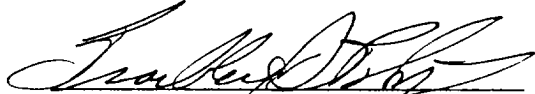


STATE OF COLORADO)

CITY AND COUNTY OF DENVER)

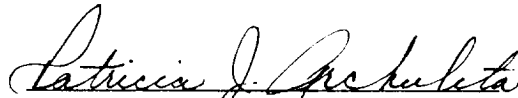
M-28-31N-10W

The foregoing instrument, a directional survey of the Atlantic A LS #3, was acknowledged before me this 28th day of JUNE, 1996, by Bradley D. Bilyeu and, to the best of his knowledge, the surveys and calculations are correct.



Bradley D. Bilyeu
Drilling Engineer - Amoco Production Company

WITNESS my hand and official seal.



Notary Public

My commission expires:

August 12, 1999

A G Y R O D A T A D I R E C T I O N A L S U R V E Y

for

AMOCO PRODUCTION COMPANY

WELL: ATLANTIC "A" LS #3, 3.5" DRILL PIPE

Location: AWS 301, SAN JUAN COUNTY, N.M.

Job Number: RM0496G282

Run Date: 2-May-96 07:26:02

Surveyor: PATRICK B. RANEY

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 36.880000 deg. N

Azimuth Correction:

Gyro: Bearings are Relative to True North

Proposed Well Direction: 90.000 deg

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

AMOCO PRODUCTION COMPANY
 WELL: ATLANTIC "A" IS #3, 3.5" DRILL PIPE
 Location: AWS 301, SAN JUAN COUNTY, N.M.
 Job Number: RM0496G282

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH feet	DOGLEG SEVERITY deg./ 100 ft.	CLOSURE DIST. feet	AZIMUTH deg.	H O R I Z O N T A L C O O R D I N A T E S feet
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0.0	0.00	0.00	0.0	0.00	0.0	0.0	0.00 N 0.00 E
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 A GYRO SURVEY IN 3.5" DRILL PIPE FROM 0 - 3844 FEET M.D.
 ALL SURVEY COORDINATES REFERENCED TO AWS 301 R.K.B.

100.0	.72	160.48	100.0	.72	.6	160.5	.59 S .21 E
200.0	.36	148.66	200.0	.38	1.6	158.1	1.46 S .59 E
300.0	.43	165.95	300.0	.14	2.3	158.1	2.09 S .84 E
400.0	.32	162.53	400.0	.11	2.9	159.5	2.71 S 1.01 E
500.0	.40	149.63	500.0	.12	3.5	158.8	3.28 S 1.27 E
600.0	.32	161.55	600.0	.11	4.1	158.2	3.85 S 1.54 E
700.0	.31	145.08	700.0	.09	4.7	157.6	4.34 S 1.78 E
800.0	.29	145.21	800.0	.02	5.2	156.4	4.77 S 2.09 E
900.0	.24	146.39	900.0	.05	5.7	155.5	5.16 S 2.35 E
1000.0	.25	170.39	1000.0	.10	6.1	155.7	5.55 S 2.50 E
1100.0	.15	166.19	1100.0	.11	6.4	156.4	5.89 S 2.57 E
1200.0	.31	168.21	1200.0	.17	6.8	157.1	6.28 S 2.66 E
1300.0	.31	175.07	1300.0	.04	7.3	158.1	6.82 S 2.73 E
1400.0	.26	173.34	1400.0	.05	7.8	159.1	7.30 S 2.78 E
1500.0	.11	113.31	1500.0	.22	8.1	159.0	7.56 S 2.90 E
1600.0	.16	91.17	1600.0	.07	8.2	157.6	7.60 S 3.13 E
1700.0	.24	60.36	1700.0	.13	8.3	155.3	7.50 S 3.45 E
1800.0	.06	198.13	1800.0	.28	8.3	154.1	7.45 S 3.61 E
1900.0	.08	334.88	1900.0	.13	8.2	154.4	7.43 S 3.57 E
2000.0	.19	280.28	2000.0	.16	8.1	155.3	7.34 S 3.37 E

