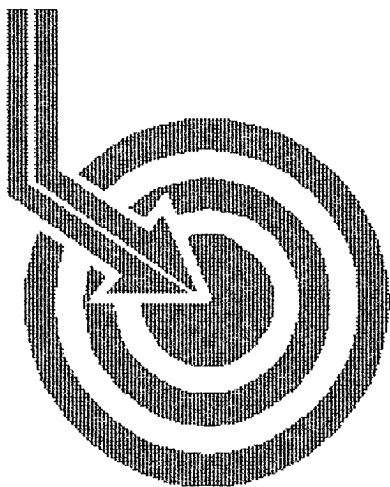




30-025-39558

Scientific Drilling

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APACHE CORPORATION

Field: Wantz
Site: Lea County, NM
Well: Mark Owen #5
Wellpath: VH - Job #32K0310191
Survey: 03/18/10

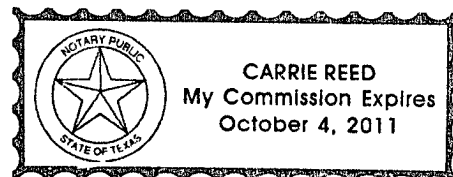
SUR: K-35-21s-37e, 1460/S & 1510/W
BHL: K-35-21s-37e, 1376/S & 1369/W
API # 30-025-39558

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

Hubertson
Company Representative

Notarized this date 25th of March, 2010.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International Inc.

Survey Report

Company: APACHE CORPORATION Date: 3/11/2010 Time: 15:52:53 Page: 1
Field: Wantz Co-ordinate(NE) Reference: Site: Lea County, NM, Grd North
Site: Lea County, NM Vertical (TVD) Reference: SITE 0.0
Well: Mark Owen #5 Section (VS) Reference: Well (0.00N,0.00E,237.49Azi)
Wellpath: VH - Job #32K0310161 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 03/09/10 Start Date: 3/9/2010
KSRG 0'-1060'
Company: Scientific Drilling Internatio Engineer: Madrid w/Express
Tool: MWD,MWD 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	359.36	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.21	166.65	100.0	0.1	-0.2	0.0	0.21	0.2	166.65
200.0	0.14	94.87	200.0	0.0	-0.4	0.2	0.21	0.4	150.65
300.0	0.49	99.75	300.0	-0.4	-0.4	0.7	0.35	0.9	120.97
400.0	0.24	118.01	400.0	-0.8	-0.6	1.4	0.27	1.5	114.59
500.0	0.32	147.09	500.0	-0.9	-1.0	1.7	0.16	1.9	119.39
600.0	0.24	197.41	600.0	-0.8	-1.4	1.8	0.25	2.3	127.91
700.0	0.28	190.07	700.0	-0.4	-1.8	1.7	0.05	2.5	137.48
800.0	0.41	202.43	800.0	0.0	-2.4	1.5	0.15	2.8	148.04
900.0	0.31	171.82	900.0	0.4	-3.0	1.4	0.21	3.3	154.98
1000.0	0.65	175.81	1000.0	0.8	-3.8	1.5	0.34	4.1	158.89
1060.0	0.51	184.07	1060.0	1.1	-4.4	1.5	0.27	4.7	161.50



Scientific Drilling International Inc.

