S-35 T-6N R-65W

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

Latitude: 40.45, Longitude: -104.51
 GRID North is 0.64 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: 3/4/2011 / 18:17

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	0.29	240.50	100.00	-0.13	-0.22	-0.13	0.25	240.50	0.29
200.00	0.35	178.74	200.00	-0.55	-0.44	-0.55	0.70	218.29	0.33
300.00	0.54	239.26	300.00	-1.09	-0.83	-1.09	1.38	217.33	0.48
400.00	0.40	308.95	399.99	-1.12	-1.51	-1.12	1.88	233.59	0.55
500.00	0.59	239.87	499.99	-1.15	-2.23	-1.15	2.51	242.65	0.58
600.00	0.43	228.71	599.99	-1.66	-2.95	-1.66	3.39	240.70	0.19
700.00	0.45	228.49	699.98	-2.16	-3.53	-2.16	4.14	238.48	0.02
800.00	0.47	214.91	799.98	-2.76	-4.06	-2.76	4.91	235.76	0.11
900.00	0.41	220.20	899.98	-3.37	-4.53	-3.37	5.65	233.30	0.08
1000.00	0.13	321.12	999.98	-3.56	-4.83	-3.56	6.00	233.60	0.45
1100.00	0.15	147.33	1099.98	-3.58	-4.83	-3.58	6.01	233.42	0.28
1200.00	0.50	220.74	1199.97	-4.03	-5.04	-4.03	6.45	231.39	0.48
1300.00	0.37	208.53	1299.97	-4.64	-5.48	-4.64	7.19	229.74	0.16
1400.00	0.44	219.38	1399.97	-5.22	-5.88	-5.22	7.86	228.39	0.10
1500.00	0.53	220.51	1499.97	-5.87	-6.42	-5.87	8.70	227.58	0.10
1600.00	0.52	224.60	1599.96	-6.55	-7.04	-6.55	9.62	227.10	0.04
1700.00	0.81	251.13	1699.95	-7.10	-8.03	-7.10	10.72	228.52	0.41
1800.00	1.07	269.62	1799.94	-7.33	-9.64	-7.33	12.11	232.72	0.40
1900.00	1.14	264.28	1899.92	-7.44	-11.56	-7.44	13.75	237.23	0.12
2000.00	0.55	258.61	1999.91	-7.63	-13.02	-7.63	15.09	239.61	0.59
2100.00	0.37	228.46	2099.91	-7.94	-13.73	-7.94	15.86	239.95	0.30
2200.00	0.82	222.66	2199.90	-8.68	-14.46	-8.68	16.86	239.01	0.46
2300.00	0.61	215.13	2299.89	-9.65	-15.25	-9.65	18.05	237.68	0.23
2400.00	0.53	187.55	2399.89	-10.54	-15.62	-10.54	18.84	235.98	0.28
2500.00	0.48	200.93	2499.89	-11.39	-15.83	-11.39	19.50	234.26	0.13
2600.00	0.80	216.12	2599.88	-12.34	-16.39	-12.34	20.51	233.02	0.36
2700.00	0.60	214.84	2699.87	-13.33	-17.10	-13.33	21.68	232.05	0.20
2800.00	0.53	194.54	2799.87	-14.21	-17.51	-14.21	22.55	230.94	0.21
2900.00	0.76	239.14	2899.86	-15.00	-18.20	-15.00	23.58	230.50	0.53
3000.00	0.42	185.65	2999.86	-15.70	-18.80	-15.70	24.49	230.13	0.61
3100.00	0.14	319.79	3099.86	-15.97	-18.92	-15.97	24.75	229.83	0.53
3200.00	1.01	18.60	3199.85	-15.04	-18.72	-15.04	24.01	231.22	0.94
3300.00	1.90	30.02	3299.82	-12.77	-17.61	-12.77	21.75	234.05	0.93
3400.00	2.72	20.33	3399.74	-9.10	-15.95	-9.10	18.37	240.28	0.91

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	3.07	16.95	3499.61	-4.32	-14.35	-4.32	14.98	253.24	0.38
3600.00	3.29	12.43	3599.45	1.04	-12.95	1.04	12.99	274.59	0.34
3700.00	3.00	14.31	3699.30	6.38	-11.68	6.38	13.31	298.64	0.30
3800.00	3.12	10.37	3799.16	11.60	-10.55	11.60	15.67	317.71	0.24
3900.00	2.72	2.64	3899.03	16.64	-9.95	16.64	19.39	329.12	0.56
4000.00	2.20	3.26	3998.94	20.92	-9.73	20.92	23.08	335.06	0.52
4100.00	2.34	354.00	4098.86	24.87	-9.83	24.87	26.74	338.42	0.39
4200.00	2.00	352.30	4198.79	28.63	-10.28	28.63	30.42	340.24	0.34
4300.00	1.42	334.81	4298.75	31.48	-11.04	31.48	33.36	340.67	0.78
4400.00	1.01	309.99	4398.72	33.16	-12.24	33.16	35.35	339.74	0.66
4500.00	0.54	238.03	4498.72	33.48	-13.32	33.48	36.03	338.31	0.99
4600.00	1.30	215.74	4598.70	32.31	-14.38	32.31	35.36	336.00	0.83
4700.00	2.07	208.51	4698.66	29.80	-15.91	29.80	33.78	331.90	0.80
4800.00	2.76	205.13	4798.57	26.03	-17.79	26.03	31.53	325.65	0.70
4900.00	3.35	200.85	4898.43	21.12	-19.85	21.12	28.99	316.78	0.63
5000.00	2.99	208.33	4998.27	16.10	-22.13	16.10	27.37	306.03	0.55
5100.00	2.41	210.07	5098.16	11.99	-24.42	11.99	27.20	296.14	0.59
5200.00	1.83	203.35	5198.09	8.70	-26.11	8.70	27.52	288.44	0.62
5300.00	1.81	203.54	5298.04	5.78	-27.37	5.78	27.98	281.93	0.02
5400.00	1.71	217.06	5398.00	3.15	-28.90	3.15	29.07	276.21	0.43
5500.00	1.51	209.30	5497.96	0.81	-30.44	0.81	30.45	271.52	0.29
5600.00	1.11	220.84	5597.93	-1.07	-31.72	-1.07	31.74	268.06	0.48
5700.00	0.83	232.05	5697.92	-2.25	-32.93	-2.25	33.00	266.09	0.34
5800.00	0.71	221.43	5797.91	-3.16	-33.91	-3.16	34.05	264.68	0.19
5900.00	0.48	210.01	5897.90	-3.99	-34.53	-3.99	34.76	263.41	0.25
6000.00	0.43	219.45	5997.90	-4.64	-34.98	-4.64	35.28	262.44	0.09
6100.00	0.46	201.30	6097.90	-5.31	-35.36	-5.31	35.76	261.46	0.14
6200.00	0.15	118.50	6197.90	-5.75	-35.39	-5.75	35.85	260.78	0.47
6300.00	0.50	142.32	6297.89	-6.15	-35.01	-6.15	35.54	260.03	0.36
6400.00	0.19	153.67	6397.89	-6.64	-34.67	-6.64	35.30	259.15	0.31
6500.00	0.34	216.06	6497.89	-7.03	-34.77	-7.03	35.47	258.57	0.30
6600.00	0.52	193.89	6597.89	-7.71	-35.05	-7.71	35.89	257.59	0.24
6700.00	0.66	178.15	6697.88	-8.73	-35.14	-8.73	36.21	256.05	0.22
HORIZONTAL DISPLACEMENT IS 36.21 FEET AT 256.05 DEGREES									