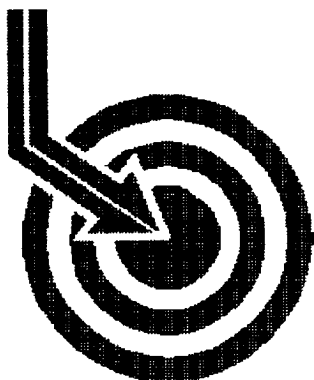




Scientific Drilling



TEXACO E & P INC.

Field: Teague (Upper Paddock)

Site: Lea County, NM

Well: Harrison B #18

Wellpath: HH - Job #32D0600196

Survey: 6/5/00-6/9/00

SUR: 990/W & 660/W
D-9-23s-37e

BHL: 547/W & 1770/W
C-9-23s-37e

30-025-32159

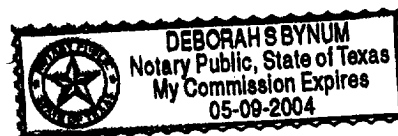
This survey is correct to the best of my knowledge
and is supported by actual field data.

[Signature] Company Representative

Notorized this date 23rd of August, 2000.

[Signature]
Notary Signature

County of Midland
State of Texas



SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC. Field: Teague (Upper Paddock) Site: Lea County, NM Well: Harrison B #18 Wellpath: VH - Job #32K0500187	Date: 8/20/2000 Time: 13:20:09 Page: 1 Co-ordinate(N/E) 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,68.2Az) Survey Calculation Method: Minimum Curvature
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Survey: 6/5/00 Start Date: 8/20/2000
 KSRR 0'-4983'

