Scientific Drilling

CHEVRONTEXACO

Field: Arrowhead Grayburg
Site: Lea County, NM
Well: AGU #352
Wellpath: HH - Job #32D0703389
Survey: 07/28/03-08/05/03

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

.....Company Representative

Notorized this date 17th of September, 2003.

Notary Signature
County of Midland
State of Texas

DEBORAH S BYNUM
Notary Public, State of Texas
My Commission Expires
05-09-2004

Scientific Drilling
Survey Report

Company:	CHEVRONTEXACO	**Date:** 9/17/2003	**Time:** 16:28:46	**Page:**	1
Field:	Arrowhead Grayburg	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	AGU #352	**Section (VS) Reference:**	Well (0.00N,0.00E,61.99Azi)		
Wellpath:	HH - Job #32D0703389	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	07/28/03-08/05/03 MWD 3777'-6080'	**Start Date:**	7/28/2003
Company:	Scientific Drilling	**Engineer:**	Hoffman/Melendez
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
3769.0	0.88	245.84	3767.3	58.8	27.6	52.0	0.00	58.8	61.99
3777.0	0.88	245.84	3775.2	58.7	27.6	51.8	0.00	58.7	61.98
3821.0	23.10	266.60	3818.0	50.4	26.9	42.8	50.63	50.6	57.83
3831.0	29.40	267.40	3827.0	46.4	26.7	38.4	63.10	46.8	55.18
3841.0	35.70	268.50	3835.4	41.6	26.5	33.0	63.28	42.3	51.23
3853.0	43.40	267.70	3844.7	34.7	26.3	25.4	64.31	36.5	44.03
3863.0	50.00	267.70	3851.5	28.2	26.0	18.1	66.00	31.7	34.91
3874.0	57.20	266.90	3858.0	20.2	25.5	9.3	65.71	27.2	19.96
3905.0	77.40	265.20	3869.9	-5.8	23.6	-19.1	65.35	30.3	320.96
3943.0	84.60	265.40	3875.9	-40.2	20.5	-56.5	18.95	60.1	289.93
3974.0	89.40	265.40	3877.5	-68.6	18.0	-87.3	15.48	89.2	281.64
4004.0	94.60	266.20	3876.5	-96.1	15.8	-117.2	17.54	118.3	277.68
4037.0	94.70	266.40	3873.8	-126.0	13.7	-150.0	0.68	150.7	275.21
4068.0	97.40	267.70	3870.5	-154.0	12.1	-180.8	9.66	181.2	273.83
4101.0	98.50	267.80	3865.9	-183.4	10.8	-213.5	3.35	213.8	272.90
4133.0	99.30	267.50	3861.0	-211.9	9.5	-245.1	2.67	245.3	272.22
4164.0	97.60	269.40	3856.4	-239.3	8.7	-275.7	8.17	275.9	271.80
4196.0	97.60	269.60	3852.2	-267.5	8.4	-307.4	0.62	307.6	271.57
4228.0	97.80	269.40	3847.9	-295.6	8.1	-339.1	0.88	339.2	271.37
4260.0	97.70	269.30	3843.6	-323.8	7.8	-370.9	0.44	370.9	271.20
4292.0	97.60	269.30	3839.3	-351.9	7.4	-402.6	0.31	402.6	271.05
4324.0	97.80	269.30	3835.1	-380.1	7.0	-434.3	0.62	434.3	270.92
4355.0	96.40	269.70	3831.2	-407.4	6.7	-465.0	4.69	465.1	270.83
4387.0	97.00	269.40	3827.5	-435.6	6.5	-496.8	2.09	496.9	270.75
4419.0	97.00	269.80	3823.6	-463.7	6.3	-528.6	1.24	528.6	270.68
4451.0	95.90	268.90	3820.0	-492.0	5.9	-560.4	4.43	560.4	270.60
4483.0	96.30	268.60	3816.6	-520.4	5.2	-592.2	1.56	592.2	270.50
4515.0	95.20	268.10	3813.4	-548.9	4.3	-624.0	3.77	624.0	270.39
4546.0	92.50	268.70	3811.3	-576.6	3.4	-654.9	8.92	654.9	270.30
4578.0	93.20	268.80	3809.7	-605.1	2.7	-686.9	2.21	686.9	270.23
4609.0	92.60	269.10	3808.2	-632.7	2.2	-717.8	2.16	717.8	270.17
4641.0	91.30	269.10	3807.1	-661.2	1.7	-749.8	4.06	749.8	270.13
4673.0	91.80	269.20	3806.2	-689.7	1.2	-781.8	1.59	781.8	270.09
4705.0	90.70	268.50	3805.5	-718.2	0.5	-813.8	4.07	813.8	270.04
4736.0	91.50	269.10	3804.9	-745.9	-0.1	-844.8	3.23	844.8	269.99
4770.0	92.70	270.50	3803.7	-775.9	-0.2	-878.7	5.42	878.7	269.99
4802.0	93.20	270.40	3802.0	-804.0	0.0	-910.7	1.59	910.7	270.00
4833.0	91.50	271.20	3800.7	-831.2	0.5	-941.7	6.06	941.7	270.03
4865.0	89.00	271.10	3800.6	-859.1	1.1	-973.7	7.82	973.7	270.06
4897.0	86.30	270.30	3801.9	-887.1	1.5	-1005.6	8.80	1005.6	270.08
4929.0	86.40	269.90	3804.0	-915.3	1.5	-1037.6	1.29	1037.6	270.09
4961.0	86.20	269.10	3806.0	-943.6	1.3	-1069.5	2.57	1069.5	270.07
4991.0	88.40	270.00	3807.4	-970.2	1.0	-1099.5	7.92	1099.5	270.05
5022.0	87.80	270.50	3808.5	-997.5	1.2	-1130.4	2.52	1130.4	270.06
5055.0	83.90	269.80	3810.8	-1026.5	1.3	-1163.3	12.01	1163.3	270.06
5087.0	84.50	269.70	3814.1	-1054.7	1.1	-1195.2	1.90	1195.2	270.05
5118.0	84.60	269.10	3817.0	-1082.1	0.8	-1226.0	1.95	1226.0	270.04
5150.0	85.40	269.40	3819.8	-1110.4	0.4	-1257.9	2.67	1257.9	270.02
5182.0	85.70	269.20	3822.3	-1138.7	0.0	-1289.8	1.13	1289.8	270.00

