

ATLANTIC D Com D #5
K-2-30N-10W

STATE OF COLORADO)

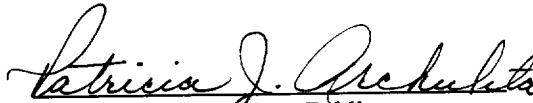
CITY AND COUNTY OF DENVER)

The foregoing instrument, a directional survey of the Atlantic D Com D #5, 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 D, COM D LS-5, 3.5" DRILL PIPE

Location: AWS-301, SAN JUAN COUNTY, NM

Job Number: RM0596G291

Run Date: 11-May-96 14:15:00

Surveyor: JAMES GILMORE

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 36.880000 deg. N

Azimuth Correction:
Gyro: Bearings are Relative to True North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

A Gyrodata Directional Survey

AMOCO PRODUCTION COMPANY
WELL: ATLANTIC D, COM D LS-5, 3.5" DRILL PIPE
Location: AWS-301, SAN JUAN COUNTY, NM
Job Number: RM0596G291

MEASURED DEPTH	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
0.0	0.00	0.00	0.0	0.00	0.0	0.0	3.00 N 0.00 E

ALL MEASURED DEPTHS REFERENCED TO DRILL FLOOR AWS-301, 15' 6".
GYRODATA GYRO SURVEY RUN IN DRILL PIPE FROM SURFACE TO 4211' MEASURED DEPTH.

NOTE : API # 3304503857 SEC 2, 31N-10W 1650' ESL / 1650' FWL

100.0	1.20	149.34	100.0	1.20	1.0	149.3	.90 S .53 E
200.0	1.19	148.29	200.0	.02	3.1	149.0	2.69 S 1.62 E
300.0	1.12	146.22	300.0	.09	5.1	148.3	4.38 S 2.70 E
400.0	1.09	138.01	399.9	.16	7.1	146.7	5.90 S 3.88 E
500.0	.68	135.40	499.9	.41	8.6	144.9	7.02 S 4.93 E
600.0	.85	156.88	599.9	.33	9.9	145.2	8.13 S 5.64 E
700.0	.65	147.42	699.9	.24	11.2	146.1	9.29 S 6.24 E
800.0	.44	188.21	799.9	.43	12.0	147.4	10.14 S 6.49 E
900.0	.41	155.98	899.9	.24	12.7	148.8	10.85 S 6.58 E
1000.0	.41	203.42	999.9	.33	13.3	150.2	11.50 S 6.59 E
1100.0	.40	164.07	1099.9	.27	13.8	151.7	12.17 S 6.54 E
1200.0	.51	203.33	1199.9	.33	14.4	153.4	12.92 S 6.46 E
1300.0	.64	202.88	1299.9	.12	15.1	156.3	13.84 S 6.07 E
1400.0	.42	224.88	1399.9	.30	15.6	159.1	14.61 S 5.59 E
1500.0	.59	208.92	1499.9	.22	16.1	161.6	15.32 S 5.09 E
1600.0	.54	188.74	1599.9	.20	16.9	163.6	16.23 S 4.77 E
1700.0	.10	74.10	1699.9	.59	17.3	164.0	16.67 S 4.78 E
1800.0	.25	245.50	1799.9	.35	17.4	164.4	16.74 S 4.67 E
1900.0	.43	161.66	1899.9	.47	17.8	165.0	17.18 S 4.59 E

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

AMOCO PRODUCTION COMPANY
 WELL: ATLANTIC D, COM D LS-5, 3.5" DRILL PIPE
 Location: AMS-302, SAN JUAN COUNTY, NM
 Job Number: RM0596G291

