

SCIENTIFIC DRILLING INTERNATIONAL

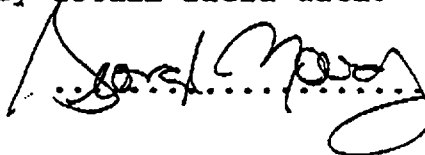
MIDLAND, TEXAS

PHILLIPS PETROLEUM COMPANY

Well Name : PHILLIPS/JAMES E FEDERAL #8
Location : EDDY COUNTY, NEW MEXICO
:
:
Date Surveyed : 8/6/93
Job No. : 32G0693174/32M0893213
Survey Performed By : G. CATES/G. HENDRIX



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

..... COMPANY REPRESENTATIVE

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 Date 8/6/93
 Filename : JAMESEF8

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No Interpolation

MD ft	INC deg	DIR deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	D'/LEG °/100
0.0	0.00	N 0.00°E	0.00	0.00	0.00	0.00	0.0
100.0	0.59	N50.54°E	100.00	0.33	0.40	0.29	0.6
200.0	0.78	S47.78°E	199.99	0.20	1.30	1.19	0.9
300.0	0.32	N51.61°E	299.99	-0.09	2.02	1.96	0.8
400.0	0.39	S11.41°W	399.99	-0.25	2.17	2.15	0.7
500.0	0.41	N63.15°W	499.99	-0.42	1.79	1.83	0.6
600.0	0.98	N43.60°W	599.98	0.36	0.88	0.74	0.6
700.0	1.08	N81.29°W	699.96	1.12	-0.64	-0.94	0.7
800.0	0.56	N87.56°W	799.95	1.29	-2.06	-2.34	0.5
900.0	0.53	S72.39°W	899.95	1.17	-2.99	-3.20	0.2
1000.0	0.68	N50.59°W	999.94	1.40	-3.89	-4.13	0.6
1100.0	0.74	N83.38°W	1099.94	1.86	-4.99	-5.31	0.4
1200.0	0.82	S35.70°W	1199.93	1.35	-6.05	-6.18	0.8
1300.0	1.09	S 2.78°E	1299.92	-0.18	-6.42	-6.10	0.7
1400.0	1.07	S23.92°E	1399.90	-1.99	-6.00	-5.18	0.4
1500.0	1.09	S31.39°E	1499.88	-3.65	-5.12	-3.87	0.1
1600.0	0.71	S14.27°E	1599.87	-5.06	-4.47	-2.85	0.5
1700.0	1.24	S21.32°E	1699.85	-6.67	-3.93	-1.86	0.5
1800.0	1.36	S22.39°E	1799.83	-8.78	-3.08	-0.45	0.1
1900.0	1.34	S53.66°E	1899.80	-10.57	-1.69	1.39	0.7
2000.0	0.86	S50.03°E	1999.78	-11.74	-0.17	3.18	0.5
2100.0	0.75	S38.64°E	2099.77	-12.74	0.81	4.41	0.2
2200.0	0.90	S15.03°E	2199.76	-14.00	1.42	5.36	0.4
2300.0	0.96	S28.19°E	2299.75	-15.50	2.02	6.36	0.2
2400.0	0.75	S79.14°E	2399.74	-16.36	3.06	7.60	0.8
2500.0	0.69	S82.59°E	2499.73	-16.56	4.30	8.84	0.1
2600.0	0.99	S29.17°E	2599.72	-17.40	5.32	10.06	0.8
2700.0	1.32	S27.18°E	2699.70	-19.18	6.27	11.47	0.3
2800.0	2.00	S46.82°E	2799.66	-21.39	8.07	13.83	0.9
2900.0	2.88	S48.80°E	2899.57	-24.24	11.23	17.67	0.9
3000.0	3.52	S58.23°E	2999.41	-27.51	15.73	22.92	0.8
3100.0	3.23	S60.08°E	3099.24	-30.54	20.78	28.62	0.3
3200.0	2.84	S63.97°E	3199.10	-33.03	25.45	33.81	0.4
3300.0	2.82	S63.19°E	3298.98	-35.22	29.87	38.67	0.0
3400.0	3.25	S74.82°E	3398.84	-37.08	34.80	43.92	0.7
3500.0	2.91	S81.35°E	3498.69	-38.20	40.05	49.27	0.5
3600.0	2.50	S77.21°E	3598.58	-39.07	44.68	53.96	0.5
3700.0	1.86	S81.68°E	3698.51	-39.78	48.42	57.75	0.7
3800.0	1.35	S84.61°E	3798.47	-40.13	51.19	60.51	0.5
3840.0	1.37	S83.73°E	3838.46	-40.22	52.14	61.44	0.1

