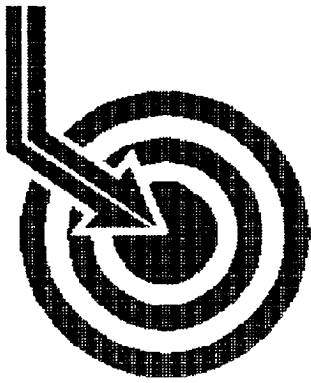




Scientific Drilling



TEXACO E & P INC.

Field: Central Vacuum

Site: Lea County, NM

Well: CVU #173

Wellpath: HH - Job #32D1200527

Survey: 12/15/00-12/26/00

SUR: 2509/N & 660/E
H - 36 - 175 - 34e

BHL: 2509/N & 1980/E
G - 36 - 175 - 34e

30 - 025 - 35212

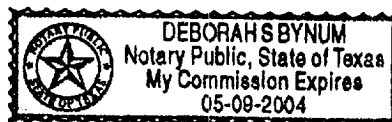
This survey is correct to the best of my knowledge
and is supported by actual field data.

David Hardy Company Representative

Notorized this date 17th of January, 2001.

Deborah Sue Bynum
Notary Signature

County of Midland
State of Texas



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Central Vacuum
Site: Lea County, NM
Well: CVU #173
Wellpath: VH - Job #32K1200527

Date: 1/17/2001 Time: 15:12:24 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,270.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 12/15/00
KSRG 0'-4416'

Start Date: 1/17/2001

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Central Vacuum
Site: Lea County, NM
Well: CVU #173
Wellpath: VH - Job #32K1200527

Date: 1/17/2001 Time: 15:12:24 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,270.0Az)
Survey Calculation Method: Minimum Curvature

Survey: 12/15/00
KSRG 0'-4416'