Scientific Drilling
Survey Report

Company:	CHEVRONTEXACO	**Date:** 9/17/2003	**Time:** 16:28:46	**Page:**	2
Field:	Arrowhead Grayburg	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	AGU #352	**Section (VS) Reference:**	Well (0.00N,0.00E,61.99Azi)		
Wellpath:	HH - Job #32D0703389	**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
5214.0	86.20	269.10	3824.6	-1167.1	-0.5	-1321.7	1.59	1321.7	269.98
5246.0	86.50	268.50	3826.6	-1195.6	-1.2	-1353.7	2.09	1353.7	269.95
5277.0	86.80	269.10	3828.4	-1223.3	-1.8	-1384.6	2.16	1384.6	269.93
5309.0	85.80	270.50	3830.5	-1251.5	-1.9	-1416.5	5.37	1416.5	269.92
5341.0	86.40	270.60	3832.6	-1279.5	-1.6	-1448.5	1.90	1448.5	269.94
5371.0	86.70	270.80	3834.4	-1305.8	-1.2	-1478.4	1.20	1478.4	269.95
5405.0	86.40	271.20	3836.5	-1335.5	-0.7	-1512.3	1.47	1512.3	269.98
5437.0	84.30	271.20	3839.1	-1363.3	0.0	-1544.2	6.56	1544.2	270.00
5468.0	84.10	270.90	3842.2	-1390.3	0.6	-1575.1	1.16	1575.1	270.02
5500.0	85.50	271.00	3845.1	-1418.2	1.1	-1606.9	4.39	1606.9	270.04
5532.0	88.00	271.00	3846.9	-1446.1	1.7	-1638.9	7.81	1638.9	270.06
5563.0	88.20	271.80	3848.0	-1473.1	2.4	-1669.8	2.66	1669.8	270.08
5613.0	86.00	274.40	3850.5	-1515.8	5.1	-1719.7	6.81	1719.7	270.17
5644.0	85.90	273.40	3852.7	-1542.1	7.2	-1750.5	3.23	1750.6	270.24
5677.0	84.70	269.10	3855.4	-1570.8	7.9	-1783.4	13.49	1783.4	270.26
5709.0	85.00	269.20	3858.3	-1599.1	7.5	-1815.3	0.99	1815.3	270.24
5741.0	84.80	269.50	3861.1	-1627.4	7.1	-1847.1	1.12	1847.2	270.22
5773.0	84.30	268.30	3864.1	-1655.8	6.5	-1879.0	4.05	1879.0	270.20
5805.0	84.70	267.30	3867.2	-1684.5	5.3	-1910.8	3.35	1910.8	270.16
5836.0	84.70	266.90	3870.1	-1712.5	3.7	-1941.7	1.28	1941.7	270.11
5868.0	85.40	267.40	3872.8	-1741.3	2.1	-1973.5	2.68	1973.5	270.06
5900.0	84.10	269.20	3875.8	-1769.9	1.2	-2005.3	6.92	2005.3	270.03
5932.0	86.00	269.10	3878.5	-1798.3	0.7	-2037.2	5.95	2037.2	270.02
5964.0	85.50	269.10	3880.9	-1826.7	0.2	-2069.1	1.56	2069.1	270.01
5995.0	85.80	269.10	3883.2	-1854.2	-0.3	-2100.0	0.97	2100.0	269.99
6027.0	86.40	270.60	3885.4	-1882.4	-0.4	-2132.0	5.04	2132.0	269.99
6080.0	86.40	270.60	3888.8	-1928.8	0.2	-2184.9	0.00	2184.9	270.00