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH feet	DOGLEG SEVERITY deg./ 100 ft.	CLOSURE		H O R I Z O N T A L C O O R D I N A T E S	
					DIST. feet	AZIMUTH deg.	feet	
2000.0	.29	198.90	1999.9	.26	18.4	165.4	17.78	S 4.63 E
2100.0	.58	200.41	2099.9	.29	19.0	166.7	18.49	S 4.37 E
2200.0	.45	185.86	2199.9	.18	19.8	167.9	19.35	S 4.15 E
2300.0	.46	229.24	2299.9	.34	20.4	169.2	20.01	S 3.81 E
2400.0	.53	195.34	2399.9	.30	21.0	170.7	20.72	S 3.36 E
2500.0	.65	227.66	2499.8	.35	21.7	172.5	21.55	S 2.84 E
2600.0	.46	258.80	2599.8	.43	22.0	174.8	21.94	S 2.01 E
2700.0	.27	277.06	2699.8	.20	22.0	176.4	21.92	S 1.38 E
2800.0	.61	259.80	2799.8	.36	22.0	178.4	21.98	S .62 E
2900.0	.53	261.16	2899.8	.08	22.1	180.9	22.15	S .35 W
3000.0	.98	227.95	2999.8	.61	22.8	183.6	22.79	S 1.44 W
3100.0	.85	248.89	3099.8	.36	23.8	186.7	23.63	S 2.77 W
3200.0	.45	209.51	3199.8	.58	24.5	188.6	24.24	S 3.65 W
3300.0	.89	223.57	3299.8	.47	25.5	189.9	25.15	S 4.38 W
3400.0	.70	266.08	3399.8	.60	26.3	192.1	25.75	S 5.53 W
3500.0	.79	287.27	3499.8	.29	26.5	194.9	25.59	S 6.79 W
3600.0	.70	291.91	3599.8	.11	26.4	197.7	25.16	S 8.01 W