AMOCO PRODUCTION COMPANY
 WELL: ATLANTIC "A" LS #3, 3.5" DRILL PIPE
 Location: AWS 301, SAN JUAN COUNTY, N.M.
 Job Number: RM0496G282

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH feet	DOGLEG SEVERITY deg./ 100 ft.	CLOSURE DIST. feet	AZIMUTH deg.	H O R I Z O N T A L C O O R D I N A T E S feet	
2100.0	.29	253.89	2100.0	.15	8.0	158.1	7.38 S	2.96 E
2200.0	.33	239.05	2200.0	.09	8.0	162.0	7.60 S	2.47 E
2300.0	.53	240.33	2300.0	.21	8.2	167.2	7.98 S	1.82 E
2400.0	.35	261.51	2400.0	.25	8.3	172.3	8.25 S	1.11 E
2500.0	.30	220.19	2500.0	.23	8.5	175.7	8.50 S	.65 E
2600.0	.20	172.52	2600.0	.22	8.9	176.8	8.87 S	.50 E
2700.0	.48	221.99	2700.0	.38	9.4	178.5	9.35 S	.24 E
2800.0	.64	229.92	2800.0	.18	10.0	182.6	10.02 S	.46 W
2900.0	.75	237.05	2899.9	.14	10.8	187.6	10.73 S	1.44 W
3000.0	.50	214.15	2999.9	.35	11.7	191.0	11.45 S	2.23 W
3100.0	.64	240.94	3099.9	.30	12.4	193.8	12.09 S	2.97 W
3200.0	.43	248.95	3199.9	.22	13.1	196.9	12.49 S	3.80 W
3300.0	.56	243.53	3299.9	.14	13.6	199.7	12.85 S	4.59 W
3400.0	.53	231.85	3399.9	.12	14.4	202.0	13.35 S	5.40 W
3450.0	4.55	102.20	3449.9	9.81	14.4	194.7	13.92 S	3.64 W
3500.0	6.89	110.79	3499.6	4.96	15.4	175.9	15.40 S	1.10 E
3550.0	8.70	128.20	3549.2	5.92	20.0	159.9	18.80 S	6.88 E
3600.0	10.02	116.79	3598.5	4.55	26.9	149.3	23.10 S	13.73 E
3650.0	10.42	105.26	3647.7	4.16	34.2	140.1	26.25 S	21.98 E
3700.0	12.04	96.96	3696.8	4.57	42.2	131.7	28.08 S	31.52 E
3750.0	13.25	98.67	3745.5	2.54	51.7	124.9	29.57 S	42.36 E
3800.0	14.65	94.24	3794.1	3.52	62.5	119.6	30.90 S	54.33 E
3844.0	15.61	98.78	3836.5	3.47	73.2	116.1	32.22 S	65.73 E

Final Station Closure: Distance: 73.21 ft Az: 116.11 deg.