Scientific Drilling
Survey Report

Company:	CHEVRONTEXACO	**Date:** 9/17/2003	**Time:** 16:11:09	**Page:**	1
Field:	Arrowhead Grayburg	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	AGU #352	**Section (VS) Reference:**	Well (0.00N,0.00E,61.99Azi)		
Wellpath:	VH - Job #32K003384	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	07/28/03 KSRG 0'-3769'	**Start Date:**	7/28/2003
Company:	Scientific Drilling	**Engineer:**	Ron Drake
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	359.41	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.32	201.74	100.0	-0.2	-0.3	-0.1	0.32	0.3	201.74
200.0	0.97	132.71	200.0	-0.1	-1.1	0.4	0.91	1.2	159.20
300.0	0.86	117.33	300.0	0.6	-2.0	1.7	0.27	2.6	139.74
400.0	0.94	139.77	400.0	1.2	-3.0	2.9	0.36	4.2	135.80
500.0	1.03	182.01	500.0	0.9	-4.5	3.4	0.71	5.6	142.98
600.0	0.57	263.70	599.9	0.0	-5.5	2.9	1.10	6.2	152.25
700.0	0.90	305.52	699.9	-0.8	-5.1	1.7	0.61	5.3	161.03
800.0	0.98	330.69	799.9	-1.2	-3.9	0.7	0.42	3.9	169.98
900.0	0.83	349.65	899.9	-1.0	-2.4	0.1	0.33	2.4	176.84
1000.0	0.85	352.34	999.9	-0.5	-1.0	-0.1	0.04	1.0	185.81
1100.0	0.69	334.33	1099.9	-0.2	0.3	-0.5	0.29	0.6	305.67
1200.0	0.98	297.06	1199.9	-0.7	1.3	-1.5	0.60	1.9	310.42
1300.0	0.59	310.41	1299.9	-1.4	2.0	-2.6	0.43	3.3	306.98
1400.0	1.03	45.67	1399.9	-0.7	2.9	-2.4	1.23	3.8	321.03
1500.0	1.14	41.74	1499.9	1.1	4.3	-1.1	0.13	4.4	345.99
1600.0	1.18	45.21	1599.8	3.0	5.8	0.3	0.08	5.8	3.14
1700.0	1.34	41.63	1699.8	5.1	7.4	1.8	0.18	7.6	13.88
1800.0	1.68	47.97	1799.8	7.6	9.2	3.7	0.38	9.9	21.78
1900.0	2.21	52.72	1899.7	10.9	11.4	6.3	0.55	13.0	29.01
2000.0	2.42	52.18	1999.6	14.9	13.8	9.5	0.21	16.8	34.49
2100.0	3.19	54.10	2099.5	19.7	16.8	13.4	0.78	21.5	38.69
2200.0	3.85	57.96	2199.3	25.8	20.2	18.5	0.70	27.4	42.56
2300.0	4.02	59.99	2299.1	32.7	23.7	24.4	0.22	34.0	45.83
2400.0	3.74	62.28	2398.9	39.5	27.0	30.3	0.32	40.6	48.34
2500.0	3.49	64.33	2498.7	45.8	29.8	36.0	0.28	46.7	50.33
2600.0	2.84	68.79	2598.5	51.3	32.0	41.0	0.69	52.1	52.01
2700.0	2.42	76.12	2698.4	55.8	33.4	45.4	0.54	56.4	53.61
2800.0	1.36	70.26	2798.3	59.0	34.4	48.5	1.08	59.5	54.72
2900.0	1.20	84.40	2898.3	61.1	34.9	50.7	0.35	61.5	55.50
3000.0	0.68	115.32	2998.3	62.5	34.7	52.3	0.71	62.8	56.43
3100.0	0.66	128.98	3098.3	63.0	34.1	53.3	0.16	63.2	57.39
3200.0	0.55	149.27	3198.3	63.3	33.3	54.0	0.24	63.4	58.31
3300.0	0.62	145.86	3298.3	63.4	32.5	54.5	0.08	63.4	59.23
3400.0	0.63	189.58	3398.3	63.1	31.5	54.7	0.47	63.1	60.10
3500.0	0.79	205.04	3498.3	62.2	30.3	54.3	0.25	62.2	60.86
3600.0	0.90	215.16	3598.3	61.0	29.0	53.6	0.18	61.0	61.56
3700.0	0.60	232.97	3698.3	59.7	28.1	52.7	0.38	59.7	61.97
3769.0	0.88	245.84	3767.3	58.8	27.6	52.0	0.47	58.8	61.99

Scientific Drilling

Field: Arrowhead Grayburg
Site: Lea County, NM
Well: AGU #352
Wellpath: HH - Job #32D0703389
Survey: 07/28/03-08/05/03