

Well Name: MICHAELIS #4
Company : A L ABERCROMBIE
Location - Sec: 15 **Twp:** 12S **Rge:** 33W
County: LOGAN **State:** KS
Date: 12/8/95

TRILOBITE TESTING L.L.C.

OPERATOR : A L Abercrombie, Inc

DATE 12/3/95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8465 DST #1

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Lansing "D"

INTERVAL : 4060.00 To 4086.00 ft

TD 4086.00 ft

TEST TYPE: CONVENTIONAL

RECORDED DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF	30	Rec.	13339	13339	13309		PF Fr. 1245 to 1315 hr
SI	45	Range(Psi)	4000.0	4000.0	4700.0	0.0	0.0 IS Fr. 1315 to 1400 hr
SF	60	Clock(hrs)	AK-1	AK-1	AK-1		SF Fr. 1400 to 1500 hr
FS	45	Depth(ft)	4076.0	4076.0	4081.0	0.0	0.0 FS Fr. 1500 to 1545 hr

	Field	1	2	3	4			
A. Init Hydro	1952.0	1959.0	0.0	0.0	0.0	T STARTED	1100	hr
B. First Flow	72.0	79.0	0.0	0.0	0.0	T ON BOTM	1240	hr
Bl. Final Flow	124.0	152.0	0.0	0.0	0.0	T OPEN	1245	hr
C. In Shut-in	1110.0	1120.0	0.0	0.0	0.0	T PULLED	1545	hr
D. Init Flow	218.0	235.0	0.0	0.0	0.0	T OUT	1830	hr
E. Final Flow	322.0	343.0	0.0	0.0	0.0			
F. Fl Shut-in	1090.0	1096.0	0.0	0.0	0.0	TOOL DATA-----		
G. Final Hydro	1932.0	1949.0	0.0	0.0	0.0	Tool Wt.		
Inside/Outside	I	I	O			Wt Set On Packer	200	

RECOVERY

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Tot Fluid 760.00 ft of      0.00 ft in DC and 760.00 ft in DP
160.00    ft of Clean gassy oil - 5% gas, 95% oil
120.00    ft of Slightly gassy oil & water cut mud -
              5% gas, 15% oil, 25% water, 55% mud
120.00    ft of Slightly gassy & oily water cut mud -
              15% gas, 5% oil, 20% water, 60% mud
60.00     ft of Slightly gassy & oily water cut mud -
              5% gas, 5% oil, 30% water, 60% mud
300.00    ft of Sulfur water - 100% water
SALINITY 48000.00 P.P.M.  A.P.I. Gravity 26.00

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TOOL DATA-----	
Tool Wt.	0.00 lbs
Wt Set On Packer	20000.00 lbs
Wt Pulled Loose	80000.00 lbs
Initial Str Wt	42000.00 lbs
Unseated Str Wt	50000.00 lbs
Bot Choke	0.75 in
Hole Size	7.88 in
D Col. ID	2.25 in
D. Pipe ID	3.80 in
D.C. Length	0.00 ft
D.P. Length	3453.00 ft
H.W. I.D	2.70 in
H.W. Length	600.00 ft

BLOW DESCRIPTION

Initial Flow -
Weak to fair blow off bottom in 16 min

Initial Shutin -
Bled off blow, no return

Final Flow -
Weak to fair blow off bottom in 32 min

Final Shutin -
Bled off blow, .25" return blow after
20 min, steady throughout

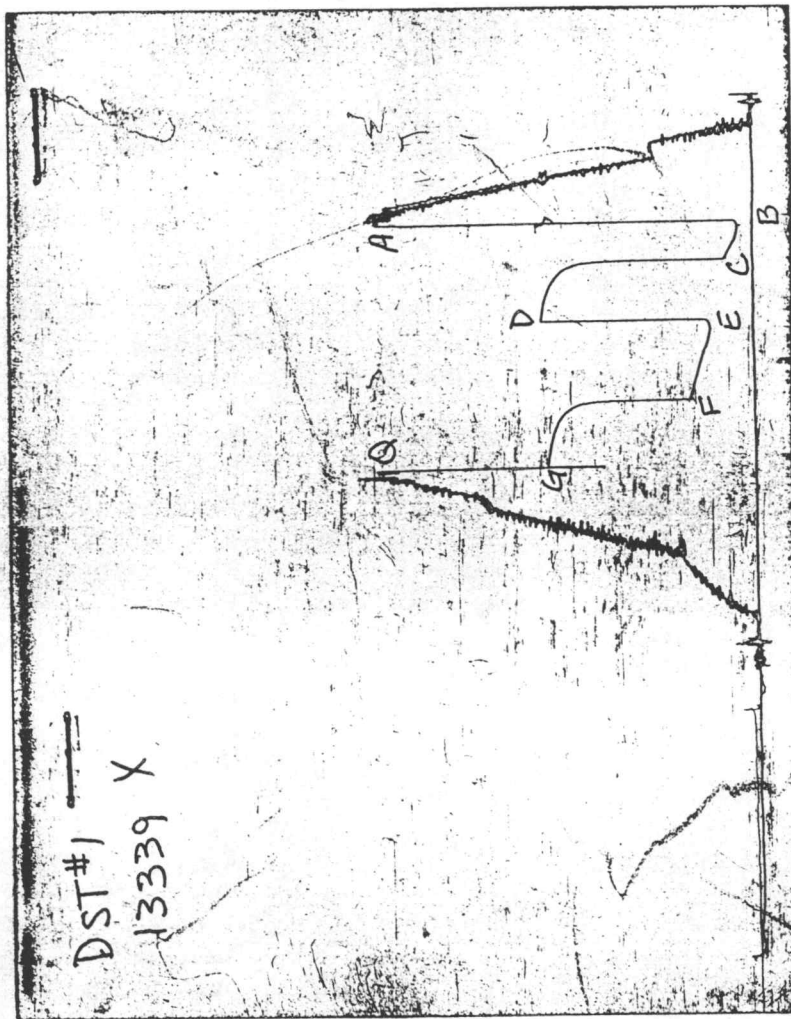
SAMPLES:

SENT TO:

MUD DATA-----		
Mud Type	Chemical	
Weight	9.00	lb/cf
Vis.	47.00	S/L
W.L.	8.80	in3
F.C.	0.00	in
Mud Drop		
Amt. of fill	0.00	ft
Btm. H. Temp.	115.00	F
Hole Condition		
% Porosity	0.00	
Packer Size	6.75	in
No. of Packers	2	
Cushion Amt.	0.00	
Cushion Type		
Reversed Out		
Tool Chased		
Tester	Rod Steinbrink	
Co. Rep.	Arden Ratzlaff	
Contr.	Abercrombie	
Rig #	:	8
Unit #		
Pump T.		

Test Successful: Y

CHART PAGE



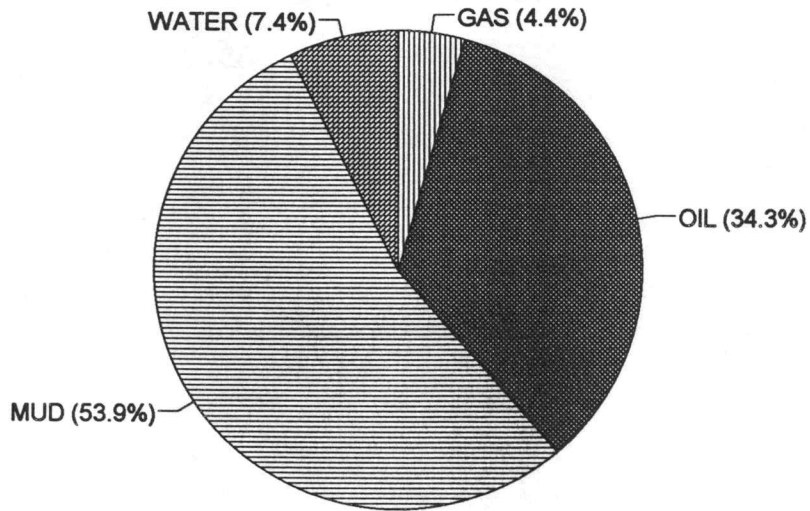
This is an actual photograph of recorder chart

CALCULATED RECOVERY ANALYSIS

DST # 1

TICKET # 8465

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL PIPE	1 160	5	8	95	152		0		0
	2		0		0		0		0
	3		0		0		0		0
	4		0		0		0		0
	5		0		0		0		0
	6		0		0		0		0
WEIGHT PIPE	1 120	5	6	15	18	25	30	55	66
	2 120	15	18	5	6	20	24	60	72
	3 60	5	3	5	3	30	18	60	36
	4 300		0		0		0	100	300
DRL COLLAR	1		0		0		0		0
	2		0		0		0		0
	3		0		0		0		0
	4		0		0		0		0
	5		0		0		0		0
TOTAL	760	4.605263	35	23.55263	179	9.473684	72	62.36842	474
			HRS OPE BBL/DAY						
BBL OIL=	2.35044	*		1.50	37.60704				
BBL WATER=	0.504	*			8.064				
BBL MUD=	3.6972								
BBL GAS =	0.30276								



TRILOBITE TESTING L.L.C.

OPERATOR : A. L. Abercrombie, Inc
WELL NAME: Michaelis #4
LOCATION : 15-12S-33W, Logan Cty KS
INTERVAL : 4108.00 To 4126.00 ft

DATE 12/4/95
KB 3095.00 ft TICKET NO: 8466 DST #2
GR 3090.00 ft FORMATION: Lansing "E"
TD 4126.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	13339	13339	13309			PF Fr. 0345 to 0415 hr
SI 45	Range(Psi)	4000.0	4000.0	4700.0	0.0	0.0	IS Fr. 0415 to 0500 hr
SF 60	Clock(hrs)	AK-1	AK-1	AK-1			SF Fr. 0500 to 0600 hr
FS 45	Depth(ft)	4116.0	4116.0	4121.0	0.0	0.0	FS Fr. 0600 to 0645 hr

	Field	1	2	3	4	
A. Init Hydro	2003.0	2011.0	0.0	0.0	0.0	T STARTED 0200 hr
B. First Flow	62.0	75.0	0.0	0.0	0.0	T ON BOTM 0340 hr
B1. Final Flow	104.0	119.0	0.0	0.0	0.0	T OPEN 0345 hr
C. In Shut-in	879.0	878.0	0.0	0.0	0.0	T PULLED 0645 hr
D. Init Flow	166.0	173.0	0.0	0.0	0.0	T OUT 0930 hr
E. Final Flow	228.0	227.0	0.0	0.0	0.0	
F. Fl Shut-in	839.0	840.0	0.0	0.0	0.0	
G. Final Hydro	1992.0	1991.0	0.0	0.0	0.0	TOOL DATA-----
Inside/Outside	I	I	O			Tool Wt. 0.00 lbs
						Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 44000.00 lbs
						Unseated Str Wt 47000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3516.00 ft
						H.W. I.D 2.70 in
						H.W. Length 600.00 ft

RECOVERY

Tot Fluid 550.00 ft of 0.00 ft in DC and 550.00 ft in DP
430.00 ft of Clean gassy oil - 10% gas, 90% oil
120.00 ft of Gassy oil cut mud - 30% gas, 25% oil, 45% mud

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow -
Weak to fair blow off bottom in 15 min

Initial Shutin -
Bled off blow, weak surface blow,
steady throughout

Final Flow -
Weak to fair blow built to 10"

Final Shutin -
Bled off blow, no return

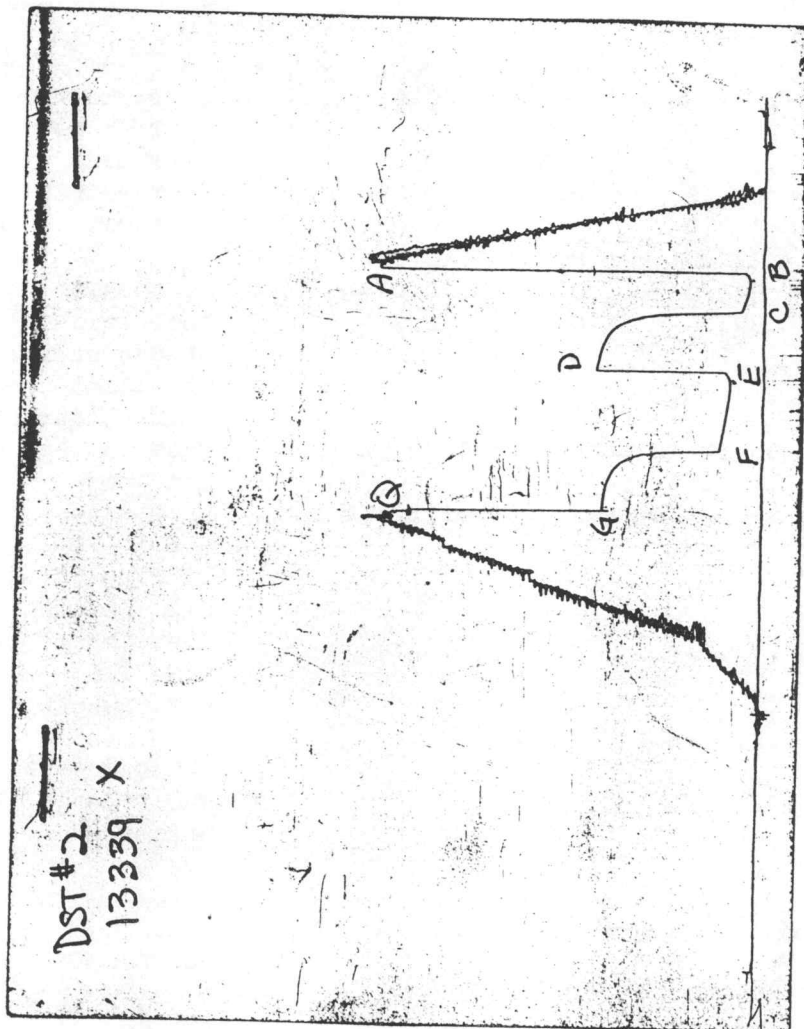
SAMPLES:
SENT TO:

Test Successful: Y

MUD DATA-----

Mud Type	Chemical
Weight	9.00 lb/
Vis.	47.00 S/L
W.L.	8.80 in3
F.C.	0.00 in
Mud Drop	
Amt. of fill	0.00 ft
Btm. H. Temp.	115.00 F
Hole Condition	
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out	
Tool Chased	
Tester	Rod Steinbrink
Co. Rep.	Arden Ratzlaff
Contr.	Abercrombie
Rig #	8
Unit #	
Pump T.	

CHART PAGE



This is an actual photograph of recorder chart

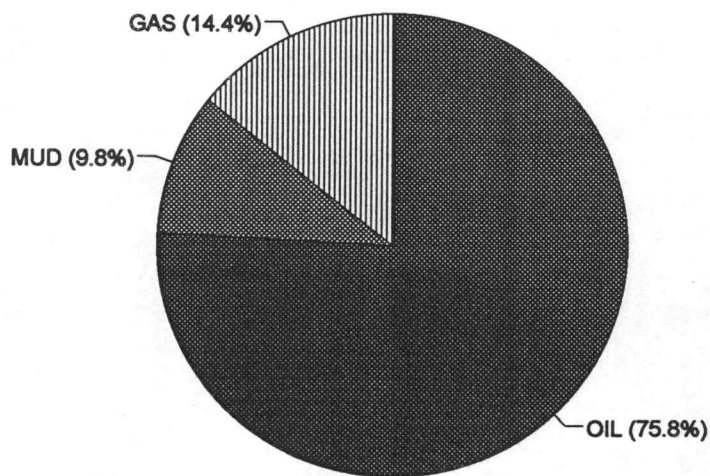
CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

DST # 2

TICKET # 8466

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	430	10	43	90	387		0		0
2	120	30	36	25	30		0	45	54
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	550	14.36364	79	75.81818	417	0	0	9.818182	54

BBL OIL=	2.919	*	HRS OPE	BBL/DAY
BBL WAT	0	*	1.50	46.704
BBL MUD:	0.378			0
BBL GAS:	0.553			



TRILOBITE TESTING L.L.C.