Start Date: 1/17/2001

Company: SDI
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	0.35	286.62	100.0	0.1	-0.3	0.3	0.35	286.62	0.3
200.0	0.20	285.09	200.0	0.2	-0.8	0.8	0.15	286.28	0.8
300.0	0.24	220.88	300.0	0.1	-1.1	1.1	0.24	275.78	1.1
400.0	0.24	186.83	400.0	-0.3	-1.2	1.2	0.14	258.03	1.2
500.0	0.23	146.82	500.0	-0.6	-1.1	1.1	0.16	240.81	1.3
600.0	0.24	146.03	600.0	-1.0	-0.9	0.9	0.01	222.96	1.3
700.0	0.33	125.73	700.0	-1.3	-0.6	0.6	0.13	202.97	1.4
800.0	0.50	121.50	800.0	-1.7	0.0	0.0	0.17	178.43	1.7
900.0	0.49	129.31	900.0	-2.2	0.7	-0.7	0.07	161.29	2.3
1000.0	0.48	133.67	1000.0	-2.8	1.4	-1.4	0.04	153.49	3.1
1100.0	0.41	133.39	1100.0	-3.3	1.9	-1.9	0.07	149.53	3.8
1200.0	0.53	118.68	1200.0	-3.8	2.6	-2.6	0.17	145.33	4.6
1300.0	0.72	122.74	1300.0	-4.3	3.5	-3.5	0.19	140.73	5.6
1400.0	0.77	132.48	1400.0	-5.1	4.6	-4.6	0.14	138.31	6.9
1500.0	0.68	131.35	1500.0	-6.0	5.5	-5.5	0.09	137.32	8.1
1600.0	0.72	134.18	1599.9	-6.8	6.4	-6.4	0.05	136.73	9.3
1700.0	0.81	129.81	1699.9	-7.7	7.4	-7.4	0.11	136.13	10.7
1800.0	0.87	134.49	1799.9	-8.7	8.5	-8.5	0.09	135.66	12.1
1900.0	0.86	127.44	1899.9	-9.7	9.6	-9.6	0.11	135.14	13.6
2000.0	0.80	101.94	1999.9	-10.3	10.9	-10.9	0.37	133.29	15.0
2100.0	0.86	88.26	2099.9	-10.4	12.3	-12.3	0.21	130.12	16.1
2200.0	0.87	80.01	2199.9	-10.2	13.8	-13.8	0.12	126.51	17.2
2300.0	0.88	76.56	2299.9	-9.9	15.3	-15.3	0.05	122.93	18.3
2400.0	0.88	71.30	2399.9	-9.5	16.8	-16.8	0.08	119.49	19.3
2500.0	1.06	70.29	2499.8	-8.9	18.4	-18.4	0.18	115.93	20.5
2600.0	1.33	74.21	2599.8	-8.3	20.4	-20.4	0.28	112.19	22.0
2700.0	1.47	76.03	2699.8	-7.7	22.7	-22.7	0.15	108.68	24.0
2800.0	1.38	78.11	2799.8	-7.1	25.2	-25.2	0.10	105.82	26.2
2900.0	1.08	79.14	2899.7	-6.7	27.3	-27.3	0.30	103.82	28.1
3000.0	0.71	84.02	2999.7	-6.5	28.8	-28.8	0.38	102.65	29.5
3100.0	0.31	80.94	3099.7	-6.4	29.7	-29.7	0.40	102.09	30.4
3200.0	0.13	53.89	3199.7	-6.3	30.1	-30.1	0.20	101.75	30.7
3300.0	0.10	9.16	3299.7	-6.1	30.2	-30.2	0.09	101.43	30.8
3400.0	0.14	282.35	3399.7	-6.0	30.1	-30.1	0.17	101.26	30.7
3500.0	0.25	280.23	3499.7	-5.9	29.7	-29.7	0.11	101.26	30.3
3600.0	0.24	283.34	3599.7	-5.8	29.3	-29.3	0.02	101.26	29.9
3700.0	0.31	287.37	3699.7	-5.7	28.8	-28.8	0.07	101.19	29.4
3800.0	0.28	290.21	3799.7	-5.5	28.4	-28.4	0.03	101.05	28.9
3900.0	0.41	271.51	3899.7	-5.4	27.8	-27.8	0.17	101.09	28.3
4000.0	0.23	227.27	3999.7	-5.6	27.3	-27.3	0.29	101.55	27.8
4100.0	0.21	147.49	4099.7	-5.9	27.2	-27.2	0.28	102.16	27.8
4200.0	0.27	150.13	4199.7	-6.2	27.4	-27.4	0.06	102.78	28.1
4300.0	0.33	152.33	4299.7	-6.7	27.7	-27.7	0.06	103.57	28.5
4400.0	0.44	121.92	4399.7	-7.1	28.1	-28.1	0.23	104.23	29.0
4416.0	0.46	113.29	4415.7	-7.2	28.3	-28.3	0.44	104.29	29.2

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC. Field: Central Vacuum Site: Lea County, NM Well: CVU #173 Wellpath: UL - Job #32D1200527	Date: 1/17/2001 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,270.0Azi) Survey Calculation Method: Minimum Curvature
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Survey: 12/20/00-12/26/00 MWD 4249'-5707'	Start Date: 1/17/2001
Company: SDI w/Unidril Tool: MWD	Engineer: D. Morvan

SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4200.0	0.27	150.13	4199.7	-6.2	27.4	0.0	0.00	102.78	28.1
4249.0	0.30	151.30	4248.7	-6.4	27.6	-27.6	0.06	103.14	28.3
4308.0	15.90	282.20	4307.0	-4.9	19.7	-19.7	27.28	103.85	20.3
4338.0	28.50	278.40	4334.7	-2.9	8.5	-8.5	42.25	108.95	9.0
4368.0	39.30	278.40	4359.6	-0.5	-8.0	8.0	36.00	266.50	8.0
4398.0	50.10	277.00	4380.8	2.3	-28.9	28.9	36.15	274.57	29.0
4428.0	60.50	276.40	4397.9	5.2	-53.3	53.3	34.71	275.54	53.6
4444.0	64.10	275.00	4405.3	6.6	-67.4	67.4	23.80	275.57	67.8
4476.0	71.20	272.50	4417.5	8.5	-96.9	96.9	23.33	275.01	97.3
4508.0	73.20	268.90	4427.3	8.9	-127.4	127.4	12.40	273.98	127.7
4539.0	76.10	266.30	4435.5	7.6	-157.3	157.3	12.37	272.77	157.5
4571.0	80.50	266.10	4442.0	5.5	-188.5	188.5	13.76	271.68	188.6
4602.0	85.20	266.00	4445.8	3.4	-219.2	219.2	15.16	270.89	219.2
4634.0	89.70	267.00	4447.3	1.5	-251.1	251.1	14.40	270.33	251.1
4666.0	94.10	268.30	4446.2	0.2	-283.1	283.1	14.34	270.03	283.1
4697.0	95.70	270.70	4443.6	-0.1	-313.9	313.9	9.28	269.98	313.9
4729.0	96.30	271.40	4440.2	0.5	-345.8	345.8	2.87	270.08	345.8
4760.0	96.60	271.60	4436.7	1.3	-376.5	376.5	1.16	270.19	376.5
4792.0	96.30	269.90	4433.1	1.7	-408.3	408.3	5.36	270.24	408.3
4824.0	96.50	269.80	4429.6	1.6	-440.1	440.1	0.70	270.21	440.1
4856.0	96.50	269.90	4425.9	1.5	-471.9	471.9	0.31	270.18	471.9
4887.0	96.80	269.70	4422.3	1.4	-502.7	502.7	1.16	270.16	502.7
4920.0	94.90	269.00	4419.0	1.0	-535.5	535.5	6.13	270.11	535.5
4952.0	94.30	268.70	4416.4	0.4	-567.4	567.4	2.09	270.04	567.4
4983.0	94.50	268.70	4414.0	-0.3	-598.3	598.3	0.65	269.97	598.3
5015.0	95.60	269.40	4411.2	-0.8	-630.2	630.2	4.07	269.92	630.2
5047.0	96.00	269.70	4408.0	-1.1	-662.0	662.0	1.56	269.91	662.0
5079.0	96.20	269.50	4404.6	-1.3	-693.9	693.9	0.88	269.89	693.9
5110.0	96.70	269.80	4401.1	-1.5	-724.7	724.7	1.88	269.88	724.7
5141.0	95.50	270.60	4397.8	-1.4	-755.5	755.5	4.64	269.90	755.5
5173.0	93.80	270.70	4395.2	-1.0	-787.4	787.4	5.32	269.93	787.4
5205.0	93.80	270.70	4393.1	-0.6	-819.3	819.3	0.00	269.96	819.3
5237.0	90.60	270.60	4391.9	-0.3	-851.3	851.3	10.00	269.98	851.3
5268.0	87.40	270.40	4392.4	0.0	-882.3	882.3	10.34	270.00	882.3
5300.0	86.30	270.40	4394.2	0.2	-914.2	914.2	3.44	270.01	914.2
5332.0	87.10	270.10	4396.0	0.4	-946.2	946.2	2.67	270.02	946.2
5364.0	87.40	270.00	4397.5	0.4	-978.1	978.1	0.99	270.02	978.1
5396.0	87.90	269.90	4398.9	0.4	-1010.1	1010.1	1.59	270.02	1010.1
5427.0	85.80	269.40	4400.6	0.2	-1041.1	1041.1	6.96	270.01	1041.1
5459.0	85.50	269.10	4403.0	-0.2	-1073.0	1073.0	1.32	269.99	1073.0
5491.0	85.80	269.00	4405.4	-0.8	-1104.9	1104.9	0.99	269.96	1104.9
5522.0	86.20	269.00	4407.6	-1.3	-1135.8	1135.8	1.29	269.93	1135.8
5554.0	86.70	269.10	4409.6	-1.8	-1167.7	1167.7	1.59	269.91	1167.7
5586.0	86.90	268.80	4411.3	-2.4	-1199.7	1199.7	1.13	269.88	1199.7
5618.0	85.80	270.90	4413.4	-2.5	-1231.6	1231.6	7.40	269.88	1231.6
5650.0	85.80	271.50	4415.7	-1.8	-1263.5	1263.5	1.87	269.92	1263.5
5668.0	86.30	271.60	4417.0	-1.4	-1281.4	1281.4	2.83	269.94	1281.5
5707.0	86.30	271.70	4419.5	-0.2	-1320.4	1320.4	0.26	269.99	1320.4



