

RECEIVED

APR 04 2008

HOBBS OCD

4-3-08

TO NMCD

Denise

We drilled this well
horizontal in 1997 but
never sent in the directional
survey (at least not on the
web site) We did file
the C-103 You can
send in the directional
surveys (horizontal & vertical
sections) Wayne



Job Number: P97-254R
Company: TEXACO E & P, INC.
Lease/Well: VGWU #86
Location: LEA CO., NEW MEXICO
Rig Name: YEK #119
RKB:
G.L. or M.S.L.:

State/Country:
Declination: 9.11° EAST
Grid:
File name: C:\WINSERVE\VGWU86.SVY
Date/Time: 20-Aug-97 / 16:00
Curve Name: ACTUAL SURVEYS

30-025-20179

RECEIVED

PHOENIX DRILLING SERVICES, INC.

APR 04 2008

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 194.43

HOBBS OCD

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
								Distance FT	Direction Deg	
GYRO TIE IN										
5747.00	.80	4.60	5746.70	-5746.70	8.00	7.00	-9.49	10.63	41.19	.00
5830.00	2.90	213.80	5829.67	-5829.67	6.83	5.88	-8.08	9.01	40.71	4.36
5835.00	5.30	213.80	5834.66	-5834.66	6.54	5.68	-7.74	8.86	40.99	48.00
5840.00	8.40	228.20	5839.62	-5839.62	6.10	5.28	-7.22	8.07	40.87	70.41
5850.00	14.20	219.30	5849.42	-5849.42	4.55	3.95	-5.50	6.11	40.31	60.40
5860.00	20.40	218.60	5858.97	-5858.97	2.35	2.09	-2.80	3.14	41.66	62.03
5870.00	26.10	216.10	5868.15	-5868.15	-79	-30	.84	85	200.45	57.84
5885.00	34.10	210.30	5881.12	-5881.12	-7.10	-4.37	7.97	8.34	211.60	56.69
5900.00	43.40	207.30	5892.81	-5892.81	-15.33	-8.88	17.05	17.71	210.04	63.24
5915.00	52.20	206.30	5902.87	-5902.87	-25.24	-13.86	27.90	28.80	208.78	58.87
5930.00	61.40	203.40	5911.08	-5911.08	-36.82	-19.12	40.23	41.31	207.56	63.42
5947.00	70.20	201.90	5918.04	-5918.04	-50.92	-26.07	56.66	56.76	206.22	52.38
5979.00	83.70	199.00	5925.25	-5925.25	-80.07	-35.92	86.49	87.75	204.16	43.10
6011.00	87.50	198.10	5927.71	-5927.71	-110.31	-46.07	118.31	119.54	202.67	12.20
6042.00	87.40	198.20	5929.09	-5929.09	-139.74	-55.71	149.21	150.44	201.74	.46
6074.00	87.50	197.40	5930.51	-5930.51	-170.18	-65.49	181.13	182.34	201.05	2.52
6105.00	89.50	196.40	5931.32	-5931.32	-189.82	-74.49	212.08	213.28	200.45	7.21
6137.00	90.10	196.10	5931.43	-5931.43	-230.55	-83.45	244.07	245.18	199.90	2.10
6168.00	91.70	196.00	5930.95	-5930.95	-260.33	-92.02	275.05	276.12	199.47	5.17
6200.00	92.30	196.10	5929.83	-5929.83	-291.07	-100.86	307.02	308.05	199.11	1.90
6231.00	92.20	196.80	5928.61	-5928.61	-320.77	-109.63	337.98	338.99	198.87	2.28
6263.00	93.10	197.10	5927.13	-5927.13	-351.35	-118.95	369.91	370.94	198.70	2.96
6294.00	93.20	197.50	5925.43	-5925.43	-380.90	-128.16	400.82	401.89	198.60	1.33
6326.00	92.70	196.00	5923.78	-5923.78	-411.50	-137.37	432.75	433.83	198.46	4.94