Survey Report

Company: APACHE CORPORATION	Date: 3/25/2010	Time: 14:10:39	Page: 1
Field: Wantz	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Mark Owen #5	Section (VS) Reference:	Well (0 00N,0.00E,237.49Azi)	
Wellpath: DH - Job #32D0310142	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 03/09/10-03/15/10	Start Date: 3/9/2010
MWD 1235'-6951'	
Company: Scientific Drilling Internatio	Engineer: Lopez/Kimble/Baldwin
Tool: Keeper, Keeper Gyro	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
1060.0	0.51	184.07	1060.0	1.1	-4.4	1.5	0.00	4.7	161.50
1235.0	0.55	196.84	1235.0	2.2	-6.0	1.2	0.07	6.1	168.85
1326.0	0.47	146.52	1326.0	2.6	-6.7	1.3	0.48	6.9	169.38
1416.0	0.69	137.74	1416.0	2.5	-7.5	1.8	0.26	7.7	166.18
1507.0	0.81	115.23	1507.0	2.0	-8.1	2.8	0.35	8.6	161.11
1598.0	1.00	109.25	1597.9	1.2	-8.7	4.1	0.23	9.6	154.61
1688.0	0.50	169.07	1687.9	0.8	-9.3	4.9	0.96	10.5	152.11
1779.0	0.36	177.59	1778.9	1.1	-10.0	5.0	0.17	11.2	153.33
1870.0	1.04	196.77	1869.9	1.9	-11.1	4.8	0.78	12.1	156.59
1961.0	1.10	199.94	1960.9	3.2	-12.7	4.3	0.09	13.4	161.44
2051.0	1.02	211.71	2050.9	4.6	-14.2	3.5	0.26	14.6	165.97
2142.0	1.56	252.79	2141.9	6.6	-15.2	1.9	1.14	15.4	172.77
2233.0	1.44	260.16	2232.8	8.8	-15.8	-0.4	0.25	15.8	181.37
2324.0	1.32	261.68	2323.8	10.8	-16.1	-2.5	0.14	16.3	188.95
2415.0	1.10	262.42	2414.8	12.6	-16.4	-4.4	0.24	17.0	195.16
2506.0	1.21	267.47	2505.8	14.2	-16.6	-6.3	0.16	17.7	200.74
2597.0	1.32	250.65	2596.8	16.0	-17.0	-8.2	0.42	18.8	205.87
2687.0	1.42	246.56	2686.7	18.2	-17.7	-10.2	0.16	20.5	209.95
2778.0	1.47	253.44	2777.7	20.4	-18.5	-12.4	0.20	22.3	213.75
2867.0	1.34	251.87	2866.7	22.5	-19.2	-14.5	0.15	24.0	217.02
2957.0	1.39	242.00	2956.7	24.6	-20.0	-16.4	0.27	25.9	219.37
3048.0	1.49	249.49	3047.6	26.9	-20.9	-18.5	0.23	27.9	221.46
3139.0	1.70	242.87	3138.6	29.4	-22.0	-20.8	0.31	30.3	223.45
3230.0	1.90	244.57	3229.5	32.2	-23.2	-23.4	0.23	33.0	225.17
3321.0	1.97	251.90	3320.5	35.2	-24.4	-26.2	0.28	35.8	227.10
3412.0	1.97	253.75	3411.4	38.2	-25.3	-29.2	0.07	38.6	229.11
3501.0	1.98	254.52	3500.4	41.2	-26.1	-32.2	0.03	41.4	230.91
3592.0	2.62	253.97	3591.3	44.7	-27.1	-35.7	0.70	44.8	232.76
3683.0	4.23	248.04	3682.1	50.0	-29.0	-40.8	1.81	50.0	234.63
3775.0	5.23	243.68	3773.8	57.5	-32.1	-47.7	1.15	57.5	236.07
3865.0	5.43	242.94	3863.4	65.8	-35.8	-55.2	0.23	65.8	236.99
3956.0	5.43	247.48	3954.0	74.3	-39.4	-63.0	0.47	74.3	237.94
4047.0	5.37	239.52	4044.6	82.8	-43.3	-70.6	0.83	82.8	238.51
4137.0	5.20	236.61	4134.3	91.1	-47.6	-77.7	0.35	91.1	238.47
4228.0	5.17	237.50	4224.9	99.3	-52.1	-84.6	0.09	99.3	238.36
4319.0	5.06	239.15	4315.5	107.4	-56.4	-91.5	0.20	107.4	238.35
4409.0	4.93	238.74	4405.2	115.3	-60.4	-98.2	0.15	115.3	238.39
4500.0	4.92	232.17	4495.8	123.1	-64.8	-104.6	0.62	123.1	238.21
4591.0	4.96	231.69	4586.5	130.9	-69.7	-110.8	0.06	130.9	237.83
4682.0	5.01	235.48	4677.2	138.7	-74.4	-117.1	0.37	138.7	237.59
4772.0	4.44	239.54	4766.9	146.1	-78.4	-123.4	0.73	146.1	237.58
4864.0	3.23	246.29	4858.6	152.3	-81.2	-128.8	1.40	152.3	237.77
4955.0	1.55	237.54	4949.6	156.0	-82.9	-132.2	1.88	156.0	237.91
5046.0	0.11	302.55	5040.6	157.3	-83.5	-133.3	1.66	157.3	237.94
5136.0	0.11	86.71	5130.6	157.3	-83.5	-133.3	0.23	157.3	237.95
5227.0	0.15	84.60	5221.5	157.1	-83.4	-133.1	0.04	157.1	237.92
5318.0	0.05	148.23	5312.5	157.0	-83.5	-133.0	0.15	157.0	237.88
5408.0	0.10	188.08	5402.5	157.0	-83.6	-132.9	0.08	157.0	237.85
5499.0	0.35	192.03	5493.5	157.3	-83.9	-133.0	0.28	157.3	237.75



Scientific Drilling International Inc.

