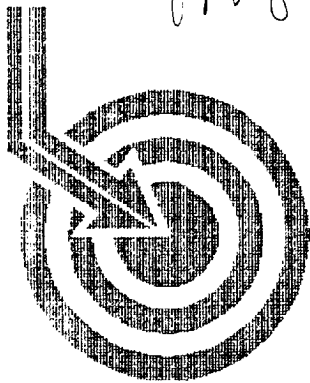


my co. ✓



Scientific Drilling



TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #127
Wellpath: HH - Job #32D0900376
Survey: 9/15/00-9/19/00

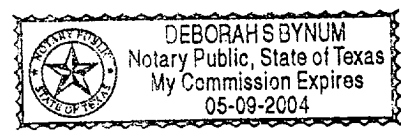
SUR: F-6-18s-35e, 1650/N & 1650/W
BHL: F-6-18s-35e, 1576/N & 2885/W
API #30-025-21292

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

David Hardy.....Company Representative

Notorized this date 22nd of November, 2000.

Deborah Sue Bynum
Notary Signature
County of Midland
State of Texas



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #127
Wellpath: VH - Job #32K0900373

Date: 11/22/2000 Time: 09:10:58 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,86.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 9/15/00
KSRG 0'-5860'

Start Date: 10/4/2000

Company: SDI
Tool: KEEPER

Engineer: Gary DeSpain

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	0.42	98.10	100.0	-0.1	0.4	0.4	0.42	98.10	0.4
200.0	0.48	116.83	200.0	-0.3	1.1	1.1	0.16	104.89	1.1
300.0	0.45	115.70	300.0	-0.7	1.8	1.8	0.03	109.63	1.9
400.0	0.54	119.94	400.0	-1.1	2.6	2.5	0.10	112.21	2.8
500.0	0.57	116.18	500.0	-1.5	3.4	3.3	0.05	113.70	3.8
600.0	0.43	115.21	600.0	-1.9	4.2	4.1	0.14	114.09	4.6
700.0	0.42	127.67	700.0	-2.3	4.9	4.7	0.09	115.09	5.4
800.0	0.45	135.24	800.0	-2.8	5.4	5.2	0.06	117.11	6.1
900.0	0.43	146.30	900.0	-3.4	5.9	5.7	0.09	119.68	6.8
1000.0	0.44	143.71	1000.0	-4.0	6.3	6.1	0.02	122.16	7.5
1100.0	0.45	137.78	1100.0	-4.6	6.8	6.5	0.05	123.88	8.2
1200.0	0.54	148.48	1200.0	-5.3	7.3	7.0	0.13	125.72	9.0
1300.0	0.53	151.42	1300.0	-6.1	7.8	7.4	0.03	127.93	9.9
1400.0	0.49	143.95	1400.0	-6.8	8.3	7.8	0.08	129.54	10.7
1500.0	0.43	150.56	1500.0	-7.5	8.7	8.2	0.08	130.74	11.5
1600.0	0.35	129.73	1599.9	-8.0	9.1	8.6	0.16	131.32	12.2
1700.0	0.31	141.04	1699.9	-8.4	9.5	8.9	0.08	131.48	12.7
1800.0	0.19	44.38	1799.9	-8.5	9.8	9.2	0.38	130.95	13.0
1900.0	0.12	44.81	1899.9	-8.3	10.0	9.4	0.07	129.77	13.0
2000.0	0.29	152.22	1999.9	-8.5	10.2	9.6	0.35	129.73	13.3
2100.0	0.64	123.07	2099.9	-9.0	10.8	10.1	0.41	129.86	14.1
2200.0	1.48	107.08	2199.9	-9.7	12.5	11.8	0.88	127.81	15.8
2300.0	2.49	93.12	2299.9	-10.2	15.9	15.2	1.11	122.67	18.9
2400.0	3.01	93.91	2399.7	-10.5	20.7	19.9	0.52	116.90	23.2
2500.0	3.88	86.51	2499.6	-10.5	26.7	25.9	0.98	111.42	28.7
2600.0	4.91	78.32	2599.3	-9.4	34.3	33.5	1.20	105.34	35.5
2700.0	4.98	75.44	2698.9	-7.4	42.7	42.0	0.26	99.90	43.3
2800.0	4.64	74.49	2798.5	-5.3	50.8	50.3	0.35	95.93	51.0
2900.0	4.05	74.32	2898.3	-3.2	58.0	57.7	0.59	93.19	58.1
3000.0	3.06	75.45	2998.1	-1.6	64.0	63.8	0.99	91.44	64.1
3100.0	2.36	77.25	3098.0	-0.5	68.6	68.4	0.71	90.40	68.6
3200.0	2.06	79.61	3197.9	0.3	72.4	72.2	0.31	89.77	72.4
3300.0	1.61	76.40	3297.8	0.9	75.5	75.4	0.46	89.28	75.5
3400.0	1.13	81.26	3397.8	1.4	77.9	77.8	0.49	88.95	77.9
3500.0	1.02	87.31	3497.8	1.6	79.7	79.7	0.16	88.84	79.8
3600.0	0.72	88.69	3597.8	1.7	81.3	81.2	0.30	88.82	81.3
3700.0	0.59	87.79	3697.8	1.7	82.4	82.3	0.13	88.81	82.4
3800.0	0.40	64.29	3797.8	1.9	83.2	83.2	0.27	88.70	83.2
3900.0	0.23	351.71	3897.8	2.2	83.5	83.5	0.40	88.47	83.5
4000.0	0.46	310.15	3997.8	2.7	83.2	83.2	0.33	88.15	83.2
4100.0	0.55	299.79	4097.8	3.2	82.5	82.5	0.13	87.79	82.5
4200.0	0.56	326.50	4197.7	3.8	81.8	81.8	0.26	87.32	81.9
4300.0	0.63	332.39	4297.7	4.7	81.2	81.4	0.09	86.67	81.4
4400.0	0.61	29.58	4397.7	5.7	81.3	81.4	0.59	86.00	81.4
4500.0	0.90	34.31	4497.7	6.8	82.0	82.2	0.30	85.26	82.2
4600.0	1.07	32.27	4597.7	8.2	82.9	83.3	0.17	84.33	83.3
4700.0	0.19	70.39	4697.7	9.1	83.6	84.0	0.93	83.80	84.0

