



Gyroscopic Survey Report
for
COG

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	STATE S-19 #12
Rig Name	ARIES #55
Survey Date	7/10/2012
Latitude	32.8157100N
North Reference	Grid North
Grid Correction	-0.12 deg
Depth Reference	RKB (12.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.00Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator(s)	CHASE BARON

Well Notes



Survey:		FINAL GYRO SURVEY							
Survey Date:		7/10/2012							
MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Dogleg Severity	Closure Distance
ft	deg	deg	ft	ft	ft	ft	deg	7100ft	ft
0 00	0.00	0 00	0.00	0 00	0.00	0 00	0.00	Invalid	0 00
100 00	0.35	278 76	100.00	0 05	0 05	-0 30	278.76	0.35	0.30
200 00	0 59	270.78	200.00	0.10	0 10	-1 11	275.10	0.25	1.11
300.00	0 45	308.18	299 99	0.35	0 35	-1.93	280 19	0.36	1 96
400.00	0 24	6.78	399.99	0 79	0 79	-2.21	289.73	0.38	2 35
500.00	0.30	25.73	499 99	1 23	1 23	-2 07	300.73	0 11	2.41
600 00	0 28	56.48	599 99	1.60	1.60	-1.75	312.41	0 15	2 37
700 00	0 23	66.25	699 99	1.82	1.82	-1.37	323.07	0.07	2 27
800.00	0 34	76.62	799 99	1.96	1 96	-0.90	335 44	0 12	2.16
900.00	0.27	50 09	899 98	2 19	2.19	-0.43	348.87	0.15	2 23
1000.00	0 23	83 50	999.98	2.36	2.36	-0.05	358.79	0.15	2.36
1100 00	0.12	158 98	1099 98	2 28	2 28	0.19	4.67	0 23	2.29
1200 00	0 10	241.65	1199 98	2 14	2 14	0 15	3.89	0.15	2.15
1300 00	0.18	207 15	1299.98	1 96	1.96	-0.01	359 82	0 11	1 96
1400 00	0.25	248 20	1399.98	1 73	1.73	-0.28	350.80	0 16	1 76
1500.00	0.20	199 07	1499.98	1.49	1 49	-0.54	340 10	0.19	1 59
1600 00	0.29	242 26	1599.98	1.21	1 21	-0.82	325 79	0.20	1.46
1700.00	0 27	199 91	1699.98	0.87	0 87	-1.13	307 67	0 20	1.42
1800 00	0 62	207.21	1799 98	0 17	0 17	-1.45	276 70	0.35	1 46
1900.00	0 62	192.35	1899 97	-0.84	-0 84	-1.82	245.25	0.16	2.00
2000.00	0.55	206 69	1999.97	-1 80	-1 80	-2.15	230.09	0.16	2 80
2100.00	0 70	194 27	2099.96	-2 82	-2 82	-2.52	221.74	0.20	3.78
2200.00	0 53	207 05	2199 95	-3 82	-3.82	-2.88	216.96	0.21	4.79
2300.00	0 66	203.58	2299 95	-4 77	-4.77	-3.32	214.86	0 13	5 81
2400.00	0 55	203.17	2399.94	-5 74	-5 74	-3.74	213.09	0 11	6 85
2500 00	0.80	194 91	2499 94	-6 86	-6 86	-4.11	210.93	0 27	8.00
2600.00	0.73	187.17	2599 93	-8 17	-8.17	-4.37	208 14	0 12	9 27
2700 00	0 94	188 75	2699 92	-9 62	-9 62	-4 58	205 44	0 21	10.65
2800.00	0.90	175 84	2799 90	-11.21	-11 21	-4 64	202 51	0.21	12.13
2900 00	0 92	171.33	2899.89	-12.78	-12 78	-4 47	199 26	0.08	13 54
3000 00	0 98	172 66	2999 88	-14 42	-14.42	-4.24	196.36	0 07	15.03
3100.00	0 99	175 93	3099 86	-16 14	-16 14	-4 06	194 13	0 06	16 64
3200 00	1 01	175 53	3199 85	-17 88	-17 88	-3 93	192 41	0.02	18.31
3300 00	0 97	189 95	3299 83	-19 59	-19.59	-4 01	191 57	0 25	20 00
3400.00	1.14	188.56	3399 82	-21 41	-21.41	-4 31	191 37	0 17	21.84
3500 00	0.92	181.43	3499.80	-23.20	-23.20	-4 47	190 92	0.25	23 62
3600 00	1 03	191 42	3599.78	-24 88	-24 88	-4 67	190 63	0.20	25.31
3700.00	0 97	187 35	3699 77	-26 59	-26.59	-4 96	190 56	0.09	27 05
3800 00	0 75	177 23	3799 76	-28 08	-28.08	-5.03	190 16	0.26	28.53
3900 00	0.76	182 26	3899 75	-29 40	-29 40	-5.03	189 70	0 07	29 82



Survey:		FINAL GYRO SURVEY								
Survey Date:		7/10/2012								
MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Dogleg Severity	Closure Distance	
ft	deg	deg	ft	ft	ft	ft	deg	%100ft	ft	
4000.00	0.78	164.02	3999.74	-30.71	-30.71	-4.87	189.00	0.24	31.09	
4100.00	0.61	149.35	4099.73	-31.82	-31.82	-4.41	187.88	0.24	32.13	
4200.00	0.39	132.03	4199.73	-32.51	-32.51	-3.88	186.81	0.27	32.74	
4300.00	0.53	185.10	4299.73	-33.20	-33.20	-3.67	186.31	0.43	33.40	
4400.00	0.46	211.65	4399.72	-34.01	-34.01	-3.92	186.58	0.24	34.23	
4500.00	0.81	247.99	4499.72	-34.61	-34.61	-4.79	187.87	0.52	34.94	
4600.00	1.11	244.02	4599.70	-35.30	-35.30	-6.31	190.14	0.31	35.86	
4700.00	1.08	240.94	4699.69	-36.18	-36.18	-8.00	192.48	0.07	37.05	
4800.00	0.95	254.19	4799.67	-36.86	-36.86	-9.62	194.63	0.27	38.10	
4900.00	1.00	262.93	4899.66	-37.19	-37.19	-11.28	196.87	0.16	38.87	
5000.00	0.94	259.30	4999.64	-37.45	-37.45	-12.95	199.08	0.08	39.63	
5100.00	1.11	251.43	5099.62	-37.92	-37.92	-14.68	201.16	0.22	40.66	
5200.00	1.11	249.79	5199.61	-38.56	-38.56	-16.51	203.18	0.03	41.94	
5300.00	1.10	246.17	5299.59	-39.28	-39.28	-18.29	204.97	0.07	43.33	
5380.00	0.98	258.78	5379.57	-39.72	-39.72	-19.66	206.34	0.32	44.32	