Atlantic A LS #3 - Sidetrack

Section 2, T31N, R10W

Calculated Survey Data

M. Depth	Angle	Azimuth	TVD	N/S	E/W	VSECT	DIST	DIR	DOG LEG
0	0	0	0	0	0	0	0	0	0
100	0.72	160.48	100	-0.59	0.21	0.32	1	160	0.7
200	0.36	148.65	199.99	-1.44	0.61	0.88	2	157	0.4
300	0.42	165.94	299.99	-2.07	0.88	1.26	2	157	0.1
400	0.31	162.53	399.99	-2.68	1.05	1.54	3	159	0.1
500	0.4	149.63	499.99	-3.25	1.3	1.9	3	158	0.1
600	0.32	161.54	599.98	-3.82	1.56	2.26	4	158	0.1
700	0.31	145.08	699.98	-4.3	1.8	2.59	5	157	0.1
800	0.29	145.21	799.98	-4.74	2.11	2.97	5	156	0
900	0.24	146.38	899.98	-5.12	2.37	3.3	6	155	0.1
1000	0.25	170.39	999.98	-5.53	2.53	3.54	6	155	0.1
1100	0.14	166.18	1099.98	-5.87	2.6	3.67	6	156	0.1
1200	0.31	168.2	1199.98	-6.25	2.69	3.83	7	157	0.2
1300	0.3	175.06	1299.98	-6.79	2.77	4.01	7	158	0
1400	0.25	173.33	1399.98	-7.27	2.81	4.15	8	159	0.1
1500	0.11	113.31	1499.98	-7.51	2.99	4.37	8	158	0.2
1600	0.15	91.17	1599.97	-7.55	3.21	4.59	8	157	0.1
1700	0.23	60.35	1699.97	-7.47	3.53	4.89	8	155	0.1
1800	0.05	198.13	1799.97	-7.59	3.67	5.06	8	154	0.3
1900	0.08	334.88	1899.97	-7.6	3.59	4.97	8	155	0.1
2000	0.18	280.27	1999.97	-7.46	3.41	4.77	8	155	0.1
2100	0.29	253.88	2099.97	-7.48	3.01	4.38	8	158	0.2
2200	0.32	239.04	2199.97	-7.7	2.52	3.94	8	162	0.1
2300	0.53	240.33	2299.97	-8.07	1.88	3.38	8	167	0.2
2400	0.34	261.51	2399.97	-8.32	1.16	2.73	8	172	0.2
2500	0.29	220.18	2499.96	-8.58	0.7	2.32	9	175	0.2
2600	0.19	172.52	2599.96	-8.97	0.58	2.28	9	176	0.2
2700	0.47	221.99	2699.96	-9.5	0.42	2.22	10	177	0.4
2800	0.63	229.92	2799.96	-10.17	-0.27	1.67	10	182	0.2
2900	0.75	237.05	2899.95	-10.89	-1.24	0.86	11	187	0.1
3000	0.5	214.15	2999.94	-11.64	-2.02	0.24	12	190	0.3
3100	0.63	240.94	3099.94	-12.3	-2.74	-0.34	13	193	0.3
3200	0.42	248.95	3199.93	-12.69	-3.56	-1.08	13	196	0.2
3300	0.56	243.53	3299.93	-13.04	-4.35	-1.78	14	198	0.1
3400	0.53	231.85	3399.93	-13.54	-5.14	-2.46	14	201	0.1
3450	4.54	102.2	3449.87	-15.26	-4.75	-1.75	16	197	9.8
3500	6.88	110.78	3499.62	-16.67	0.02	3.2	17	180	5
3550	8.7	128.19	3549.15	-20	5.9	9.6	21	164	5.9

				N/S	B/W	V-Set	Dist	Din	Dof/ky
3600	10.02	116.78	3598.49	-24.36	12.74	17.16	27	152	4.5
3650	10.42	105.26	3647.69	-27.53	21.01	25.88	35	143	4.2
3700	12.03	96.95	3696.73	-29.41	30.55	35.6	42	134	4.6
3750	13.25	98.67	3745.52	-30.89	41.39	46.53	52	127	2.6
3800	14.64	94.24	3794.05	-32.25	53.36	58.54	62	121	3.5
3844	15.61	98.78	3836.52	-33.55	64.77	69.98	73	117	3.5
* 4032	17.5	98.78	4016.72	-41.73	117.7	123.5	125	110	1
* 4186	18.25	98.78	4163.29	-48.94	164.42	170.74	172	107	0.5
* 4343	19	98.78	4312.06	-56.59	213.97	220.84	221	105	0.5
* 4497	20.75	98.78	4456.88	-64.59	265.71	273.15	273	104	1.1
* 4780	20	98.78	4722.18	-79.63	363.09	371.61	372	102	0.3
* 5089	16	98.78	5015.99	-94.2	457.43	467	467	102	1.3
* 5465	11	98.78	5381.49	-107.59	544.15	554.68	555	101	1.3

Note: * These surveys were Totco's where only inclination is measured. The last recorded azimuth is assumed for these surveys.