3700.0	.75	283.78	3699.8	.11	26.4	200.4	24.78	S 9.21 W
3800.0	.69	337.57	3799.8	.65	26.1	202.7	24.07	S 10.07 W
3850.0	2.37	235.52	3849.7	5.20	26.8	204.4	24.37	S 11.04 W
3900.0	6.42	221.17	3899.6	8.35	30.4	206.9	27.07	S 13.73 W
3950.0	7.51	218.07	3949.2	2.30	36.3	209.0	31.75	S 17.59 W
4000.0	7.74	235.37	3998.8	4.59	42.6	211.7	36.23	S 22.38 W
4050.0	9.40	237.96	4048.2	3.41	49.4	215.4	40.31	S 28.61 W
4100.0	10.62	237.30	4097.5	2.47	57.6	218.6	44.97	S 35.94 W

A G Y r o d a t a D i r e c c i o n a l S u r v e y

AMOCO PRODUCTION COMPANY
 WELL: ATLANTIC D, CCM D LS-5, 3.5" DRILL PIPE
 Location: AWS-301, SAN JUAN COUNTY, NM
 Job Number: RM0596G291

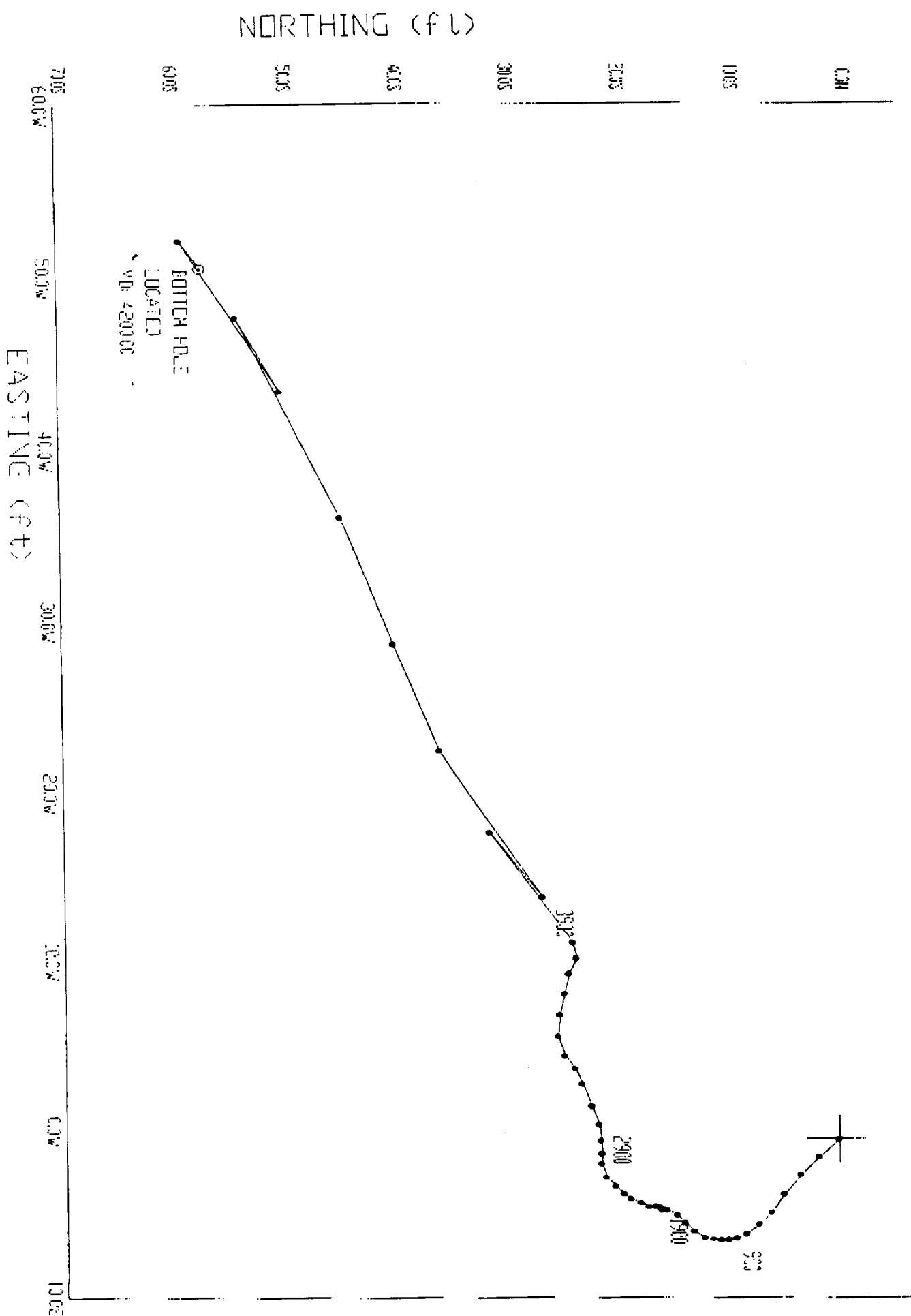
MEASURED DEPTH feet	I N C I deg.	AZIMUTH deg.	VERTICAL DEPTH feet	DOGLEG SEVERITY deg./ 100 ft.	CLOSURE DIST. feet	AZIMUTH deg.	H O R I Z O N T A L C O O R D I N A T E S feet
4150.0	10.35	230.96	4146.6	2.37	66.4	220.7	50.28 S
4180.0	11.63	226.02	4176.1	5.31	72.0	221.3	54.08 S
4200.0	12.44	221.37	4195.6	6.31	76.2	221.5	57.10 S
4211.0	12.99	221.74	4206.4	5.00	78.6	221.5	58.91 S
Final Station Closure:				Distance:	78.62 ft	Az:	221.47 deg.

