



Company: NOBLE ENERGY
Well: ELISE STATE C24-19

Rig Name: PRODUCTION
State/County: COLORADO/WELD
Latitude: 40.30

GRID North is 0.64 Degrees East of True North
VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Service Company : VAUGHN ENERGY SERVICES

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01.ut

Minimum Curvature Method

Report Date/Time: 12/16/2010 / 21:46

Vaughn Energy Services
RIFLE, COLORADO
800-606-4976

Surveyor: Nick Campbell
ELISE STATE C24-19

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	0.90	4.31	100.00	0.78	0.06	0.78	0.79	4.31	0.90
200.00	0.93	353.99	199.98	2.37	0.03	2.37	2.37	0.81	0.17
300.00	1.30	0.08	299.96	4.30	-0.05	4.30	4.30	359.34	0.39
400.00	1.35	35.01	399.94	6.40	0.63	6.40	6.43	5.60	0.80
500.00	1.97	50.14	499.90	8.46	2.62	8.46	8.86	17.20	0.75
600.00	1.88	49.38	599.84	10.63	5.18	10.63	11.82	25.99	0.09
700.00	2.33	31.23	699.77	13.43	7.48	13.43	15.37	29.10	0.80
800.00	2.09	38.50	799.70	16.60	9.67	16.60	19.21	30.22	0.36
900.00	2.32	49.21	899.63	19.35	12.33	19.35	22.95	32.52	0.47
1000.00	2.23	54.79	999.55	21.79	15.46	21.79	26.72	35.35	0.24
1100.00	1.96	59.45	1099.48	23.79	18.52	23.79	30.15	37.91	0.32
1200.00	1.85	60.41	1199.43	25.45	21.40	25.45	33.26	40.06	0.12
1300.00	1.37	48.51	1299.39	27.04	23.70	27.04	35.96	41.23	0.59
1400.00	1.34	56.08	1399.36	28.49	25.56	28.49	38.27	41.91	0.18
1500.00	1.28	59.39	1499.33	29.70	27.49	29.70	40.48	42.79	0.10
1600.00	1.38	60.89	1599.31	30.86	29.50	30.86	42.69	43.71	0.11
1700.00	0.91	48.20	1699.29	31.97	31.14	31.97	44.63	44.25	0.53
1800.00	0.88	47.08	1799.27	33.02	32.29	33.02	46.18	44.36	0.03
1900.00	0.18	359.69	1899.27	33.70	32.85	33.70	47.06	44.27	0.77
2000.00	0.25	356.89	1999.27	34.08	32.84	34.08	47.33	43.94	0.07
2100.00	0.63	222.81	2099.27	33.90	32.46	33.90	46.93	43.76	0.83
2200.00	0.43	207.55	2199.26	33.16	31.91	33.16	46.02	43.90	0.24
2300.00	1.17	189.41	2299.25	31.82	31.57	31.82	44.82	44.77	0.77
2400.00	0.90	236.45	2399.24	30.38	30.74	30.38	43.22	45.34	0.86
2500.00	1.35	267.03	2499.22	29.88	28.90	29.88	41.57	44.05	0.74
2600.00	1.67	249.95	2599.18	29.32	26.36	29.32	39.43	41.95	0.54
2700.00	1.01	252.35	2699.16	28.56	24.16	28.56	37.40	40.23	0.66
2800.00	1.30	241.04	2799.14	27.74	22.33	27.74	35.61	38.83	0.37