Surf. ~~790'~~ FSL = 682' FSL

990' FWL = 1534' FWL

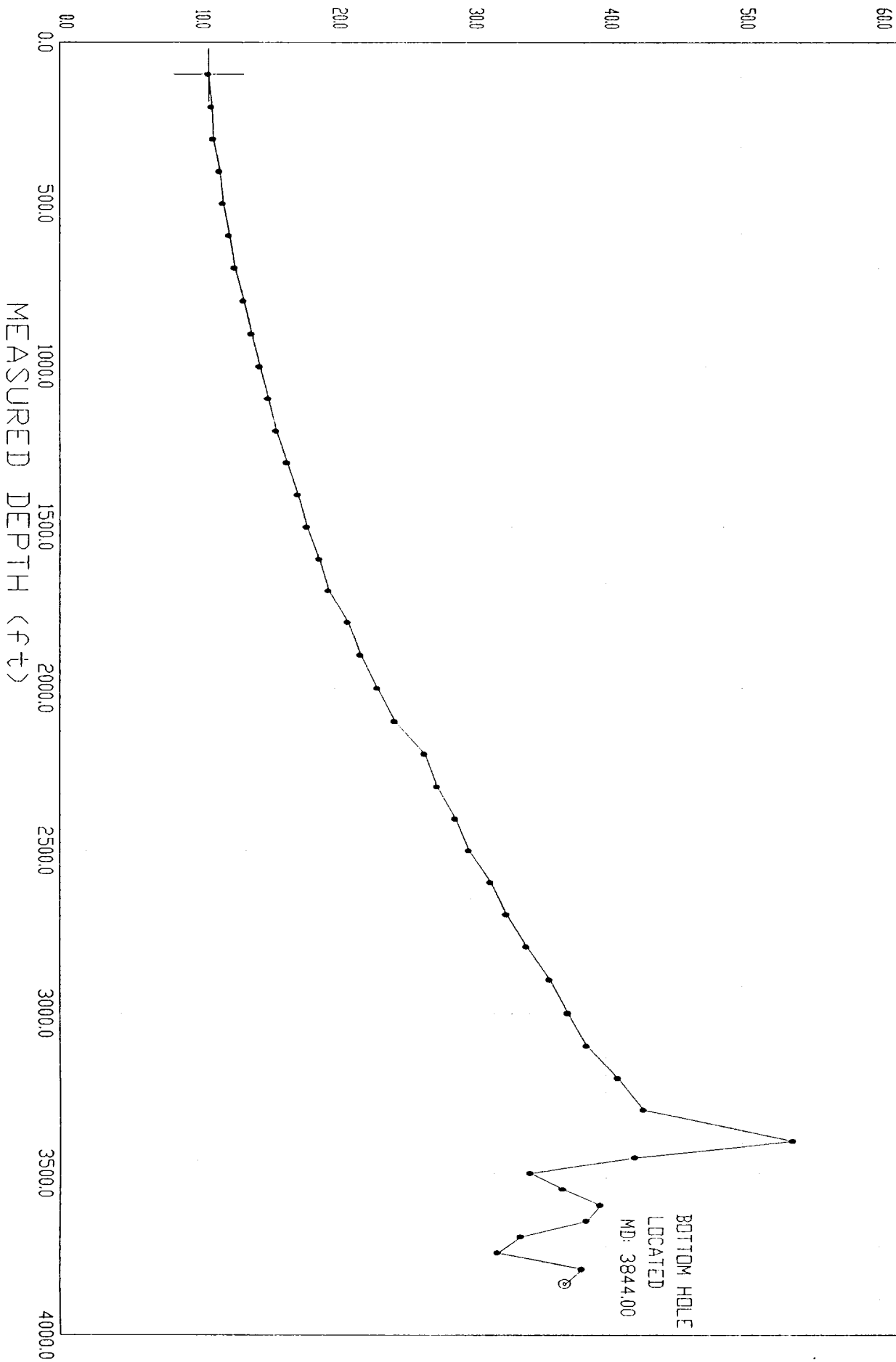
790'	990
108'	544
<u>682</u>	<u>1534</u>

AMOCO PRODUCTION COMPANY
WELL: ATLANTIC A LS #3 3.5" DRILL PIPE
Location: AWS 301, SAN JUAN COUNTY, N.M.