Survey Report

Company: APACHE CORPORATION
Field: Wantz
Site: Lea County, NM
Well: Mark Owen #5
Wellpath: DH - Job #32D0310142

Date: 3/25/2010 Time: 14:10:39 Page: 2
Co-ordinate(NE) Reference: Site: Lea County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,237.49Azi)
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
5590.0	0.31	208.39	5584.5	157.7	-84.4	-133.2	0.11	157.7	237.64
5681.0	0.54	197.98	5675.5	158.2	-85.0	-133.4	0.27	158.2	237.49
5772.0	0.69	217.68	5766.5	159.1	-85.9	-133.9	0.28	159.1	237.33
5863.0	0.77	213.39	5857.5	160.1	-86.8	-134.6	0.11	160.2	237.17
5954.0	0.96	202.30	5948.5	161.3	-88.0	-135.2	0.28	161.3	236.93
6044.0	0.95	193.09	6038.5	162.5	-89.5	-135.7	0.17	162.5	236.60
6134.0	0.82	195.84	6128.5	163.5	-90.8	-136.0	0.15	163.5	236.27
6225.0	1.00	195.36	6219.5	164.6	-92.2	-136.4	0.20	164.6	235.94
6316.0	0.67	122.95	6310.5	164.9	-93.3	-136.2	1.12	165.0	235.59
6407.0	0.84	108.36	6401.5	164.3	-93.8	-135.1	0.28	164.4	235.24
6498.0	0.74	107.11	6492.5	163.5	-94.1	-133.9	0.11	163.7	234.89
6588.0	0.86	120.42	6582.5	162.8	-94.6	-132.7	0.24	163.0	234.51
6679.0	1.14	127.16	6673.4	162.2	-95.5	-131.4	0.33	162.5	233.99
6770.0	1.05	96.95	6764.4	161.2	-96.2	-129.9	0.63	161.6	233.48
6861.0	1.23	340.99	6855.4	160.4	-95.4	-129.4	2.13	160.7	233.60
6951.0	1.55	332.72	6945.4	160.0	-93.4	-130.2	0.42	160.3	234.36



Scientific
Drilling

Scientific Drilling International Inc.

Survey Report

Company: APACHE CORPORATION	Date: 3/25/2010	Time: 14:14:55	Page: 1
Field: Wantz	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Mark Owen #5	Section (VS) Reference:	Well (0.00N,0.00E,237.49Azi)	
Wellpath: VH - Job #32K0310191	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 03/18/10	Start Date: 3/18/2010
Company: KSRG 6900'-7560'	
Company: Scientific Drilling Internatio	Engineer: Madrid/Rowe/Renteria
Tool: Keeper,Keeper Gyro	Tied-to: From. Definitive Path

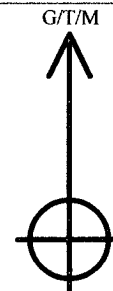
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
6861.0	1.23	340.99	6855.4	160.4	-95.4	-129.4	0.00	160.7	233.60
6900.0	1.51	336.13	6894.4	160.2	-94.5	-129.7	0.78	160.5	233.93
7000.0	1.51	333.63	6994.4	159.8	-92.1	-130.8	0.07	160.0	234.85
7100.0	1.32	341.66	7094.3	159.4	-89.8	-131.8	0.27	159.5	235.72
7200.0	1.22	325.16	7194.3	159.2	-87.9	-132.8	0.38	159.2	236.50
7300.0	1.02	316.01	7294.3	159.4	-86.4	-134.0	0.27	159.4	237.20
7400.0	1.33	295.08	7394.3	160.2	-85.2	-135.6	0.52	160.2	237.86
7500.0	1.70	283.39	7494.2	161.9	-84.4	-138.1	0.48	161.9	238.58
7560.0	1.75	287.63	7554.2	163.1	-83.9	-139.9	0.23	163.1	239.04



Scientific
Drilling

Field: Wantz
Site: Lea County, NM
Well: Mark Owen #5
Survey: 03/18/10



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°
Magnetic Field
Dip Angle: 0.00°
Date: 3/25/2010
Model: igrf2000

West(-)/East(+) [20ft/in]

South(-)/North(+) [20ft/in]