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No Interpolation

	MD ft	INC deg	DIR deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	D'LEG °/100
	3884.0	2.05	S59.76°E	3882.44	-40.68	53.34	62.72	2.2
	3946.0	4.92	S56.64°E	3944.32	-42.70	56.52	66.35	4.6
	4008.0	7.80	S59.06°E	4005.93	-46.33	62.35	72.97	4.7
	4070.0	10.61	S57.67°E	4067.13	-51.54	70.78	82.54	4.5
	4132.0	13.43	S57.86°E	4127.76	-58.43	81.71	94.97	4.5
	4194.0	16.19	S61.20°E	4187.70	-66.42	95.38	110.35	4.7
	4256.0	16.68	S62.61°E	4247.16	-74.68	110.85	127.54	1.0
	4318.0	17.08	S62.63°E	4306.49	-82.96	126.84	145.22	0.6
	4380.0	17.42	S62.90°E	4365.70	-91.37	143.19	163.29	0.6
	4442.0	17.84	S63.53°E	4424.79	-99.83	159.95	181.77	0.7
5768' MD	4504.0	17.93	S63.55°E	4483.79	-108.32	177.00	200.53	0.1
	4566.0	18.22	S63.69°E	4542.73	-116.86	194.23	219.48	0.5
	4628.0	18.30	S63.72°E	4601.61	-125.47	211.65	238.63	0.1
	4690.0	18.72	S64.05°E	4660.40	-134.13	229.32	258.04	0.7
	4752.0	18.86	S64.47°E	4719.10	-142.81	247.31	277.75	0.3
5811' MD	4814.0	19.02	S64.50°E	4777.74	-151.47	265.47	297.63	0.3
	4876.0	18.94	S64.55°E	4836.37	-160.15	283.67	317.55	0.1
	4938.0	19.37	S64.75°E	4894.94	-168.86	302.06	337.66	0.7
	5000.0	19.56	S64.89°E	4953.40	-177.65	320.76	358.09	0.3
	5062.0	19.68	S64.95°E	5011.80	-186.47	339.61	378.67	0.2
5124' MD	5124.0	19.98	S65.35°E	5070.12	-195.31	358.70	399.49	0.5
	5186.0	20.23	S65.46°E	5128.34	-204.18	378.08	420.59	0.4
	5248.0	20.43	S65.26°E	5186.48	-213.16	397.65	441.92	0.3
	5310.0	20.44	S65.57°E	5244.58	-222.17	417.34	463.35	0.2
	5372.0	19.52	S64.68°E	5302.85	-231.07	436.56	484.31	1.6
5434' MD	5434.0	18.40	S64.61°E	5361.48	-239.70	454.76	504.22	1.8
	5496.0	17.38	S63.82°E	5420.48	-247.98	471.91	523.02	1.7
	5558.0	16.45	S62.78°E	5479.80	-256.08	488.03	540.78	1.6
	5620.0	15.50	S62.34°E	5539.41	-263.94	503.17	557.53	1.5
	5682.0	14.48	S61.36°E	5599.30	-271.51	517.32	573.24	1.7
5744' MD	5744.0	13.90	S61.60°E	5659.40	-278.76	530.67	588.11	0.9
	5806.0	13.19	S60.40°E	5719.68	-285.80	543.37	602.29	1.2
	5868.0	13.68	S60.98°E	5779.98	-292.85	555.93	616.34	0.8
	5930.0	13.93	S61.52°E	5840.19	-299.96	568.90	630.80	0.5
	5992.0	14.32	S62.33°E	5900.32	-307.08	582.25	645.63	0.7
6054' MD	6054.0	14.65	S63.03°E	5960.35	-314.20	596.03	660.86	0.6
	6116.0	14.95	S63.16°E	6020.29	-321.37	610.16	676.44	0.5
	6178.0	15.51	S63.71°E	6080.11	-328.65	624.72	692.48	0.9
	6240.0	16.01	S64.39°E	6139.78	-336.02	639.87	709.10	0.9
	6302.0	16.14	S65.09°E	6199.36	-343.34	655.39	726.07	0.4

540'

