



Company: NOBLE
Lease/Well: WELLS/# 22-15
Location:
Rig Name: PRODUCTION
State/County: COLORADO/WELD COUNTY
Latitude: 40.40
GRID North is 0.70 Degrees East of True North
VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : GL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01.ut
Minimum Curvature Method
Report Date/Time: 4/12/2011 / 16:24

Vaughn Energy Services
Rifle, Colorado
970-456-2071
Garry Fowler
Wells 22-15

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	0.37	288.71	100.00	0.10	-0.31	0.10	0.32	288.71	0.37
200.00	0.67	287.61	200.00	0.39	-1.17	0.39	1.24	288.18	0.30
300.00	0.75	291.01	299.99	0.80	-2.34	0.80	2.47	288.79	0.09
400.00	0.57	338.15	399.98	1.50	-3.14	1.50	3.48	295.49	0.55
500.00	0.69	348.82	499.98	2.55	-3.44	2.55	4.28	306.56	0.17
600.00	0.72	344.74	599.97	3.75	-3.72	3.75	5.28	315.19	0.06
700.00	0.75	342.17	699.96	4.97	-4.09	4.97	6.44	320.59	0.05
800.00	0.80	343.89	799.95	6.27	-4.48	6.27	7.71	324.45	0.06
900.00	0.73	352.43	899.94	7.57	-4.76	7.57	8.95	327.85	0.14
1000.00	0.79	344.46	999.93	8.87	-5.03	8.87	10.20	330.44	0.12
1100.00	0.85	348.07	1099.92	10.26	-5.37	10.26	11.58	332.39	0.08
1200.00	0.71	334.41	1199.91	11.55	-5.79	11.55	12.92	333.38	0.24
1300.00	1.01	339.50	1299.90	12.93	-6.36	12.93	14.41	333.80	0.31
1400.00	1.05	10.69	1399.89	14.66	-6.50	14.66	16.04	336.07	0.55
1500.00	0.82	337.78	1499.87	16.22	-6.61	16.22	17.52	337.84	0.57
1600.00	0.56	30.20	1599.87	17.31	-6.63	17.31	18.54	339.04	0.66
1700.00	0.50	45.28	1699.86	18.04	-6.08	18.04	19.04	341.39	0.15
1800.00	0.74	13.27	1799.86	18.98	-5.62	18.98	19.79	343.51	0.41
1900.00	0.69	19.04	1899.85	20.18	-5.27	20.18	20.86	345.35	0.09
2000.00	0.88	18.10	1999.84	21.48	-4.84	21.48	22.02	347.30	0.19
2100.00	1.00	16.68	2099.83	23.05	-4.35	23.05	23.46	349.32	0.12
2200.00	1.62	5.98	2199.80	25.29	-3.95	25.29	25.60	351.12	0.66
2300.00	1.76	351.83	2299.76	28.22	-4.02	28.22	28.50	351.89	0.44
2400.00	1.81	354.25	2399.71	31.31	-4.40	31.31	31.61	352.00	0.09
2500.00	1.86	351.78	2499.66	34.48	-4.79	34.48	34.81	352.10	0.10
2600.00	1.91	344.40	2599.60	37.69	-5.47	37.69	38.08	351.75	0.25
2700.00	1.83	345.68	2699.55	40.84	-6.31	40.84	41.32	351.22	0.09
2800.00	1.69	346.04	2799.50	43.82	-7.06	43.82	44.39	350.85	0.14
2900.00	1.46	338.98	2899.47	46.44	-7.87	46.44	47.10	350.38	0.30
3000.00	1.32	324.94	2999.44	48.56	-8.99	48.56	49.39	349.51	0.37
3100.00	1.36	320.90	3099.41	50.43	-10.40	50.43	51.49	348.35	0.10