Company: SDI Engineer: Kyle Shoup
 Tool: KEEPER

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	0.32	14.12	100.0	0.3	0.1	0.2	0.32	14.12	0.3
200.0	0.25	343.85	200.0	0.8	0.1	0.3	0.16	5.74	0.8
300.0	0.06	14.29	300.0	1.0	0.0	0.4	0.20	1.57	1.0
400.0	0.13	281.41	400.0	1.1	-0.1	0.3	0.15	356.28	1.1
500.0	0.08	291.61	500.0	1.1	-0.2	0.2	0.05	347.72	1.2
600.0	0.07	220.71	600.0	1.1	-0.4	0.1	0.09	342.47	1.2
700.0	0.15	201.46	700.0	0.9	-0.4	-0.1	0.09	335.06	1.0
800.0	0.08	186.65	800.0	0.8	-0.5	-0.2	0.08	326.68	0.9
900.0	0.25	219.78	900.0	0.5	-0.6	-0.4	0.19	308.75	0.8
1000.0	0.30	234.29	1000.0	0.2	-1.0	-0.9	0.09	281.11	1.0
1100.0	0.43	235.30	1100.0	-0.2	-1.5	-1.5	0.13	263.57	1.5
1200.0	0.36	196.34	1200.0	-0.7	-1.9	-2.0	0.27	250.27	2.0
1300.0	0.36	195.17	1300.0	-1.3	-2.1	-2.4	0.01	238.22	2.5
1400.0	0.34	182.34	1400.0	-1.9	-2.2	-2.7	0.08	229.04	2.9
1500.0	0.43	215.57	1500.0	-2.5	-2.4	-3.2	0.24	224.02	3.5
1600.0	0.40	308.68	1600.0	-2.6	-2.9	-3.6	0.60	228.34	3.9
1700.0	0.58	334.81	1700.0	-1.9	-3.4	-3.9	0.28	240.67	3.9
1800.0	0.81	354.04	1800.0	-0.7	-3.7	-3.7	0.32	258.59	3.7
1900.0	1.83	16.62	1899.9	1.5	-3.3	-2.5	1.13	294.37	3.6
2000.0	2.23	28.60	1999.9	4.7	-1.9	0.0	0.58	338.07	5.1
2100.0	2.86	41.55	2099.8	8.3	0.7	3.7	0.85	4.69	8.3
2200.0	2.73	43.84	2199.7	11.9	4.0	8.1	0.17	18.53	12.5
2300.0	3.00	48.63	2299.5	15.3	7.6	12.7	0.36	26.36	17.1
2400.0	3.16	49.74	2399.4	18.8	11.7	17.8	0.17	31.76	22.2
2500.0	2.61	51.96	2499.3	22.0	15.6	22.6	0.56	35.24	27.0
2600.0	1.71	52.94	2599.2	24.3	18.5	26.2	0.90	37.31	30.6
2700.0	1.28	52.28	2699.2	25.9	20.6	28.8	0.43	38.51	33.1
2800.0	0.53	42.35	2799.1	26.9	21.8	30.2	0.76	39.00	34.7
2900.0	0.46	26.84	2899.1	27.6	22.3	31.0	0.15	38.91	35.5
3000.0	0.33	57.20	2999.1	28.2	22.7	31.6	0.24	38.92	36.2
3100.0	0.36	86.78	3099.1	28.3	23.3	32.1	0.18	39.42	36.7
3200.0	0.35	94.21	3199.1	28.3	23.9	32.7	0.05	40.16	37.1
3300.0	0.22	77.94	3299.1	28.3	24.4	33.2	0.15	40.72	37.4
3400.0	0.02	34.89	3399.1	28.4	24.6	33.4	0.21	40.90	37.6
3500.0	0.09	50.97	3499.1	28.5	24.7	33.5	0.07	40.92	37.7
3600.0	0.18	352.05	3599.1	28.7	24.7	33.6	0.15	40.76	37.8
3700.0	0.23	12.28	3699.1	29.0	24.7	33.7	0.09	40.44	38.1
3800.0	0.20	170.50	3799.1	29.0	24.8	33.8	0.42	40.50	38.2
3900.0	0.04	106.65	3899.1	28.9	24.9	33.8	0.19	40.74	38.1
4000.0	0.15	345.02	3999.1	29.0	24.9	33.8	0.17	40.63	38.2
4100.0	0.35	342.33	4099.1	29.4	24.7	33.9	0.20	40.08	38.4
4200.0	0.31	303.99	4199.1	29.8	24.4	33.7	0.22	39.30	38.6
4300.0	0.39	222.22	4299.1	29.7	24.0	33.3	0.46	38.87	38.2
4400.0	0.86	177.79	4399.1	28.7	23.8	32.7	0.64	39.59	37.3
4500.0	0.61	163.46	4499.1	27.5	23.9	32.4	0.31	41.08	36.4
4600.0	0.34	197.05	4599.1	26.7	24.0	32.2	0.38	41.99	35.9
4700.0	0.62	224.59	4699.1	26.0	23.5	31.5	0.36	42.15	35.1

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC Field: Teague (Upper Paddock) Site: Lea County, NM Well: Harrison B #18 Wellpath: VH - Job #32K0500187	Date: 8/20/2000 Time: 13:20:09 Page: 2 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,68.2Azi) Survey Calculation Method: Minimum Curvature
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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4800.0	0.62	218.04	4799.1	25.2	22.8	30.5	0.07	42.18	34.0
4900.0	0.71	164.21	4899.1	24.2	22.7	30.0	0.61	43.15	33.1
4983.4	0.76	188.24	4982.5	23.1	22.7	29.7	0.37	44.49	32.4

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC. Field: Teague (Upper Paddock) Site: Lea County, NM Well: Harrison B #18 Wellpath: HH - Job #32D0600196	Date: 8/20/2000 Time: 13:32:29 Page: 1 Co-ordinate(N/E) 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, 68.2Az) Survey Calculation Method: Minimum Curvature
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Survey: 6/5/00-6/9/00
MWD 4970'-6150'