OPERATOR : A. L. Abercrombie, Inc

DATE 12/4/95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8467

DST #3

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Lansing "H"

INTERVAL : 4182.00 To 4212.00 ft

TD 4212.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13339	13339	13309			PF Fr. 1945 to 2015 hr
SI 45 Range(Psi)	4000.0	4000.0	4700.0	0.0	0.0	IS Fr. 2015 to 2100 hr
SF 60 Clock(hrs)	AK-1	AK-1	AK-1			SF Fr. 2100 to 2200 hr
FS 45 Depth(ft)	4202.0	4202.0	4207.0	0.0	0.0	FS Fr. 2200 to 2245 hr

	Field	1	2	3	4	
A. Init Hydro	2013.0	2043.0	0.0	0.0	0.0	T STARTED 1815 hr
B. First Flow	41.0	73.0	0.0	0.0	0.0	T ON BOTM 1940 hr
B1. Final Flow	83.0	125.0	0.0	0.0	0.0	T OPEN 1945 hr
C. In Shut-in	259.0	299.0	0.0	0.0	0.0	T PULLED 2245 hr
D. Init Flow	135.0	179.0	0.0	0.0	0.0	T OUT 0115 hr
E. Final Flow	155.0	206.0	0.0	0.0	0.0	
F. Fl Shut-in	280.0	329.0	0.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	1952.0	1985.0	0.0	0.0	0.0	Tool Wt. 0.00 lbs
Inside/Outside	I	I	O			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 60000.00 lbs
						Initial Str Wt 44000.00 lbs
						Unseated Str Wt 46000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3608.00 ft
						H.W. I.D 2.70 in
						H.W. Length 600.00 ft

RECOVERY

Tot Fluid 480.00 ft of 0.00 ft in DC and 480.00 ft in DP
 180.00 ft of Gas in pipe
 300.00 ft of Clean gassy oil - 10% gas, 90% oil
 180.00 ft of Gassy oil cut mud - 45% gas, 25% oil, 30% mud

SALINITY 0.00 P.P.M. A.P.I. Gravity 35.60

BLOW DESCRIPTION

Initial Flow -
 Weak to fair blow off bottom in 9 min

Initial Shutin -
 Bled off blow, surface return built to .5"

Final Flow -
 Weak surface blow slowly built to 7"

Final Shutin -
 Bled off blow, no return blow

SAMPLES:

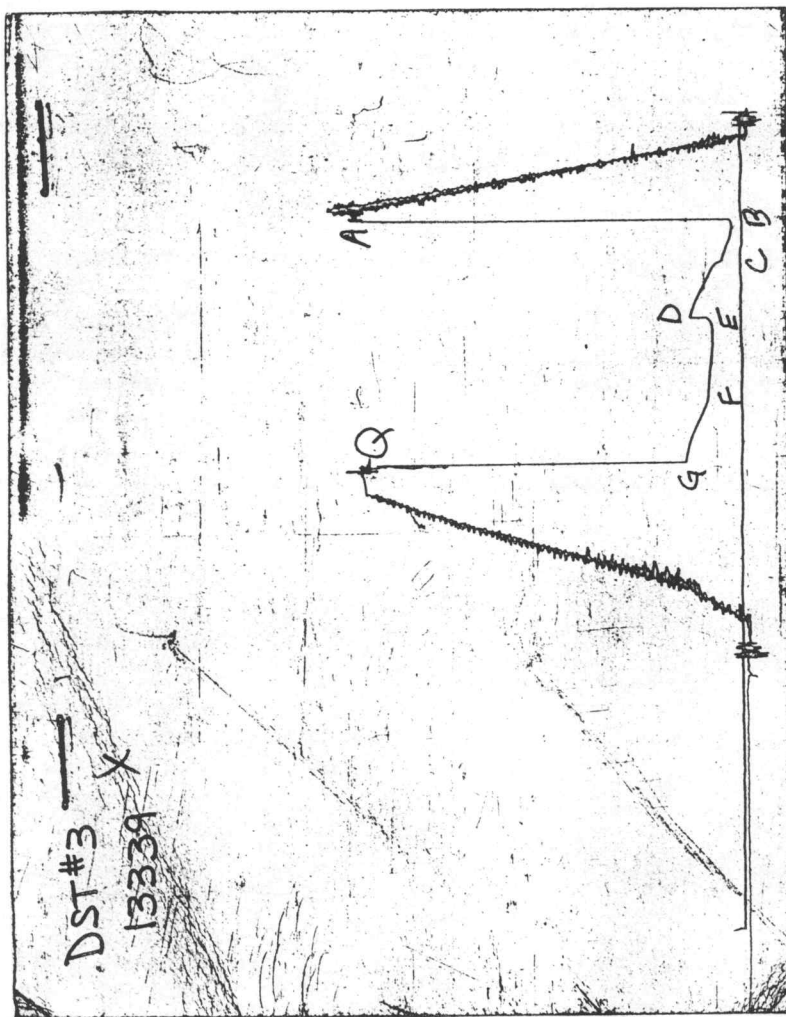
SENT TO:

Test Successful: Y

MUD DATA-----

Mud Type	Chemical
Weight	9.00 lb/
Vis.	51.00 S/L
W.L.	7.20 in3
F.C.	0.00 in
Mud Drop	
Amt. of fill	0.00 ft
Btm. H. Temp.	115.00 F
Hole Condition	
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out	
Tool Chased	
Tester	Rod Steinbrink
Co. Rep.	Arden Ratzlaff
Contr.	Abercrombie
Rig #	8
Unit #	
Pump T.	

CHART PAGE



This is an actual photograph of recorder chart

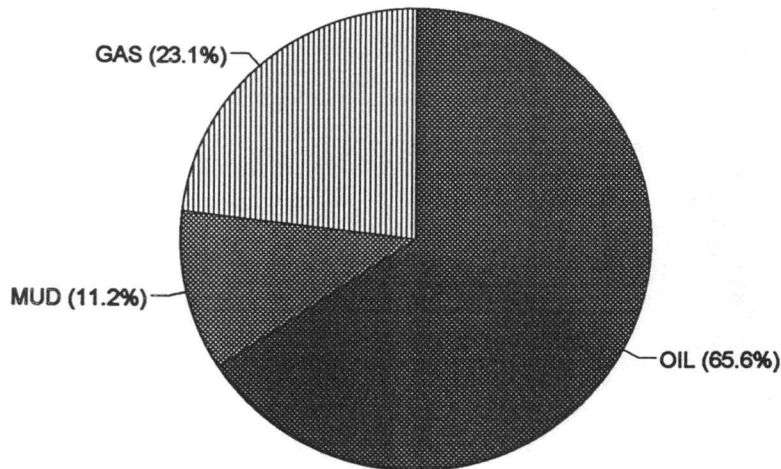
CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

DST # 3

TICKET # 8467

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	300	10	30	90	270		0		0
2	180	45	81	25	45		0	30	54
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	480	23.125	111	65.625	315	0	0	11.25	54

BBL OIL=	2.205	*	HRS OPE BBL/DAY	
BBL WAT	0	*	1.50	35.28
BBL MUD:	0.378			0
BBL GAS:	0.777			



TRILOBITE TESTING L.L.C.

OPERATOR : A.L. Abercrombie, Inc.

DATE 12-5-95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8468

DST #4

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Lansing "I"

INTERVAL : 4221.00 To 4244.00 ft

TD 4244.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mihs		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	13339	13339	2351			PF Fr. 1032 to 1102 hr
SI 45	Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 1102 to 1147 hr
SF 60	Clock(hrs)	AK-1	AK-1	Alpin			SF Fr. 1147 to 1247 hr
FS 45	Depth(ft)	4239.0	4239.0	4223.0	0.0	0.0	FS Fr. 1247 to 1332 hr

	Field	1	2	3	4	
A. Init Hydro	2093.0	2103.0	2051.0	0.0	0.0	T STARTED 0900 hr
B. First Flow	93.0	85.0	38.0	0.0	0.0	T ON BOTM 1030 hr
B1. Final Flow	155.0	144.0	165.0	0.0	0.0	T OPEN 1032 hr
C. In Shut-in	270.0	264.0	274.0	0.0	0.0	T PULLED 1332 hr
D. Init Flow	207.0	215.0	169.0	0.0	0.0	T OUT 1600 hr
E. Final Flow	239.0	256.0	249.0	0.0	0.0	
F. Fl Shut-in	270.0	264.0	274.0	0.0	0.0	
G. Final Hydro	2073.0	2069.0	2015.0	0.0	0.0	TOOL DATA-----
Inside/Outside	O	O	I			Tool Wt. 1800.00 lbs

RECOVERY

Tot Fluid 485.00 ft of 0.00 ft in DC and 485.00 ft in DP
 120.00 ft of Gas in pipe
 10.00 ft of Free Oil - 5% gas, 95% oil
 475.00 ft of Slightly gassy muddy water -
 5% gas, Trace oil, 60% water, 35% mud

RW .16 @ 80 F

SALINITY 40000.00 P.P.M. A.P.I. Gravity 39.20

MUD DATA-----

Mud Type	Chemical
Weight	9.10 lb/c
Vis.	49.00 S/L
W.L.	9.20 in3
F.C.	0.00 in
Mud Drop N	

BLOW DESCRIPTION

Initial Flow -
 Weak to fair blow off bottom in 17 min

Initial Shutin -
 Bled off blow, no return

Final Flow -
 Weak surface blow built to 3"

Final Shutin -
 Bled off blow, no return

SAMPLES:

SENT TO:

Amt. of fill	0.00 ft
Btm. H. Temp.	123.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Rod Steinbrink
Co. Rep.	Arden Ratzlaff
Contr.	Abercrombie
Rig #	#8
Unit #	
Pump T.	

Test Successful: Y

CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

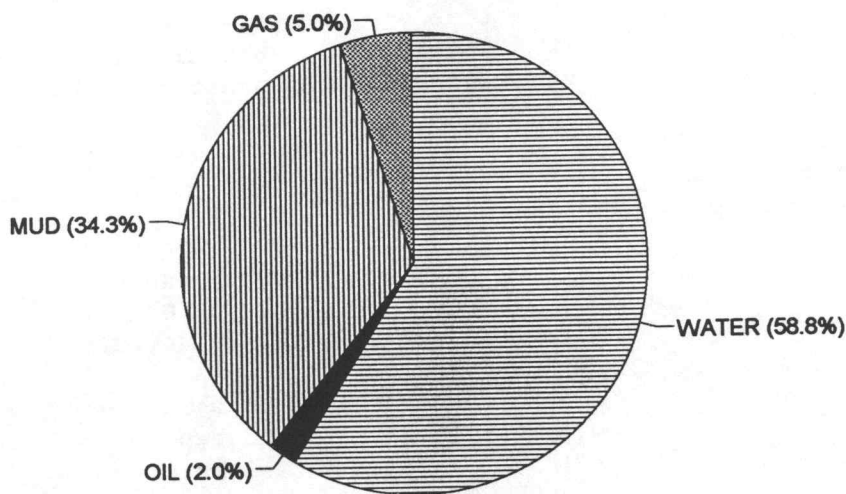
ST # 4

TICKET # 8468

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	10	5	0.5	95	9.5		0		0
2	475	5	23.75		0	60	285	35	166.25
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	485	5	24.25	1.958763	9.5	58.76289	285	34.27835	166.25

HRS OPE BBL/DAY

BL OIL= 0.0665 * 1.50 1.064
 BL WAT 1.995 * 31.92
 BL MUD: 1.16375
 BL GAS: 0.16975



8468 DST #4 Michaelis #4 A.L. Abercrombie TEST HISTORY

Flag Points

t (Min.) P (PSig)

A: 0.00 2051.27
 B: 0.00 38.18
 C: 30.00 165.08
 D: 54.00 274.44
 E: 0.00 168.94
 F: 60.00 249.34
 G: 44.00 274.18
 Q: 0.00 2014.76

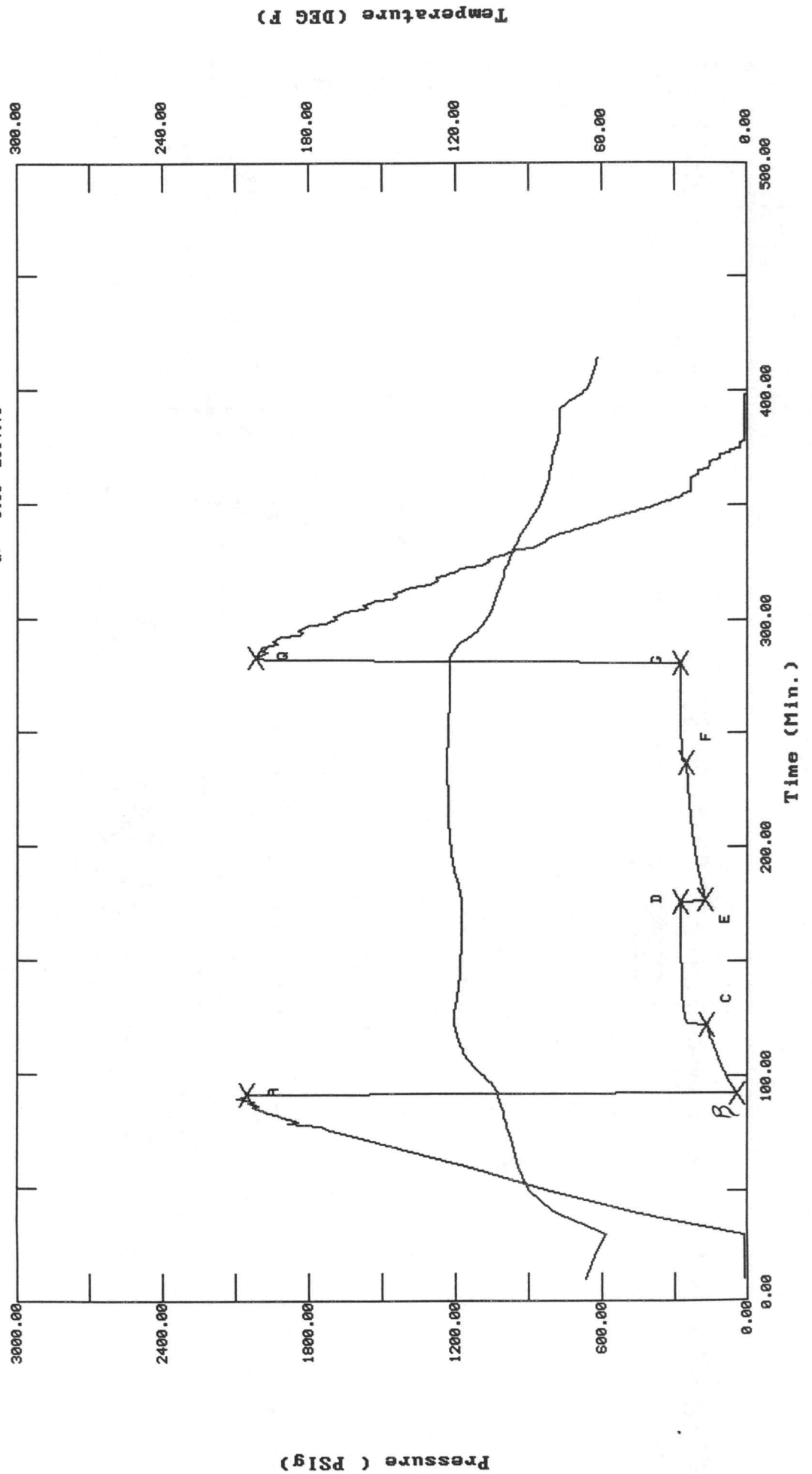
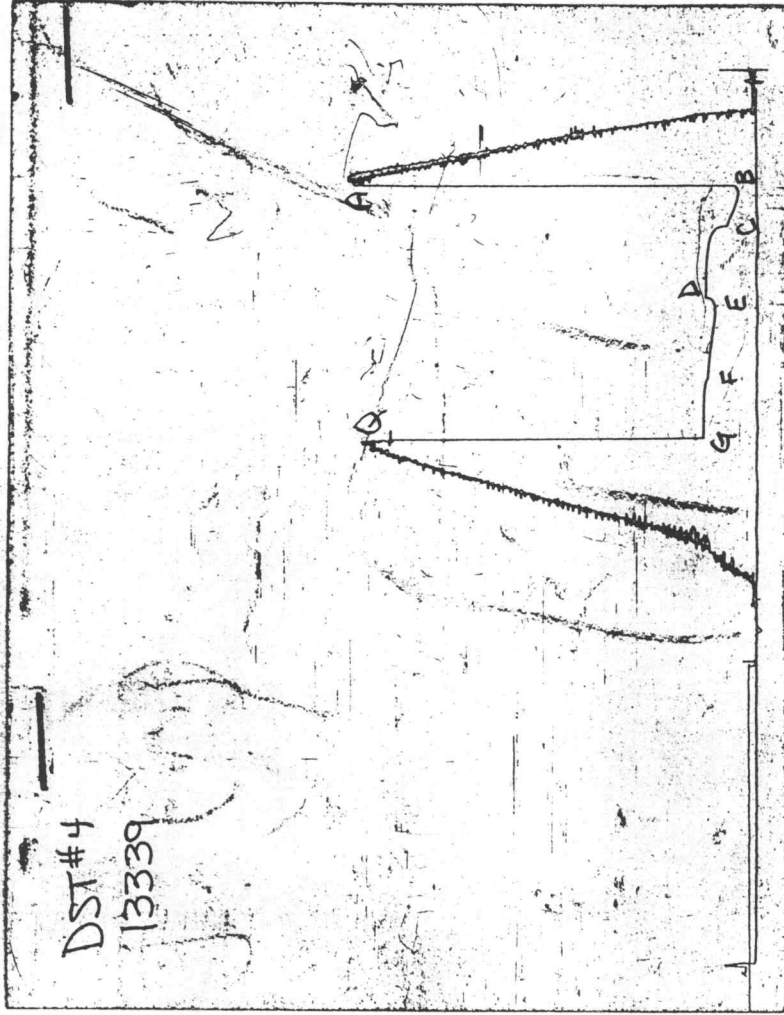


