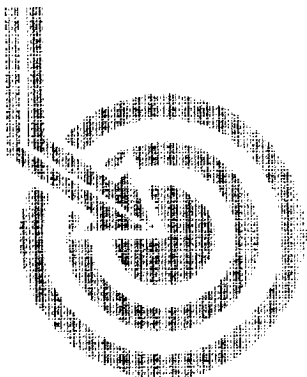




Scientific Drilling



TEXACO E & P INC.

Field: Vacuum Glorieta San Andres

Site: Lea County, NM

Well: VGSAU #24

Wellpath: VH/HH - Job #32D0999244/247

Survey: 9/16/99-9/26/99

API #: 30-025-02271

Gyro Footage: 0'-4220'

MWD Footage: 4270'-5570'

Survey: Sec. 2/1, T18S, R34E

K.O.P.: 4220'

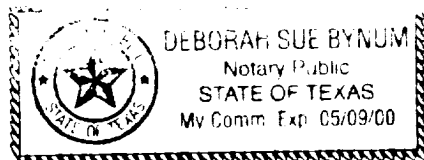
Sur: 1980/s & 660/e

BHL: 2028/s & 2556/e

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

David Hardy.....Company Representative

Notorized this date 25th of March, 2000.



Deborah Sue Bynum
Mulland Co., Inc

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta San Andres
Site: Lea County, NM
Well: VGSAU #24
Wellpath: VH - Job #32K0999247

Date: 3/23/2000
Co-ordinate(NE) Reference: Site: Lea County, NM, True North
Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level
Section (VS) Reference: Slot (0.0E,0.0N,0.0Azi)
Survey Calculation Method: Minimum Curvature

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Survey: 9/16/99
 KSRG 0'-4220'

Start Date: 12/6/1999

Company: S.D.I.
Tool: KEEPER

Engineer: Jon Valenzuela

SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
100.0	0.36	232.57	100.0	-0.2	-0.2	-0.2	0.36	232.57	0.3
200.0	0.09	269.80	200.0	-0.4	-0.6	-0.4	0.29	236.50	0.7
300.0	0.30	199.55	300.0	-0.6	-0.7	-0.6	0.28	229.77	1.0
400.0	0.38	200.16	400.0	-1.2	-0.9	-1.2	0.08	218.54	1.5
500.0	0.23	188.58	500.0	-1.7	-1.1	-1.7	0.16	212.71	2.0
600.0	0.47	194.78	600.0	-2.3	-1.2	-2.3	0.24	208.11	2.6
700.0	0.44	161.73	700.0	-3.1	-1.2	-3.1	0.26	201.60	3.3
800.0	0.46	105.45	800.0	-3.5	-0.7	-3.5	0.42	191.25	3.6
900.0	0.43	90.38	900.0	-3.6	0.1	-3.6	0.12	179.04	3.6
1000.0	0.60	82.36	1000.0	-3.6	1.0	-3.6	0.18	165.01	3.7
1100.0	0.61	68.43	1100.0	-3.3	2.0	-3.3	0.15	149.19	3.8
