



Company: NOBLE ENERGY
 Well: RASSMUSSEN 01
 Location: NW/NE SEC. 26-T4N-R64W
 Rig Name: LIGHTNING WIRE
 State/County: COLORADO/WELD
 Latitude: 40.29
 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: rassmussen01-01.ut
 Minimum Curvature Method
 Report Date/Time: 2/23/2011 / 21:04

VAUGHN ENERGY SERVICES
 CORPUS CHRISTI, TX
 800-606-4976
 SURVEYOR: CORY ALBERT

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	0.51	43.95	100.00	0.32	0.31	0.32	0.45	43.95	0.51
200.00	0.51	66.05	199.99	0.82	1.02	0.82	1.31	51.23	0.19
300.00	0.53	55.30	299.99	1.26	1.81	1.26	2.21	55.02	0.10
400.00	0.36	63.02	399.99	1.67	2.47	1.67	2.98	55.89	0.19
500.00	0.40	63.33	499.99	1.97	3.06	1.97	3.64	57.22	0.05
600.00	0.31	60.66	599.98	2.26	3.61	2.26	4.26	57.94	0.09
700.00	0.36	62.43	699.98	2.54	4.12	2.54	4.84	58.38	0.05
800.00	0.38	62.80	799.98	2.83	4.69	2.83	5.48	58.88	0.02
900.00	0.30	62.18	899.98	3.11	5.22	3.11	6.07	59.23	0.08
1000.00	0.30	59.20	999.98	3.36	5.67	3.36	6.60	59.35	0.02
1100.00	0.28	44.39	1099.98	3.67	6.07	3.67	7.09	58.84	0.08
1200.00	0.43	36.51	1199.97	4.14	6.46	4.14	7.67	57.33	0.16
1300.00	0.47	58.08	1299.97	4.66	7.03	4.66	8.44	56.46	0.17
1400.00	0.44	64.78	1399.97	5.04	7.73	5.04	9.23	56.88	0.06
1500.00	0.46	61.46	1499.96	5.40	8.44	5.40	10.02	57.37	0.03
1600.00	0.50	62.68	1599.96	5.79	9.18	5.79	10.85	57.74	0.04
1700.00	0.64	59.98	1699.96	6.27	10.05	6.27	11.85	58.03	0.14
1800.00	0.50	62.83	1799.95	6.75	10.92	6.75	12.84	58.27	0.14
1900.00	0.37	26.51	1899.95	7.24	11.46	7.24	13.55	57.71	0.30
2000.00	0.20	335.02	1999.95	7.68	11.52	7.68	13.85	56.30	0.29
2100.00	0.34	329.79	2099.95	8.10	11.30	8.10	13.90	54.38	0.14
2200.00	0.40	321.20	2199.94	8.63	10.94	8.63	13.93	51.74	0.08
2300.00	0.85	319.64	2299.94	9.46	10.24	9.46	13.94	47.26	0.44
2400.00	1.06	320.39	2399.92	10.73	9.17	10.73	14.12	40.52	0.21
2500.00	1.19	322.63	2499.90	12.27	7.95	12.27	14.62	32.94	0.14
2600.00	1.18	321.44	2599.88	13.90	6.68	13.90	15.43	25.65	0.03
2700.00	1.27	317.23	2699.86	15.52	5.29	15.52	16.40	18.80	0.12
2800.00	0.94	318.75	2799.84	16.95	3.99	16.95	17.41	13.26	0.33
2900.00	0.94	317.75	2899.83	18.18	2.90	18.18	18.41	9.06	0.02
3000.00	1.00	313.32	2999.81	19.38	1.71	19.38	19.46	5.05	0.09
3100.00	1.22	304.70	3099.79	20.58	0.21	20.58	20.59	0.57	0.28
3200.00	1.58	300.26	3199.76	21.89	-1.86	21.89	21.96	355.14	0.38
3300.00	1.54	301.43	3299.73	23.28	-4.20	23.28	23.66	349.77	0.05
3400.00	1.34	291.35	3399.70	24.41	-6.44	24.41	25.25	345.22	0.33
3500.00	0.79	298.02	3499.68	25.16	-8.13	25.16	26.44	342.08	0.56
3600.00	0.47	306.37	3599.67	25.72	-9.07	25.72	27.28	340.58	0.33