CHART PAGE



This is an actual photograph of recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8468 DST #4 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 09:01:08

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
***** Initial Hydro.	91.00	2051.3	0.0	102.50		
***** Start Flow 1	0.00	38.2	0.0	102.66		
	1.00	45.6	7.4	102.98		
	2.00	53.5	15.4	103.55		
	3.00	58.6	20.4	104.27		
	4.00	63.3	25.1	105.16		
	5.00	68.7	30.5	106.10		
	6.00	74.8	36.6	107.11		
	7.00	80.6	42.4	108.09		
	8.00	85.3	47.2	109.11		
	9.00	90.7	52.5	110.08		
	10.00	95.2	57.1	110.98		
	11.00	99.5	61.4	111.83		
	12.00	103.9	65.7	112.72		
	13.00	106.2	68.1	113.52		
	14.00	110.9	72.8	114.31		
	15.00	114.8	76.6	114.84		
	16.00	118.8	80.7	115.54		
	17.00	123.1	84.9	116.14		
	18.00	126.6	88.5	116.67		
	19.00	130.4	92.2	117.18		
	20.00	134.6	96.4	117.62		
	21.00	137.9	99.7	118.05		
	22.00	141.7	103.6	118.37		
	23.00	144.8	106.6	118.71		
	24.00	148.3	110.1	119.01		
	25.00	151.4	113.2	119.29		
	26.00	154.4	116.2	119.56		
	27.00	157.1	118.9	119.69		
	28.00	159.9	121.7	119.95		
	29.00	162.5	124.3	120.14		
***** End Flow 1	30.00	165.1	126.9	120.30		
***** Start Shutin 1	0.00	165.1	0.0	120.30	0.0000	0.027
	1.00	241.1	76.0	120.47	31.0000	0.058
	2.00	249.4	84.3	120.56	16.0000	0.062
	3.00	253.9	88.8	120.59	11.0000	0.064
	4.00	256.5	91.4	120.52	8.5000	0.066
	5.00	258.5	93.4	120.41	7.0000	0.067
	6.00	260.5	95.4	120.28	6.0000	0.068
	7.00	261.5	96.4	120.12	5.2857	0.068
	8.00	263.0	97.9	119.94	4.7500	0.069
	9.00	263.5	98.4	119.77	4.3333	0.069
	10.00	264.7	99.6	119.57	4.0000	0.070
	11.00	265.5	100.4	119.56	3.7273	0.070
	12.00	265.7	100.6	119.34	3.5000	0.071
	13.00	266.3	101.2	119.19	3.3077	0.071
	14.00	267.1	102.1	119.04	3.1429	0.071
	15.00	267.3	102.2	118.90	3.0000	0.071
	16.00	268.1	103.0	118.77	2.8750	0.072
	17.00	268.4	103.3	118.65	2.7647	0.072
	18.00	268.8	103.7	118.56	2.6667	0.072

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8468 DST #4 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 09:01:08

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	19.00	269.1	104.1	118.44	2.5789	0.072
	20.00	269.4	104.3	118.35	2.5000	0.073
	21.00	269.4	104.3	118.31	2.4286	0.073
	22.00	269.7	104.6	118.23	2.3636	0.073
	23.00	270.2	105.2	118.16	2.3043	0.073
	24.00	270.2	105.1	118.10	2.2500	0.073
	25.00	270.5	105.4	118.04	2.2000	0.073
	26.00	270.7	105.7	117.98	2.1538	0.073
	27.00	270.9	105.8	117.92	2.1111	0.073
	28.00	271.2	106.1	117.87	2.0714	0.074
	29.00	271.7	106.6	117.86	2.0345	0.074
	30.00	271.5	106.4	117.82	2.0000	0.074
	31.00	272.1	107.0	117.79	1.9677	0.074
	32.00	272.2	107.1	117.77	1.9375	0.074
	33.00	272.3	107.3	117.75	1.9091	0.074
	34.00	272.6	107.5	117.72	1.8824	0.074
	35.00	272.8	107.7	117.70	1.8571	0.074
	36.00	272.8	107.8	117.68	1.8333	0.074
	37.00	272.7	107.6	117.67	1.8108	0.074
	38.00	273.2	108.1	117.66	1.7895	0.075
	39.00	273.3	108.2	117.65	1.7692	0.075
	40.00	273.4	108.4	117.65	1.7500	0.075
	41.00	273.5	108.4	117.64	1.7317	0.075
	42.00	273.3	108.2	117.64	1.7143	0.075
	43.00	273.8	108.8	117.64	1.6977	0.075
	44.00	273.6	108.5	117.64	1.6818	0.075
	45.00	274.0	108.9	117.63	1.6667	0.075
	46.00	273.8	108.7	117.63	1.6522	0.075
	47.00	274.3	109.2	117.64	1.6383	0.075
	48.00	274.4	109.3	117.65	1.6250	0.075
	49.00	274.1	109.0	117.64	1.6122	0.075
	50.00	274.2	109.1	117.66	1.6000	0.075
	51.00	274.2	109.1	117.65	1.5882	0.075
	52.00	274.3	109.2	117.66	1.5769	0.075
	53.00	274.4	109.3	117.66	1.5660	0.075
***** End Shut-in 1	54.00	274.4	109.4	117.67	1.5556	0.075
***** Start Flow 2	0.00	168.9	0.0	117.67		
	1.00	172.0	3.0	117.73		
	2.00	175.0	6.0	117.87		
	3.00	177.5	8.6	118.06		
	4.00	180.5	11.6	118.29		
	5.00	183.0	14.0	118.48		
	6.00	185.1	16.1	118.74		
	7.00	187.3	18.4	119.00		
	8.00	189.9	21.0	119.26		
	9.00	191.8	22.8	119.56		
	10.00	194.3	25.3	119.75		
	11.00	196.0	27.1	120.00		
	12.00	198.1	29.2	120.23		
	13.00	200.1	31.1	120.45		
	14.00	202.3	33.4	120.64		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
TEST: 8468 DST #4 Michaelis #4 A.L.Abercrombie
DATE: 12/05/95 TIME: 09:01:08

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
15.00	204.2	35.2	120.83		
16.00	205.5	36.6	121.01		
17.00	207.3	38.4	121.18		
18.00	208.9	39.9	121.33		
19.00	210.7	41.7	121.48		
20.00	212.2	43.3	121.62		
21.00	213.7	44.7	121.76		
22.00	214.8	45.8	121.90		
23.00	216.4	47.5	122.02		
24.00	217.8	48.8	122.02		
25.00	218.8	49.9	122.05		
26.00	220.4	51.4	122.19		
27.00	221.7	52.8	122.30		
28.00	222.9	54.0	122.38		
29.00	224.1	55.1	122.44		
30.00	224.9	56.0	122.54		
31.00	226.0	57.1	122.57		
32.00	227.4	58.5	122.63		
33.00	228.3	59.3	122.68		
34.00	229.6	60.7	122.72		
35.00	230.6	61.7	122.76		
36.00	231.6	62.7	122.82		
37.00	232.6	63.6	122.86		
38.00	233.2	64.3	122.89		
39.00	234.1	65.1	122.94		
40.00	235.3	66.4	122.97		
41.00	235.8	66.9	123.00		
42.00	237.1	68.1	123.04		
43.00	238.0	69.1	123.06		
44.00	238.5	69.6	123.08		
45.00	239.4	70.4	123.10		
46.00	240.2	71.3	123.13		
47.00	240.9	72.0	123.14		
48.00	241.7	72.8	123.17		
49.00	242.7	73.8	123.20		
50.00	243.6	74.6	123.20		
51.00	243.9	74.9	123.23		
52.00	244.6	75.6	123.23		
53.00	245.2	76.3	123.24		
54.00	246.2	77.3	123.25		
55.00	246.8	77.9	123.26		
56.00	247.3	78.4	123.28		
57.00	247.7	78.8	123.26		
58.00	248.7	79.7	123.27		
59.00	249.2	80.2	123.27		
60.00	249.3	80.4	123.28		

***** End Flow 2

***** Start Shutin 2

0.00	249.3	0.0	123.28	0.0000	0.062
1.00	266.0	16.7	123.27	91.0000	0.071
2.00	267.5	18.1	123.27	46.0000	0.072
3.00	268.4	19.1	123.26	31.0000	0.072
4.00	269.1	19.7	123.27	23.5000	0.072

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8468 DST #4 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 09:01:08

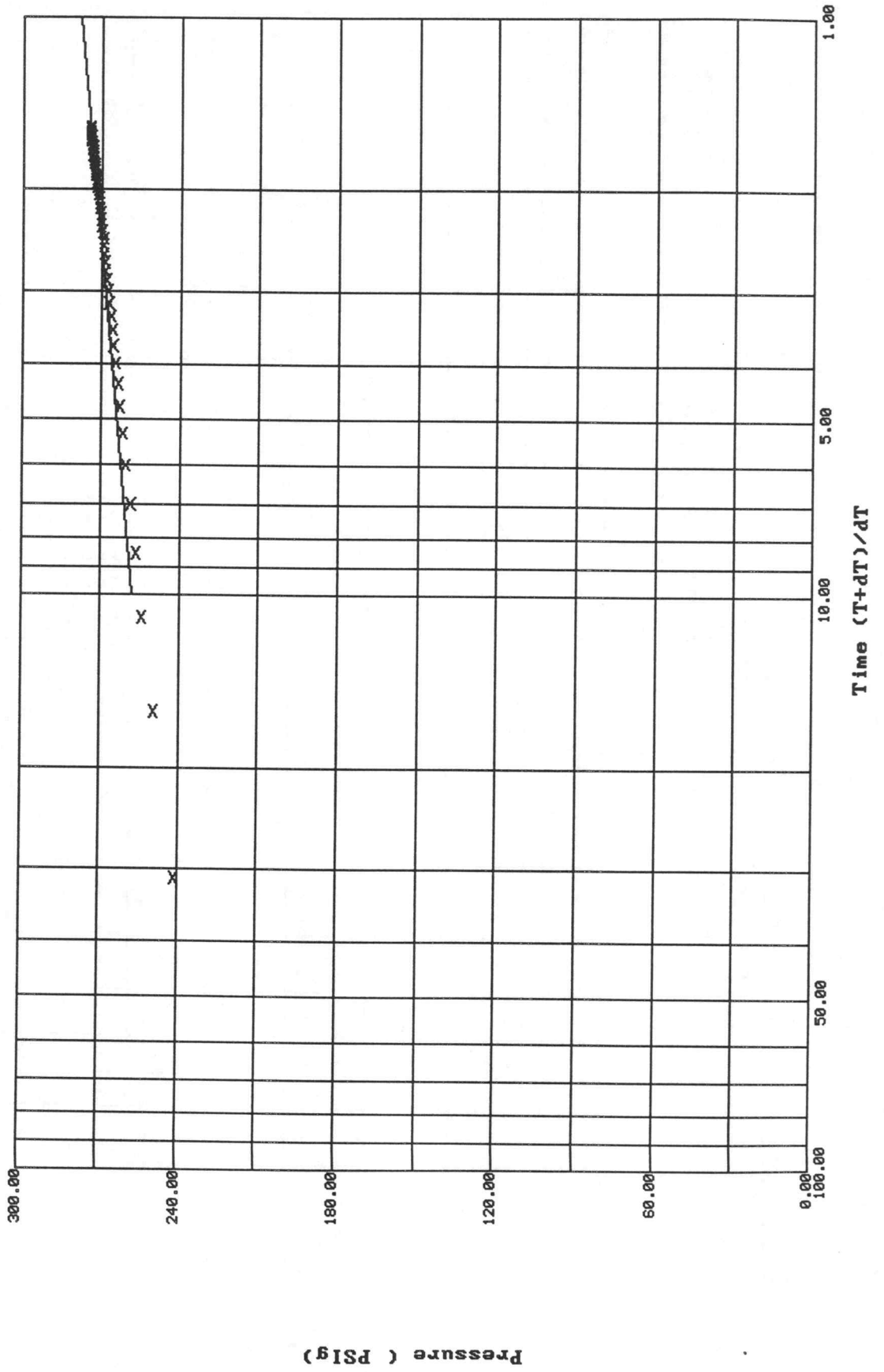
	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	5.00	269.1	19.7	123.24	19.0000	0.072
	6.00	269.5	20.1	123.23	16.0000	0.073
	7.00	269.8	20.5	123.20	13.8571	0.073
	8.00	270.2	20.9	123.18	12.2500	0.073
	9.00	270.8	21.5	123.16	11.0000	0.073
	10.00	270.7	21.4	123.12	10.0000	0.073
	11.00	271.2	21.8	123.10	9.1818	0.074
	12.00	271.2	21.9	123.06	8.5000	0.074
	13.00	271.7	22.3	123.02	7.9231	0.074
	14.00	271.6	22.2	122.99	7.4286	0.074
	15.00	272.0	22.7	122.93	7.0000	0.074
	16.00	271.8	22.5	122.88	6.6250	0.074
	17.00	272.3	23.0	122.84	6.2941	0.074
	18.00	272.4	23.1	122.78	6.0000	0.074
	19.00	272.6	23.2	122.73	5.7368	0.074
	20.00	272.7	23.3	122.70	5.5000	0.074
	21.00	272.5	23.2	122.66	5.2857	0.074
	22.00	272.9	23.6	122.62	5.0909	0.074
	23.00	272.7	23.3	122.61	4.9130	0.074
	24.00	273.1	23.8	122.55	4.7500	0.075
	25.00	272.9	23.6	122.54	4.6000	0.074
	26.00	273.0	23.7	122.49	4.4615	0.075
	27.00	273.1	23.8	122.44	4.3333	0.075
	28.00	273.2	23.8	122.41	4.2143	0.075
	29.00	273.3	23.9	122.38	4.1034	0.075
	30.00	273.7	24.3	122.34	4.0000	0.075
	31.00	273.3	24.0	122.31	3.9032	0.075
	32.00	273.5	24.2	122.29	3.8125	0.075
	33.00	273.6	24.3	122.26	3.7273	0.075
	34.00	273.9	24.6	122.22	3.6471	0.075
	35.00	274.0	24.7	122.19	3.5714	0.075
	36.00	273.8	24.4	122.17	3.5000	0.075
	37.00	274.2	24.8	122.12	3.4324	0.075
	38.00	273.9	24.6	122.08	3.3684	0.075
	39.00	274.4	25.0	122.05	3.3077	0.075
	40.00	274.4	25.0	122.04	3.2500	0.075
	41.00	274.1	24.8	122.04	3.1951	0.075
	42.00	274.4	25.0	122.02	3.1429	0.075
	43.00	274.5	25.2	122.04	3.0930	0.075
***** End Shut-in 2	44.00	274.2	24.8	122.02	3.0455	0.075
***** Final Hydro.	283.00	2014.8	0.0	122.03		