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #127
Wellpath: VH - Job #32K0900373

Date: 11/22/2000 **Time:** 09:10:58 **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,86.0Azi)
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	0.77	326.78	4797.7	9.7	83.3	83.8	0.84	83.37	83.9
4900.0	2.21	333.07	4897.7	12.0	82.1	82.7	1.45	81.70	83.0
5000.0	2.55	334.40	4997.6	15.7	80.3	81.2	0.34	78.93	81.8
5100.0	3.08	340.04	5097.5	20.2	78.4	79.6	0.60	75.53	81.0
5200.0	4.65	350.56	5197.2	26.8	76.8	78.5	1.72	70.80	81.3
5300.0	5.19	351.85	5296.9	35.2	75.5	77.8	0.55	64.99	83.3
5400.0	5.04	351.72	5396.5	44.1	74.2	77.1	0.15	59.31	86.3
5500.0	4.43	350.10	5496.1	52.2	72.9	76.4	0.62	54.40	89.7
5600.0	3.78	352.44	5595.9	59.3	71.8	75.8	0.67	50.47	93.1
5700.0	3.11	358.09	5695.7	65.3	71.3	75.7	0.75	47.54	96.7
5800.0	2.93	7.17	5795.5	70.5	71.5	76.3	0.51	45.42	100.4
5860.0	2.43	15.32	5855.5	73.3	72.1	77.0	1.05	44.53	102.8

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #127
Wellpath: HH - Job #32D0900376

Date: 11/22/2000 **Time:** 09:36:40 **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,86.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 9/15/00-9/19/00
 S/T 6296'-7134'