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
3700.00	0.21	307.44	3699.67	26.07	-9.54	26.07	27.76	339.91	0.26
3800.00	0.31	302.26	3799.67	26.33	-9.91	26.33	28.13	339.38	0.11
3900.00	0.34	305.79	3899.67	26.64	-10.38	26.64	28.59	338.72	0.04
4000.00	0.31	306.42	3999.67	26.98	-10.84	26.98	29.08	338.11	0.03
4100.00	0.25	358.74	4099.67	27.37	-11.07	27.37	29.52	337.98	0.26
4200.00	0.53	123.98	4199.66	27.33	-10.69	27.33	29.35	338.64	0.71
4300.00	1.03	128.79	4299.65	26.51	-9.60	26.51	28.20	340.09	0.50
4400.00	1.37	134.82	4399.63	25.11	-8.06	25.11	26.37	342.20	0.36
4500.00	1.82	122.20	4499.59	23.42	-5.87	23.42	24.15	345.93	0.57
4600.00	2.17	108.74	4599.53	21.97	-2.74	21.97	22.14	352.89	0.58
4700.00	2.44	93.58	4699.45	21.23	1.17	21.23	21.26	3.17	0.67
4800.00	2.68	90.05	4799.35	21.09	5.63	21.09	21.83	14.95	0.28
4900.00	3.00	88.97	4899.23	21.14	10.59	21.14	23.64	26.60	0.33
5000.00	2.78	96.91	4999.10	20.89	15.62	20.89	26.08	36.77	0.46
5100.00	2.74	101.23	5098.99	20.14	20.37	20.14	28.64	45.32	0.21
5200.00	3.06	119.32	5198.86	18.37	25.04	18.37	31.05	53.74	0.97
5300.00	2.96	135.87	5298.73	15.21	29.16	15.21	32.89	62.46	0.87
5400.00	2.98	148.99	5398.59	11.13	32.30	11.13	34.16	70.99	0.68
5500.00	3.03	159.59	5498.46	6.42	34.56	6.42	35.15	79.48	0.56
5600.00	3.31	164.25	5598.30	1.16	36.26	1.16	36.28	88.17	0.37
5700.00	3.64	169.80	5698.12	-4.74	37.61	-4.74	37.91	97.18	0.47
5800.00	3.68	173.43	5797.92	-11.05	38.54	-11.05	40.09	105.99	0.23
5900.00	3.46	184.24	5897.72	-17.24	38.68	-17.24	42.35	114.03	0.70
6000.00	3.04	186.12	5997.56	-22.89	38.18	-22.89	44.51	120.95	0.44
6100.00	2.00	187.48	6097.46	-27.26	37.67	-27.26	46.49	125.89	1.03
6200.00	1.50	194.17	6197.42	-30.26	37.12	-30.26	47.89	129.19	0.55
6300.00	1.11	194.72	6297.39	-32.46	36.55	-32.46	48.88	131.60	0.39
6400.00	1.01	199.02	6397.37	-34.22	36.02	-34.22	49.69	133.53	0.13
6500.00	1.00	209.57	6497.36	-35.81	35.30	-35.81	50.29	135.41	0.18
6600.00	0.68	218.51	6597.35	-37.03	34.51	-37.03	50.62	137.02	0.35
6700.00	0.59	223.88	6697.34	-37.87	33.78	-37.87	50.74	138.26	0.10
6706.00	0.57	226.44	6703.34	-37.91	33.74	-37.91	50.75	138.33	0.54
HORIZONTAL DISPLACEMENT IS 50.75 FEET AT 138.33 DEGREES									