Scientific
Drilling

TEXACO E & P INC.

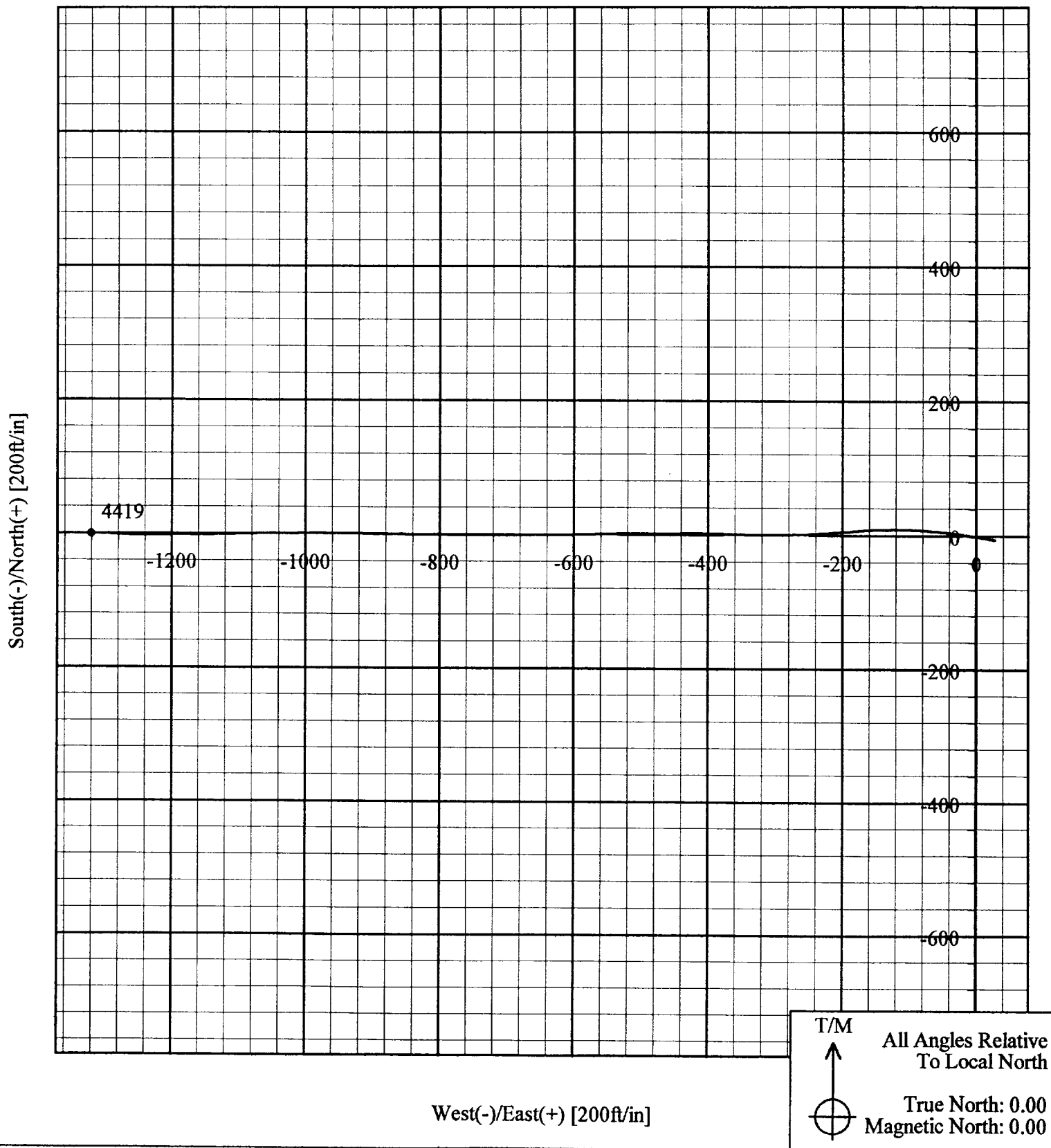
Field: Central Vacuum

Site: Lea County, NM

Well: CVU #173

Wellpath: UL - Job #32D1200527

Survey: 12/20/00-12/26/00



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC. Field: Central Vacuum Site: Lea County, NM Well: CVU #173 Wellpath: LL - Job #32D1200527	Date: 1/17/2001 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,270.0Az) Survey Calculation Method: Minimum Curvature
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Survey: 12/15/00-12/19/00
MWD 444'-5913'