Horner Plot: shut-in #1

8468 DST #4 Michaelis #4 A.L.Abercrombie

Slope: 20.8169 PSig/cycle

Ext. Pressure: 278.4586 PSig

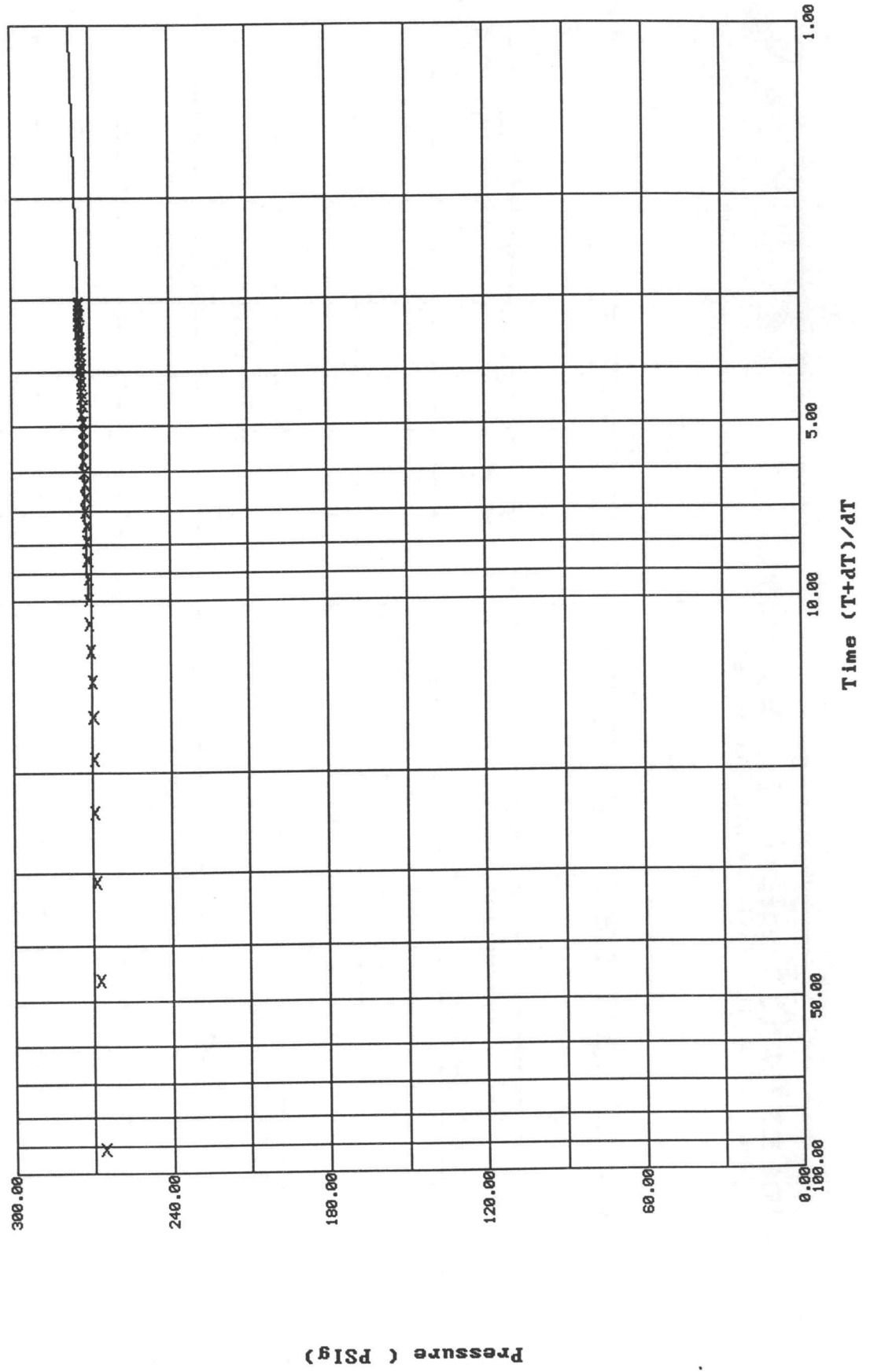


Horner Plot: shut-in #2

8468 DST #4 Michaelis #4 A.L.Abercrombie

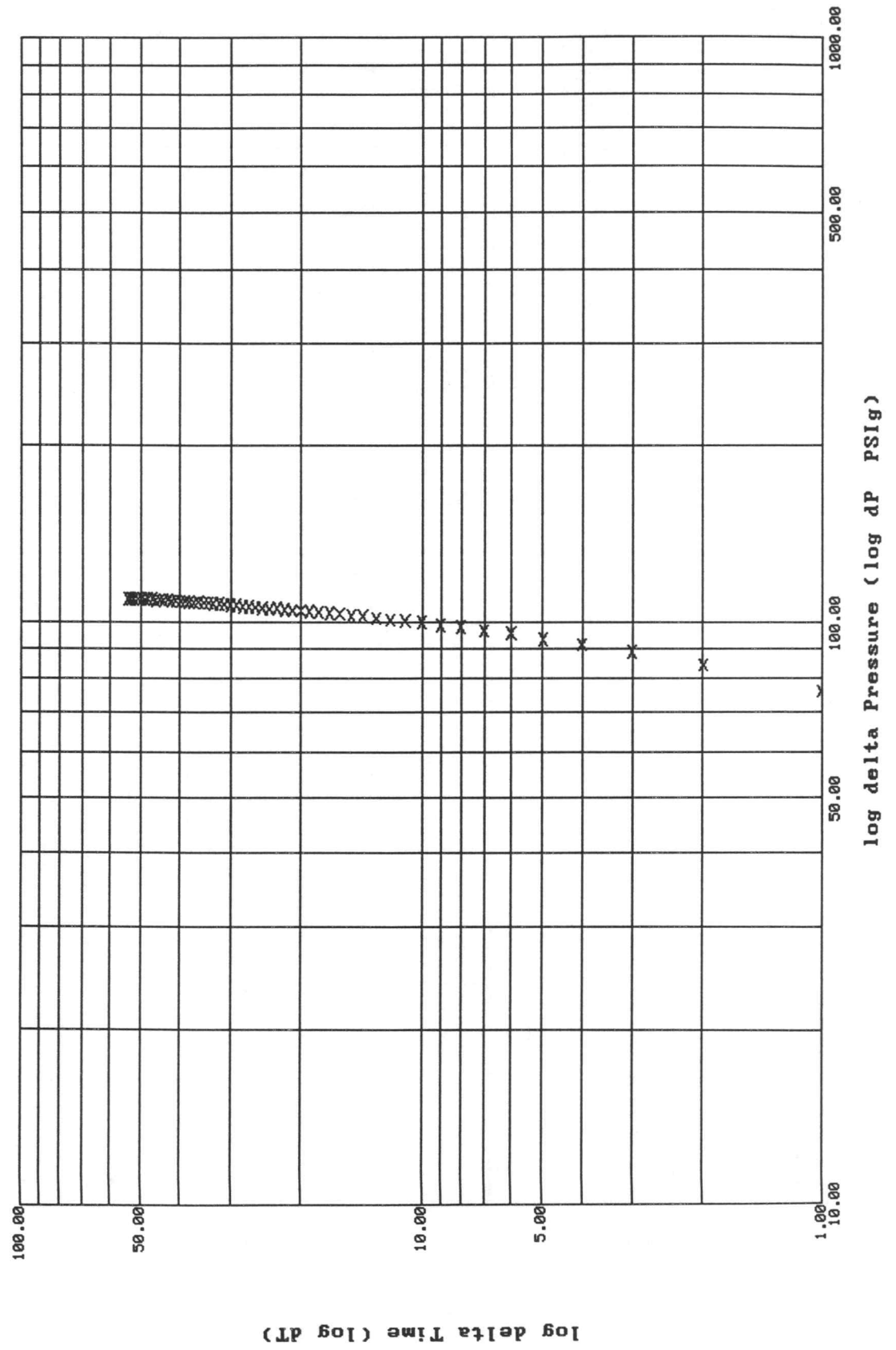
Slope: 6.4875 PSig/cycle

Ext. Pressure: 277.5275 PSig



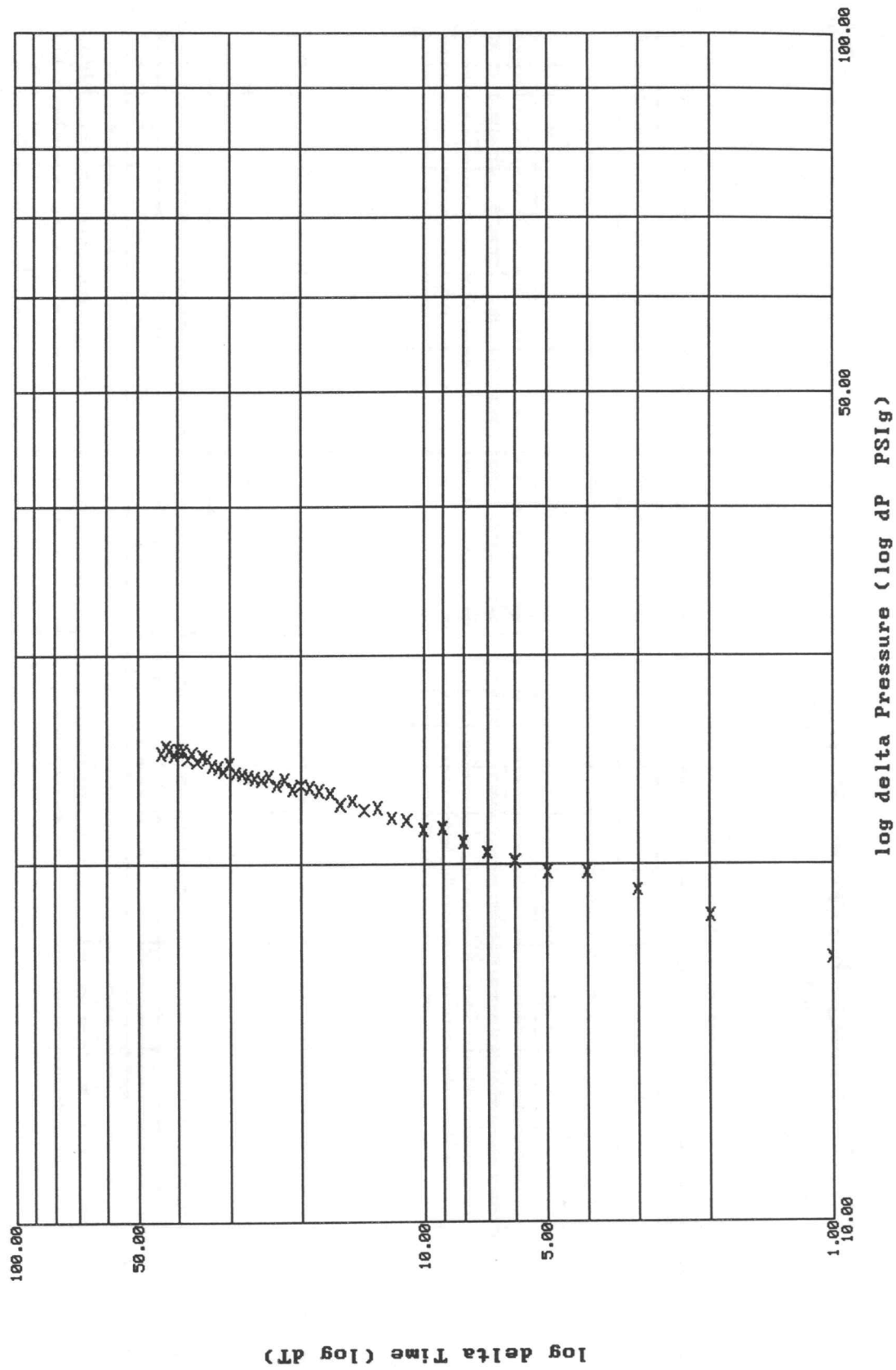
McKinley Plot: shut-in #1

8468 DST #4 Michaelis #4 A.L.Abercrombie



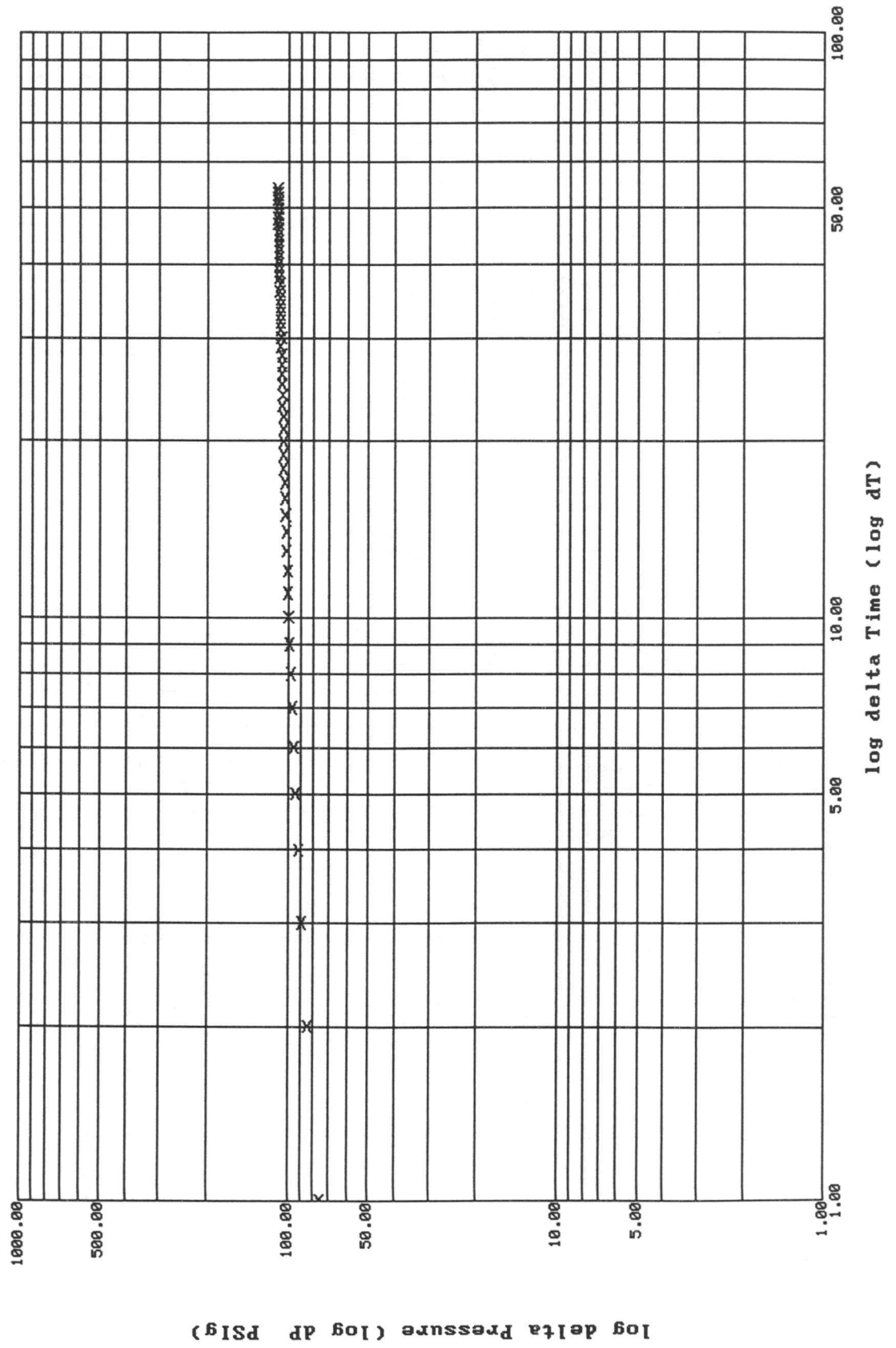
McKinley Plot: shut-in #2

8468 DST #4 Michaelis #4 A.L.Abercrombie

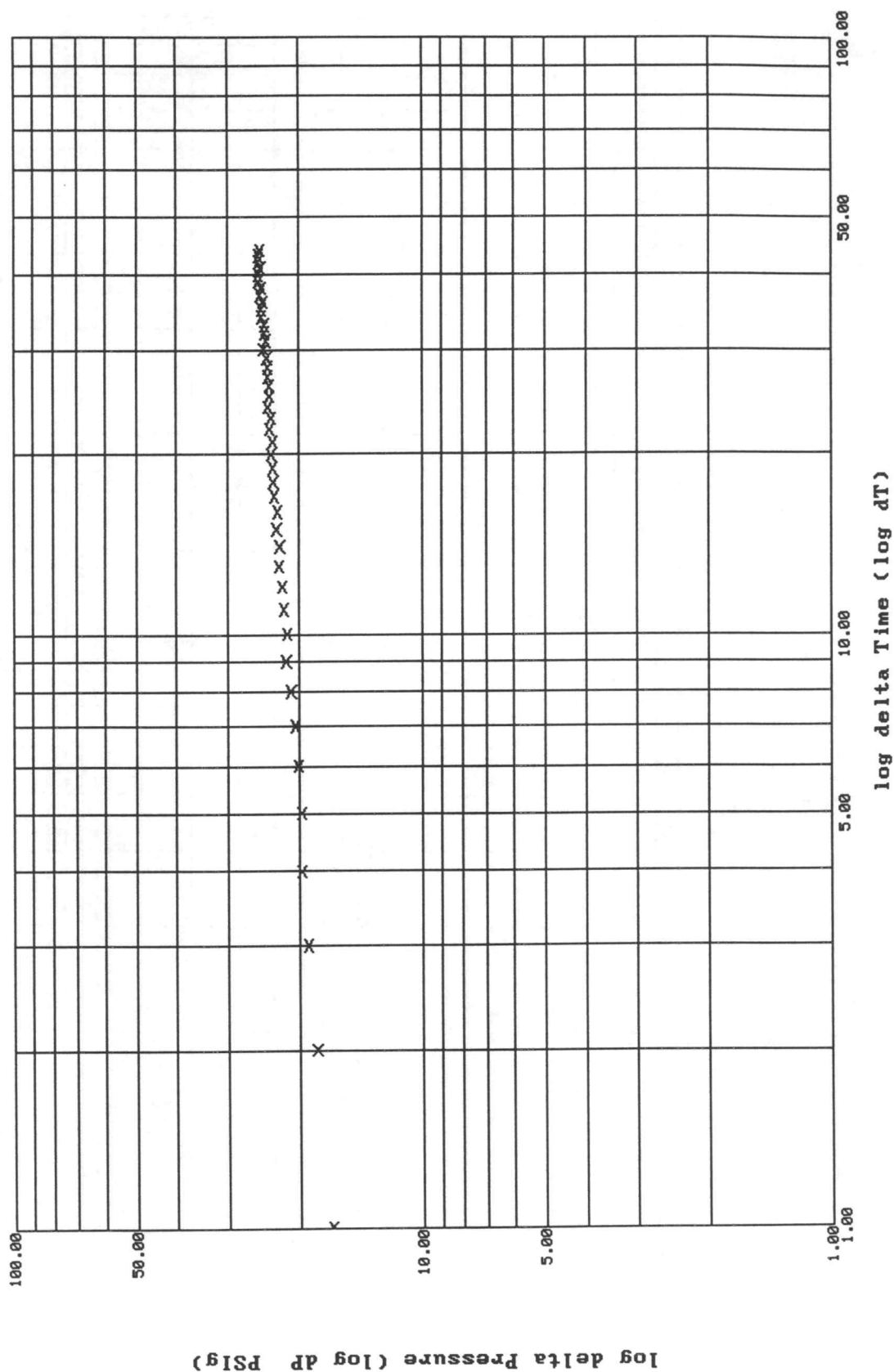


Ramey Plot: shut-in #1

8468 DST #4 Michaelis #4 A.L. Abercrombie



Ramey Plot: shut-in #2 8468 DST #4 Michaelis #4 A.L. Abercrombie



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Michaelis #4

LOCATION : 15-12S-33W, Logan Cty KS

TICKET No. 8468 D.S.T. No. 4 DATE 12-5-95

TOTAL TOOL TO BOTTOM OF TOP PACKERS 21

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 23

TOTAL TOOL 44

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 44

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands67 Single 1 Total 4208

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4252

TOTAL DEPTH 4244

TOTAL DRILL PIPE ABOVE K.B. 8

REMARKS:

RW .16 @ 80 deg. = 40,000 Chlor.