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No Interpolation

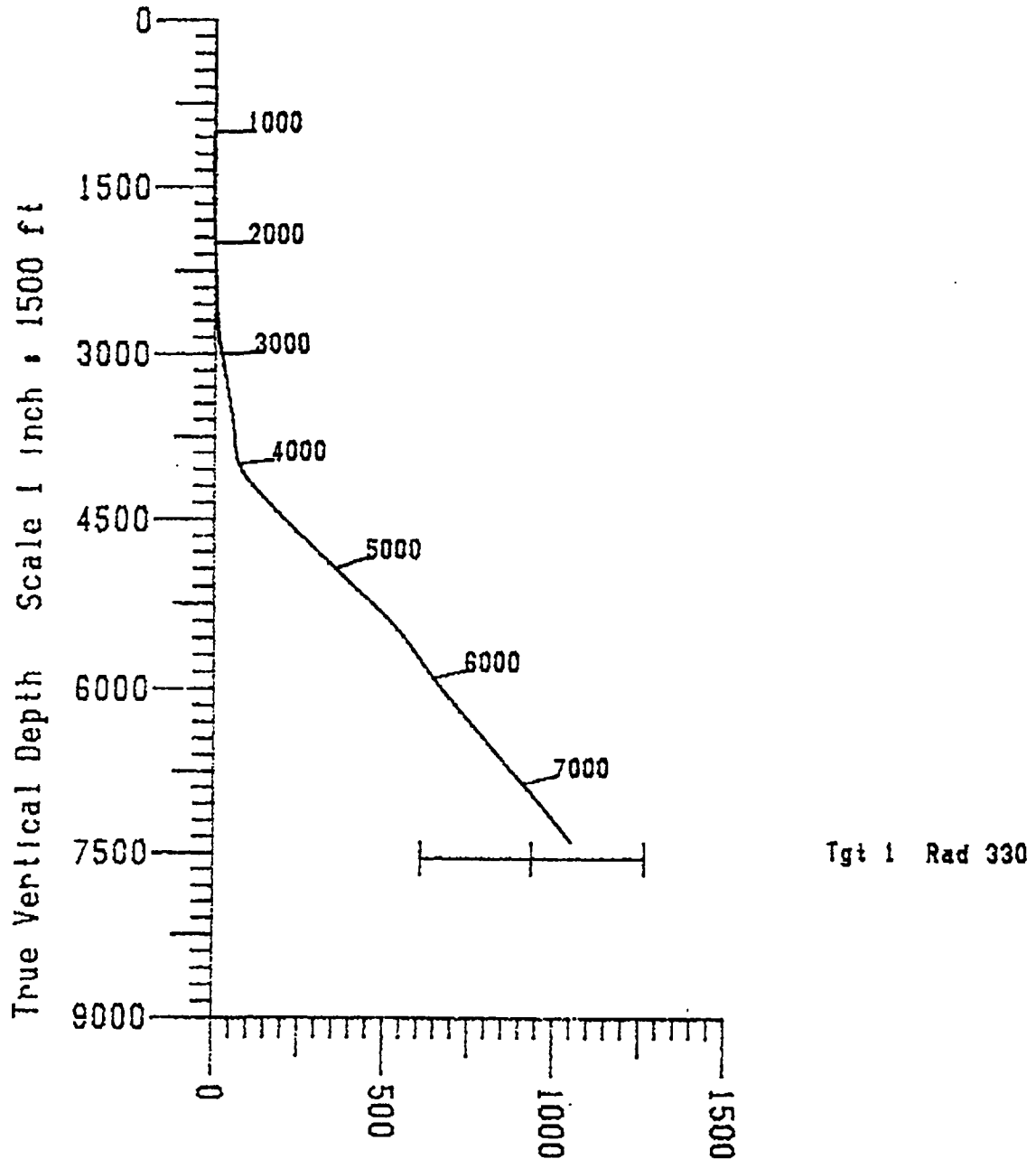
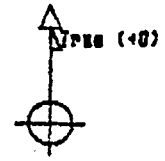
MD ft	INC deg	DIR deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	D'LEG °/100
6364.0	16.09	S65.44°E	6258.92	-350.54	671.02	743.10	0.2
6426.0	15.69	S65.19°E	6318.55	-357.63	686.45	759.90	0.7
6488.0	15.68	S65.93°E	6378.24	-364.57	701.70	776.51	0.3
6550.0	15.64	S66.44°E	6437.94	-371.32	717.02	793.11	0.2
6612.0	15.28	S66.72°E	6497.70	-377.89	732.18	809.52	0.6
6674.0	14.82	S67.00°E	6557.57	-384.22	746.98	825.51	0.8
6736.0	14.88	S68.07°E	6617.50	-390.29	761.67	841.32	0.5
6798.0	15.07	S68.72°E	6677.40	-396.19	776.56	857.27	0.4
6860.0	15.64	S69.00°E	6737.18	-402.11	791.88	873.64	0.9
6922.0	15.91	S69.33°E	6796.85	-408.10	807.63	890.45	0.5
6984.0	15.91	S69.16°E	6856.47	-414.13	823.52	907.40	0.1
7046.0	15.75	S69.25°E	6916.12	-420.13	839.33	924.26	0.3
7108.0	15.86	S69.16°E	6975.78	-426.13	855.12	941.10	0.2
7170.0	15.56	S69.46°E	7035.46	-432.06	870.82	957.85	0.5
7232.0	15.09	S69.58°E	7095.25	-437.79	886.17	974.20	0.8
7294.0	14.80	S69.19°E	7155.16	-443.42	901.14	990.15	0.5
7356.0	14.63	S69.70°E	7215.13	-448.95	915.89	1005.86	0.3
7418.0	14.31	S69.75°E	7275.16	-454.32	930.42	1021.32	0.5
7480.0	14.39	S69.88°E	7335.22	-459.62	944.84	1036.65	0.1
7542.0	14.25	S70.15°E	7395.30	-464.86	959.25	1051.96	0.2