Start Date: 1/17/2001

Company: SDI w/Unidril
Tool: MWD

Engineer: D. Morvan

SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4416.0	0.46	113.29	4415.7	-7.2	28.3	-28.3	0.00	104.29	29.2
4444.0	0.46	113.29	4443.7	-7.3	28.5	-28.5	0.00	104.36	29.4
4492.0	17.10	274.20	4491.0	-6.8	21.5	-21.5	36.53	107.62	22.6
4514.0	24.90	274.30	4511.5	-6.3	13.7	-13.7	35.45	114.56	15.1
4545.0	35.70	273.20	4538.3	-5.3	-1.9	1.9	34.88	199.81	5.6
4557.0	40.20	273.80	4547.7	-4.8	-9.3	9.3	37.63	242.56	10.4
4575.0	46.00	274.60	4560.9	-3.9	-21.5	21.5	32.36	259.72	21.9
4607.0	56.20	275.30	4580.9	-1.7	-46.3	46.3	31.92	267.84	46.3
4638.0	61.60	275.30	4596.9	0.7	-72.7	72.7	17.42	270.56	72.7
4669.0	66.70	275.00	4610.4	3.2	-100.5	100.5	16.47	271.83	100.5
4701.0	69.10	271.90	4622.5	5.0	-130.1	130.1	11.70	272.19	130.2
4733.0	69.50	269.60	4633.8	5.4	-160.0	160.0	6.84	271.92	160.1
4764.0	69.30	269.30	4644.7	5.1	-189.0	189.0	1.11	271.54	189.1
4795.0	70.60	269.20	4655.3	4.7	-218.1	218.1	4.20	271.24	218.2
4826.0	74.90	269.70	4664.5	4.4	-247.7	247.7	13.96	271.03	247.8
4858.0	78.30	270.60	4671.9	4.5	-278.9	278.9	10.97	270.93	278.9
4889.0	78.50	270.50	4678.2	4.8	-309.2	309.2	0.72	270.89	309.3
4921.0	82.20	269.60	4683.5	4.8	-340.8	340.8	11.89	270.81	340.8
4953.0	87.00	268.80	4686.6	4.4	-372.6	372.6	15.20	270.67	372.6
4984.0	88.60	269.00	4687.7	3.8	-403.6	403.6	5.20	270.54	403.6
5016.0	92.70	269.40	4687.4	3.3	-435.6	435.6	12.87	270.44	435.6
5048.0	97.70	269.70	4684.5	3.1	-467.4	467.4	15.65	270.38	467.4
5080.0	98.70	270.10	4679.9	3.0	-499.1	499.1	3.36	270.35	499.1
5113.0	99.10	270.10	4674.8	3.1	-531.7	531.7	1.21	270.33	531.7
5152.0	101.60	269.60	4667.8	3.0	-570.1	570.1	6.53	270.30	570.1
5175.0	102.00	269.80	4663.1	2.9	-592.6	592.6	1.94	270.28	592.6
5207.0	102.30	269.90	4656.4	2.8	-623.9	623.9	0.99	270.26	623.9