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
								Distance FT	Direction Deg	
6358.00	93.20	195.00	5922.13	-5922.13	-442.30	-145.91	464.71	465.74	198.26	3.49
6389.00	92.40	192.60	5920.62	-5920.62	-472.37	-153.29	495.66	496.62	197.98	8.15
6421.00	93.20	192.60	5919.06	-5919.06	-503.56	-160.26	527.61	528.45	197.65	2.50
6452.00	93.70	192.60	5917.19	-5917.19	-533.76	-167.01	558.54	559.28	197.37	1.61
6483.00	91.30	192.00	5915.84	-5915.84	-564.01	-173.61	589.48	590.13	197.11	7.98
6515.00	91.30	192.80	5915.11	-5915.11	-595.26	-180.48	621.46	622.02	196.87	2.50
6547.00	90.80	193.50	5914.53	-5914.53	-626.41	-187.76	653.44	653.95	196.69	2.69
6578.00	88.70	194.20	5914.66	-5914.66	-656.51	-195.18	684.44	684.91	196.56	7.14
6610.00	88.30	195.30	5915.50	-5915.50	-687.45	-203.32	716.43	716.88	196.46	9.66
6641.00	88.20	195.40	5916.45	-5916.45	-717.33	-211.53	747.41	747.86	196.43	.46
6672.00	89.60	191.80	5917.04	-5917.04	-747.45	-218.81	778.39	778.82	196.32	12.46
6703.00	89.20	191.20	5917.37	-5917.37	-777.82	-224.89	809.35	809.71	196.13	2.33
6735.00	88.60	190.90	5917.98	-5917.98	-809.22	-231.12	841.29	841.58	195.94	2.10
6766.00	87.50	190.50	5919.04	-5919.04	-839.66	-236.88	872.20	872.44	195.75	3.78
6797.00	86.90	190.80	5920.55	-5920.55	-870.09	-242.60	903.10	903.28	195.58	2.16
6829.00	86.60	191.00	5921.81	-5921.81	-901.49	-248.64	936.01	935.15	195.42	5.35
6861.00	88.20	191.00	5922.70	-5922.70	-932.89	-254.75	966.94	967.05	195.27	1.25
TD										
6918.00	88.20	191.00	5924.49	-5924.49	-988.82	-265.62	1023.81	1023.87	195.04	.00

PHOENIX DRILLING SERVICES

HORIZONTAL SURVEY PROGRAM
MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E & P, INC. WELL: Vacuum Glorietta West Unit #86 LOCATION: LEA COUNTY, NEW MEXICO JOB NO: 173145						START: <u>7/16/97</u> FILE: CURVE1. FINISH: <u>7/19/97</u> INFORMATION PROVIDED BY: TEXACO E HORIZONTAL COORDINATOR: RUBESH,				
DIP1 = 1.54 deg = 91.54 deg TARGET1 = 5,931 ft TVD VS1 = 104 ft						DATE: 7/29/97 MAG DECLINATION 9.11 EAST TIME: 1:55 PM DIRECTION 194.43				
DIP2 = -1.02 deg = 88.98 deg TARGET2 = 5,915 ft TVD VS2 = 735 ft										
SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	TRUE		DLS/ 100	CENTER			
				VERTICAL DEPTH	VERTICAL SECTION		ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
TIE	5747	0.8	4.6	5746.7	-9.5	0.3	187.6	-4.8	8.0	7.0
1	5830	2.9	213.8	5829.6	-8.0	4.3	104.6	-4.0	6.8	5.9