Final Station Closure: Distance: 78.62 ft Az: 221.47 deg.

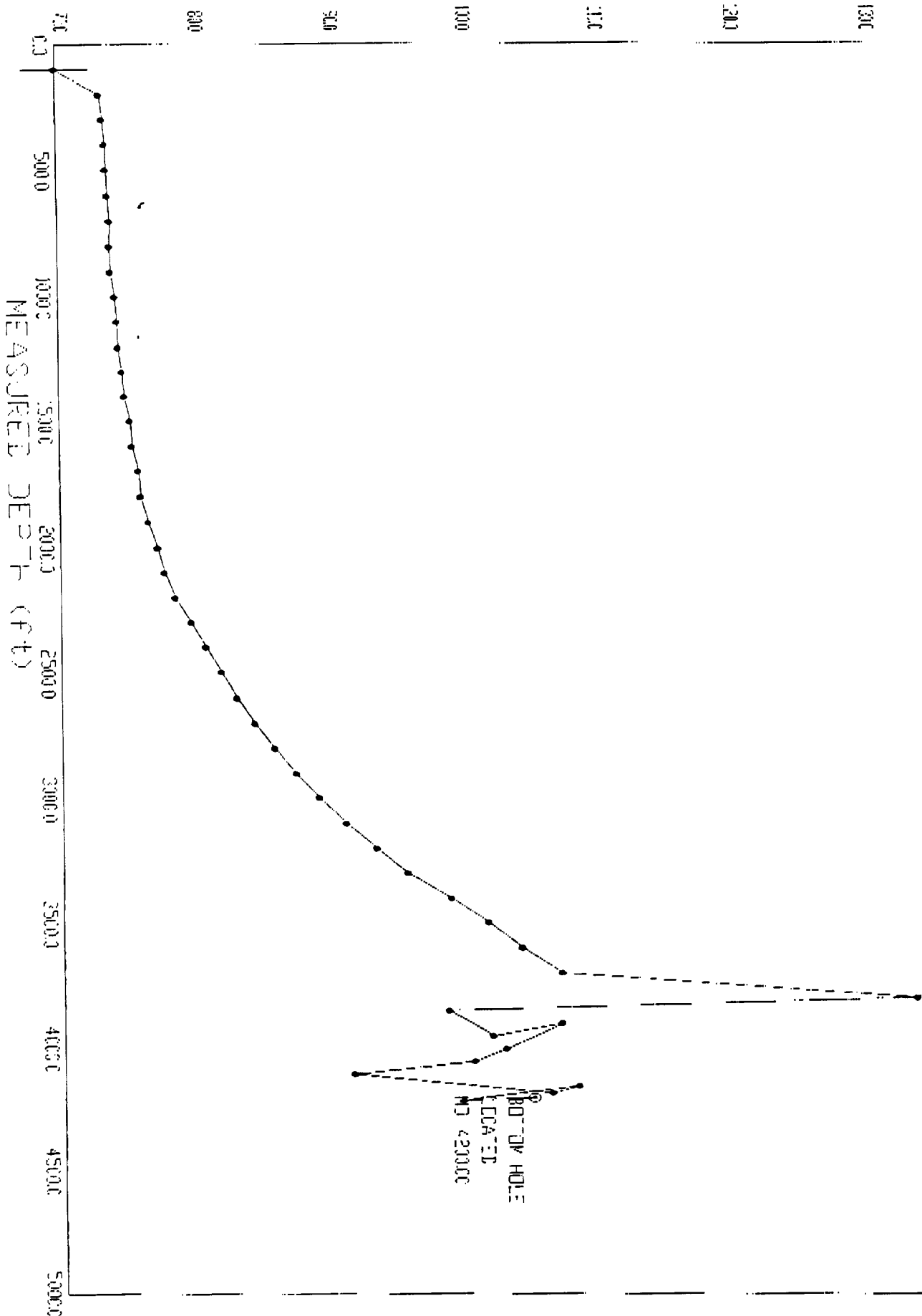
May-21-96 01:57P

AMOCO PRODUCTION COMPANY
WELL: ATLANTIC D, COM D IS-5, 3.5" DRILL PIPE
Location: AWS-301, SAN JUAN COUNTY, NM

