

Results of Directional Survey

API number:	30-025-39415		
OGRID:		Operator:	COG OPERATING LLC
		Property:	BC FEDERAL # 41

surface	ULSTR:	B	20	T	17S	R	32E
			330	FNL	1920	FEL	

BH Loc	ULSTR:	B	20	T	17S	R	32E
			379	FNL	1674	FEL	

Top Perf/OH	ULSTR:	B	20	T	17S	R	32E
		5410	393	FNL	1659	FEL	

Bot Perf/OH	ULSTR:	B	20	T	17S	R	32E
		6790	381	FNL	1672	FEL	

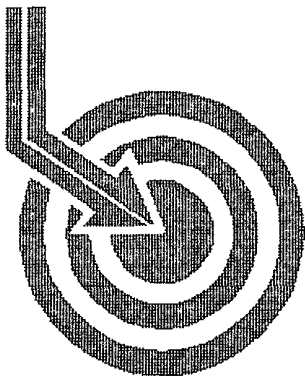
	MD	N/S	E/W	VD
	5166	-65.63	263.53	5155.92
TOP PERFS/OH	5410	-63.43	261.25	5399.88
	5227	-65.08	262.96	5216.91
	5166	-65.63	263.53	5155.92
BOT PERFS/OH	6790	-50.99	248.35	6779.65
	5227	-65.08	262.96	5216.91

NEXT TO LAST	5166	-65.63	263.53	5155.92
LAST READING	5227	-65.08	262.96	5216.91
TD	7050	-48.64	245.93	7039.61

Surface Location	330	FN	1920	FE
Projected BHL	379	FN	1674	FE
Location of				
Top Perfs/OH	393	FN	1659	FE
Bottom Perfs/OH	381	FN	1672	FE

SUMMARY of Subsurface Locations

Surface Location	B-20-17S-32E	330	FN	1920	FE	Vert. Depth
Top Perfs/OH	B-20-17S-32E	393	FN	1659	FE	5399.88
Bottom Perfs/OH	B-20-17S-32E	381	FN	1672	FE	6779.65
Projected TD	B-20-17S-32E	379	FN	1674	FE	7039.61



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COG RESOURCES

Field: Maljamar
Site: Lea County, NM
Well: BC Federal #41
Wellpath: DH - Job #32D1209550
Survey: 12/15/09-12/20/09

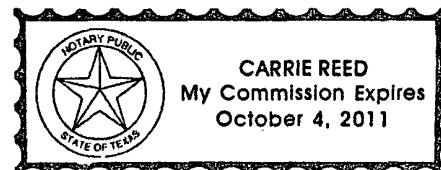
SUR: B-20-17s-32e, 330/N & 1920/E
BHL: B-20-17s-32e, 379/N & 1674/E
API # 30-025-39415

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

.....*Robert*.....Company Representative

Notorized this date 31st of December, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International

Survey Report

Company: COG RESOURCES	Date: 12/15/2009	Time: 13:42:05	Page: 1
Field: Maljamar	Co-ordinate(NE) Reference:	Site: Lea County, NM, True North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: BC Federal #41	Section (VS) Reference:	Well (0.00N,0.00E,100.35Azi)	
Wellpath: VH - Job #32K1209557	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 12/15/09 KSRG 0'-2045'	Start Date: 12/15/2009
Company: Scientific Drilling Internatio	Engineer: Guebara w/Gray
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
0.00	0.00	359.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.51	198.63	100.00	-0.06	-0.42	-0.14	0.51	0.45	198.63
200.00	0.78	140.72	199.99	0.39	-1.37	0.15	0.67	1.38	173.89
300.00	1.43	112.70	299.97	2.13	-2.38	1.73	0.83	2.94	143.99
400.00	1.82	106.84	399.93	4.92	-3.32	4.40	0.42	5.51	127.04
500.00	2.13	119.83	499.88	8.25	-4.70	7.53	0.54	8.88	121.99
600.00	2.22	118.81	599.80	11.84	-6.56	10.84	0.10	12.67	121.19
700.00	2.21	121.50	699.73	15.48	-8.50	14.18	0.10	16.54	120.95
800.00	1.89	124.09	799.66	18.79	-10.44	17.19	0.33	20.11	121.26
900.00	1.61	122.48	899.62	21.60	-12.11	19.74	0.28	23.16	121.53
1000.00	1.51	123.98	999.58	24.11	-13.60	22.02	0.11	25.88	121.71
1100.00	1.46	134.04	1099.55	26.37	-15.23	24.03	0.27	28.45	122.36
1200.00	1.41	133.08	1199.52	28.47	-16.95	25.84	0.06	30.91	123.26
1300.00	1.34	116.96	1299.49	30.62	-18.32	27.78	0.39	33.28	123.40
1400.00	1.20	112.48	1399.46	32.77	-19.25	29.79	0.17	35.47	122.87
1500.00	1.45	93.83	1499.44	35.05	-19.74	32.02	0.50	37.62	121.65
1600.00	1.53	70.78	1599.40	37.47	-19.38	34.55	0.60	39.61	119.30
1700.00	1.66	54.26	1699.37	39.63	-18.10	36.98	0.48	41.17	116.08
1800.00	1.31	38.90	1799.33	41.18	-16.36	38.88	0.53	42.18	112.83
1900.00	1.39	37.11	1899.30	42.28	-14.51	40.33	0.09	42.86	109.78
2000.00	1.30	40.41	1999.28	43.39	-12.67	41.79	0.12	43.67	106.87
2045.00	0.98	39.95	2044.27	43.84	-11.99	42.37	0.71	44.03	105.80