2	5835	5.3	213.8	5834.6	-7.7	48.0	99.6	-3.9	6.5	5.7
3	5840	8.4	228.2	5839.6	-7.2	70.4	94.6	-3.6	6.1	5.3
4	5850	14.2	219.3	5849.4	-5.5	60.4	84.8	-2.7	4.6	4.0
5	5860	20.4	218.6	5858.9	-2.8	62.0	75.1	-1.5	2.3	2.1
6	5870	26.1	216.1	5868.1	0.9	57.8	65.9	0.0	-0.8	-0.3
7	5885	34.1	210.3	5881.1	8.0	56.7	52.7	2.4	-7.1	-4.3
8	5900	43.4	207.3	5892.8	17.1	63.2	40.8	4.7	-15.4	-8.8
9	5915	52.2	206.3	5902.8	27.9	58.9	30.4	7.1	-25.3	-13.8
10	5930	61.4	203.4	5911.0	40.3	63.4	21.9	9.3	-36.7	-19.1
11	5947	70.2	201.9	5918.0	55.6	52.4	14.5	11.5	-51.0	-25.0
12	5979	83.7	199.0	5925.2	86.5	43.1	6.5	14.8	-80.1	-35.9
13	6011	87.5	198.1	5927.7	118.3	12.2	3.1	17.1	-110.4	-46.0
14	6042	87.4	198.2	5929.1	149.2	0.5	0.9	19.1	-139.8	-55.7
15	6074	87.5	197.4	5930.5	181.2	2.5	-1.3	21.0	-170.2	-65.4
16	6105	89.5	196.4	5931.3	212.1	7.2	-3.0	22.3	-199.9	-74.5
17	6137	90.1	196.1	5931.4	244.1	2.1	-4.0	23.3	-230.6	-83.4
18	6168	91.7	196.0	5930.9	275.1	5.2	-4.3	24.2	-260.4	-92.0
19	6200	92.3	196.1	5929.8	307.1	1.9	-4.0	25.1	-291.1	-100.8
20	6231	92.2	196.8	5928.6	338.0	2.3	-3.7	26.2	-320.8	-109.6
21	6263	93.1	197.1	5927.1	369.9	3.0	-3.0	27.6	-351.4	-118.9
22	6294	93.2	197.5	5925.4	400.9	1.3	-2.2	29.1	-381.0	-128.1
23	6326	92.7	196.0	5923.8	432.8	4.9	-1.4	30.4	-411.6	-137.3
24	6358	93.2	195.0	5922.1	464.7	3.5	-0.6	31.0	-442.3	-145.9
25	6389	92.4	192.8	5920.6	495.7	7.5	0.1	30.7	-472.4	-153.3
26	6421	93.2	192.6	5919.0	527.6	2.6	0.8	29.8	-503.6	-160.3
27	6452	93.7	192.6	5917.2	558.6	1.6	1.8	28.8	-533.8	-167.1
28	6483	91.3	192.0	5915.8	589.5	8.0	2.3	27.6	-564.0	-173.7
29	6515	91.3	192.8	5915.1	621.5	2.5	2.2	26.5	-595.3	-180.5
30	6547	90.8	193.5	5914.5	653.5	2.7	1.9	25.8	-626.4	-187.8
31	6578	88.7	194.2	5914.6	684.5	7.1	1.0	25.5	-656.5	-195.2
32	6610	88.3	195.3	5915.5	716.5	3.7	-0.7	25.7	-687.5	-203.4
33	6641	88.2	195.4	5916.4	747.4	0.5	-1.3	26.2	-717.3	-211.6
34	6672	89.6	191.8	5917.0	778.4	12.5	-1.4	25.7	-747.5	-218.9
35	6703	89.2	191.2	5917.3	809.4	2.3	-1.1	24.1	-777.8	-225.1
36	6735	88.6	190.9	5918.0	841.3	2.1	-1.2	22.2	-809.2	-231.2
37	6766	87.5	190.5	5919.0	872.2	3.8	-1.7	20.2	-839.7	-236.9
38	6797	86.9	190.8	5920.5	903.1	2.2	-2.6	18.2	-870.1	-242.7
39	6829	88.6	191.0	5921.8	935.1	5.3	-3.3	16.2	-901.5	-248.7
40	6861	88.2	191.0	5922.7	967.0	1.3	-3.7	14.3	-932.9	-254.8
BIT	6918	88.2	191.0	5924.5	1023.9	0.0	-4.4	10.9	-988.8	-265.7