RM0496G282 DEFINITIVE

gyrodata

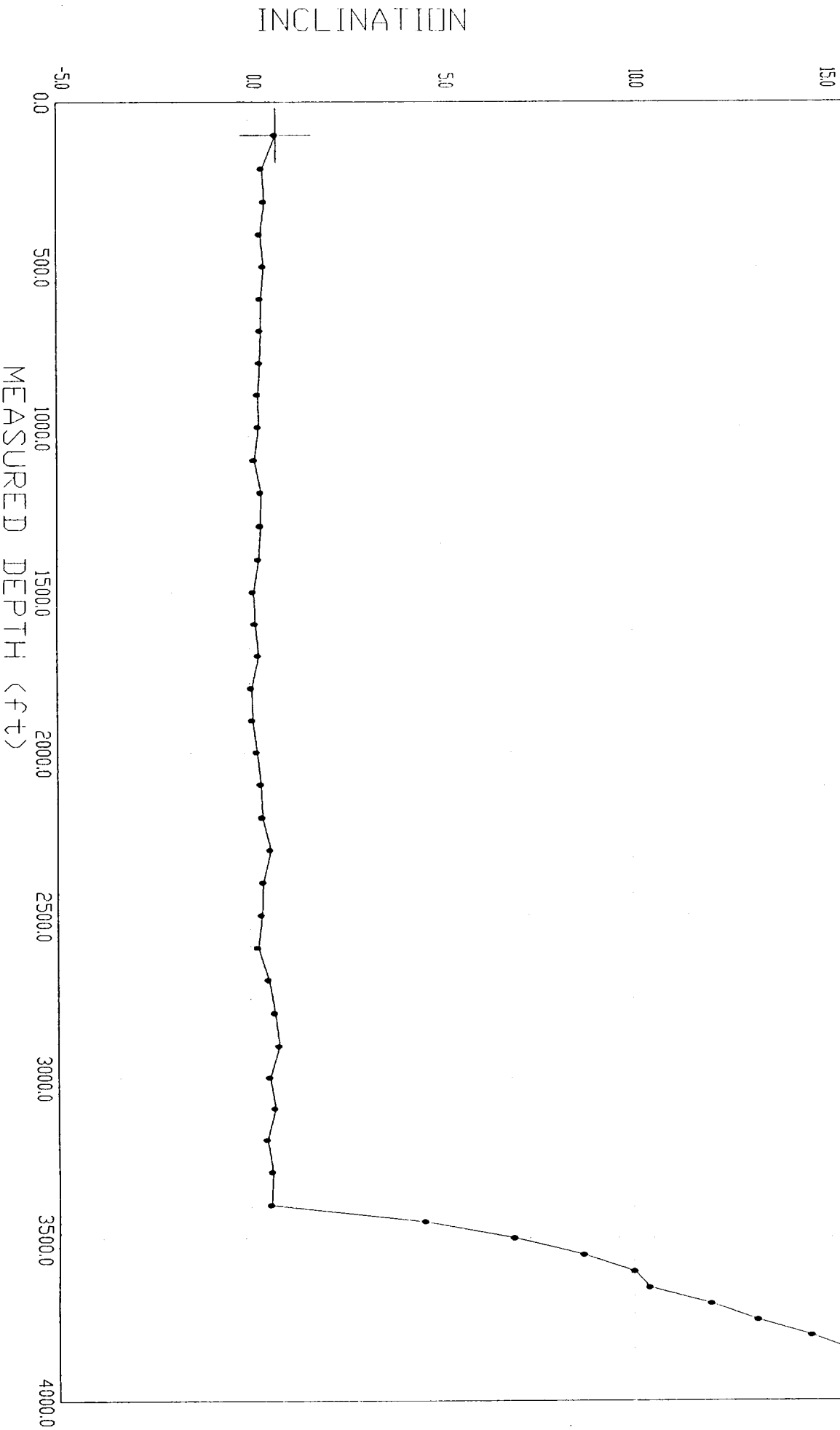
TEMPERATURE (deg-C)



AMOCO PRODUCTION COMPANY
WELL: ATLANTIC A LS #3 3.5" DRILL PIPE
Location: AWS 301. SAN JUAN COUNTY, N.M.