5239.0	100.90	268.70	4649.9	2.4	-655.2	655.2	5.71	270.21	655.2
5270.0	101.00	268.50	4644.0	1.7	-685.6	685.6	0.71	270.14	685.6
5302.0	101.90	268.50	4637.7	0.9	-717.0	717.0	2.81	270.07	717.0
5334.0	99.90	269.30	4631.6	0.2	-748.4	748.4	6.71	270.02	748.4
5366.0	96.10	269.90	4627.2	0.0	-780.1	780.1	12.02	270.00	780.1
5398.0	93.00	269.80	4624.6	-0.1	-812.0	812.0	9.69	270.00	812.0
5429.0	93.00	269.80	4623.0	-0.2	-842.9	842.9	0.00	269.99	842.9
5460.0	92.90	269.30	4621.4	-0.4	-873.9	873.9	1.64	269.97	873.9
5492.0	89.50	269.20	4620.8	-0.8	-905.9	905.9	10.63	269.95	905.9
5524.0	86.90	269.40	4621.8	-1.2	-937.9	937.9	8.15	269.93	937.9
5555.0	83.40	270.10	4624.4	-1.4	-968.7	968.7	11.51	269.92	968.7
5587.0	80.50	269.70	4628.9	-1.4	-1000.4	1000.4	9.15	269.92	1000.4
5620.0	79.90	269.30	4634.5	-1.7	-1032.9	1032.9	2.18	269.91	1032.9
5652.0	80.20	269.20	4640.0	-2.1	-1064.5	1064.5	0.99	269.89	1064.5
5684.0	77.80	270.50	4646.1	-2.2	-1095.9	1095.9	8.49	269.89	1095.9
5716.0	78.30	271.20	4652.7	-1.7	-1127.2	1127.2	2.65	269.91	1127.2
5748.0	78.50	271.00	4659.2	-1.1	-1158.5	1158.5	0.87	269.94	1158.5
5780.0	78.80	270.60	4665.5	-0.7	-1189.9	1189.9	1.54	269.97	1189.9
5812.0	79.20	270.60	4671.6	-0.4	-1221.3	1221.3	1.25	269.98	1221.3
5844.0	79.20	270.50	4677.6	-0.1	-1252.7	1252.7	0.31	270.00	1252.7
5876.0	79.50	270.00	4683.5	0.1	-1284.2	1284.2	1.80	270.00	1284.2

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC. Field: Central Vacuum Site: Lea County, NM Well: CVU #173 Wellpath: LL - Job #32D1200527	Date: 1/17/2001 Time: 16:12:53 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,270.0Azi) Survey Calculation Method: Minimum Curvature
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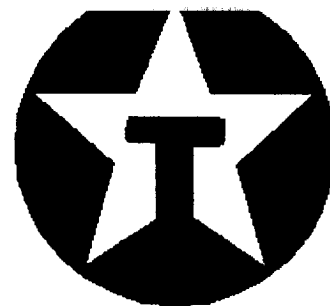
Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
5913.0	79.50	270.00	4690.2	0.1	-1320.6	1320.6	0.00	270.00	1320.6