Scientific Drilling International Survey Report

Company: COG RESOURCES **Date:** 12/29/2009 **Time:** 20:46:16 **Page:** 1
Field: Maljamar **Co-ordinate(NE) Reference:** Site: Lea County, NM, True North
Site: Lea County, NM **Vertical (TVD) Reference:** SITE 0.0
Well: BC Federal #41 **Section (VS) Reference:** Well (0.00N,0.00E,100.25Azi)
Wellpath: DH - Job #32D1209550 **Survey Calculation Method:** Minimum Curvature **Db:** Sybase

Survey: 12/15/09-12/20/09 **Start Date:** 12/15/2009
Company: Scientific Drilling Internatio **Engineer:** Foster/Elger/Stewart
Tool: MWD;MWD **Tied-to:** From: Definitive Path

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
2045.00	0.98	39.95	2044.27	43.83	-11.99	42.37	0.00	44.03	105.80
2045.00	0.98	39.95	2044.27	43.83	-11.99	42.37	0.00	44.03	105.80
2166.00	0.77	34.89	2165.25	44.68	-10.53	43.50	0.18	44.76	103.61
2228.00	1.47	72.39	2227.24	45.56	-9.95	44.50	1.58	45.60	102.60
2290.00	2.74	104.45	2289.20	47.74	-10.08	46.69	2.72	47.77	102.18
2352.00	3.64	109.50	2351.10	51.16	-11.10	49.98	1.52	51.20	102.53
2414.00	4.02	111.88	2412.97	55.23	-12.57	53.85	0.66	55.30	103.14
2477.00	4.64	109.11	2475.79	59.91	-14.23	58.31	1.04	60.02	103.71
2570.00	4.48	105.81	2568.49	67.24	-16.45	65.36	0.33	67.40	104.13
2664.00	3.75	105.82	2662.25	73.96	-18.29	71.85	0.78	74.14	104.28
2757.00	4.74	105.38	2754.99	80.81	-20.14	78.48	1.07	81.02	104.39
2850.00	4.14	108.54	2847.71	87.96	-22.22	85.37	0.70	88.21	104.59
2943.00	4.92	100.68	2940.42	95.27	-24.03	92.47	1.07	95.54	104.57
3036.00	4.22	101.73	3033.13	102.68	-25.46	99.74	0.76	102.94	104.32
3130.00	5.30	105.07	3126.80	110.46	-27.30	107.32	1.19	110.73	104.27
3224.00	4.57	103.70	3220.45	118.53	-29.31	115.15	0.79	118.82	104.28
3287.00	4.03	103.31	3283.27	123.24	-30.42	119.74	0.86	123.54	104.25
3387.00	4.69	112.39	3382.99	130.75	-32.78	126.94	0.95	131.10	104.48
3481.00	3.89	112.52	3476.72	137.62	-35.47	133.44	0.85	138.07	104.88
3574.00	5.50	107.50	3569.41	145.12	-38.02	140.60	1.79	145.65	105.13
3667.00	5.04	108.99	3662.01	153.58	-40.68	148.72	0.52	154.18	105.30
3761.00	4.78	110.85	3755.67	161.51	-43.42	156.28	0.32	162.20	105.53
3855.00	4.57	111.75	3849.36	169.03	-46.20	163.42	0.24	169.83	105.79
3948.00	4.53	109.94	3942.06	176.28	-48.83	170.31	0.16	177.18	106.00
4042.00	4.39	110.05	4035.78	183.49	-51.33	177.18	0.15	184.47	106.16
4135.00	4.30	109.25	4128.51	190.44	-53.70	183.82	0.12	191.50	106.28
4229.00	5.36	101.71	4222.18	198.31	-55.75	191.44	1.31	199.40	106.24
4353.00	5.41	100.02	4345.63	209.94	-57.94	202.87	0.13	210.98	105.94
4479.00	5.49	101.28	4471.06	221.91	-60.16	214.63	0.11	222.90	105.66
4604.00	5.39	101.08	4595.50	233.76	-62.45	226.26	0.08	234.72	105.43
4729.00	5.30	98.81	4719.95	245.40	-64.47	237.72	0.18	246.31	105.17
4854.00	5.20	99.30	4844.43	256.84	-66.27	249.02	0.09	257.69	104.90
4916.00	4.66	94.00	4906.20	262.15	-66.90	254.30	1.14	262.96	104.74
4978.00	3.84	86.23	4968.03	266.67	-66.94	258.89	1.61	267.40	104.50
5042.00	2.09	85.89	5031.94	269.88	-66.71	262.19	2.73	270.54	104.28
5102.00	0.78	46.45	5091.92	271.18	-66.35	263.58	2.61	271.80	104.13
5166.00	1.00	319.37	5155.92	271.00	-65.63	263.53	1.93	271.58	103.98
5227.00	0.49	302.21	5216.91	270.35	-65.08	262.96	0.90	270.90	103.90