38 API @ 48 deg. = 39.2 Gravity API

P.O. SUB 60' above WP	4140
C.O. SUB 2'	4200
S.I. TOOL 5'	4207
HMV 5'	4212
JARS n/a	
SAFETY JOINT n/a	
PACKER 5'	4216
PACKER 5'	4221
DEPTH 4221	
STUBB 1'	4222
ANCHOR	
Alpine Recorder	4223
17' perf	4239
T.C.	
DEPTH	
AK-1 recorder	4239
BULLNOSE 5' bull plug	
T.D.	4244

TRILOBITE TESTING L.L.C.

OPERATOR : A.L. Abercrombie, Inc.

DATE 12-06-95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8469

DST #5

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Lansing "J"

INTERVAL : 4248.00 To 4273.00 ft

TD 4273.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	13339	13339	2351			PF Fr. 0059 to 0129 hr
SI 45	Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 0129 to 0214 hr
SF 60	Clock(hrs)	AK-1	AK-1	Alpin			SF Fr. 0214 to 0314 hr
FS 45	Depth(ft)	4268.0	4268.0	4250.0	0.0	0.0	FS Fr. 0314 to 0359 hr

	Field	1	2	3	4	
A. Init Hydro	2123.0	2131.0	2066.0	0.0	0.0	T STARTED 2310 hr
B. First Flow	62.0	55.0	34.0	0.0	0.0	T ON BOTM 0056 hr
Bl. Final Flow	62.0	55.0	50.0	0.0	0.0	T OPEN 0059 hr
C. In Shut-in	301.0	283.0	303.0	0.0	0.0	T PULLED 0359 hr
D. Init Flow	83.0	73.0	47.0	0.0	0.0	T OUT 0615 hr
E. Final Flow	83.0	75.0	68.0	0.0	0.0	
F. Fl Shut-in	291.0	281.0	300.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2043.0	2057.0	2059.0	0.0	0.0	Tool Wt. 1800.00 lbs
Inside/Outside	O	O	I			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 50000.00 lbs
						Initial Str Wt 44000.00 lbs
						Unseated Str Wt 44000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3639.00 ft
						H.W. I.D 2.70 in
						H.W. Length 600.00 ft

RECOVERY

Tot Fluid 120.00 ft of 0.00 ft in DC and 120.00 ft in DP
 390.00 ft of Gas in pipe
 30.00 ft of Free Oil - 5% gas, 95% oil
 90.00 ft of Gassy oil cut mud - 25% gas, 15% oil, 60% mud

SALINITY 0.00 P.P.M. A.P.I. Gravity 41.00

BLOW DESCRIPTION

Initial Flow -
 Weak surface blow slowly built to 5"

Initial Shutin -
 Bled off blow, no return

Final Flow -
 Weak surface blow slowly built to 9"

Final Shutin -
 Bled off blow, no return

SAMPLES:

SENT TO:

Test Successful: Y

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/
Vis.	49.00 S/L
W.L.	9.20 in3
F.C.	0.00 in

Mud Drop Y 5.0 ft

Amt. of fill	0.00 ft
Btm. H. Temp.	117.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00

Cushion Type
 Reversed Out N

Tool Chased N

Tester	Rod Steinbrink
Co. Rep.	Arden Ratzlaff
Contr.	Abercrombie
Rig #	#8
Unit #	
Pump T.	

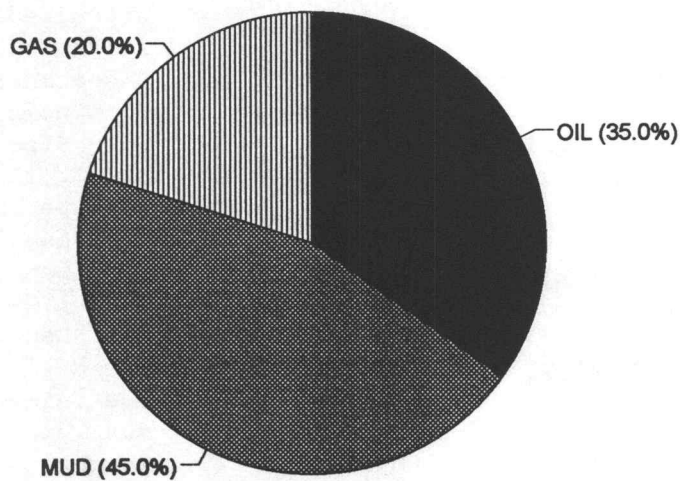
CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

DST # 5

TICKET # 8469

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	30	5	1.5	95	28.5		0		0
2	90	25	22.5	15	13.5		0	60	54
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	120	20	24	35	42	0	0	45	54

		HRS OPE BBL/DAY	
BBL OIL=	0.294	*	1.50 4.704
BBL WAT	0	*	0
BBL MUD:	0.378		
BBL GAS:	0.168		



8469 DST #5 Michaelis #4 A.L. Abercrombie TEST HISTORY

Flag Points

t (Min.) P (PSig)

A:	0.00	2065.88
B:	0.00	34.32
C:	32.00	49.93
D:	47.00	303.47
E:	0.00	46.74
F:	61.00	68.39
G:	42.00	299.70
Q:	0.00	2058.74

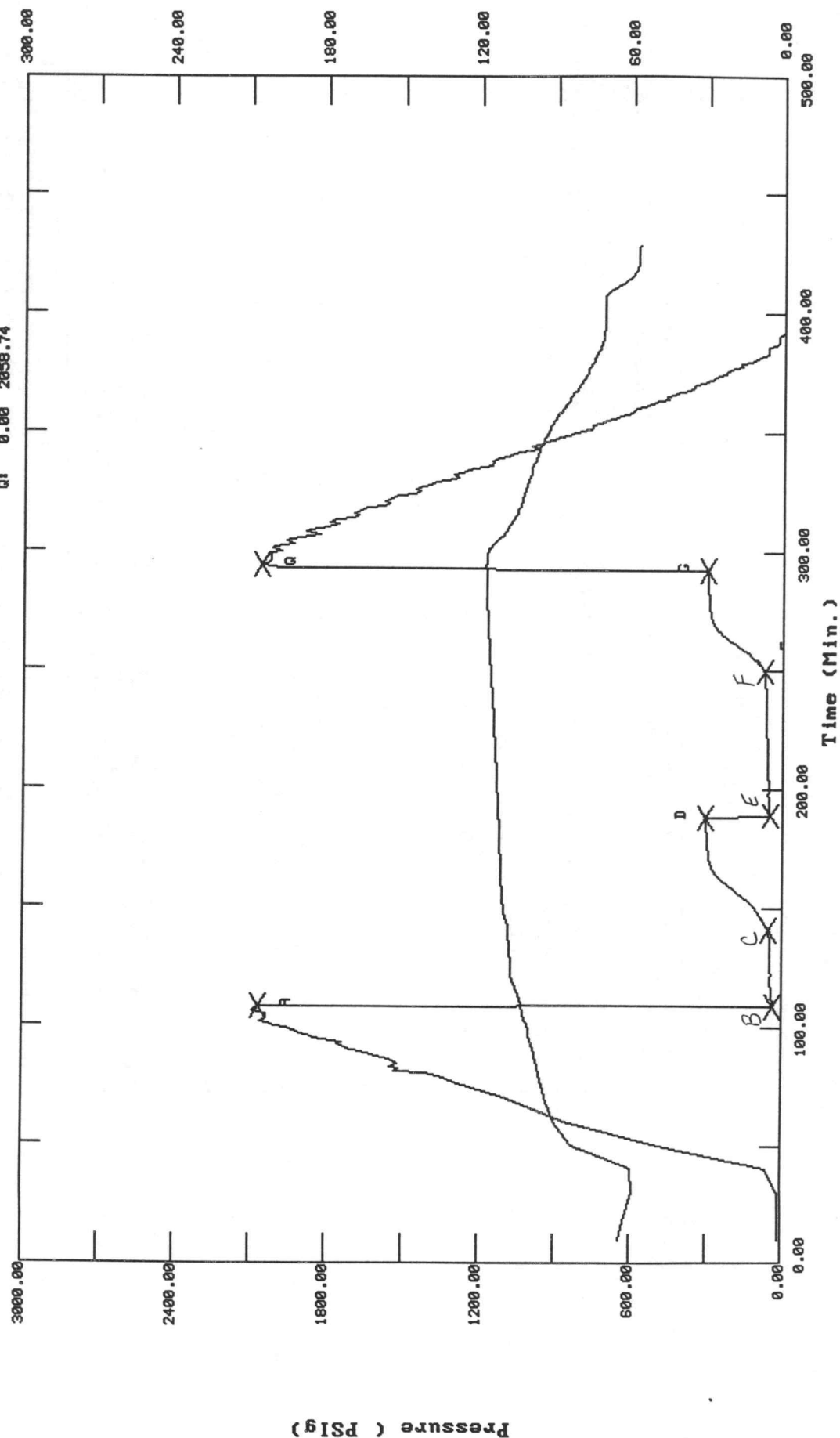
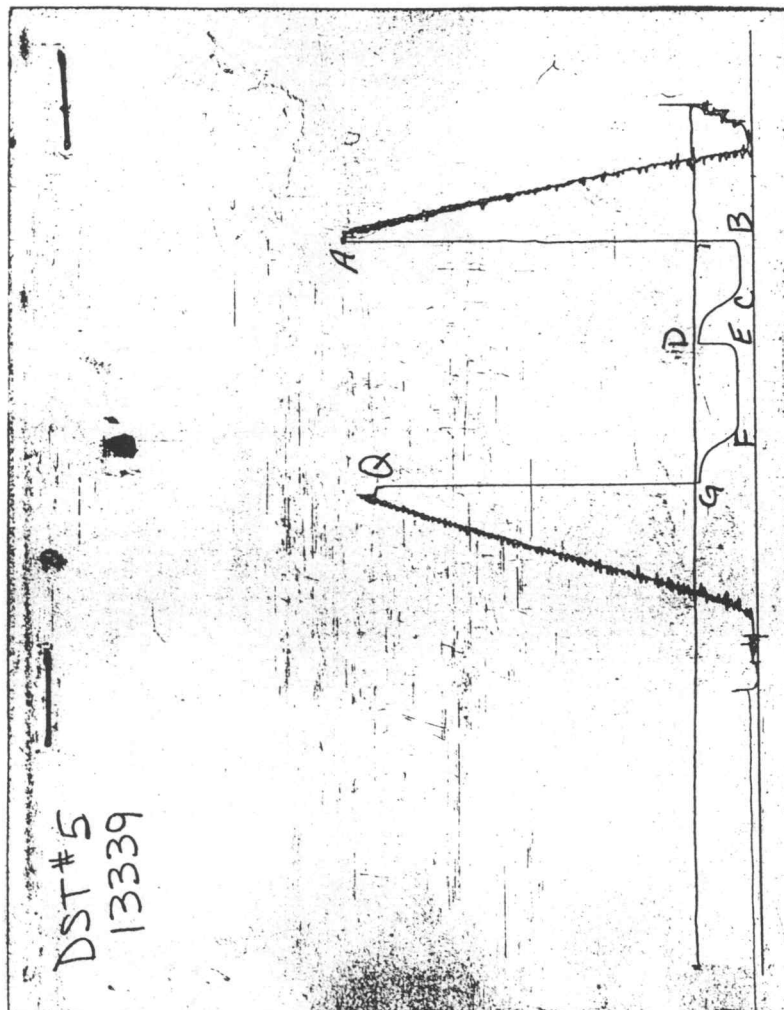


CHART PAGE



This is an actual photograph of recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8469 DST #5 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95 TIME: 23:10:31

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
***** Initial Hydro.	108.00	2065.9	0.0	102.98		
***** Start Flow 1	0.00	34.3	0.0	103.11		
	1.00	34.3	0.0	103.36		
	2.00	35.6	1.3	103.61		
	3.00	37.2	2.9	103.87		
	4.00	38.2	3.9	104.22		
	5.00	39.0	4.7	104.59		
	6.00	40.6	6.3	104.93		
	7.00	41.9	7.6	105.34		
	8.00	42.6	8.3	105.71		
	9.00	44.1	9.7	106.10		
	10.00	43.7	9.4	106.42		
	11.00	43.5	9.2	106.74		
	12.00	43.4	9.1	107.04		
	13.00	42.0	7.7	107.30		
	14.00	42.0	7.7	107.31		
	15.00	42.9	8.6	107.37		
	16.00	44.4	10.1	107.45		
	17.00	44.6	10.2	107.47		
	18.00	44.9	10.6	107.52		
	19.00	45.1	10.7	107.55		
	20.00	45.6	11.3	107.59		
	21.00	45.8	11.5	107.66		
	22.00	46.2	11.9	107.73		
	23.00	46.9	12.6	107.80		
	24.00	47.0	12.7	107.89		
	25.00	47.3	13.0	107.98		
	26.00	47.9	13.6	108.06		
	27.00	48.2	13.8	108.14		
	28.00	48.2	13.8	108.21		
	29.00	48.5	14.2	108.31		
	30.00	49.1	14.8	108.35		
	31.00	49.1	14.8	108.45		
***** End Flow 1	32.00	49.9	15.6	108.53		
***** Start Shutin 1	0.00	49.9	0.0	108.53	0.0000	0.002
	1.00	55.7	5.8	108.61	33.0000	0.003
	2.00	61.3	11.3	108.78	17.0000	0.004
	3.00	67.3	17.4	109.05	11.6667	0.005
	4.00	73.1	23.2	109.31	9.0000	0.005
	5.00	79.8	29.9	109.60	7.4000	0.006
	6.00	86.3	36.3	109.82	6.3333	0.007
	7.00	93.3	43.4	110.05	5.5714	0.009
	8.00	100.7	50.8	110.24	5.0000	0.010
	9.00	108.7	58.7	110.40	4.5556	0.012
	10.00	117.5	67.6	110.54	4.2000	0.014
	11.00	126.6	76.6	110.65	3.9091	0.016
	12.00	136.7	86.8	110.77	3.6667	0.019
	13.00	147.4	97.4	110.86	3.4615	0.022
	14.00	159.2	109.3	110.96	3.2857	0.025
	15.00	172.0	122.0	110.98	3.1333	0.030
	16.00	184.3	134.4	111.06	3.0000	0.034

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8469 DST #5 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 23:10:31