Origin of Bottom Hole Closure PLATFORM CENTRE
 Bottom Hole Closure 1066 ft S64.14°E

SRG 0'-3840' BY G. CATES
 M/S 3884'-7542' BY G. HENDRIX



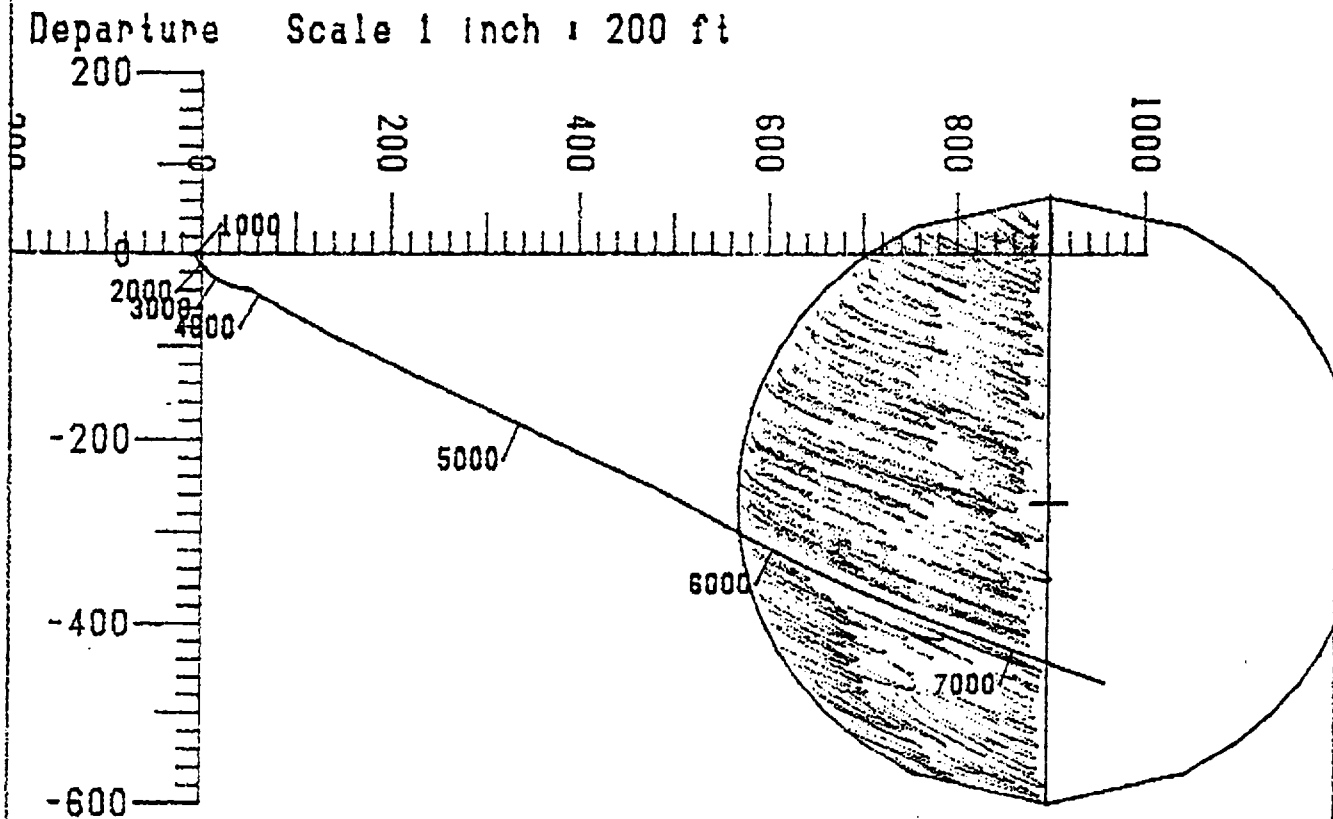
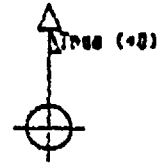
SCIENTIFIC DRILLING INTERNATIONAL
FOR
PHILLIPS PETROLEUM COMPANY
JAMES E FEDERAL 89
IN
EDDY COUNTY, NEW MEXICO



PLANE OF VERT SECTn S73.44E



SCIENTIFIC DRILLING INTERNATIONAL
FOR
PHILLIPS PETROLEUM COMPANY
JAMES E FEDERAL 38
IN
EDDY COUNTY, NEW MEXICO



PLANE OF VERT SECT_n S73.44E