1200.0	0.65	70.23	1200.0	-2.9	3.0	-2.9	0.04	134.19	4.2
1300.0	0.59	73.05	1300.0	-2.6	4.0	-2.6	0.07	122.59	4.8
1400.0	0.71	59.86	1400.0	-2.1	5.1	-2.1	0.19	112.68	5.5
1500.0	0.88	36.87	1499.9	-1.2	6.0	-1.2	0.36	101.09	6.2
1600.0	1.21	15.69	1599.9	0.4	6.8	0.4	0.50	86.25	6.8
1700.0	1.22	14.26	1699.9	2.5	7.3	2.5	0.03	71.24	7.8
1800.0	0.94	21.81	1799.9	4.3	7.9	4.3	0.31	61.54	9.0
1900.0	1.09	24.24	1899.9	5.9	8.6	5.9	0.16	55.49	10.4
2000.0	0.82	31.98	1999.9	7.4	9.4	7.4	0.30	51.75	11.9
2100.0	0.69	21.64	2099.9	8.6	10.0	8.6	0.19	49.38	13.1
2200.0	0.44	39.29	2199.8	9.4	10.4	9.4	0.30	47.96	14.1
2300.0	0.41	61.95	2299.8	9.9	11.0	9.9	0.17	48.07	14.8
2400.0	0.63	75.57	2399.8	10.2	11.8	10.2	0.25	49.32	15.6
2500.0	0.63	81.78	2499.8	10.4	12.9	10.4	0.07	51.18	16.6
2600.0	0.82	80.59	2599.8	10.6	14.2	10.6	0.19	53.22	17.7
2700.0	0.96	80.09	2699.8	10.9	15.7	10.9	0.14	55.35	19.1
2800.0	0.88	77.40	2799.8	11.2	17.3	11.2	0.09	57.13	20.6
2900.0	0.93	78.04	2899.8	11.5	18.8	11.5	0.05	58.57	22.1
3000.0	0.58	76.97	2999.8	11.8	20.1	11.8	0.35	59.63	23.3
3100.0	0.32	86.46	3099.8	11.9	20.9	11.9	0.27	60.29	24.0
3200.0	0.33	100.15	3199.8	11.9	21.4	11.9	0.08	61.01	24.5
3300.0	0.35	91.23	3299.8	11.8	22.0	11.8	0.06	61.77	25.0
3400.0	0.33	92.77	3399.8	11.8	22.6	11.8	0.02	62.45	25.5
3500.0	0.63	72.23	3499.8	12.0	23.4	12.0	0.34	62.97	26.3
3600.0	0.75	53.62	3599.8	12.5	24.5	12.5	0.25	62.93	27.5
3700.0	0.80	50.84	3699.8	13.3	25.6	13.3	0.06	62.43	28.8
3800.0	0.86	45.98	3799.7	14.3	26.6	14.3	0.09	61.76	30.2
3900.0	0.89	38.95	3899.7	15.4	27.7	15.4	0.11	60.85	31.7
4000.0	0.94	30.74	3999.7	16.7	28.6	16.7	0.14	59.63	33.1
4100.0	0.88	31.30	4099.7	18.1	29.4	18.1	0.06	58.37	34.5
4200.0	1.17	22.07	4199.7	19.7	30.2	19.7	0.33	56.85	36.0
4220.0	1.32	36.26	4219.7	20.1	30.4	20.1	1.71	56.54	36.4