558240512
RM0596G291 DEFINITIVE



TEMPERATURE (deg-F)



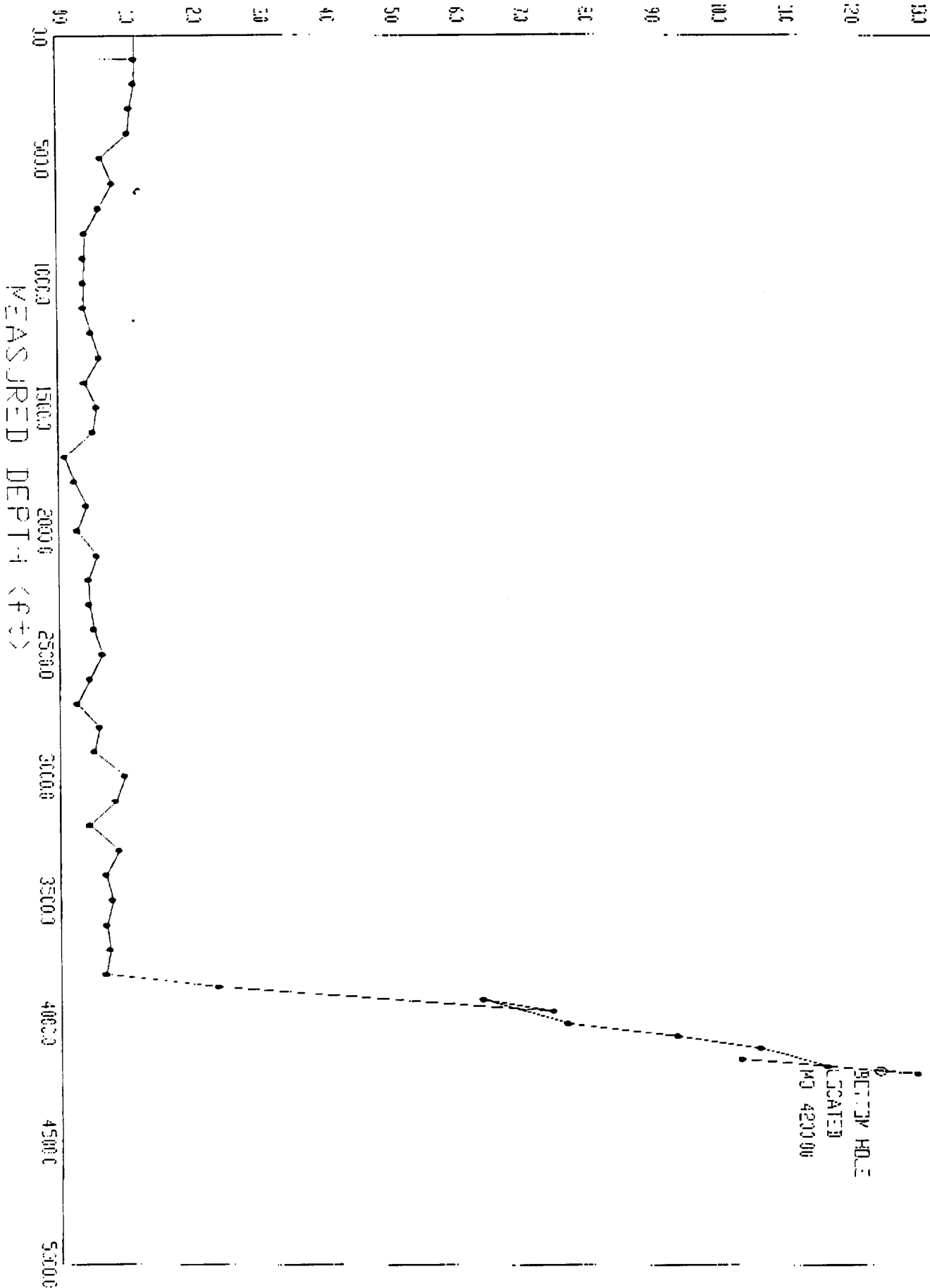
AMOCO PRODUCTION COMPANY
WELL: ATLANTIC D. COM D LS-5, 3.5" DRILL PIPE
Location: AWS-301, SAN JUAN COUNTY, NM

