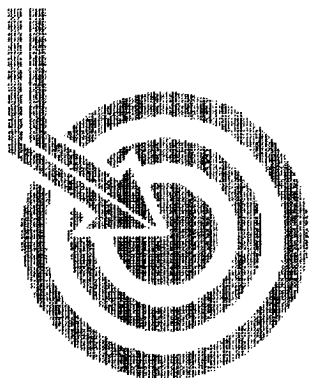




Scientific Drilling



TEXACO E & P INC.

Field: Vacuum Drinkard

Site: Lea County, NM

Well: NM "L" State #12

Wellpath: VH/HH - Job #32D0499091/092

Survey: 4/27/99-5/6/99

SUR: 1800/N & 660/E

A-1-185-34e

BHL: 460/N & 1180/E

A-1-185-34e

30-025-31992

API #: 30-025-31992

Gyro Footage: 0'-7450'

MWD Footage: 7495'-9236'

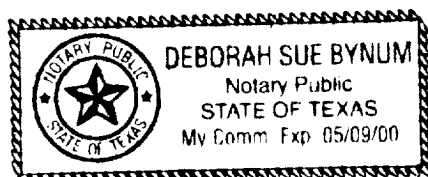
Survey: Sec. 1, T18S, R34E

K.O.P.: 7450'

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

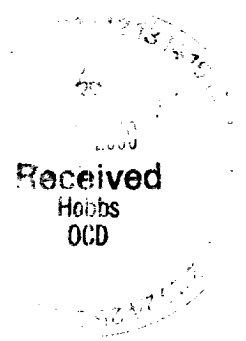
David Noddy.....Company Representative

Notorized this date 25th of March, 2000.



Deborah Sue Bynum
Midland Co., TX

Del



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Drinkard
Site: Lea County, NM
Well: NM "L" State #12
Wellpath: VH/HH - Job #32D0499091/0

Date: 3/15/2000 Time: 09:28:55 Page: 1
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

Survey: 4/27/99-5/6/99
KSRG 0'-7450' - MWD 7495'-9236'