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
	17.00	197.3	147.4	111.13	2.8824	0.039
	18.00	210.3	160.4	111.19	2.7778	0.044
	19.00	222.0	172.1	111.25	2.6842	0.049
	20.00	233.1	183.2	111.31	2.6000	0.054
	21.00	243.5	193.5	111.37	2.5238	0.059
	22.00	252.0	202.1	111.43	2.4545	0.064
	23.00	260.1	210.2	111.49	2.3913	0.068
	24.00	266.5	216.5	111.55	2.3333	0.071
	25.00	272.2	222.2	111.61	2.2800	0.074
	26.00	277.0	227.1	111.68	2.2308	0.077
	27.00	281.0	231.1	111.71	2.1852	0.079
	28.00	284.6	234.7	111.71	2.1429	0.081
	29.00	287.4	237.5	111.71	2.1034	0.083
	30.00	289.8	239.9	111.72	2.0667	0.084
	31.00	291.8	241.9	111.75	2.0323	0.085
	32.00	293.4	243.5	111.84	2.0000	0.086
	33.00	294.8	244.9	111.90	1.9697	0.087
	34.00	296.0	246.1	111.93	1.9412	0.088
	35.00	296.8	246.8	111.99	1.9143	0.088
	36.00	297.9	248.0	112.02	1.8889	0.089
	37.00	298.4	248.5	112.07	1.8649	0.089
	38.00	299.4	249.4	112.10	1.8421	0.090
	39.00	300.0	250.1	112.14	1.8205	0.090
	40.00	300.5	250.6	112.18	1.8000	0.090
	41.00	300.7	250.8	112.22	1.7805	0.090
	42.00	301.5	251.5	112.25	1.7619	0.091
	43.00	301.6	251.7	112.29	1.7442	0.091
	44.00	302.5	252.5	112.33	1.7273	0.091
	45.00	303.0	253.0	112.35	1.7111	0.092
	46.00	303.3	253.4	112.40	1.6957	0.092
***** End Shut-in 1	47.00	303.5	253.5	112.43	1.6809	0.092
***** Start Flow 2	0.00	46.7	0.0	112.43		
	1.00	49.9	3.2	112.47		
	2.00	51.5	4.8	112.54		
	3.00	52.6	5.9	112.60		
	4.00	52.9	6.1	112.67		
	5.00	53.6	6.9	112.74		
	6.00	53.5	6.8	112.81		
	7.00	54.1	7.4	112.84		
	8.00	54.3	7.6	112.91		
	9.00	54.9	8.1	112.96		
	10.00	53.0	6.3	113.01		
	11.00	53.3	6.5	113.06		
	12.00	53.5	6.8	113.11		
	13.00	54.0	7.3	113.15		
	14.00	54.3	7.6	113.19		
	15.00	54.6	7.9	113.24		
	16.00	55.0	8.2	113.28		
	17.00	55.0	8.2	113.33		
	18.00	55.6	8.9	113.37		
	19.00	56.1	9.3	113.42		

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8469 DST #5 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 23:10:31

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	20.00	56.0	9.2	113.48		
	21.00	56.7	10	113.52		
	22.00	57.1	10.3	113.57		
	23.00	56.9	10.2	113.62		
	24.00	57.2	10.5	113.67		
	25.00	57.6	10.9	113.73		
	26.00	58.2	11.4	113.78		
	27.00	58.6	11.8	113.84		
	28.00	58.6	11.8	113.90		
	29.00	58.9	12.2	113.95		
	30.00	59.2	12.5	114.01		
	31.00	60.0	13.2	114.07		
	32.00	60.0	13.2	114.14		
	33.00	60.0	13.2	114.19		
	34.00	60.8	14.0	114.26		
	35.00	61.1	14.4	114.33		
	36.00	61.1	14.4	114.41		
	37.00	61.7	14.9	114.50		
	38.00	62.1	15.4	114.63		
	39.00	62.2	15.4	114.65		
	40.00	62.5	15.8	114.65		
	41.00	63.1	16.4	114.65		
	42.00	63.0	16.3	114.65		
	43.00	63.8	17.0	114.65		
	44.00	64.0	17.3	114.65		
	45.00	64.3	17.5	114.70		
	46.00	64.5	17.8	114.82		
	47.00	64.8	18.0	114.92		
	48.00	65.0	18.2	114.99		
	49.00	65.0	18.3	115.07		
	50.00	65.6	18.9	115.11		
	51.00	65.8	19.1	115.20		
	52.00	66.1	19.4	115.26		
	53.00	66.3	19.6	115.33		
	54.00	66.4	19.6	115.39		
	55.00	66.7	20.0	115.44		
	56.00	67.2	20.5	115.48		
	57.00	67.3	20.6	115.55		
	58.00	67.4	20.6	115.63		
	59.00	67.6	20.9	115.69		
	60.00	68.5	21.7	115.77		
***** End Flow 2	61.00	68.4	21.7	115.80		
***** Start Shutin 2	0.00	68.4	0.0	115.80	0.0000	0.005
	1.00	75.8	7.4	115.86	94.0000	0.006
	2.00	83.8	15.4	115.92	47.5000	0.007
	3.00	92.6	24.2	116.05	32.0000	0.009
	4.00	101.1	32.7	116.05	24.2500	0.010
	5.00	110.5	42.1	116.08	19.6000	0.012
	6.00	121.1	52.7	116.18	16.5000	0.015
	7.00	132.3	63.9	116.22	14.2857	0.017
	8.00	143.5	75.1	116.33	12.6250	0.021

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8469 DST #5 Michaelis #4 A.L.Abercrombie

DATE: 12/05/95

TIME: 23:10:31

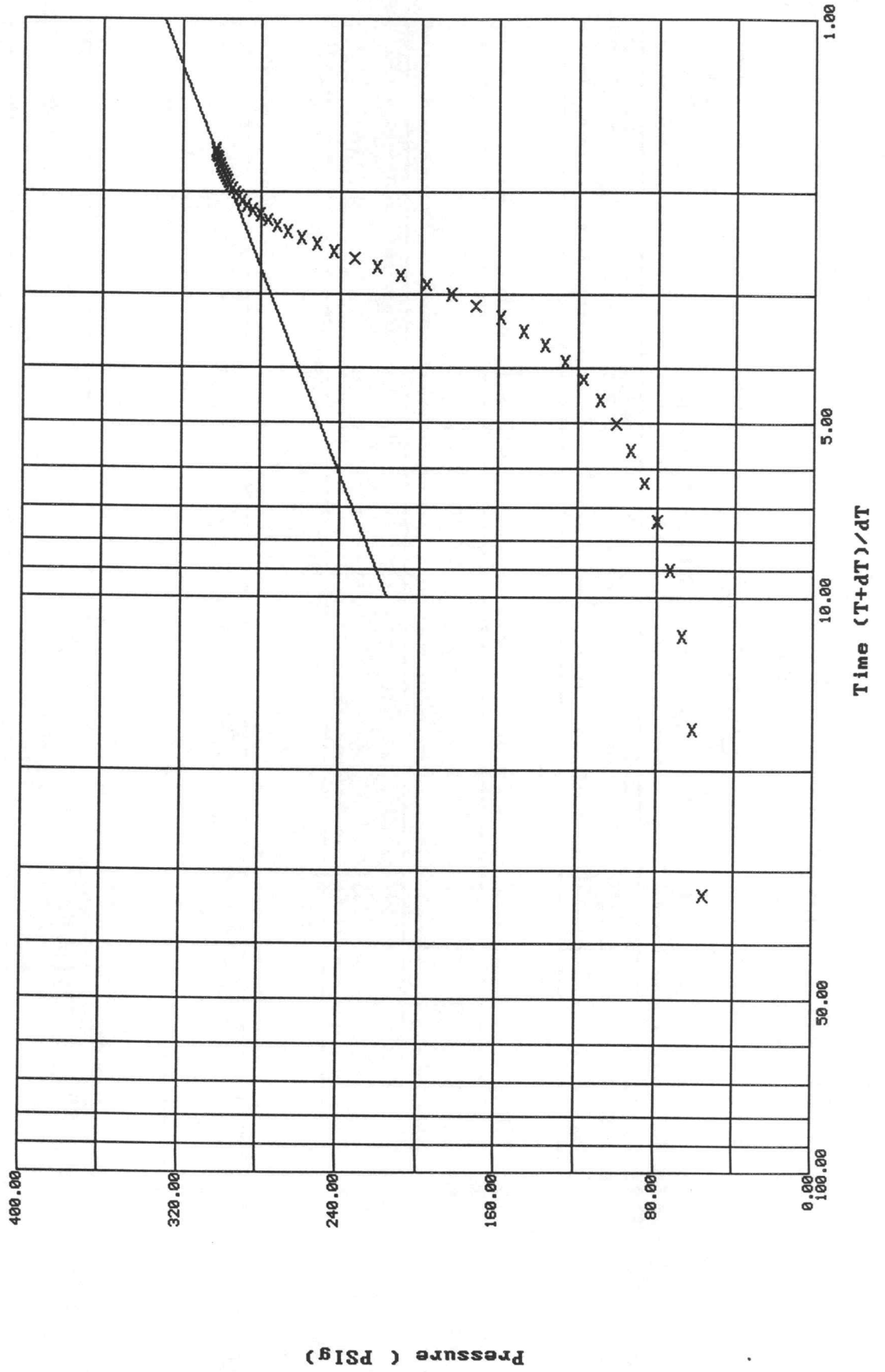
	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	9.00	156.9	88.5	116.36	11.3333	0.025
	10.00	170.7	102.3	116.45	10.3000	0.029
	11.00	184.5	116.2	116.50	9.4545	0.034
	12.00	198.4	130.0	116.55	8.7500	0.039
	13.00	211.7	143.3	116.59	8.1538	0.045
	14.00	224.0	155.6	116.63	7.6429	0.050
	15.00	235.4	167.0	116.70	7.2000	0.055
	16.00	245.7	177.3	116.76	6.8125	0.060
	17.00	254.5	186.1	116.82	6.4706	0.065
	18.00	261.5	193.1	116.87	6.1667	0.068
	19.00	267.6	199.2	116.92	5.8947	0.072
	20.00	273.0	204.6	116.97	5.6500	0.075
	21.00	277.1	208.7	117.02	5.4286	0.077
	22.00	280.2	211.8	117.07	5.2273	0.079
	23.00	283.3	214.9	117.11	5.0435	0.080
	24.00	285.6	217.2	117.16	4.8750	0.082
	25.00	287.4	219.1	117.18	4.7200	0.083
	26.00	289.0	220.6	117.22	4.5769	0.084
	27.00	290.0	221.6	117.26	4.4444	0.084
	28.00	291.5	223.1	117.30	4.3214	0.085
	29.00	292.1	223.7	117.33	4.2069	0.085
	30.00	293.3	224.9	117.36	4.1000	0.086
	31.00	293.6	225.2	117.40	4.0000	0.086
	32.00	294.2	225.8	117.43	3.9062	0.087
	33.00	295.1	226.7	117.47	3.8182	0.087
	34.00	295.6	227.2	117.49	3.7353	0.087
	35.00	296.1	227.7	117.52	3.6571	0.088
	36.00	296.5	228.1	117.55	3.5833	0.088
	37.00	297.0	228.6	117.58	3.5135	0.088
	38.00	297.6	229.2	117.60	3.4474	0.089
	39.00	297.9	229.5	117.62	3.3846	0.089
	40.00	298.4	230.0	117.65	3.3250	0.089
	41.00	299.3	230.9	117.67	3.2683	0.090
***** End Shut-in 2	42.00	299.7	231.3	117.69	3.2143	0.090
***** Final Hydro.	294.00	2058.7	0.0	117.87		