RM0596G291 DEFINITIVE

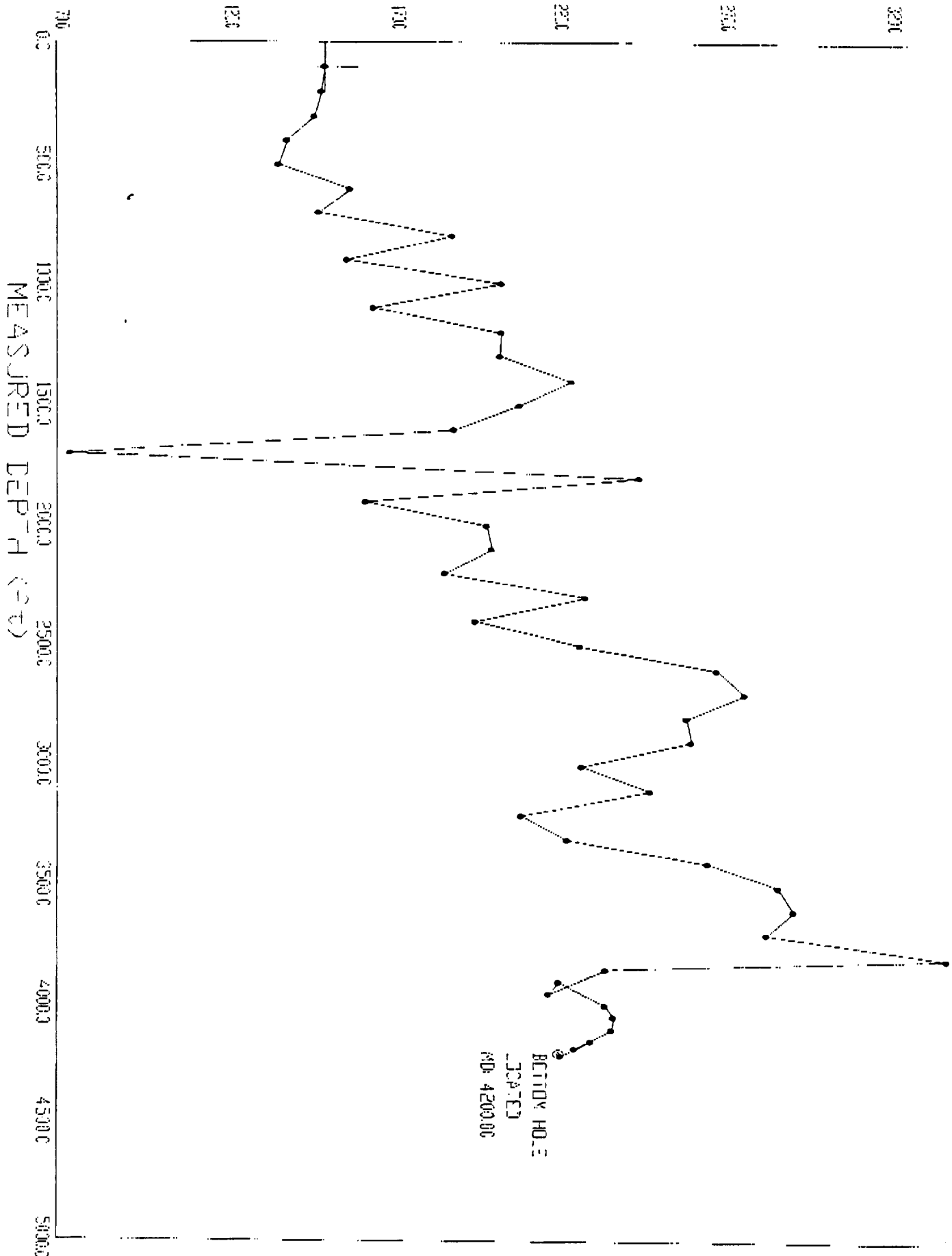
INCLINATION

AMCO PRODUCTION COMPANY
WELL: ATLANTIC D COM D LS-5, 3.5" DRILL PIPE
Location: AMS-30, SAN JUAN COUNTY, NM

RM0596G291 DEFINITIVE



AZIMUTH



MOCO PRODUCTION COMPANY
WELL: ATLANTIC D. COM D LS-5. 3.5" DRILL PIPE
Location: AMS-301. SAN JUAN COUNTY, NM

RM0596G291 DEFINITIVE

Atlantic D Com D #5 - Sidetrack

Section 2, T31N, R10W

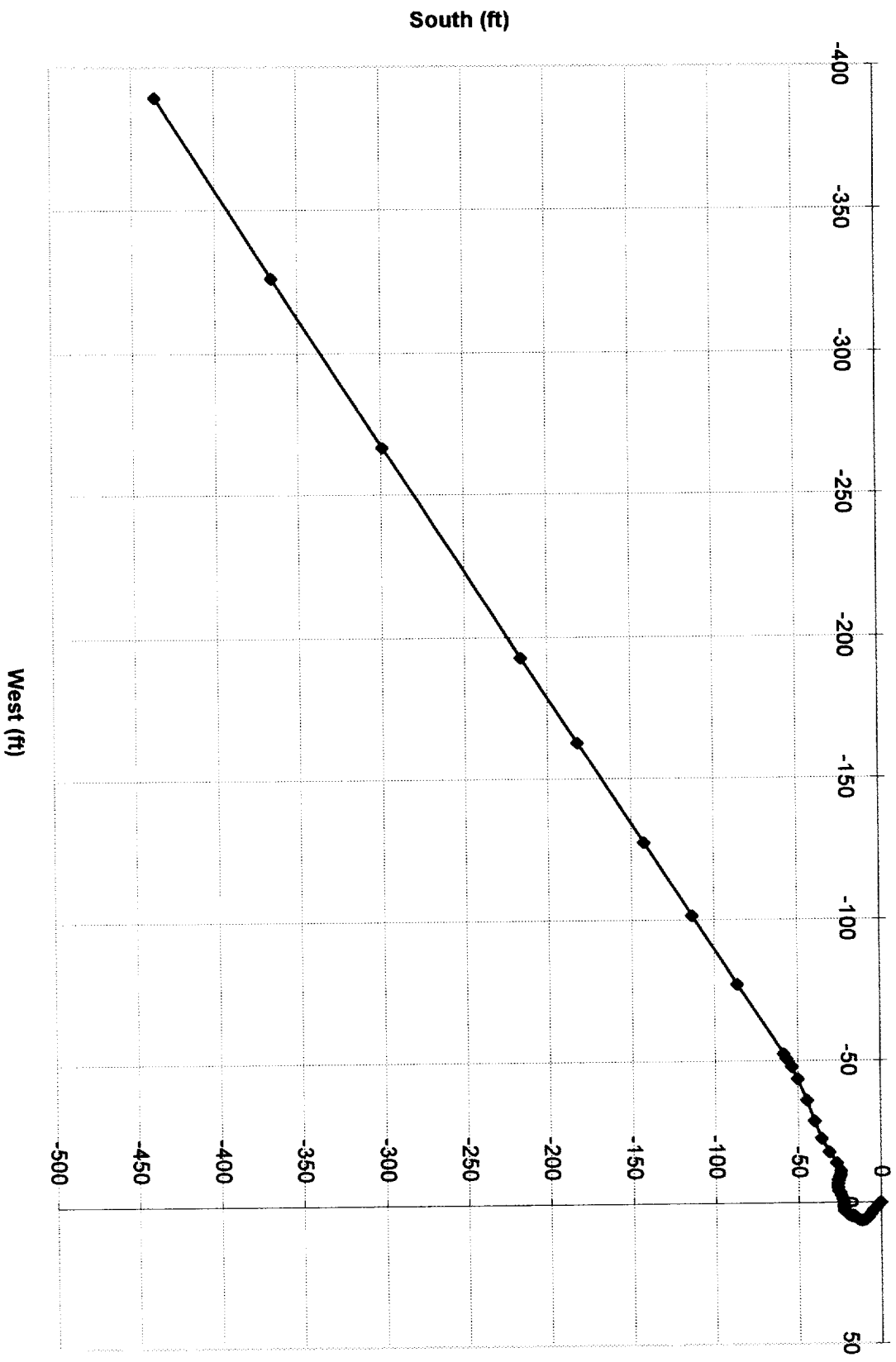
Actual Calculated Survey Data

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	1.2	149.34	99.99	-0.9	0.53	0.31	1	149	1.2
200	1.19	148.29	199.97	-2.71	1.63	0.92	3	149	0
300	1.12	146.22	299.95	-4.41	2.72	1.45	5	148	0.1
400	1.09	138.01	399.93	-5.92	3.9	1.79	7	147	0.2
500	0.68	135.4	499.92	-7.05	4.96	1.92	9	145	0.4
600	0.85	156.88	599.91	-8.15	5.7	2.24	10	145	0.3
700	0.65	147.42	699.9	-9.3	6.31	2.69	11	146	0.2
800	0.44	188.21	799.9	-10.21	6.51	3.24	12	148	0.4
900	0.41	155.98	899.9	-10.94	6.61	3.71	13	149	0.2
1000	0.41	203.42	999.89	-11.63	6.61	4.22	13	150	0.3
1100	0.4	164.07	1099.89	-12.33	6.56	4.77	14	152	0.3
1200	0.51	203.33	1199.89	-13.11	6.51	5.39	15	154	0.3
1300	0.64	202.88	1299.88	-14.04	6.12	6.34	15	156	0.1
1400	0.42	224.88	1399.88	-14.8	5.61	7.25	16	159	0.3