Start Date: 7/15/1999

Company: S.D.I./Ryan
Tool: KEEPER

Engineer: DeSpain/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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
100.0	0.66	30.56	100.0	0.5	0.3	0.5	0.66	30.56	0.6
200.0	0.58	4.22	200.0	1.5	0.6	1.5	0.29	22.60	1.6
300.0	0.50	4.84	300.0	2.4	0.7	2.4	0.08	15.97	2.5
400.0	0.58	19.77	400.0	3.3	0.9	3.3	0.16	15.13	3.5
500.0	0.50	32.26	500.0	4.2	1.3	4.2	0.14	17.34	4.4
600.0	0.24	41.07	600.0	4.7	1.7	4.7	0.27	19.59	5.0
700.0	0.33	328.04	700.0	5.1	1.7	5.1	0.35	18.01	5.4
800.0	0.40	344.16	800.0	5.7	1.4	5.7	0.12	13.96	5.9
900.0	0.35	13.13	900.0	6.3	1.4	6.3	0.19	12.39	6.5
1000.0	0.29	336.36	1000.0	6.9	1.4	6.9	0.21	11.20	7.0
1100.0	0.19	117.39	1100.0	7.0	1.4	7.0	0.45	11.32	7.2
1200.0	0.12	142.71	1200.0	6.9	1.6	6.9	0.10	13.25	7.0
1300.0	0.44	118.22	1300.0	6.6	2.0	6.6	0.33	17.01	6.9
1400.0	0.28	133.31	1400.0	6.2	2.5	6.2	0.18	22.08	6.7
1500.0	0.46	127.63	1500.0	5.8	3.0	5.8	0.18	27.44	6.6
1600.0	0.36	148.29	1600.0	5.3	3.5	5.3	0.18	33.43	6.4
1700.0	0.37	111.78	1700.0	4.9	4.0	4.9	0.23	38.87	6.3
1800.0	0.50	137.83	1800.0	4.5	4.6	4.5	0.23	45.50	6.4
1900.0	0.44	108.70	1900.0	4.0	5.2	4.0	0.24	52.27	6.6
2000.0	0.42	129.76	1999.9	3.7	5.9	3.7	0.16	57.88	6.9
2100.0	0.81	104.36	2099.9	3.3	6.8	3.3	0.47	64.39	7.6
2200.0	0.73	91.08	2199.9	3.1	8.2	3.1	0.19	69.26	8.7
2300.0	1.37	85.80	2299.9	3.2	10.0	3.2	0.65	72.42	10.5
2400.0	1.37	77.86	2399.9	3.5	12.4	3.5	0.19	74.16	12.8
2500.0	1.74	76.23	2499.9	4.1	15.0	4.1	0.37	74.65	15.5
2600.0	1.61	70.56	2599.8	4.9	17.8	4.9	0.21	74.46	18.5
2700.0	1.69	67.22	2699.8	6.0	20.5	6.0	0.13	73.71	21.3
2800.0	1.61	65.76	2799.7	7.1	23.1	7.1	0.09	72.85	24.2
2900.0	1.49	66.49	2899.7	8.2	25.6	8.2	0.12	72.18	26.9
3000.0	1.25	75.12	2999.7	9.0	27.8	9.0	0.32	72.03	29.3
3100.0	0.87	70.79	3099.6	9.6	29.6	9.6	0.39	72.11	31.1
3200.0	0.85	67.35	3199.6	10.1	31.0	10.1	0.06	71.97	32.6
3300.0	0.71	70.30	3299.6	10.6	32.3	10.6	0.15	71.84	34.0
3400.0	0.53	72.85	3399.6	10.9	33.3	10.9	0.18	71.83	35.1
3500.0	0.08	110.67	3499.6	11.0	33.8	11.0	0.47	71.91	35.6
3600.0	0.39	227.07	3599.6	10.8	33.6	10.8	0.43	72.21	35.3
3700.0	0.56	222.45	3699.6	10.2	33.0	10.2	0.17	72.86	34.6
3800.0	0.64	218.74	3799.6	9.4	32.4	9.4	0.09	73.81	33.7
3900.0	0.61	214.76	3899.6	8.5	31.7	8.5	0.05	74.95	32.8
4000.0	0.59	216.59	3999.6	7.7	31.1	7.7	0.03	76.14	32.0
4100.0	0.64	214.97	4099.6	6.8	30.5	6.8	0.05	77.42	31.2
4200.0	0.60	218.24	4199.6	5.9	29.8	5.9	0.05	78.75	30.4
4300.0	0.61	228.56	4299.6	5.2	29.1	5.2	0.11	79.93	29.6
4400.0	0.93	228.15	4399.6	4.3	28.1	4.3	0.32	81.35	28.4
4500.0	1.23	221.13	4499.6	2.9	26.8	2.9	0.33	83.77	27.0
4600.0	1.86	232.01	4599.5	1.1	24.8	1.1	0.69	87.42	24.8
4700.0	2.23	237.79	4699.4	-0.9	21.9	-0.9	0.42	92.40	21.9

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Drinkard
Site: Lea County, NM
Well: NM "L" State #12
Wellpath: VH/HH - Job #32D0499091/0

Date: 3/15/2000 Time: 09:28:55 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: Skot (0.0E,0.0N,0.0Azi)
Survey Calculation Method: Minimum Curvature