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
3200.00	1.52	332.61	3199.38	52.53	-11.76	52.53	53.83	347.38	0.33
3300.00	1.74	345.83	3299.34	55.19	-12.75	55.19	56.64	347.00	0.44
3400.00	1.82	351.44	3399.29	58.23	-13.35	58.23	59.75	347.08	0.19
3500.00	1.56	358.20	3499.25	61.17	-13.63	61.17	62.67	347.43	0.32
3600.00	1.55	359.15	3599.21	63.89	-13.70	63.89	65.34	347.90	0.03
3700.00	1.58	359.79	3699.17	66.62	-13.72	66.62	68.02	348.36	0.04
3800.00	1.50	357.37	3799.13	69.31	-13.79	69.31	70.67	348.75	0.10
3900.00	1.39	348.43	3899.10	71.81	-14.09	71.81	73.18	348.90	0.25
4000.00	1.37	342.12	3999.07	74.14	-14.70	74.14	75.58	348.78	0.15
4100.00	1.11	335.87	4099.05	76.16	-15.47	76.16	77.72	348.52	0.30
4200.00	0.86	13.89	4199.04	77.77	-15.68	77.77	79.34	348.60	0.68
4300.00	0.81	7.20	4299.03	79.19	-15.41	79.19	80.68	348.99	0.11
4400.00	0.91	316.17	4399.02	80.47	-15.88	80.47	82.02	348.84	0.75
4500.00	1.20	301.89	4499.00	81.59	-17.32	81.59	83.41	348.02	0.38
4600.00	1.28	304.52	4598.98	82.78	-19.12	82.78	84.96	346.99	0.10
4700.00	1.12	302.45	4698.95	83.94	-20.87	83.94	86.49	346.04	0.16
4800.00	1.07	291.54	4798.94	84.81	-22.57	84.81	87.76	345.10	0.22
4900.00	0.99	288.79	4898.92	85.43	-24.25	85.43	88.80	344.15	0.09
5000.00	1.09	291.41	4998.90	86.05	-25.96	86.05	89.88	343.21	0.11
5100.00	0.93	278.23	5098.89	86.52	-27.65	86.52	90.83	342.27	0.28
5200.00	0.44	274.50	5198.88	86.67	-28.85	86.67	91.34	341.59	0.49
5300.00	0.59	286.17	5298.88	86.84	-29.73	86.84	91.79	341.10	0.18
5400.00	0.72	243.09	5398.87	86.70	-30.78	86.70	92.00	340.45	0.50
5500.00	0.16	249.14	5498.87	86.36	-31.47	86.36	91.92	339.98	0.57
5600.00	0.33	353.58	5598.87	86.60	-31.63	86.60	92.19	339.93	0.40
5700.00	0.74	46.48	5698.86	87.32	-31.20	87.32	92.73	340.34	0.60
5800.00	0.78	45.00	5798.85	88.25	-30.25	88.25	93.29	341.08	0.05
5900.00	0.64	52.70	5898.85	89.08	-29.32	89.08	93.78	341.78	0.17
6000.00	0.59	58.07	5998.84	89.69	-28.43	89.69	94.09	342.41	0.07
6100.00	0.70	54.26	6098.83	90.32	-27.50	90.32	94.41	343.07	0.11
6200.00	0.83	32.99	6198.82	91.28	-26.61	91.28	95.08	343.75	0.31
6300.00	0.87	25.15	6298.81	92.57	-25.89	92.57	96.13	344.37	0.12
6400.00	0.83	45.15	6398.80	93.77	-25.06	93.77	97.06	345.04	0.30
6500.00	0.98	23.54	6498.79	95.06	-24.21	95.06	98.10	345.71	0.37
6600.00	1.09	70.57	6598.78	96.17	-22.97	96.17	98.87	346.57	0.83
6620.00	1.15	63.59	6618.77	96.32	-22.61	96.32	98.94	346.79	0.73
HORIZONTAL DISPLACEMENT IS 98.94 FEET AT 346.79 DEGREES									