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta San Andres
Site: Lea County, NM
Well: VGSAU #24
Wellpath: VH/HH - Job #32D0999244/2

Date: 3/23/2000
Co-ordinate(NE) Reference: Site: Lea County, NM, True North
Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level
Section (VS) Reference: Slot (0.0E,0.0N,0.0Azi)
Survey Calculation Method: Minimum Curvature

Page: 1

Survey: 9/16/99-9/26/99
 KSRG 0'-4220'/MWD 4270'-5570'

Start Date: 12/6/1999

Company: SDI/Ryan
Tool: KEEPER

Engineer: Valenzuela/Burger

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4220.0	20.56	275.50	4130.0	71.8	-745.5	20.1	0.00	275.50	748.9
4270.0	20.80	275.50	4176.8	73.5	-763.1	21.4	0.49	275.50	766.6
4280.0	25.30	275.10	4186.0	73.8	-767.0	21.8	45.03	275.50	770.5
4290.0	29.50	275.10	4194.9	74.2	-771.5	22.2	42.00	275.50	775.1
4310.0	38.40	274.10	4211.5	75.1	-782.7	23.1	44.59	275.48	786.3
4330.0	45.90	273.40	4226.3	76.0	-796.0	23.9	37.57	275.45	799.7
4342.0	48.40	272.70	4234.5	76.5	-804.8	24.4	21.27	275.43	808.5
4373.0	53.70	272.30	4253.9	77.5	-828.9	25.5	17.13	275.34	832.5
4404.0	54.10	274.80	4272.2	79.1	-853.9	27.0	6.64	275.29	857.6
4436.0	54.30	273.00	4290.9	80.8	-879.8	28.8	4.60	275.25	883.5
4468.0	54.70	272.70	4309.5	82.1	-905.8	30.1	1.46	275.18	909.5
4499.0	55.00	269.50	4327.4	82.6	-931.2	30.5	8.50	275.07	934.8
4532.0	55.00	268.50	4346.3	82.1	-958.2	30.1	2.48	274.90	961.7
4562.0	54.70	265.60	4363.6	80.9	-982.7	28.8	7.97	274.71	986.0
4594.0	54.80	264.60	4382.0	78.6	-1008.7	26.6	2.57	274.46	1011.8
4625.0	54.90	264.20	4399.9	76.2	-1033.9	24.1	1.10	274.21	1036.7
4656.0	55.00	265.30	4417.7	73.9	-1059.2	21.8	2.92	273.99	1061.8
4688.0	54.90	267.80	4436.1	72.3	-1085.4	20.2	6.40	273.81	1087.8
4720.0	54.60	268.50	4454.5	71.4	-1111.5	19.4	2.02	273.68	1113.8
4751.0	54.30	268.80	4472.5	70.8	-1136.7	18.8	1.25	273.57	1138.9
4782.0	58.30	268.50	4489.7	70.2	-1162.5	18.2	12.93	273.46	1164.6
4815.0	63.50	267.80	4505.8	69.3	-1191.3	17.2	15.87	273.33	1193.3
4847.0	69.50	267.40	4518.5	68.1	-1220.6	16.0	18.78	273.19	1222.5
4878.0	75.70	267.80	4527.8	66.8	-1250.1	14.8	20.04	273.06	1251.9
4909.0	80.30	268.50	4534.3	65.8	-1280.4	13.8	15.00	272.94	1282.1
4941.0	84.10	267.80	4538.6	64.8	-1312.1	12.8	12.07	272.83	1313.7
4972.0	87.00	268.10	4541.0	63.7	-1343.0	11.7	9.40	272.72	1344.5
5004.0	87.80	268.10	4542.4	62.7	-1374.9	10.6	2.50	272.61	1376.4
5035.0	88.30	268.50	4543.5	61.7	-1405.9	9.7	2.07	272.51	1407.3
5067.0	88.30	268.50	4544.5	60.9	-1437.9	8.8	0.00	272.43	1439.2
5099.0	88.90	268.80	4545.2	60.1	-1469.9	8.1	2.10	272.34	1471.1
5131.0	93.70	268.80	4544.5	59.5	-1501.8	7.4	15.00	272.27	1503.0
5162.0	99.80	269.50	4540.9	59.0	-1532.6	7.0	19.80	272.21	1533.7
5194.0	105.30	270.90	4533.9	59.1	-1563.8	7.1	17.71	272.17	1564.9
5225.0	111.50	270.90	4524.1	59.6	-1593.2	7.5	20.00	272.14	1594.3
5257.0	115.60	269.50	4511.4	59.7	-1622.5	7.6	13.43	272.11	1623.6
5288.0	115.60	270.60	4498.0	59.7	-1650.5	7.7	3.20	272.07	1651.6
5320.0	115.10	270.90	4484.3	60.1	-1679.4	8.0	1.78	272.05	1680.5
5352.0	117.30	269.20	4470.1	60.1	-1708.1	8.1	8.37	272.02	1709.2
5383.0	118.10	269.20	4455.7	59.7	-1735.6	7.7	2.58	271.97	1736.6
5415.0	120.20	267.40	4440.1	58.9	-1763.5	6.9	8.20	271.91	1764.5
5446.0	121.00	267.40	4424.4	57.7	-1790.2	5.6	2.58	271.85	1791.1
5477.0	120.00	265.00	4408.6	55.9	-1816.8	3.9	7.41	271.76	1817.7
5508.0	120.70	264.40	4393.0	53.5	-1843.4	1.4	2.81	271.66	1844.2
5531.0	121.20	264.40	4381.1	51.5	-1863.1	-0.5	2.17	271.58	1863.8
5570.0	121.00	264.40	4361.0	48.3	-1896.3	-3.8	0.51	271.46	1896.9



**Scientific
Drilling**

TEXACO E & P INC
Field: Vacuum Glorieta San Andres
Site: Lea County, NM
Well: VGSAU #24
Wellpath: VH/HH - Job #32D0999244/247
Survey: 9/16/99-9/26/99