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	2.32	239.27	4799.4	-3.0	18.5	-3.0	0.11	99.17	18.7
4900.0	2.58	240.79	4899.3	-5.1	14.8	-5.1	0.27	109.09	15.7
5000.0	2.68	238.55	4999.2	-7.4	10.8	-7.4	0.14	124.47	13.1
5100.0	2.72	238.92	5099.1	-9.9	6.8	-9.9	0.04	145.43	12.0
5200.0	2.72	240.48	5199.0	-12.3	2.7	-12.3	0.07	167.54	12.6
5300.0	2.74	243.90	5298.8	-14.5	-1.5	-14.5	0.16	185.90	14.6
5400.0	2.94	244.40	5398.7	-16.7	-6.0	-16.7	0.20	199.68	17.7
5500.0	2.87	242.17	5498.6	-18.9	-10.5	-18.9	0.13	208.97	21.6
5600.0	2.66	243.16	5598.5	-21.2	-14.8	-21.2	0.22	214.93	25.8
5700.0	2.70	246.30	5698.4	-23.1	-19.0	-23.1	0.15	219.38	29.9
5800.0	2.83	245.99	5798.2	-25.1	-23.4	-25.1	0.13	223.01	34.3
5900.0	2.74	244.13	5898.1	-27.1	-27.8	-27.1	0.13	225.70	38.9
6000.0	2.70	247.86	5998.0	-29.1	-32.1	-29.1	0.18	227.87	43.3
6100.0	2.86	230.37	6097.9	-31.6	-36.2	-31.6	0.86	228.96	48.1
6200.0	2.86	228.29	6197.8	-34.8	-40.0	-34.8	0.10	229.00	53.0
6300.0	2.81	230.79	6297.6	-38.0	-43.8	-38.0	0.13	229.04	58.0
6400.0	2.78	224.43	6397.5	-41.3	-47.4	-41.3	0.31	228.93	62.9
6500.0	2.69	229.81	6497.4	-44.5	-50.9	-44.5	0.27	228.80	67.6
6600.0	2.90	232.30	6597.3	-47.6	-54.7	-47.6	0.24	228.96	72.5
6700.0	2.97	228.99	6697.2	-50.8	-58.6	-50.8	0.18	229.07	77.6
6800.0	2.81	233.06	6797.0	-54.0	-62.5	-54.0	0.26	229.18	82.6
6900.0	2.87	231.70	6896.9	-57.0	-66.5	-57.0	0.09	229.36	87.6
7000.0	2.42	236.74	6996.8	-59.8	-70.2	-59.8	0.51	229.59	92.2
7100.0	2.27	235.22	7096.7	-62.0	-73.6	-62.0	0.16	229.87	96.3
7200.0	2.21	233.44	7196.6	-64.3	-76.8	-64.3	0.09	230.04	100.2
7300.0	2.29	235.00	7296.6	-66.6	-80.0	-66.6	0.10	230.20	104.1
7400.0	2.16	239.09	7396.5	-68.7	-83.2	-68.7	0.21	230.44	107.9
7450.0	2.30	238.06	7446.5	-69.7	-84.9	-69.7	0.29	230.59	109.8
7495.0	2.30	238.06	7491.4	-70.7	-86.4	-70.7	0.00	230.71	111.6
7525.0	6.90	343.40	7521.3	-69.3	-87.4	-69.3	26.09	231.60	111.6
7535.0	9.50	343.40	7531.2	-67.9	-87.8	-67.9	26.00	232.28	111.0
7545.0	12.50	343.40	7541.1	-66.1	-88.4	-66.1	30.00	233.21	110.4
7555.0	15.30	345.90	7550.8	-63.8	-89.0	-63.8	28.63	234.38	109.5
7564.0	17.70	346.90	7559.4	-61.3	-89.6	-61.3	26.85	235.63	108.6
7573.0	20.20	346.20	7567.9	-58.5	-90.3	-58.5	27.89	237.08	107.6
7583.0	23.00	345.50	7577.2	-54.9	-91.2	-54.9	28.12	238.96	106.4
7593.0	25.50	345.20	7586.3	-50.9	-92.2	-50.9	25.03	241.10	105.3
7603.0	27.70	344.80	7595.3	-46.6	-93.4	-46.6	22.07	243.49	104.4
7613.0	29.80	344.10	7604.0	-42.0	-94.7	-42.0	21.27	246.10	103.6
7626.0	32.70	343.40	7615.1	-35.5	-96.6	-35.5	22.48	249.83	102.9
7658.0	38.20	343.10	7641.2	-17.7	-101.9	-17.7	17.20	260.14	103.4
7689.0	43.20	344.10	7664.7	1.7	-107.6	1.7	16.27	270.89	107.6
7721.0	47.60	344.80	7687.2	23.6	-113.7	23.6	13.84	281.73	116.1
7753.0	52.20	344.80	7707.8	47.2	-120.1	47.2	14.37	291.46	129.1
7784.0	56.60	344.50	7725.8	71.5	-126.8	71.5	14.22	299.43	145.6
7816.0	61.80	343.40	7742.2	97.9	-134.4	97.9	16.52	306.08	166.3
7848.0	65.50	343.80	7756.4	125.4	-142.5	125.4	11.62	311.36	189.8
7879.0	69.40	343.80	7768.3	152.9	-150.5	152.9	12.58	315.46	214.6
7910.0	73.40	344.10	7778.2	181.2	-158.6	181.2	12.94	318.80	240.8
7942.0	77.60	344.10	7786.2	211.0	-167.1	211.0	13.12	321.62	269.1
7973.0	81.30	343.80	7791.8	240.2	-175.5	240.2	11.97	323.85	297.5
8005.0	85.60	343.40	7795.5	270.7	-184.5	270.7	13.49	325.73	327.6

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Drinkard
Site: Lea County, NM
Well: NM "L" State #12
Wellpath: VH/HH - Job #32D0499091/0