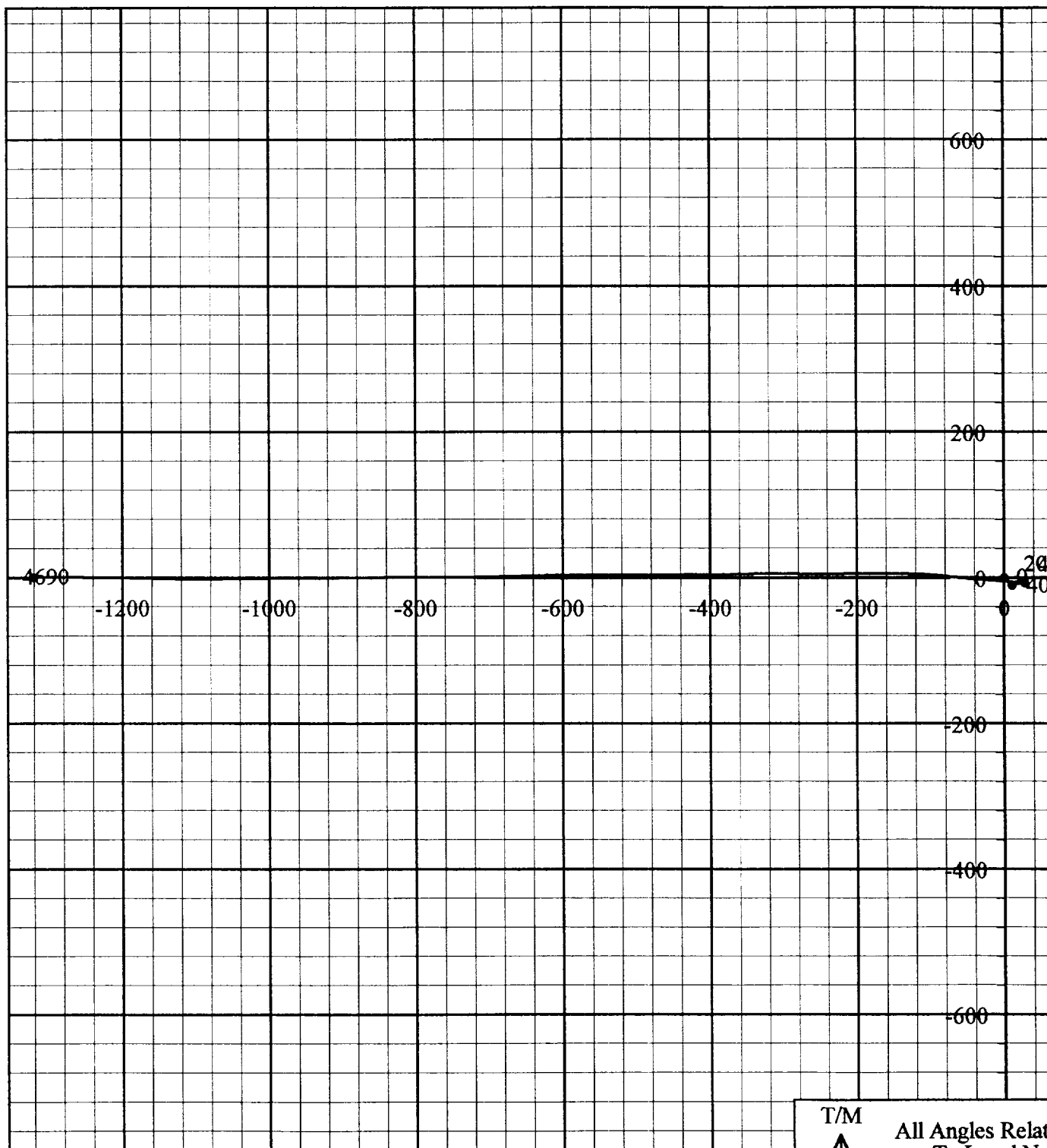


Scientific
Drilling

TEXACO E & P INC.
Field: Central Vacuum
Site: Lea County, NM
Well: CVU #173
Wellpath: LL - Job #32D1200527
Survey: 12/15/00-12/19/00



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



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



All Angles Relative
To Local North

True North: 0.00
Magnetic North: 0.00