



Scientific Drilling

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AUG 21 2012

NMOCD ARTESIA

Gyroscopic Survey Report
for
COG

30-015-32241

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	STATE S-19 #8
Rig Name	ARIES
Survey Date	6/15/2012
Latitude	32.8150000°N
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 SURV EY
Operator(s)	FRANK RENTERIA

Well Notes



Survey:		FINAL GYRO SURV EY								
Survey Date:		6/15/2012								
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	0.05	303 70	100 00	0.02	0 02	-0.03	303.70	0.05	0.04	
200.00	0 39	189 68	200.00	-0 29	-0.29	-0 12	202 88	0.41	0.32	
300.00	0 34	178 28	300.00	-0 92	-0.92	-0 17	190 59	0 09	0.94	
400.00	0 24	124.46	400.00	-1.33	-1 33	0.01	179.75	0.27	1.33	
500 00	0 27	103.99	500 00	-1.51	-1 51	0 40	165.04	0.09	1.56	
600 00	0 39	101 49	599 99	-1 63	-1 63	0.96	149.48	0.12	1 89	
700 00	0.54	104 30	699.99	-1 81	-1.81	1.75	136.06	0 15	2 52	
800.00	0 46	97.97	799 99	-1.98	-1 98	2.60	127 36	0 10	3.27	
900.00	0 46	95.66	899 98	-2.08	-2.08	3 40	121 48	0 02	3 98	
1000 00	0.34	119 55	999.98	-2.27	-2 27	4.06	119.19	0.20	4.65	
1100 00	0.20	150 27	1099.98	-2.57	-2 57	4 40	120 22	0 20	5.10	
1200.00	0 22	201.01	1199 98	-2 90	-2 90	4.42	123 23	0 18	5.28	
1300.00	0.13	189 13	1299.98	-3.19	-3.19	4 33	126.34	0.10	5.38	
1400.00	0 10	181 34	1399 98	-3 39	-3.39	4.31	128.15	0.03	5.49	
1500 00	0.07	101 58	1499 98	-3 49	-3.49	4.38	128.59	0.12	5.60	
1600.00	0.06	327 43	1599.98	-3 46	-3 46	4.41	128 11	0 12	5.61	
1700.00	0 05	71.21	1699.98	-3 40	-3.40	4 43	127.55	0.09	5 58	
1800.00	0 17	347.04	1799.98	-3 25	-3.25	4.44	126.19	0.17	5.50	
1900 00	0.20	320.96	1899.98	-2.97	-2.97	4 30	124 67	0.09	5.22	
2000.00	0 17	308.29	1999 98	-2.74	-2.74	4 07	124.00	0.05	4.91	
2100 00	0 14	328.84	2099 98	-2.55	-2 55	3 89	123.23	0 07	4.65	
2200 00	0.27	333.53	2199.98	-2.24	-2 24	3.72	121 00	0 13	4 34	
2300.00	0 26	322 89	2299.98	-1 85	-1.85	3 48	117 95	0.05	3.94	
2400.00	0 28	309 45	2399.97	-1 51	-1.51	3 15	115.57	0 07	3 49	
2500.00	0.22	358.70	2499 97	-1.16	-1.16	2 96	111.39	0 22	3 17	
2600 00	0.30	2 03	2599.97	-0.70	-0 70	2.96	103 27	0.09	3.04	
2700.00	0 20	3 82	2699 97	-0 26	-0 26	2.98	95.01	0 11	2 99	
2800.00	0.38	3 28	2799.97	0.24	0.24	3.01	85 45	0.18	3 02	
2900.00	0.39	339 45	2899.97	0 89	0.89	2.91	73.08	0.16	3.04	
3000.00	0.36	350 80	2999.97	1 51	1.51	2 74	61 16	0.08	3.13	
3100 00	0 18	310 20	3099.96	1.92	1 92	2.57	53 19	0 25	3 21	
3200 00	0.28	274.12	3199.96	2 05	2.05	2 21	47.18	0 17	3.01	
3300 00	0.42	233.57	3299 96	1.84	1 84	1.67	42 17	0.28	2.49	
3400.00	0.41	246 95	3399.96	1 49	1.49	1.05	35.16	0 10	1.82	
3500 00	0 34	238 24	3499 96	1.19	1.19	0 47	21.38	0 09	1.28	
3600.00	0.40	262 24	3599 96	0 99	0.99	-0 13	352 28	0.16	1 00	
3700.00	0.24	187 49	3699 95	0 73	0.73	-0 51	325.37	0 41	0 89	
3800 00	0.27	179 39	3799.95	0.29	0 29	-0 53	298.73	0.05	0 61	
3900 00	0 29	157 02	3899 95	-0.18	-0.18	-0 43	247.56	0 11	0.47	



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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
4000.00	0 14	189 40	3999 95	-0.53	-0.53	-0.35	213 61	0.19	0.64
4100.00	0.52	188.42	4099 95	-1 10	-1.10	-0.44	201.73	0 38	1 18
4200.00	0.55	175.81	4199 94	-2 03	-2.03	-0.47	193 06	0 12	2 08
4300 00	0 56	150.51	4299.94	-2 93	-2.93	-0.19	183.80	0 24	2.93
4400 00	0.29	182 42	4399 94	-3 60	-3.60	0.04	179 44	0 35	3.60
4500 00	0.19	187.63	4499 94	-4 02	-4.02	0 00	179.97	0 10	4.02
4600 00	0 19	194.95	4599.94	-4 35	-4 35	-0 06	180.84	0 02	4.35
4700 00	0 27	128.48	4699.94	-4.66	-4.66	0 08	179.05	0.26	4 66
4800 00	0.65	88 25	4799.93	-4 79	-4.79	0.83	170 21	0 47	4.86
4900 00	0.83	72.38	4899 92	-4 55	-4.55	2 09	155 40	0.27	5 01
5000 00	0 97	71.46	4999 91	-4.06	-4.06	3 58	138.61	0 14	5 42
5100 00	0 64	75 55	5099.90	-3.66	-3.66	4 92	126 60	0 34	6.13
5200.00	0 54	93 52	5199.90	-3.55	-3.55	5 93	120.89	0.21	6.91
5300 00	0.54	64.21	5299.89	-3.37	-3.37	6 82	116.31	0.27	7 61
5320 00	0 99	33.54	5319 89	-3 19	-3.19	7 00	114.47	2 98	7 69