



30-015-37426

Scientific Drilling

Gyroscopic Survey Report for COG

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	SRO STATE UNIT COM #14H
Rig Name	PATRIOT #2
Survey Date	10/20/2010
Latitude	32.05 deg
North Reference	Grid North
Grid Correction	-0.12 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 89.38Azim (deg)
Definitive Survey	FINAL OUTFRAN SURVEY
Operator	A.MADRID

Comments



Scientific Drilling

Survey Report

Well Name:		SRO STATE UNIT COM #14H							
Survey:		FINAL OUTFUN SURVEY							
Survey Date:		10/20/2010							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.38	171.56	100.00	0.05	-0.33	0.05	0.38	0.33	171.56
200.00	1.05	185.11	199.99	0.00	-1.57	0.02	0.68	1.57	179.40
300.00	1.62	176.97	299.96	-0.03	-3.90	0.01	0.60	3.90	179.86
400.00	1.61	177.53	399.92	0.07	-6.71	0.14	0.02	6.71	178.76
500.00	1.63	178.25	499.88	0.15	-9.53	0.25	0.03	9.53	178.51
600.00	2.43	158.14	599.82	0.94	-12.92	1.08	1.06	12.96	175.22
700.00	2.56	165.06	699.73	2.26	-17.05	2.45	0.33	17.22	171.83
800.00	2.36	173.73	799.64	3.02	-21.25	3.25	0.42	21.50	171.31
900.00	1.71	179.99	899.57	3.20	-24.79	3.47	0.69	25.03	172.02
1000.00	1.44	182.56	999.53	3.12	-27.53	3.42	0.28	27.74	172.92
1100.00	1.30	174.21	1099.51	3.15	-29.91	3.48	0.24	30.11	173.37
1200.00	1.33	168.69	1199.48	3.47	-32.18	3.82	0.13	32.41	173.23
1300.00	1.31	175.38	1299.45	3.77	-34.46	4.14	0.16	34.71	173.15
1400.00	1.03	167.33	1399.43	4.03	-36.48	4.43	0.32	36.74	173.08
1500.00	0.72	155.56	1499.42	4.47	-37.93	4.89	0.36	38.24	172.66
1600.00	0.74	153.38	1599.41	5.01	-39.07	5.43	0.04	39.45	172.08
1700.00	0.82	148.39	1699.40	5.66	-40.26	6.10	0.11	40.72	171.39
1800.00	1.11	112.86	1799.39	6.92	-41.24	7.37	0.65	41.90	169.87
1900.00	1.23	98.21	1899.37	8.87	-41.77	9.32	0.32	42.80	167.42
2000.00	1.18	105.88	1999.35	10.92	-42.21	11.38	0.17	43.71	164.92
2100.00	1.39	92.60	2099.32	13.11	-42.54	13.57	0.36	44.65	162.31
2200.00	1.50	93.90	2199.29	15.62	-42.69	16.09	0.12	45.62	159.35
2300.00	1.55	96.32	2299.25	18.27	-42.93	18.74	0.08	46.84	156.42
2400.00	1.19	106.93	2399.23	20.61	-43.38	21.08	0.44	48.22	154.09
2500.00	0.79	92.49	2499.21	22.28	-43.71	22.76	0.47	49.28	152.50
2600.00	0.66	94.63	2599.20	23.54	-43.78	24.02	0.14	49.94	151.25
2700.00	0.63	96.73	2699.20	24.65	-43.89	25.13	0.04	50.58	150.21
2800.00	0.77	87.62	2799.19	25.87	-43.93	26.35	0.18	51.22	149.05
2900.00	0.55	85.64	2899.18	27.02	-43.87	27.50	0.23	51.77	147.92
3000.00	0.63	71.19	2999.18	28.02	-43.65	28.50	0.17	52.13	146.86
3100.00	0.40	52.18	3099.17	28.82	-43.26	29.29	0.29	52.24	145.90
3200.00	0.24	75.13	3199.17	29.30	-42.99	29.77	0.20	52.29	145.30
3300.00	0.08	351.86	3299.17	29.50	-42.87	29.96	0.24	52.30	145.05
3400.00	0.21	227.70	3399.17	29.35	-42.92	29.82	0.26	52.26	145.21
3500.00	0.48	241.72	3499.17	28.84	-43.24	29.31	0.28	52.24	145.87
3600.00	0.35	244.09	3599.17	28.19	-43.58	28.67	0.13	52.16	146.66
3700.00	0.60	266.58	3699.16	27.40	-43.74	27.87	0.30	51.87	147.49
3800.00	0.65	282.33	3799.16	26.33	-43.65	26.80	0.18	51.22	148.45



Survey Report

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Survey:		FINAL OUTFUN SURVEY								
Survey Date:		10/20/2010								
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle	
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg	
3900.00	0.70	278.15	3899.15	25.17	-43.44	25.65	0.07	50.45	149.45	
4000.00	0.58	286.82	3999.14	24.09	-43.21	24.56	0.16	49.70	150.39	
4100.00	0.86	279.75	4099.14	22.88	-42.94	23.34	0.29	48.87	151.47	
4200.00	0.91	262.50	4199.12	21.36	-42.92	21.82	0.27	48.15	153.05	
4300.00	0.83	257.29	4299.11	19.86	-43.18	20.33	0.11	47.73	154.79	
4400.00	0.71	249.58	4399.10	18.57	-43.56	19.04	0.16	47.54	156.39	
4500.00	0.56	237.96	4499.10	17.56	-44.03	18.04	0.19	47.59	157.72	
4600.00	0.67	239.38	4599.09	16.64	-44.59	17.12	0.11	47.77	159.00	
4700.00	0.78	216.91	4699.08	15.72	-45.43	16.21	0.30	48.24	160.36	
4800.00	0.80	215.92	4799.07	14.89	-46.54	15.40	0.03	49.02	161.69	
4900.00	0.69	204.60	4899.07	14.22	-47.65	14.73	0.18	49.88	162.82	
5000.00	0.75	227.28	4999.06	13.47	-48.65	14.00	0.29	50.62	163.94	
5100.00	1.22	248.67	5099.04	11.99	-49.48	12.52	0.59	51.04	165.80	
5200.00	1.19	244.78	5199.02	10.05	-50.31	10.59	0.09	51.41	168.11	
5300.00	0.92	247.93	5299.00	8.36	-51.05	8.91	0.27	51.83	170.10	
5400.00	0.71	233.53	5398.99	7.11	-51.72	7.67	0.29	52.29	171.57	
5500.00	0.70	228.66	5498.99	6.14	-52.50	6.71	0.06	52.92	172.71	
5600.00	0.87	227.91	5598.98	5.11	-53.41	5.69	0.18	53.71	173.92	
5700.00	0.82	223.61	5698.97	4.04	-54.44	4.63	0.09	54.63	175.14	
5800.00	0.74	225.34	5798.96	3.08	-55.41	3.68	0.07	55.53	176.20	
5900.00	0.82	244.30	5898.95	1.96	-56.18	2.57	0.27	56.23	177.38	
6000.00	1.04	238.83	5998.94	0.53	-56.96	1.15	0.23	56.97	178.85	
6100.00	1.00	239.10	6098.92	-1.00	-57.87	-0.37	0.03	57.87	180.37	
6190.00	1.25	236.89	6188.90	-2.51	-58.81	-1.87	0.28	58.84	181.82	