

PHOENIX DRILLING SERVICES
HORIZONTAL SURVEY PROGRAM
MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E & P, INC. WELL: J.R. PHILLIPS # 13 LOCATION: LEA COUNTY, NEW MEXICO JOB NO: 173243						START: 12/18/97 FILE: CURVE1.V FINISH: 12/22/97 INFORMATION PROVIDED BY: TEXACO E HORIZONTAL COORDINATOR: RUBESH, DATE: 12/23/97 MAG DECLINATION GRID 3.35 EAST TIME: 12:45 PM DIRECTION 335.65				
DIP1 = 0.00 deg = 90.00 deg TARGET1 = 5,695 ft TVD VS1 = 1,497 ft										
DIP2 = 0.00 deg = 90.00 deg TARGET2 = 5,695 ft TVD VS2 = 1,497 ft										
SVY #	MEASURED DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	TRUE		DLS/ 100	CENTER			
				VERTICAL DEPTH	VERTICAL SECTION		ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
36	6525	91.6	332.9	5691.2	811.8	6.9	3.8	-226.1	646.3	-540.7
37	6557	90.7	336.7	5690.5	843.7	12.2	4.5	-226.6	675.3	-554.3
38	6589	88.3	341.1	5690.8	875.7	15.7	4.2	-224.8	705.1	-565.8
39	6620	86.2	346.6	5691.8	906.3	17.7	3.2	-220.3	734.9	-574.4
40	6651	89.2	348.7	5692.5	936.6	7.5	2.5	-213.9	765.1	-581.1
41	6683	89.7	348.4	5692.8	967.8	1.8	2.2	-206.8	796.5	-587.4
42	6716	89.0	351.8	5693.1	999.8	10.5	1.9	-198.5	829.0	-593.1
43	6749	88.4	355.3	5693.9	1031.2	10.8	1.1	-188.4	861.8	-596.8
44	6780	89.7	0.0	5694.4	1059.9	15.7	0.6	-176.8	892.7	-598.1
45	6812	89.4	1.0	5694.7	1088.9	3.3	0.3	-163.3	924.7	-597.8
46	6843	89.7	0.7	5694.9	1117.0	1.4	0.1	-150.1	955.7	-597.3
47	6875	90.9	0.9	5694.7	1146.0	3.8	0.3	-136.5	987.7	-596.9
48	6907	89.9	1.1	5694.5	1174.9	3.2	0.5	-122.8	1019.7	-596.3
49	6939	88.7	1.6	5694.9	1203.7	4.1	0.1	-109.0	1051.7	-595.6
TD	6985	88.7	1.6	5695.9	1245.1	0.0	-0.9	-88.8	1097.7	-594.3

To: Cliff
 To: Scott
 To: Mike
 From: Kirby

Bit Trip 12/22, left cone in hole
 ≈ 250' short of target