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
2900.00	0.80	251.33	2899.12	26.97	20.67	26.97	33.98	37.47	0.53
3000.00	1.29	235.76	2999.10	26.11	19.08	26.11	32.34	36.16	0.56
3100.00	0.69	269.43	3099.09	25.47	17.55	25.47	30.94	34.57	0.81
3200.00	0.86	236.55	3199.08	25.05	16.32	25.05	29.90	33.09	0.47
3300.00	0.92	254.92	3299.07	24.43	14.92	24.43	28.62	31.41	0.29
3400.00	0.64	273.50	3399.06	24.25	13.58	24.25	27.80	29.25	0.38
3500.00	0.22	217.52	3499.05	24.13	12.90	24.13	27.37	28.14	0.55
3600.00	0.50	229.66	3599.05	23.70	12.45	23.70	26.77	27.73	0.28
3700.00	0.12	175.31	3699.05	23.31	12.13	23.31	26.28	27.50	0.44
3800.00	0.26	177.38	3799.05	22.98	12.15	22.98	25.99	27.87	0.14
3900.00	0.31	242.50	3899.05	22.63	11.92	22.63	25.57	27.77	0.31
4000.00	0.50	173.70	3999.05	22.07	11.72	22.07	24.99	27.98	0.49
4100.00	1.08	189.11	4099.04	20.70	11.62	20.70	23.74	29.31	0.61
4200.00	1.08	180.02	4199.02	18.83	11.47	18.83	22.05	31.35	0.17
4300.00	0.98	165.92	4299.00	17.06	11.68	17.06	20.68	34.39	0.27
4400.00	1.58	171.47	4398.98	14.87	12.09	14.87	19.17	39.10	0.61
4500.00	1.12	162.58	4498.95	12.58	12.58	12.58	17.80	45.00	0.51
4600.00	0.89	184.20	4598.94	10.88	12.82	10.88	16.81	49.67	0.44
4700.00	0.88	206.95	4698.92	9.43	12.42	9.43	15.59	52.79	0.35
4800.00	0.68	196.63	4798.92	8.17	11.90	8.17	14.43	55.52	0.24
4900.00	0.98	212.17	4898.90	6.88	11.27	6.88	13.20	58.61	0.37
5000.00	0.99	200.88	4998.89	5.34	10.51	5.34	11.79	63.05	0.19
5100.00	0.86	179.25	5098.88	3.78	10.21	3.78	10.89	69.67	0.37
5200.00	0.43	205.51	5198.87	2.69	10.06	2.69	10.41	75.01	0.52
5300.00	0.42	190.61	5298.87	1.99	9.83	1.99	10.03	78.53	0.11
5400.00	0.53	137.23	5398.86	1.29	10.08	1.29	10.16	82.71	0.44
5500.00	0.64	172.36	5498.86	0.39	10.47	0.39	10.48	87.86	0.37
5600.00	0.30	178.24	5598.86	-0.43	10.55	-0.43	10.56	92.31	0.35
5700.00	0.55	174.91	5698.85	-1.17	10.60	-1.17	10.67	96.29	0.26
5800.00	0.60	136.40	5798.85	-2.03	11.01	-2.03	11.19	100.45	0.38
5900.00	0.25	159.55	5898.85	-2.62	11.45	-2.62	11.75	102.89	0.38
6000.00	0.59	134.29	5998.84	-3.19	11.89	-3.19	12.31	104.99	0.37
6100.00	0.80	146.19	6098.84	-4.12	12.65	-4.12	13.30	108.04	0.25
6200.00	0.77	171.32	6198.83	-5.36	13.14	-5.36	14.19	112.21	0.34
6300.00	0.48	194.37	6298.82	-6.43	13.13	-6.43	14.62	116.10	0.38
6400.00	0.66	128.75	6398.82	-7.20	13.48	-7.20	15.28	118.10	0.64
6500.00	0.40	209.07	6498.81	-7.86	13.76	-7.86	15.85	119.74	0.71
6600.00	0.37	122.35	6598.81	-8.34	13.87	-8.34	16.18	121.03	0.53
6700.00	1.09	140.62	6698.80	-9.25	14.74	-9.25	17.40	122.10	0.74
6720.00	1.03	141.50	6718.80	-9.54	14.98	-9.54	17.75	122.49	0.29
HORIZONTAL DISPLACEMENT IS 17.75 FEET AT 122.49 DEGREES									