



Scientific Drilling

Gyroscopic Survey Report
for
COG

30-015-31429

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	ELECTRA FED NO.1
Rig Name	ARIES P/U
Survey Date	7/16/2011
Latitude	32.84 deg
North Reference	True North
Grid Correction	0.00 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.00Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator	ANGEL GUEBARA

Comments

12 FOOT KB





Scientific Drilling

Survey Report

Well Name: ELECTRA FED NO.1
Survey: FINAL GYRO SURVEY
Survey Date: 7/16/2011

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
0.00	0.00	0 00	0.00	0.00	0.00	0.00	Invalid	0 00	0 00
100.00	0 55	152.98	100 00	-0.43	-0.43	0 22	0.55	0 48	152.98
200.00	0.90	157.62	199 99	-1.58	-1 58	0.73	0.35	1.74	155 07
300.00	1.33	165.65	299.97	-3.43	-3 43	1.32	0.45	3 67	158 93
400.00	1 57	176.83	399 94	-5.92	-5.92	1 68	0.38	6 15	164.13
500.00	1 53	182 42	499 90	-8.62	-8 62	1 70	0 16	8 78	168.82
600.00	1 31	183 84	599.87	-11 09	-11 09	1.57	0.22	11 20	171.94
700.00	1.11	181 96	699.85	-13.19	-13 19	1.46	0.21	13 27	173.68
800.00	1 09	179 92	799.83	-15.11	-15.11	1 43	0 04	15.18	174.60
900.00	0 75	159.15	899.82	-16.67	-16.67	1.66	0 47	16.75	174 30
1000.00	0.82	143.06	999 81	-17.85	-17.85	2.32	0.23	18.00	172 58
1100 00	1.03	126.71	1099.80	-18 96	-18.96	3.47	0.34	19 28	169 62
1200.00	0 90	136.16	1199.78	-20.07	-20.07	4.74	0.20	20.62	166 70
1300 00	0 99	128.74	1299 77	-21 18	-21 18	5.96	0 15	22 00	164.27
1400 00	1.01	146.61	1399 75	-22 45	-22.45	7 12	0 31	23.55	162.40
1500.00	1 05	150.65	1499.74	-23 98	-23 98	8.05	0.08	25.30	161.44
1600.00	1.14	165.87	1599.72	-25.74	-25.74	8.74	0 30	27.19	161.24
1700 00	1.13	169 67	1699 70	-27.68	-27.68	9 16	0.08	29 16	161 68
1800.00	1.26	186.17	1799.68	-29.75	-29 75	9.22	0 36	31.15	162 77
1900 00	1 19	192.05	1899.66	-31.85	-31.85	8.89	0 14	33.07	164.41
2000 00	1.22	202.99	1999 63	-33 84	-33.84	8.26	0.23	34.84	166 29
2100.00	1.22	207.98	2099 61	-35.76	-35.76	7.34	0.11	36.51	168.40
2200 00	1 22	208.54	2199.59	-37 63	-37.63	6 34	0.01	38 16	170.44
2300.00	1.21	219.50	2299 57	-39 38	-39.38	5.16	0.23	39.72	172.54
2400 00	1 19	222.16	2399 54	-40.97	-40.97	3 79	0.06	41.14	174.72
2500.00	1.18	222.34	2499 52	-42 50	-42 50	2.40	0.01	42.57	176.77
2600 00	1.22	224 01	2599 50	-44 03	-44 03	0.96	0.06	44.04	178 75
2700.00	1.07	230 62	2699 48	-45 39	-45.39	-0 50	0.21	45.39	180.63
2800 00	0 87	238.48	2799 47	-46 37	-46.37	-1.86	0.24	46.41	182.30
2900.00	0 85	237.87	2899 46	-47 16	-47 16	-3.13	0.02	47.26	183 80
3000.00	0.79	242.57	2999.45	-47.87	-47.87	-4.37	0.09	48 07	185 22
3100 00	0 73	244.46	3099 44	-48.46	-48.46	-5.55	0.07	48.78	186.54
3200 00	0 55	254.04	3199.43	-48.87	-48.87	-6.58	0 21	49.31	187.67
3300 00	0.53	253.40	3299 43	-49.13	-49.13	-7.49	0.02	49.70	188.66
3400 00	0 25	244.86	3399.42	-49.35	-49.35	-8.12	0 29	50.02	189.34
3500 00	0.19	53 30	3499 42	-49 34	-49.34	-8.18	0 44	50.02	189.41
3600.00	0.24	45.33	3599.42	-49.10	-49.10	-7 90	0.05	49 73	189.14
3700 00	0.24	33.61	3699 42	-48 78	-48.78	-7.63	0.05	49 37	188.90
3800 00	0.29	352.64	3799.42	-48.35	-48.35	-7.55	0 19	48 93	188 88



Survey Report

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Survey: FINAL GYRO SURVEY
Survey Date: 7/16/2011

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
3900.00	0.30	321.24	3899.42	-47.89	-47.89	-7.75	0.16	48.51	189.19
4000.00	0.17	319.23	3999.42	-47.57	-47.57	-8.01	0.13	48.24	189.56
4100.00	0.17	243.86	4099.42	-47.52	-47.52	-8.24	0.21	48.23	189.84
4200.00	0.19	237.78	4199.42	-47.67	-47.67	-8.51	0.03	48.43	190.12
4300.00	0.13	184.10	4299.42	-47.88	-47.88	-8.66	0.15	48.65	190.25
4400.00	0.10	103.16	4399.42	-48.01	-48.01	-8.58	0.15	48.77	190.13
4500.00	0.20	339.29	4499.42	-47.87	-47.87	-8.55	0.27	48.63	190.13
4600.00	0.34	312.99	4599.42	-47.50	-47.50	-8.83	0.18	48.32	190.53
4700.00	0.37	260.69	4699.41	-47.35	-47.35	-9.37	0.31	48.27	191.19
4800.00	0.58	348.22	4799.41	-46.90	-46.90	-9.79	0.68	47.91	191.79
4900.00	0.78	113.26	4899.41	-46.67	-46.67	-9.27	1.21	47.58	191.23
5000.00	0.59	110.66	4999.40	-47.12	-47.12	-8.16	0.19	47.82	189.83
5100.00	0.56	122.15	5099.40	-47.56	-47.56	-7.26	0.12	48.12	188.68
5200.00	0.40	133.72	5199.39	-48.07	-48.07	-6.59	0.19	48.52	187.81
5300.00	0.15	151.03	5299.39	-48.42	-48.42	-6.28	0.27	48.83	187.39
5400.00	0.11	174.51	5399.39	-48.62	-48.62	-6.21	0.06	49.02	187.28
5500.00	0.07	30.86	5499.39	-48.66	-48.66	-6.17	0.17	49.05	187.22
5600.00	0.03	301.64	5599.39	-48.60	-48.60	-6.16	0.08	48.99	187.22
5700.00	0.20	179.75	5699.39	-48.76	-48.76	-6.18	0.22	49.15	187.23
5800.00	0.31	193.45	5799.39	-49.19	-49.19	-6.24	0.13	49.59	187.23
5900.00	0.27	199.85	5899.39	-49.67	-49.67	-6.39	0.05	50.08	187.33
6000.00	0.52	88.75	5999.39	-49.89	-49.89	-6.02	0.67	50.25	186.88
6033.00	0.50	93.76	6032.39	-49.89	-49.89	-5.72	0.15	50.22	186.55