Date: 3/15/2000 Time: 09:28:55 Page: 3
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

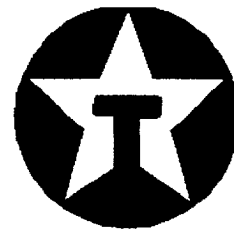
Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
8037.0	90.30	343.40	7796.6	301.4	-193.6	301.4	14.69	327.28	358.2
8069.0	96.30	343.10	7794.8	331.9	-202.8	331.9	18.77	328.57	389.0
8100.0	103.00	342.40	7789.6	361.1	-211.9	361.1	21.73	329.60	418.7
8132.0	108.20	342.40	7781.0	390.5	-221.2	390.5	16.25	330.47	448.8
8164.0	108.30	342.00	7771.0	419.4	-230.5	419.4	1.23	331.21	478.6
8195.0	108.60	342.00	7761.2	447.4	-239.6	447.4	0.97	331.83	507.5
8227.0	109.90	343.10	7750.6	476.2	-248.6	476.2	5.20	332.43	537.2
8257.0	110.20	342.70	7740.3	503.1	-256.9	503.1	1.60	332.95	564.9
8289.0	110.60	343.10	7729.2	531.8	-265.7	531.8	1.71	333.45	594.5
8321.0	110.80	343.40	7717.9	560.5	-274.4	560.5	1.08	333.92	624.0
8352.0	110.80	343.80	7706.9	588.3	-282.6	588.3	1.21	334.34	652.6
8385.0	110.90	343.80	7695.1	617.9	-291.2	617.9	0.30	334.77	683.0
8417.0	111.30	344.80	7683.6	646.6	-299.2	646.6	3.17	335.17	712.5
8449.0	111.60	344.80	7671.9	675.4	-307.0	675.4	0.94	335.55	741.9
8480.0	112.10	344.80	7660.4	703.1	-314.6	703.1	1.61	335.90	770.3
8511.0	110.50	344.50	7649.1	731.0	-322.2	731.0	5.24	336.21	798.9
8543.0	108.90	343.80	7638.3	760.0	-330.5	760.0	5.41	336.50	828.7
8575.0	104.90	342.00	7629.0	789.2	-339.5	789.2	13.61	336.73	859.1
8606.0	100.90	341.00	7622.1	817.9	-349.1	817.9	13.28	336.89	889.2
8637.0	96.60	341.70	7617.4	846.9	-358.9	846.9	14.05	337.04	919.8
8669.0	92.50	343.10	7614.8	877.3	-368.5	877.3	13.53	337.22	951.5
8701.0	88.10	343.80	7614.7	908.0	-377.6	908.0	13.92	337.42	983.3
8733.0	83.50	343.80	7617.0	938.6	-386.5	938.6	14.37	337.62	1015.1
8765.0	82.80	343.40	7620.8	969.1	-395.5	969.1	2.52	337.80	1046.7
8796.0	83.20	343.10	7624.6	998.5	-404.3	998.5	1.61	337.96	1077.3
8834.0	83.50	342.40	7629.0	1034.6	-415.5	1034.6	1.99	338.12	1114.9
8860.0	83.80	342.40	7631.9	1059.2	-423.4	1059.2	1.15	338.21	1140.7
8892.0	83.80	342.40	7635.3	1089.5	-433.0	1089.5	0.00	338.33	1172.4
8924.0	84.00	341.70	7638.7	1119.8	-442.8	1119.8	2.26	338.43	1204.2
8956.0	84.10	343.10	7642.1	1150.1	-452.4	1150.1	4.36	338.53	1235.9
8987.0	83.00	345.50	7645.5	1179.8	-460.7	1179.8	8.47	338.67	1266.6
9019.0	83.30	345.90	7649.4	1210.6	-468.6	1210.6	1.56	338.84	1298.1
9050.0	83.40	346.90	7652.9	1240.5	-475.8	1240.5	3.22	339.01	1328.6
9082.0	83.50	347.30	7656.6	1271.5	-482.9	1271.5	1.28	339.20	1360.1
9114.0	84.20	346.60	7660.0	1302.5	-490.1	1302.5	3.08	339.38	1391.6
9146.0	84.60	344.80	7663.1	1333.4	-498.0	1333.4	5.74	339.52	1423.3
9178.0	84.60	345.20	7666.2	1364.1	-506.2	1364.1	1.24	339.64	1455.0
9209.0	81.50	345.90	7669.9	1393.9	-513.9	1393.9	10.25	339.76	1485.6
9236.0	83.80	345.90	7673.4	1419.9	-520.4	1419.9	8.52	339.87	1512.3