Horner Plot: shut-in #1

8469 DST #5 Michaelis #4 A.L. Abercrombie

Slope: 113.5670 PSig/cycle

Ext. Pressure: 329.2782 PSig

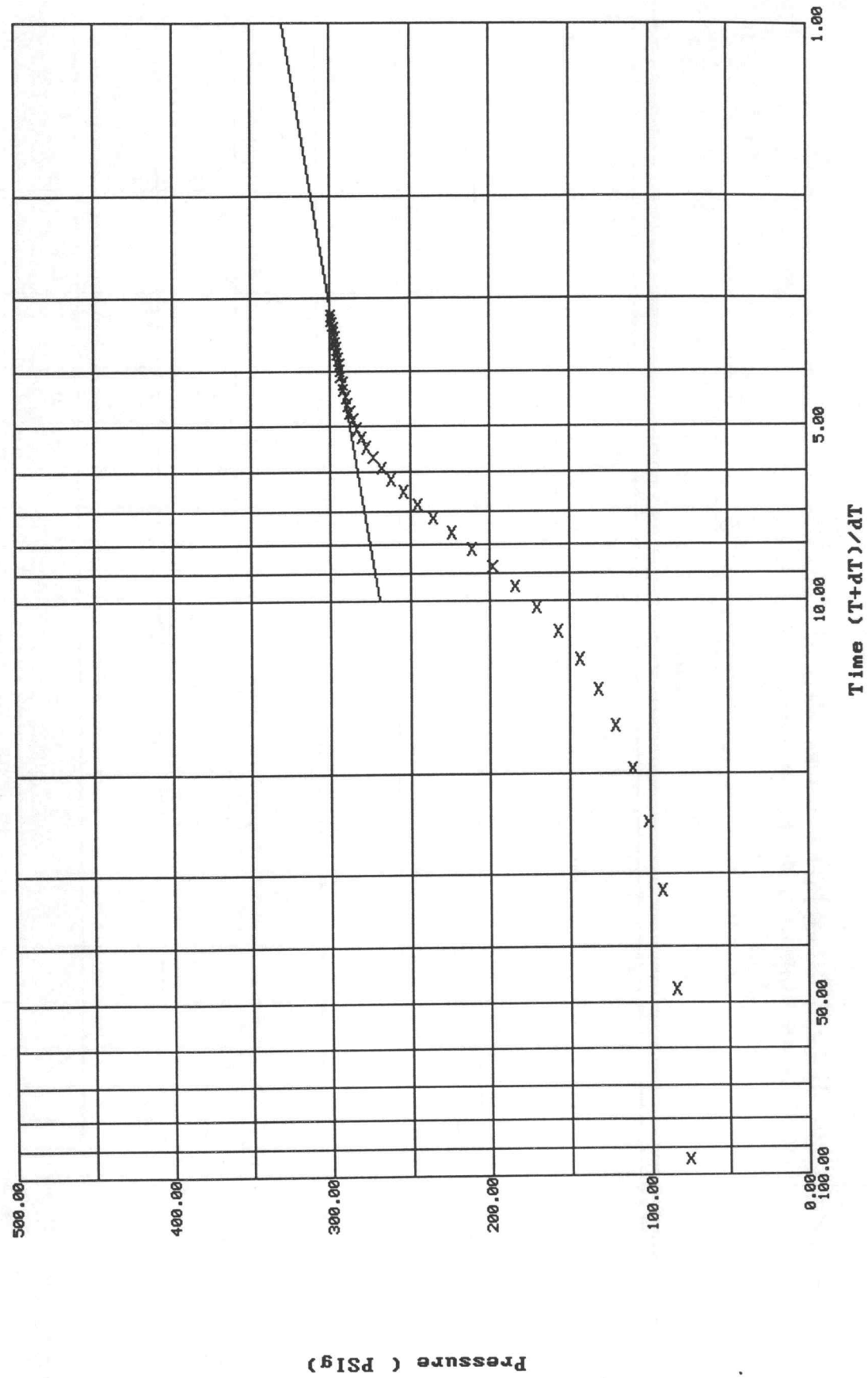


Horner Plot: shut-in #2

8469 DST #5 Michaelis #4 A.L. Abercrombie

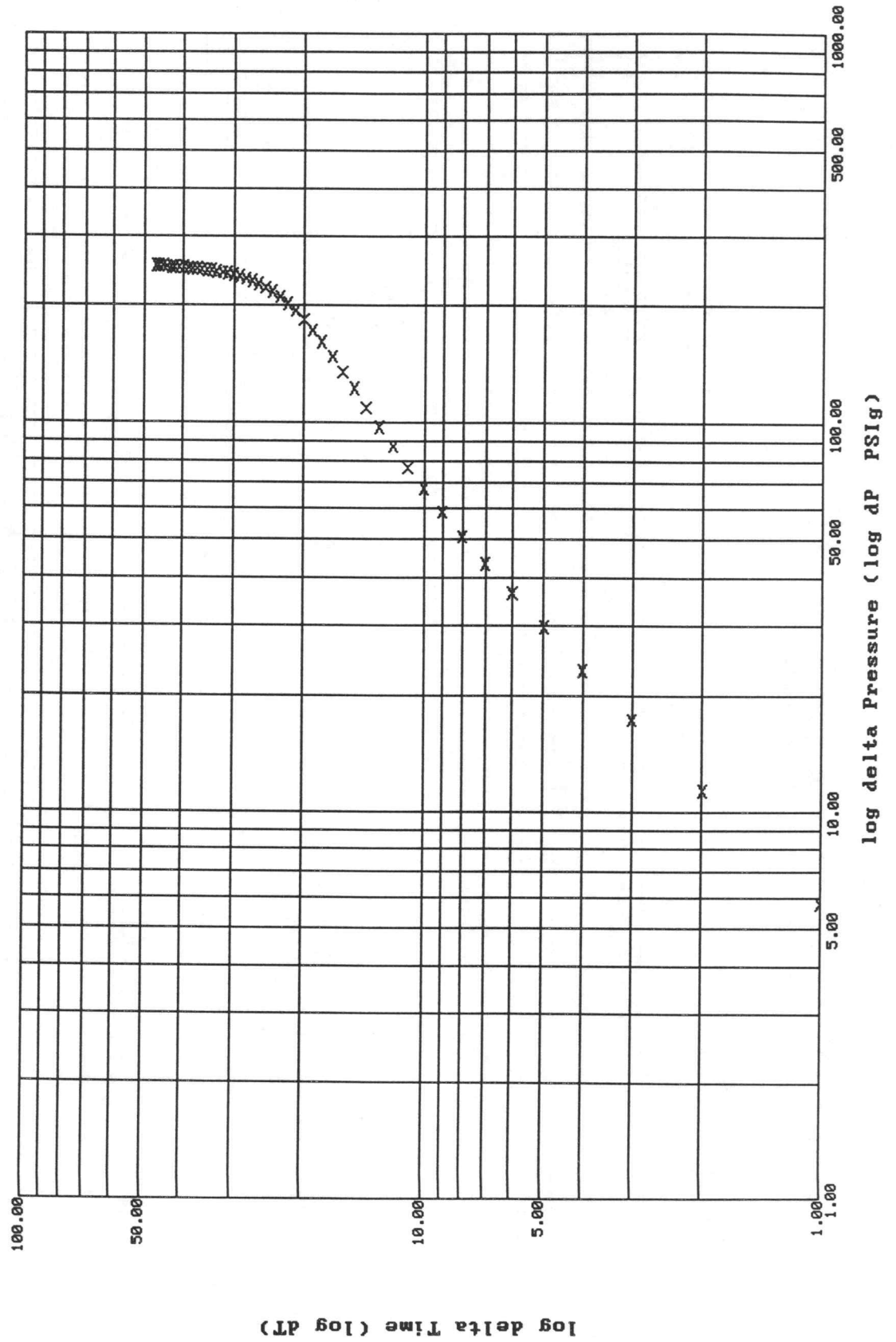
Slope: 61.1661 PSig/cycle

Ext. Pressure: 330.5207 PSig



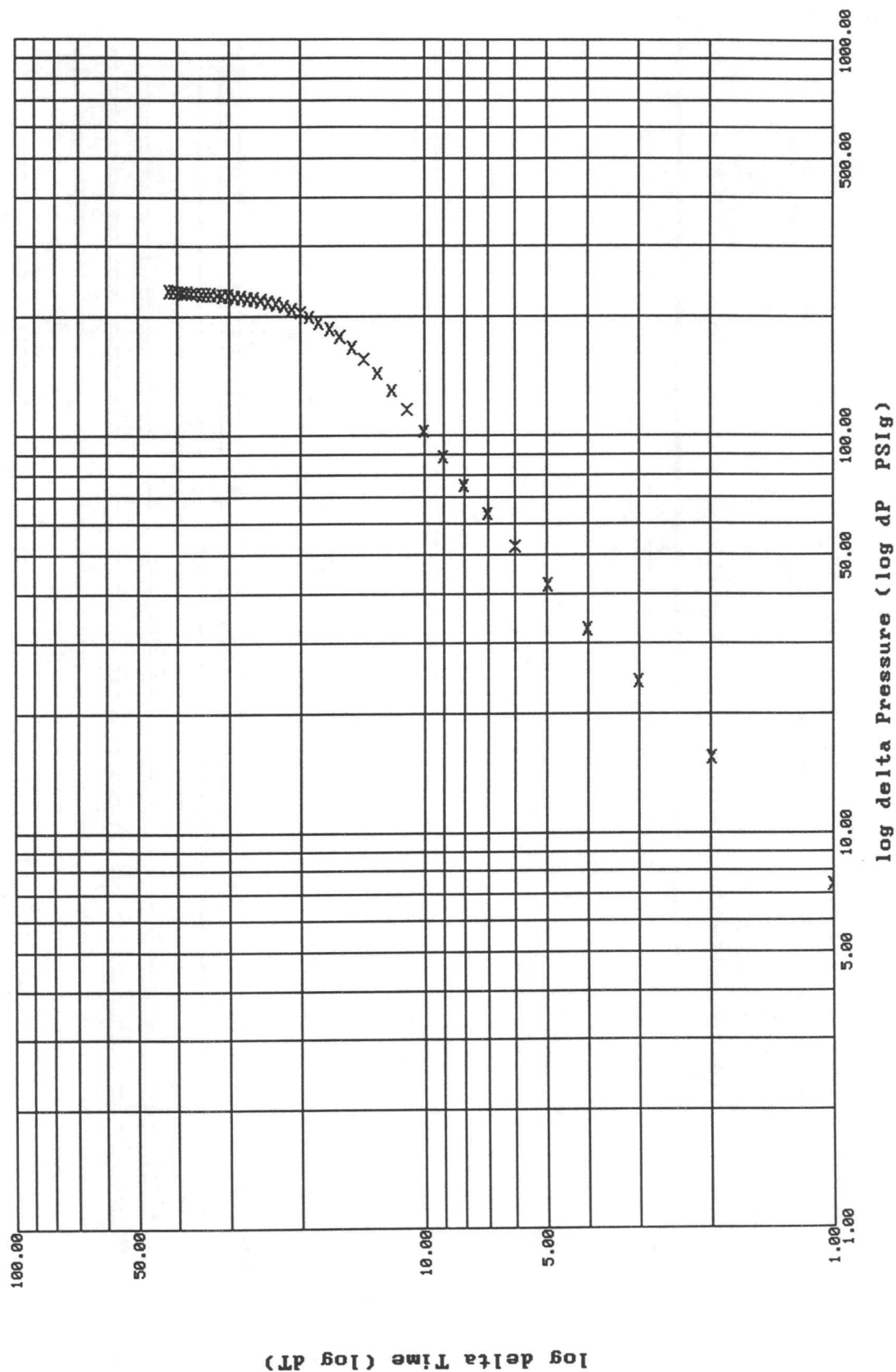
McKinley Plot: shut-in #1

8469 DST #5 Michaelis #4 A.L. Abercrombie



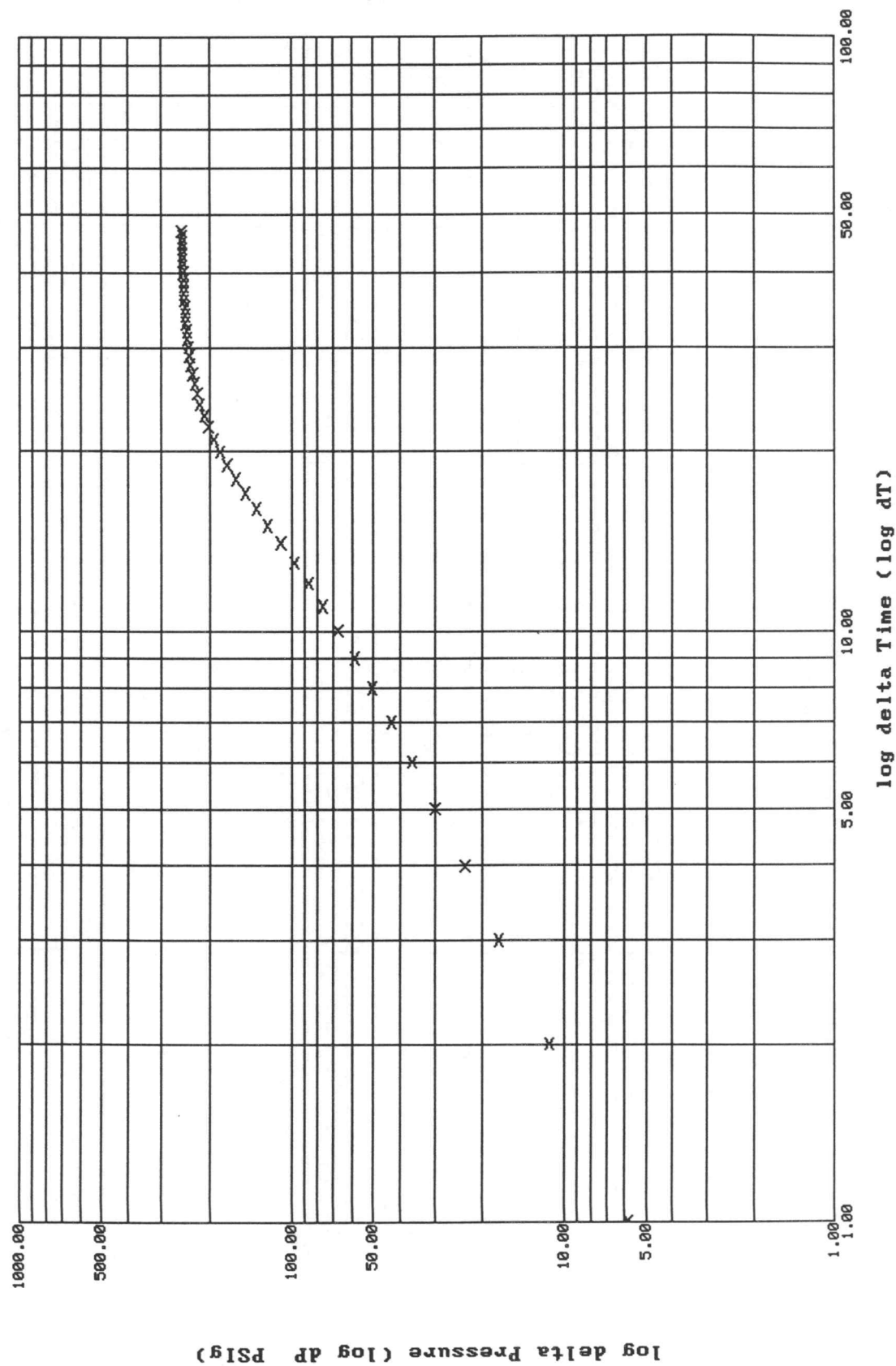
McKinley Plot: shut-in #2

8469 DST #5 Michaelis #4 A.L. Abercrombie



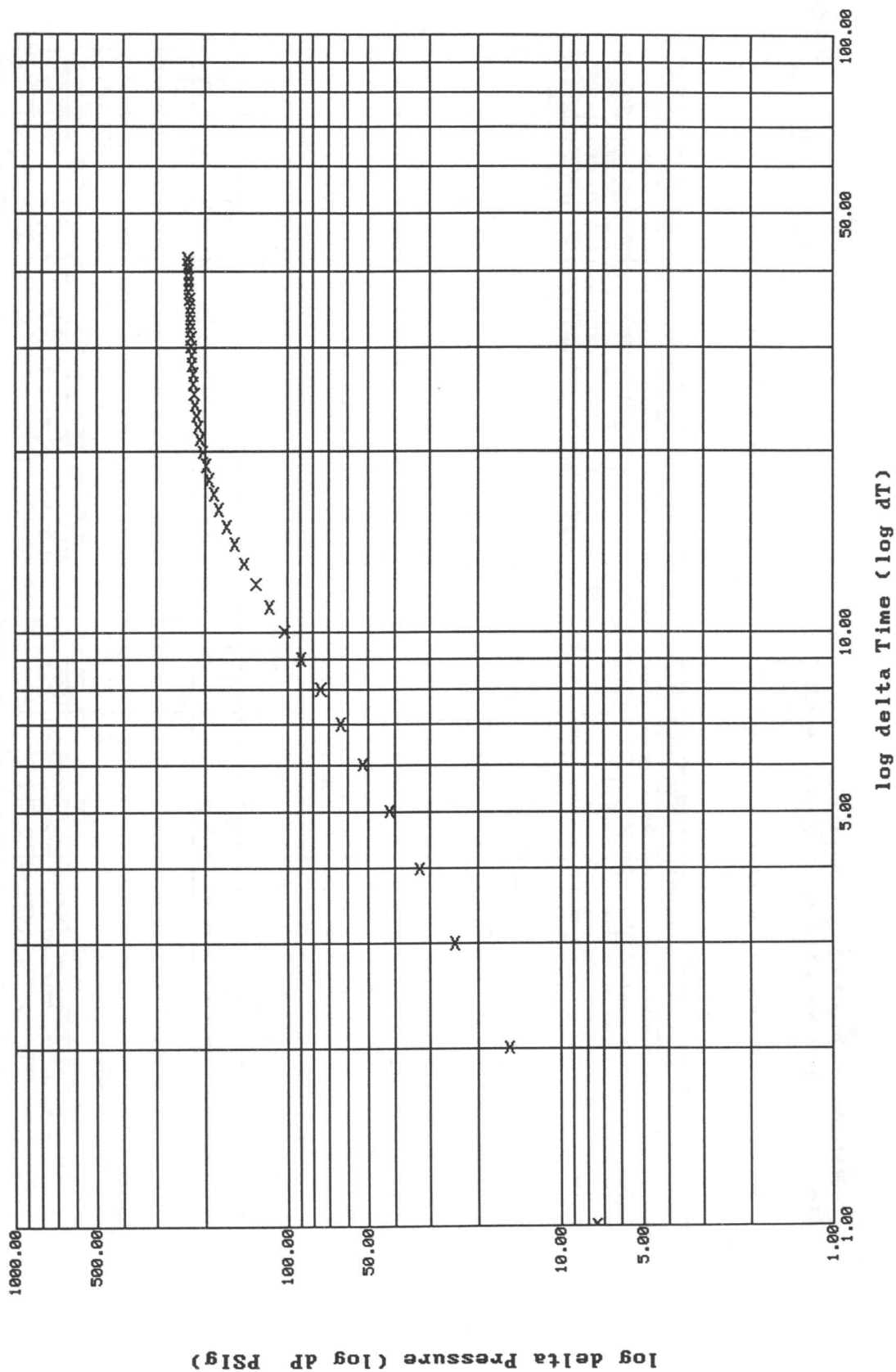
Ramey Plot: shut-in #1

8469 DST #5 Michaelis #4 A.L.Abercrombie



Ramey Plot: shut-in #2

8469 DST #5 Michaelis #4 A.L.Abercrombie



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Michaelis #4

LOCATION : 15-12S-33W, Logan Cty KS

TICKET No. 8469 D.S.T. No. 5 DATE 12-06-95

TOTAL TOOL TO BOTTOM OF TOP PACKERS 20

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 25

TOTAL TOOL 45

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 45

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands68 Single 1 Total 4239

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4284

TOTAL DEPTH 4273

TOTAL DRILL PIPE ABOVE K.B. 11

REMARKS:

P.O. SUB 120'above WP	4108
C.O. SUB 1'	4228
S.I. TOOL 5'	4234
HMV 5'	4239
JARS n/a	
SAFETY JOINT n/a	
PACKER 5'	4243
PACKER 5'	4248
DEPTH 4248	
STUBB 1'	4249
ANCHOR	
Alpine recorder	4250
19' perf	4268
T.C. DEPTH	
AK-1 recorder	4268
BULLNOSE 5' bull plug T.D.	4273

TRILOBITE TESTING L.L.C.

OPERATOR : A.L. Abercrombie, Inc
WELL NAME: Michaelis #4
LOCATION : 15-12S-33W, Logan Cty KS
INTERVAL : 4268.00 To 4292.00 ft

DATE 12-06-95
KB 3095.00 ft TICKET NO: 8470 DST #6
GR 3090.00 ft FORMATION: Lansing "K"
TD 4292.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13339	13339	2351			PF Fr. 1422 to 1452 hr
SI 45 Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 1452 to 1537 hr
SF 90 Clock(hrs)	AK-1	AK-1	Alpin			SF Fr. 1537 to 1707 hr
FS 45 Depth(ft)	4287.0	4287.0	4270.0	0.0	0.0	FS Fr. 1707 to 1752 hr

	Field	1	2	3	4	
A. Init Hydro	2135.0	2157.0	2083.0	0.0	0.0	T STARTED 1250 hr
B. First Flow	20.0	48.0	22.0	0.0	0.0	T ON BOTM 1420 hr
B1. Final Flow	20.0	48.0	43.0	0.0	0.0	T OPEN 1422 hr
C. In Shut-in	447.0	460.0	476.0	0.0	0.0	T PULLED 1752 hr
D. Init Flow	41.0	62.0	45.0	0.0	0.0	T OUT 2000 hr
E. Final Flow	52.0	79.0	75.0	0.0	0.0	
F. Fl Shut-in	447.0	460.0	469.0	0.0	0.0	
G. Final Hydro	2133.0	2073.0	2040.0	0.0	0.0	TOOL DATA-----
Inside/Outside	O	O	I			Tool Wt. 1800.00 lbs

RECOVERY

Tot Fluid 110.00 ft of 0.00 ft in DC and 110.00 ft in DP
160.00 ft of Gas in pipe
10.00 ft of Free oil - 5% gas, 95% oil
40.00 ft of Gassy oil cut mud - 10% gas, 10% oil, 80% mud
60.00 ft of Gassy oil & water cut mud -
10% gas, 10% oil, 30% water, 50% mud

RW .30 @ 80 F

SALINITY 20000.00 P.P.M. A.P.I. Gravity 38.20

BLOW DESCRIPTION

Initial Flow -
Weak surface blow built to 1"

Final Flow -
Weak surface blow built to 4"

SAMPLES:
SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/
Vis.	48.00 S/L
W.L.	9.60 in3
F.C.	0.00 in

Mud Drop N

Amt. of fill	0.00 ft
Btm. H. Temp.	113.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00

Cushion Type
Reversed Out N

Tool Chased N
Tester Rod Steinbrink
Co. Rep. Arden Ratzlaff
Contr. Abercrombie
Rig # #8
Unit #
Pump T.

