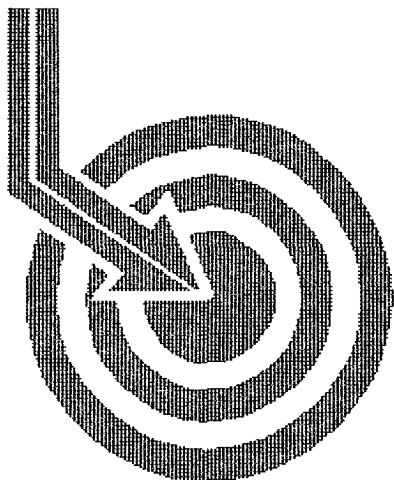


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RM



Scientific Drilling



COG RESOURCES

Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #63
Wellpath: VH - Job #32K0410277
Survey: 04/21/10

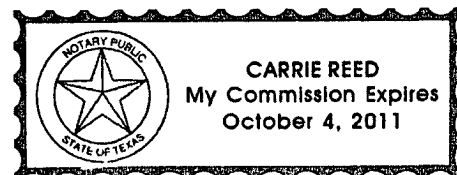
NR

This survey is correct to the best of my knowledge and is supported by actual field data.

Luhan
Company Representative

Notarized this date 6th of May, 2010.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International, Inc.

Survey Report

Company: COG RESOURCES
Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #63
Wellpath: VH - Job #32K0410277

Date: 4/22/2010
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,205.11Azi)
Survey Calculation Method: Minimum Curvature
Db: Sybase