Scientific Drilling
Midland, Texas

Keeper Survey
for

Vertical Hole

Texaco

30-025-20179

Job Number : 32K0797311
Well Number : V.G.W.U. No.66
Site Location : Lea County, Texas
Latitude : 32.791
Survey Date(s) : 16-JUL-1997
S.D.C. personnel : Jeff Cossey
Calculation Method : Minimum Curvature
Survey Depth Zero : Slips
Proposal Direction : 194.00
Depth Unit : Feet

Comments :

Outrun Survey
Texaco

Well number : V.G.W.U. No.86

Date : 16-JUL-1997

Measured Depth	Vertical Depth	Vert. Section	Inc Deg	Azimuth Deg	Coordinates		D-leg /100ft
					Latitude	Departure	
0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00
100.0	100.00	-0.3	0.77	80.10	0.12	0.66	0.77
200.0	199.99	-0.7	0.43	86.65	0.25	1.70	0.35
300.0	299.99	-1.0	0.67	84.83	0.33	2.66	0.24
400.0	399.98	-1.3	0.58	81.61	0.45	3.74	0.10
500.0	499.97	-1.9	0.77	72.36	0.73	4.88	0.22
600.0	599.97	-2.5	0.65	81.07	1.02	6.07	0.16
700.0	699.96	-2.9	0.77	85.33	1.16	7.30	0.14
800.0	799.95	-3.2	0.76	94.61	1.17	8.63	0.12
900.0	899.94	-3.3	0.55	104.19	1.00	9.75	0.24
1000.0	999.94	-3.2	0.67	112.79	0.65	10.75	0.15
1100.0	1099.93	-2.9	0.37	149.21	0.15	11.46	0.43
1200.0	1199.93	-2.5	0.36	133.58	-0.35	11.85	0.10
1300.0	1299.93	-2.2	0.34	148.90	-0.82	12.23	0.10
1400.0	1399.93	-1.8	0.23	167.87	-1.26	12.43	0.14
1500.0	1499.93	-1.5	0.25	132.77	-1.60	12.63	0.15
1600.0	1599.92	-1.2	0.23	163.93	-1.94	12.84	0.13
1700.0	1699.92	-0.8	0.33	214.35	-2.37	12.73	0.25
1800.0	1799.92	-0.4	0.15	207.92	-2.72	12.51	0.18
1900.0	1899.92	-0.1	0.25	169.25	-3.04	12.49	0.16
2000.0	1999.92	0.3	0.26	211.83	-3.46	12.41	0.19
2100.0	2099.92	0.7	0.10	198.08	-3.73	12.27	0.17
2200.0	2199.92	0.9	0.16	155.67	-3.94	12.29	0.11
2300.0	2299.92	1.1	0.18	161.22	-4.22	12.40	0.03
2400.0	2399.92	1.4	0.16	181.40	-4.51	12.45	0.07
2500.0	2499.92	1.3	0.41	77.78	-4.58	12.80	0.47
2600.0	2599.91	1.0	0.58	80.34	-4.42	13.64	0.17
2700.0	2699.91	0.4	0.86	74.93	-4.14	14.87	0.29
2800.0	2799.89	-0.2	0.89	81.72	-3.83	16.37	0.11
2900.0	2899.88	-0.9	0.89	77.77	-3.56	17.89	0.06
3000.0	2999.87	-1.6	0.91	72.43	-3.15	19.40	0.09
3100.0	3099.86	-2.3	0.75	79.60	-2.79	20.80	0.19
3200.0	3199.85	-3.0	0.65	64.10	-2.43	21.95	0.21
3300.0	3299.85	-3.6	0.50	66.78	-2.01	22.86	0.15
3400.0	3399.84	-4.0	0.37	71.19	-1.73	23.57	0.13
3500.0	3499.84	-4.3	0.17	64.40	-1.56	24.01	0.20
3600.0	3599.84	-4.4	0.09	341.81	-1.43	24.12	0.18
3700.0	3699.84	-4.5	0.11	279.56	-1.34	24.00	0.11
3800.0	3799.84	-4.5	0.28	273.83	-1.31	23.66	0.17

Outrun Survey
Texaco

Well number : V.G.W.U. No.86

Date : 16-JUL-1997

Measured Depth	Vertical Depth	Vert. Section	Inc Deg	Azimuth Deg	Coordinates		D-leg /100ft
					Latitude	Departure	
3900.0	3899.84	-4.3	0.32	250.03	-1.39	23.15	0.13
4000.0	3999.84	-4.0	0.27	255.80	-1.54	22.86	0.06
4100.0	4099.84	-3.8	0.31	269.84	-1.60	22.15	0.08
4200.0	4199.84	-3.8	0.54	296.67	-1.39	21.46	0.30
4300.0	4299.83	-3.9	0.48	280.52	-1.10	20.63	0.15
4400.0	4399.83	-3.9	0.53	279.25	-0.95	19.76	0.06
4500.0	4499.82	-3.5	0.61	242.69	-1.12	18.83	0.36
4600.0	4599.82	-2.8	0.63	246.60	-1.58	17.85	0.05
4700.0	4699.81	-2.2	0.71	262.61	-1.38	16.74	0.20
4800.0	4799.80	-1.9	0.83	278.37	-1.86	15.41	0.24
4900.0	4899.79	-1.7	0.98	276.41	-1.66	13.85	0.16
5000.0	4999.77	-1.7	1.25	290.06	-1.19	11.97	0.37
5100.0	5099.75	-2.1	1.18	296.34	-0.35	10.02	0.15
5200.0	5199.73	-2.7	1.00	311.45	0.68	8.45	0.34
5300.0	5299.72	-3.6	0.72	331.26	1.81	7.49	0.40
5400.0	5399.71	-4.6	0.74	338.95	2.96	6.95	0.10
5500.0	5499.70	-5.7	0.77	349.83	4.22	6.61	0.15
5600.0	5599.69	-7.2	1.05	9.73	5.78	6.64	0.42
5700.0	5699.67	-8.8	0.76	12.86	7.33	6.94	0.29
5747.0	5746.67	-9.4	0.79	4.59	7.96	7.04	0.25

At Bottom Hole Location: Measured Depth Horiz. Displ. Closure Dir.
 = 5747.0 = 10.626 = 41.487