Start Date: 11/22/2000

Company: SDI
Tool: S/T

Engineer: William Lamb

SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
5878.0	2.43	15.32	5873.5	74.0	72.3	0.0	0.00	44.33	103.5
5930.0	21.09	80.53	5924.3	76.6	81.9	87.1	38.82	46.91	112.2
5940.0	24.93	79.79	5933.5	77.3	85.8	91.0	38.51	47.97	115.5
5950.0	28.78	81.15	5942.4	78.0	90.2	95.4	38.98	49.14	119.3
5960.0	32.32	83.13	5951.0	78.7	95.3	100.5	36.80	50.43	123.6
5970.0	36.12	85.32	5959.3	79.3	100.9	106.1	39.94	51.82	128.3
5980.0	39.67	87.00	5967.2	79.7	107.0	112.3	36.97	53.31	133.4
6015.0	51.31	85.87	5991.6	81.3	131.8	137.2	33.34	58.35	154.9
6045.0	58.95	84.07	6008.8	83.5	156.3	161.8	25.94	61.91	177.2
6076.0	65.97	85.07	6023.1	86.0	183.7	189.2	22.82	64.90	202.8
6108.0	72.97	88.34	6034.3	87.7	213.6	219.2	23.87	67.67	230.9
6134.0	79.01	91.30	6040.6	87.8	238.8	244.3	25.72	69.81	254.4
6171.0	80.82	90.72	6047.1	87.2	275.2	280.6	5.13	72.42	288.7
6203.0	86.19	89.49	6050.7	87.1	307.0	312.3	17.21	74.16	319.1
6234.0	88.05	89.71	6052.3	87.3	338.0	343.2	6.04	75.51	349.1
6265.0	91.87	90.00	6052.3	87.4	369.0	374.2	12.36	76.67	379.2
6296.0	93.68	89.96	6050.8	87.4	399.9	405.0	5.84	77.67	409.4
6327.0	94.84	89.41	6048.5	87.6	430.8	435.9	4.14	78.51	439.6
6358.0	94.10	89.28	6046.1	87.9	461.7	466.7	2.42	79.22	470.0
6390.0	92.41	90.02	6044.3	88.1	493.7	498.6	5.76	79.88	501.5
6421.0	92.91	89.74	6042.8	88.2	524.6	529.5	1.85	80.46	532.0
6453.0	92.04	90.07	6041.4	88.3	556.6	561.4	2.91	80.99	563.6
6479.0	90.72	91.28	6040.8	88.0	582.6	587.3	6.89	81.42	589.2
6516.0	93.77	90.23	6039.4	87.5	619.6	624.2	8.72	81.96	625.7
6547.0	94.23	89.67	6037.2	87.5	650.5	655.0	2.33	82.34	656.3
6579.0	94.94	89.38	6034.6	87.8	682.4	686.8	2.40	82.67	688.0
6611.0	95.29	89.27	6031.8	88.1	714.3	718.7	1.15	82.97	719.7
6641.0	94.43	89.49	6029.3	88.5	744.1	748.5	2.96	83.22	749.4
6672.0	93.76	90.74	6027.0	88.4	775.1	779.3	4.57	83.49	780.1
6704.0	93.94	90.28	6024.9	88.1	807.0	811.2	1.54	83.77	811.8
6735.0	94.53	89.93	6022.6	88.1	837.9	842.0	2.21	84.00	842.5
6766.0	95.03	90.15	6020.0	88.0	868.8	872.8	1.76	84.21	873.3
6797.0	94.97	90.27	6017.3	87.9	899.7	903.6	0.43	84.42	904.0
6829.0	94.23	90.09	6014.7	87.8	931.6	935.4	2.38	84.61	935.7
6860.0	94.24	91.25	6012.5	87.5	962.5	966.2	3.73	84.81	966.5
6891.0	94.70	92.11	6010.0	86.5	993.4	997.0	3.23	85.02	997.1
6922.0	94.55	91.37	6007.5	85.6	1024.3	1027.7	2.47	85.22	1027.8
6953.0	94.73	91.14	6005.0	84.9	1055.2	1058.5	0.94	85.40	1058.6
6984.0	95.00	91.73	6002.4	84.2	1086.0	1089.3	2.09	85.57	1089.3
7015.0	94.79	92.69	5999.7	83.0	1116.9	1120.0	3.16	85.75	1120.0
7046.0	94.83	93.57	5997.1	81.3	1147.7	1150.6	2.83	85.95	1150.6
7077.0	94.55	94.58	5994.6	79.1	1178.6	1181.2	3.37	86.16	1181.2
7102.0	94.60	95.70	5992.6	76.9	1203.4	1205.8	4.47	86.35	1205.8
7134.0	94.60	95.70	5990.0	73.7	1235.1	1237.3	0.00	86.59	1237.3