Time: 11:11:01
Page: 1

Survey: 04/21/10
Start Date: 4/21/2010
Company: Scientific Drilling Internatio
Engineer: Guebara w/Halliburton
Tool: Keeper, Keeper Gyro
Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.72	231.13	100.0	0.6	-0.4	-0.5	0.72	0.6	231.13
200.0	0.54	219.20	200.0	1.6	-1.2	-1.3	0.22	1.7	227.88
300.0	0.34	164.22	300.0	2.3	-1.8	-1.5	0.44	2.3	219.61
400.0	0.96	104.39	400.0	2.3	-2.3	-0.6	0.84	2.4	194.66
500.0	1.66	96.74	500.0	1.7	-2.7	1.6	0.72	3.1	148.37
600.0	1.68	102.77	599.9	1.0	-3.2	4.5	0.18	5.5	125.07
700.0	1.90	107.12	699.9	0.4	-4.0	7.5	0.26	8.5	117.87
800.0	1.84	115.46	799.8	0.2	-5.2	10.6	0.28	11.8	116.03
900.0	1.69	121.60	899.8	0.4	-6.6	13.3	0.24	14.8	116.52
1000.0	1.32	135.33	999.7	0.9	-8.2	15.3	0.51	17.4	118.18
1100.0	1.26	139.24	1099.7	1.8	-9.9	16.9	0.11	19.5	120.33
1200.0	1.06	139.26	1199.7	2.6	-11.4	18.2	0.20	21.5	122.09
1300.0	0.85	151.65	1299.7	3.4	-12.8	19.1	0.29	23.0	123.68
1400.0	0.75	170.62	1399.7	4.4	-14.1	19.6	0.28	24.1	125.64
1500.0	0.72	172.98	1499.7	5.5	-15.3	19.8	0.04	25.0	127.76
1600.0	0.60	198.99	1599.6	6.5	-16.4	19.7	0.32	25.7	129.86
1700.0	0.70	226.09	1699.6	7.6	-17.4	19.1	0.32	25.8	132.30
1800.0	0.75	231.97	1799.6	8.8	-18.2	18.1	0.09	25.7	135.10
1900.0	0.86	234.43	1899.6	10.0	-19.0	17.0	0.12	25.5	138.22
2000.0	0.92	230.24	1999.6	11.4	-20.0	15.8	0.09	25.5	141.71
2100.0	0.86	235.94	2099.6	12.8	-20.9	14.5	0.11	25.5	145.20
2200.0	0.86	234.80	2199.6	14.1	-21.8	13.3	0.02	25.5	148.58
2300.0	0.77	242.72	2299.6	15.2	-22.5	12.1	0.14	25.5	151.76
2400.0	0.81	233.76	2399.6	16.4	-23.2	10.9	0.13	25.7	154.83
2500.0	0.85	239.80	2499.6	17.6	-24.0	9.7	0.10	25.9	158.00
2600.0	0.77	235.74	2599.5	18.8	-24.8	8.5	0.10	26.2	161.04
2700.0	0.83	231.77	2699.5	20.0	-25.6	7.4	0.08	26.6	163.90
2800.0	0.75	235.17	2799.5	21.3	-26.4	6.3	0.09	27.2	166.63
2900.0	0.74	226.44	2899.5	22.4	-27.2	5.3	0.11	27.7	169.04
3000.0	0.92	234.95	2999.5	23.7	-28.1	4.1	0.22	28.4	171.61
3100.0	0.87	234.25	3099.5	25.1	-29.0	2.9	0.05	29.2	174.35
3200.0	0.79	230.89	3199.5	26.4	-29.9	1.7	0.09	30.0	176.70
3300.0	0.63	220.76	3299.5	27.5	-30.8	0.8	0.20	30.8	178.45
3400.0	0.69	213.71	3399.5	28.6	-31.7	0.1	0.10	31.7	179.75
3500.0	0.68	225.80	3499.5	29.8	-32.6	-0.6	0.14	32.6	181.09
3600.0	0.63	232.22	3599.5	30.8	-33.4	-1.5	0.09	33.4	182.54
3700.0	0.66	237.06	3699.5	31.8	-34.0	-2.4	0.06	34.1	184.03
3800.0	0.69	240.56	3799.4	32.8	-34.6	-3.4	0.05	34.8	185.62
3900.0	0.71	241.53	3899.4	33.8	-35.2	-4.5	0.02	35.5	187.24
4000.0	0.90	230.48	3999.4	35.0	-36.0	-5.6	0.24	36.4	188.88
4100.0	1.13	229.35	4099.4	36.6	-37.1	-7.0	0.23	37.8	190.64
4200.0	1.46	220.10	4199.4	38.7	-38.8	-8.5	0.39	39.7	192.44
4300.0	1.45	230.65	4299.4	41.1	-40.5	-10.3	0.27	41.8	194.32
4400.0	1.36	232.17	4399.3	43.3	-42.1	-12.3	0.10	43.8	196.25
4500.0	1.29	220.10	4499.3	45.4	-43.7	-13.9	0.29	45.8	197.69
4600.0	1.51	205.31	4599.3	47.9	-45.7	-15.2	0.42	48.2	198.41
4700.0	1.58	203.14	4699.2	50.5	-48.2	-16.3	0.09	50.9	198.71
4800.0	1.48	217.18	4799.2	53.2	-50.5	-17.6	0.39	53.5	199.27



Scientific Drilling International, Inc.

Survey Report

Company: COG RESOURCES
Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #63
Wellpath: VH - Job #32K0410277

Date: 4/22/2010 Time: 11:11:01 Page: 2
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,205.11Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.0	1.29	211.09	4899.2	55.6	-52.5	-19.0	0.24	55.8	199.91
5000.0	1.09	217.58	4999.1	57.6	-54.2	-20.2	0.24	57.8	200.41
5100.0	0.95	231.61	5099.1	59.3	-55.4	-21.4	0.29	59.4	201.10
5200.0	0.85	242.91	5199.1	60.6	-56.3	-22.7	0.20	60.7	201.96
5300.0	0.79	270.80	5299.1	61.5	-56.6	-24.1	0.40	61.5	203.01
5400.0	0.98	279.19	5399.1	62.0	-56.5	-25.6	0.23	62.0	204.37
5447.0	1.05	277.16	5446.1	62.2	-56.4	-26.4	0.17	62.2	205.11