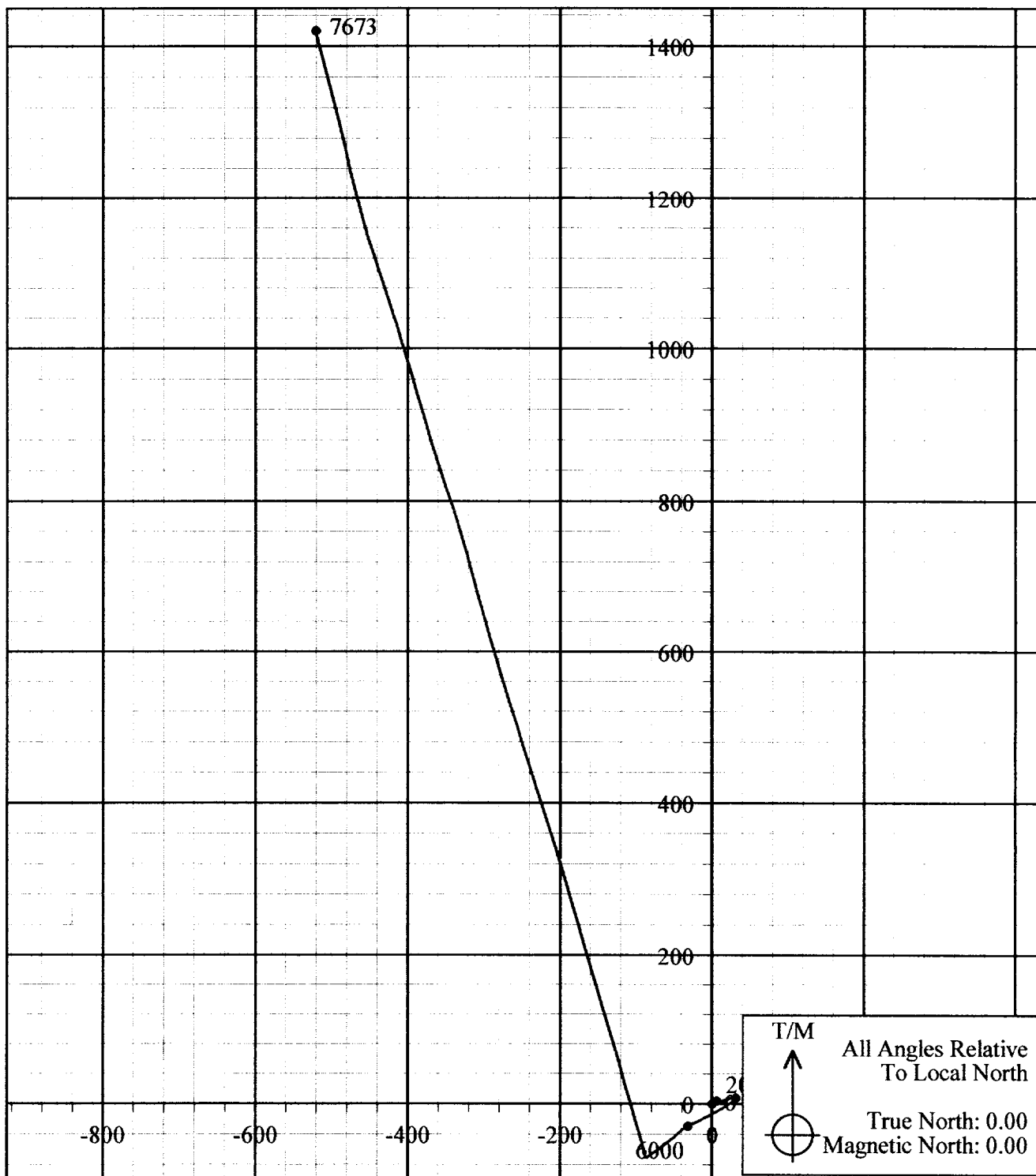


**Scientific
Drilling**

TEXACO E & P INC
Field: Vacuum Drinkard
Site: Lea County, NM
Well: NM "L" State #12
Wellpath: VH/HH - Job #32D0499091/092
Survey: 4/27/99-5/6/99



South(-)/North(+) [200ft/in]



West(-)/East(+) [200ft/in]