gyrodata
RM0496G282 DEFINITIVE

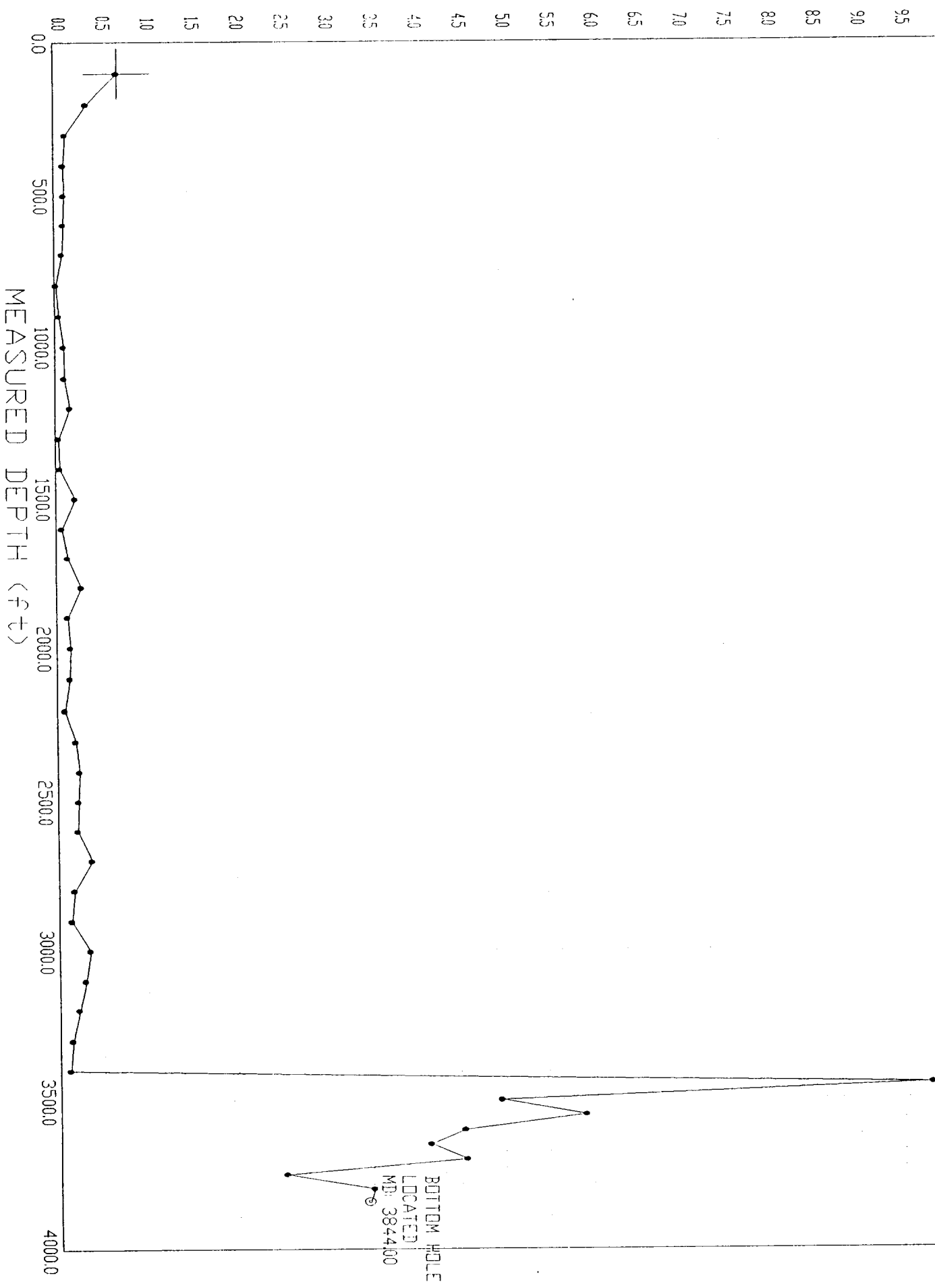
BOTTOM HOLE
LOCATED
MD: 3844.00



DOGLEG SEVERITY (deg/100ft)

AMOCO PRODUCTION COMPANY
WELL: ATLANTIC A LS #3 3.5" DRILL PIPE
Location: AWS 301, SAN JUAN COUNTY, N.M.

gyrodata
RM0496G282 DEFINITIVE



BOTTOM HOLE
LOCATED
MD: 3844.00

Atlantic A LS #3 - Sidetrack Section View
Vertical Section - 101 degrees