1500	0.59	209.92	1499.87	-15.5	5.07	8.12	16	162	0.2
1600	0.54	188.74	1599.87	-16.42	4.75	9.02	17	164	0.2
1700	0.1	74.1	1699.87	-16.73	5.1	9.02	17	163	0.6
1800	0.25	245.5	1799.87	-16.92	5.17	9.11	18	163	0.3
1900	0.43	161.66	1899.86	-17.42	4.96	9.63	18	164	0.5
2000	0.29	198.9	1999.86	-18.03	4.95	10.09	19	165	0.3
2100	0.58	200.41	2099.86	-18.75	4.7	10.79	19	166	0.3
2200	0.45	185.86	2199.86	-19.62	4.49	11.58	20	167	0.2
2300	0.46	229.24	2299.85	-20.33	4.12	12.35	21	169	0.3
2400	0.53	195.34	2399.85	-21.05	3.67	13.19	21	170	0.3
2500	0.65	227.66	2499.84	-21.92	3.14	14.19	22	172	0.3
2600	0.46	268.8	2599.84	-22.27	2.26	15.04	22	174	0.4
2700	0.27	277.06	2699.84	-22.24	1.62	15.44	22	176	0.2
2800	0.61	259.8	2799.83	-22.26	0.86	15.97	22	178	0.4
2900	0.53	261.16	2899.83	-22.42	-0.13	16.75	22	180	0.1
3000	0.98	227.95	2999.82	-22.98	-1.3	17.95	23	183	0.6
3100	0.85	248.89	3099.81	-23.81	-2.65	19.47	24	186	0.4
3200	0.45	209.51	3199.8	-24.54	-3.49	20.57	25	188	0.6
3300	0.89	223.57	3299.79	-25.48	-4.19	21.74	26	189	0.5
3400	0.7	266.08	3399.78	-26.05	-5.42	22.99	27	192	0.6
3500	0.79	287.27	3499.77	-25.9	-6.7	23.73	27	195	0.3
3600	0.7	291.91	3599.77	-25.47	-7.93	24.23	27	197	0.1
3700	0.75	283.78	3699.76	-25.08	-9.13	24.75	27	200	0.1