Start Date: 8/20/2000

Company: SDI w/Ryan
Tool: MWD

Engineer: L. Coetzee

SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4900.0	0.71	164.21	4899.1	24.2	22.7	30.0	0.00	43.15	33.1
4970.0	0.74	184.38	4969.1	23.3	22.7	29.8	0.37	44.30	32.6
5005.0	14.10	72.30	5003.7	24.4	26.8	33.9	41.13	47.72	36.2
5025.0	22.50	72.70	5022.7	26.3	32.8	40.2	42.00	51.31	42.0
5035.0	27.10	72.30	5031.8	27.5	36.8	44.4	46.03	53.20	46.0
5045.0	31.70	71.60	5040.5	29.1	41.5	49.3	46.13	54.98	50.6
5055.0	36.30	70.90	5048.8	30.8	46.8	54.9	46.17	56.58	56.0
5065.0	40.80	69.50	5056.6	33.0	52.6	61.1	45.84	57.93	62.1
5075.0	45.40	68.40	5063.9	35.4	59.0	67.9	46.61	59.02	68.8
5085.0	50.20	68.10	5070.6	38.2	65.9	75.3	48.05	59.91	76.1
5098.0	56.30	68.40	5078.4	42.0	75.5	85.7	46.96	60.91	86.4
5115.0	64.80	70.20	5086.8	47.2	89.4	100.5	50.84	62.14	101.1
5137.0	74.30	70.90	5094.4	54.1	108.8	121.1	43.28	63.56	121.5
5148.0	76.90	70.60	5097.2	57.6	118.9	131.7	23.78	64.14	132.1
5179.0	83.90	70.20	5102.3	67.9	147.6	162.3	22.62	65.32	162.5
5211.0	85.70	69.50	5105.2	78.8	177.5	194.1	6.03	66.06	194.3
5243.0	84.80	70.20	5107.9	89.8	207.5	226.0	3.56	66.59	226.1
5274.0	84.60	70.60	5110.7	100.2	236.6	256.8	1.44	67.05	256.9
5306.0	88.00	70.60	5112.8	110.8	266.7	288.7	10.62	67.44	288.8
5338.0	87.40	70.90	5114.1	121.3	296.9	320.7	2.10	67.77	320.7
5369.0	87.10	69.50	5115.6	131.8	326.0	351.6	4.61	67.99	351.6
5401.0	86.70	67.80	5117.3	143.4	355.8	383.6	5.45	68.04	383.6
5432.0	86.70	67.80	5119.1	155.1	384.4	414.5	0.00	68.02	414.5
5464.0	86.20	68.10	5121.1	167.1	414.0	446.5	1.82	68.02	446.5
5496.0	86.20	68.10	5123.2	179.0	443.6	478.4	0.00	68.02	478.4
5527.0	89.40	68.10	5124.4	190.6	472.4	509.4	10.32	68.03	509.4
5559.0	89.60	67.80	5124.7	202.6	502.0	541.4	1.13	68.02	541.4
5590.0	89.90	67.40	5124.8	214.4	530.7	572.4	1.61	68.00	572.4
5622.0	89.70	67.10	5124.9	226.8	560.2	604.4	1.13	67.96	604.4
5654.0	89.20	68.10	5125.2	239.0	589.8	636.4	3.49	67.94	636.4
5685.0	89.20	68.80	5125.7	250.4	618.6	667.4	2.26	67.97	667.4
5714.0	89.60	68.40	5126.0	260.9	645.6	696.4	1.95	67.99	696.4
5749.0	89.90	68.10	5126.1	273.9	678.1	731.4	1.21	68.00	731.4
5781.0	90.80	68.40	5125.9	285.8	707.8	763.3	2.96	68.02	763.4
5813.0	91.50	68.10	5125.3	297.6	737.6	795.3	2.38	68.02	795.3
5844.0	91.80	68.40	5124.4	309.1	766.3	826.3	1.37	68.03	826.3
5875.0	90.40	68.80	5123.8	320.4	795.2	857.3	4.70	68.05	857.3
5906.0	90.80	68.80	5123.5	331.6	824.1	888.3	1.29	68.08	888.3
5938.0	88.00	68.80	5123.8	343.2	853.9	920.3	8.75	68.10	920.3
6001.0	89.20	67.80	5125.3	366.5	912.4	983.3	2.48	68.12	983.3
6064.0	89.60	68.80	5126.0	389.8	971.0	1046.3	1.71	68.13	1046.3
6101.0	90.30	68.80	5126.0	403.2	1005.5	1083.3	1.89	68.15	1083.3
6150.0	89.30	68.80	5126.2	420.9	1051.2	1132.3	2.04	68.18	1132.3