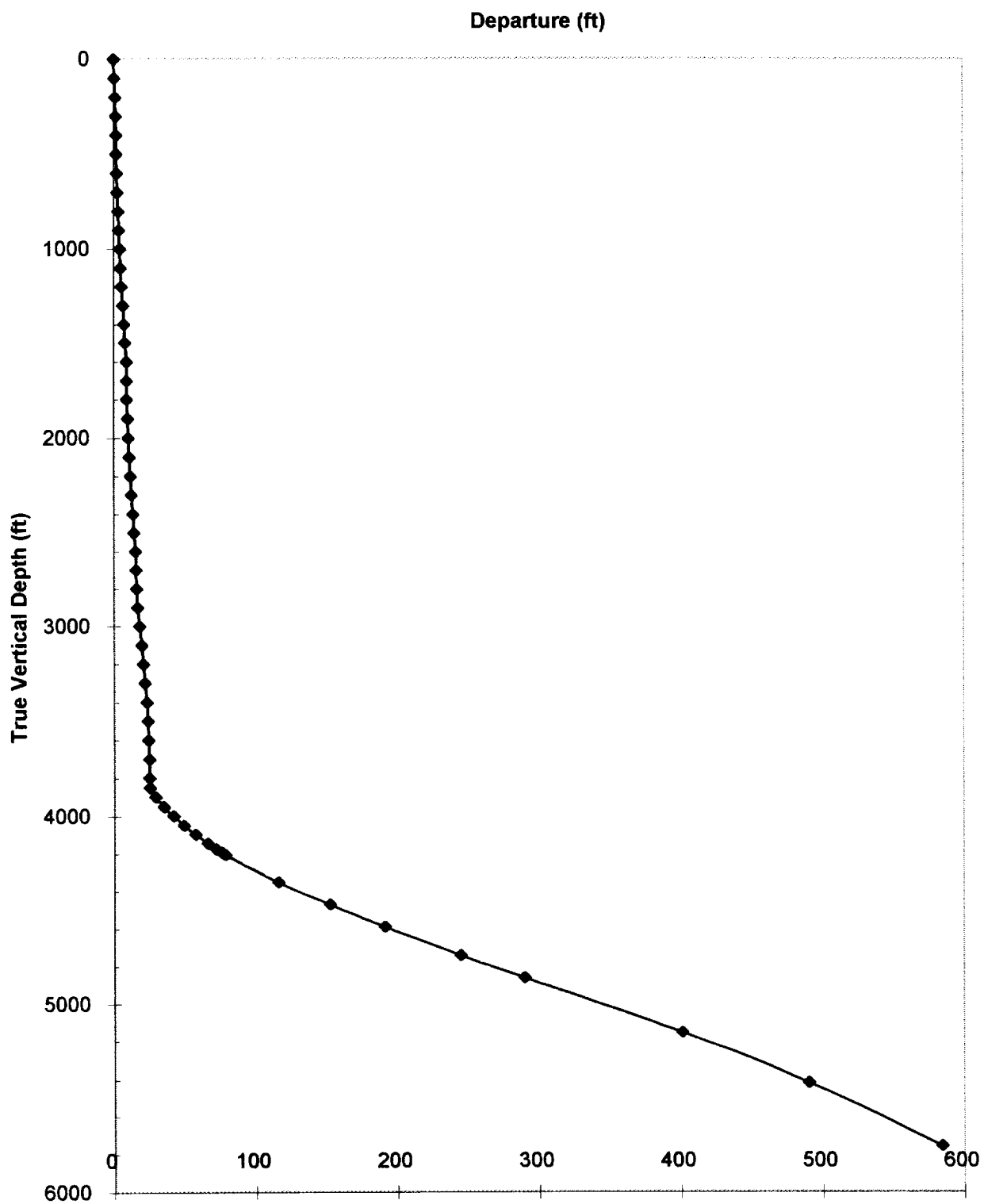
3800	0.69	337.57	3799.75	-24.29	-10.04	24.77	26	202	0.7
3850	2.37	235.52	3849.73	-23.96	-11.16	25.28	26	205	5.2
3900	6.42	221.17	3899.57	-26.5	-14.02	29.07	30	208	8.3
3950	7.51	218.07	3949.2	-31.17	-17.88	35.13	36	210	2.3
4000	7.74	235.37	3998.76	-35.7	-22.69	41.72	42	212	4.6
4050	9.4	237.96	4048.2	-39.8	-28.92	48.92	49	216	3.4
4100	10.62	237.3	4097.44	-44.45	-36.26	57.29	57	219	2.5
4150	10.35	230.96	4146.6	-49.78	-43.63	66.18	66	221	2.4
4180	11.63	226.02	4176.05	-53.57	-47.91	71.86	72	222	5.3
4200	12.44	221.37	4195.61	-56.58	-50.79	76.03	76	222	6.3
4211	12.99	221.74	4206.34	-58.39	-52.39	78.45	78	222	5.1
* 4360	16	221.74	4350.58	-86.22	-77.22	115.74	116	222	2
* 4485	18	221.74	4470.12	-113.49	-101.55	152.29	152	222	1.6
* 4610	18	221.74	4589	-142.31	-127.27	190.91	191	222	0
* 4774	20	221.74	4744.06	-182.15	-162.81	244.3	244	222	1.2
* 4900	22	221.74	4861.68	-215.84	-192.87	289.45	289	222	1.6
* 5212	19.75	221.74	5153.18	-298.79	-266.88	400.62	401	222	0.7
* 5490	17.75	221.74	5416.42	-365.46	-326.37	489.98	490	222	0.7
* 5840	13.5	221.74	5753.4	-435.79	-389.12	584.22	584	222	1.2

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

Atlantic D Com D #5 - Sidetrack Plan View



**Atlantic D Com D #5 - Sidetrack Section View
Vertical Section - 222 degrees**



5/23/96