Test Successful: Y

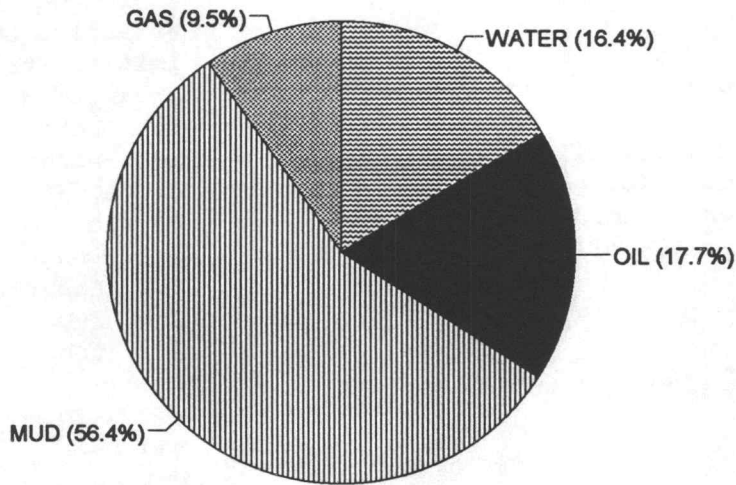
CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

DST # 6

TICKET # 8470

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	10	5	0.5	95	9.5		0		0
2	40	10	4	10	4		0	80	32
3	60	10	6	10	6	30	18	50	30
4			0		0		0		0
5			0		0		0		0
TOTAL	110	9.545455	10.5	17.72727	19.5	16.36364	18	56.36364	62

			HRS OPE	BBL/DAY
BBL OIL=	0.1365	*	2.00	1.638
BBL WAT	0.126	*		1.512
BBL MUD:	0.434			
BBL GAS:	0.0735			



TEST HISTORY 8470 DST #6 Michaelis #4 A..L.Abercrombie

Flag Points

t(Min.) P(PSig)

A: 0.00 2083.18
 B: 0.00 22.15
 C: 35.00 43.05
 D: 43.00 475.78
 E: 0.00 45.23
 F: 98.00 75.44
 G: 44.00 468.81
 H: 0.00 2040.11

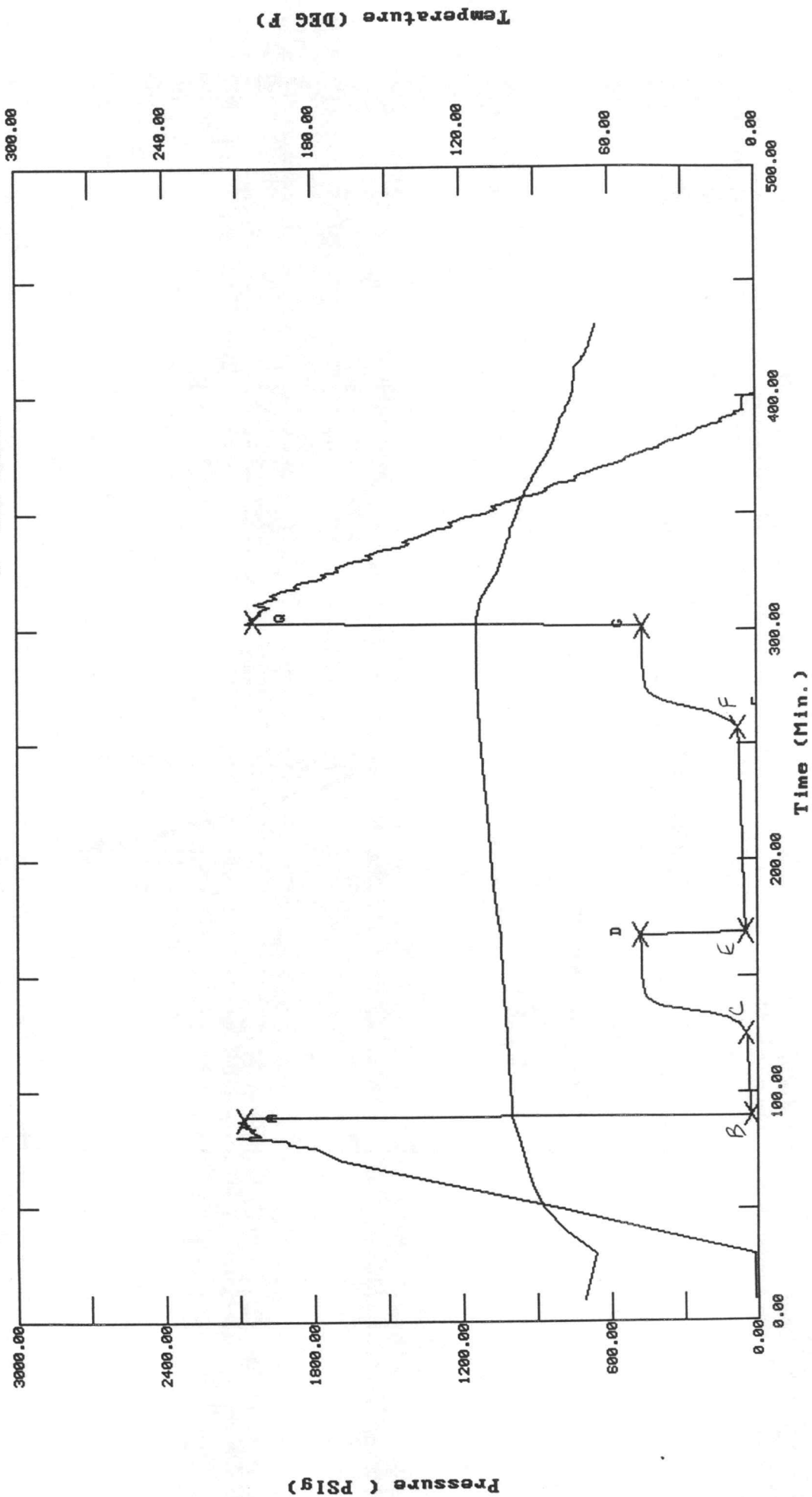
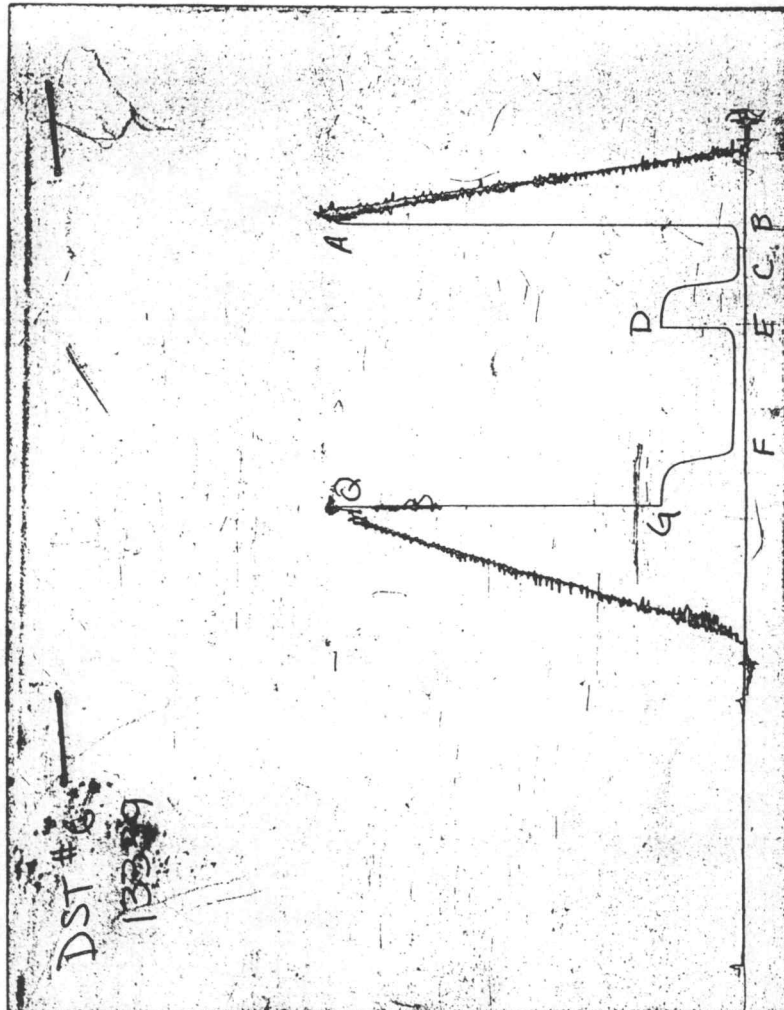


CHART PAGE



This is an actual photograph of recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8470 DST #6 Michaelis #4 A..L.Abercrombie

DATE: 12/06/95

TIME: 12:51:33

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
***** Initial Hydro.	88.00	2083.2	0.0	99.55		
***** Start Flow 1	0.00	22.1	0.0	99.97		
	1.00	23.7	1.5	99.97		
	2.00	24.8	2.6	99.97		
	3.00	26.3	4.2	99.97		
	4.00	27.4	5.2	99.97		
	5.00	27.3	5.1	99.97		
	6.00	27.9	5.8	99.97		
	7.00	28.4	6.3	99.97		
	8.00	29.4	7.2	100.10		
	9.00	29.1	7.0	100.41		
	10.00	31.3	9.1	100.56		
	11.00	31.6	9.5	100.64		
	12.00	32.1	9.9	100.67		
	13.00	31.9	9.7	100.73		
	14.00	32.2	10.1	100.79		
	15.00	33.0	10.8	100.83		
	16.00	33.1	11.0	100.89		
	17.00	33.6	11.5	100.94		
	18.00	34.2	12.0	100.99		
	19.00	35.0	12.8	101.04		
	20.00	35.2	13.1	101.10		
	21.00	35.9	13.8	101.15		
	22.00	36.4	14.3	101.20		
	23.00	36.8	14.7	101.25		
	24.00	37.2	15.0	101.33		
	25.00	37.9	15.8	101.34		
	26.00	38.3	16.2	101.42		
	27.00	39.0	16.9	101.48		
	28.00	39.2	17.0	101.54		
	29.00	39.5	17.4	101.60		
	30.00	40.4	18.2	101.65		
	31.00	40.8	18.6	101.71		
	32.00	41.5	19.4	101.77		
	33.00	41.6	19.5	101.83		
	34.00	42.5	20.3	101.90		
***** End Flow 1	35.00	43.0	20.9	101.96		
***** Start Shutin 1	0.00	43.0	0.0	101.96	0.0000	0.002
	1.00	48.7	5.6	102.03	36.0000	0.002
	2.00	56.1	13.1	102.07	18.5000	0.003
	3.00	64.7	21.7	102.12	12.6667	0.004
	4.00	75.3	32.2	102.20	9.7500	0.006
	5.00	88.8	45.7	102.27	8.0000	0.008
	6.00	106.2	63.1	102.33	6.8333	0.011
	7.00	130.0	86.9	102.40	6.0000	0.017
	8.00	162.2	119.2	102.47	5.3750	0.026
	9.00	206.0	162.9	102.53	4.8889	0.042
	10.00	262.3	219.2	102.61	4.5000	0.069
	11.00	322.9	279.8	102.69	4.1818	0.104
	12.00	374.0	330.9	102.74	3.9167	0.140
	13.00	409.5	366.4	102.81	3.6923	0.168

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8470 DST #6 Michaelis #4 A..L.Abercrombie

DATE: 12/06/95

TIME: 12:51:33

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
14.00	431.0	387.9	102.89	3.5000	0.186
15.00	443.9	400.8	102.96	3.3333	0.197
16.00	451.7	408.6	103.03	3.1875	0.204
17.00	456.5	413.4	103.09	3.0588	0.208
18.00	460.0	417.0	103.17	2.9444	0.212
19.00	462.5	419.5	103.23	2.8421	0.214
20.00	464.8	421.7	103.30	2.7500	0.216
21.00	466.0	423.0	103.37	2.6667	0.217
22.00	467.3	424.3	103.43	2.5909	0.218
23.00	468.3	425.3	103.49	2.5217	0.219
24.00	469.6	426.5	103.56	2.4583	0.220
25.00	470.0	426.9	103.63	2.4000	0.221
26.00	470.7	427.6	103.64	2.3462	0.222
27.00	471.5	428.5	103.69	2.2963	0.222
28.00	471.7	428.6	103.75	2.2500	0.222
29.00	472.2	429.1	103.81	2.2069	0.223
30.00	472.9	429.9	103.87	2.1667	0.224
31.00	473.3	430.2	103.92	2.1290	0.224
32.00	473.6	430.5	103.98	2.0938	0.224
33.00	473.8	430.8	104.04	2.0606	0.225
34.00	473.8	430.7	104.09	2.0294	0.224
35.00	474.1	431.1	104.13	2.0000	0.225
36.00	474.6	431.6	104.19	1.9722	0.225
37.00	474.4	431.4	104.23	1.9459	0.225
38.00	475.0	432.0	104.28	1.9211	0.226
39.00	474.9	431.8	104.33	1.8974	0.225
40.00	475.4	432.3	104.38	1.8750	0.226
41.00	475.5	432.5	104.44	1.8537	0.226
42.00	475.7	432.6	104.48	1.8333	0.226
43.00	475.8	432.7	104.52	1.8140	0.226

***** End Shut-in 1

***** Start Flow 2

0.00	45.2	0.0	104.55
1.00	45.1	-0.1	104.66
2.00	47.3	2.1	104.85
3.00	48.2	2.9	105.07
4.00	48.1	2.8	105.28
5.00	48.1	2.8	105.47
6.00	48.9	3.7	105.62
7.00	48.7	3.4	105.77
8.00	49.3	4.0	105.88
9.00	49.4	4.2	105.98
10.00	50.3	5.0	106.07
11.00	50.8	5.5	106.17
12.00	51.2	6.0	106.30
13.00	50.9	5.6	106.43
14.00	51.1	5.9	106.55
15.00	51.8	6.5	106.69
16.00	52.1	6.9	106.85
17.00	52.2	7.0	106.99
18.00	52.8	7.6	107.15
19.00	52.8	7.6	107.30
20.00	53.4	8.1	107.33

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8470 DST #6 Michaelis #4 A..L.Abercrombie

DATE: 12/06/95

TIME: 12:51:33

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
21.00	53.5	8.3	107.47		
22.00	54.0	8.8	107.60		
23.00	53.9	8.6	107.70		
24.00	54.5	9.2	107.80		
25.00	54.5	9.3	107.88		
26.00	54.7	9.5	107.94		
27.00	55.0	9.8	108.01		
28.00	55.6	10.4	108.07		
29.00	55.5	10.2	108.13		
30.00	55.6	10.4	108.19		
31.00	56.5	11.2	108.24		
32.00	56.8	11.6	108.30		
33.00	57.1	11.9	108.35		
34.00	57.1	11.8	108.37		
35.00	57.7	12.5	108.45		
36.00	57.6	12.3	108.51		
37.00	58.2	13.0	108.59		
38.00	58.6	13.3	108.67		
39.00	58.7	13.4	108.75		
40.00	58.9	13.7	108.83		
41.00	59.2	14.0	108.91		
42.00	59.7	14.4	108.99		
43.00	59.6	14.4	109.08		
44.00	60.1	14.9	109.14		
45.00	60.7	15.4	109.24		
46.00	61.0	15.8	109.31		
47.00	61.1	15.9	109.39		
48.00	61.4	16.2	109.47		
49.00	61.6	16.4	109.54		
50.00	61.8	16.5	109.61		
51.00	61.9	16.7	109.69		
52.00	62.6	17.4	109.75		
53.00	63.0	17.8	109.81		
54.00	63.4	18.1	109.90		
55.00	63.4	18.2	109.99		
56.00	63.7	18.5	110.08		
57.00	64.4	19.2	110.17		
58.00	64.6	19.4	110.26		
59.00	65.0	19.7	110.34		
60.00	65.1	19.9	110.43		
61.00	65.6	20.4	110.53		
62.00	65.9	20.6	110.62		
63.00	66.3	21.1	110.72		
64.00	66.5	21.3	110.84		
65.00	66.6	21.4	110.94		
66.00	67.4	22.2	110.99		
67.00	67.8	22.6	111.09		
68.00	68.0	22.7	111.18		
69.00	68.1	22.8	111.31		
70.00	68.4	23.2	111.41		
71.00	68.7	23.5	111.51		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8470 DST #6 Michaelis #4 A..L.Abercrombie

DATE: 12/06/95

TIME: 12:51:33

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	72.00	69.5	24.3	111.62		
	73.00	69.4	24.2	111.71		
	74.00	69.7	24.5	111.71		
	75.00	70.2	24.9	111.76		
	76.00	70.7	25.4	111.88		
	77.00	70.7	25.4	111.97		
	78.00	70.9	25.7	112.06		
	79.00	71.4	26.2	112.14		
	80.00	71.7	26.4	112.22		
	81.00	72.3	27.1	112.30		
	82.00	72.7	27.4	112.36		
	83.00	72.7	27.4	112.44		
	84.00	73.2	27.9	112.50		
	85.00	73.3	28.0	112.57		
	86.00	73.7	28.5	112.64		
	87.00	74.2	29.0	112.70		
***** End Flow 2	88.00	75.4	30.2	112.75		
***** Start Shutin 2	0.00	75.4	0.0	112.75	0.0000	0.006
	1.00	85.5	10.1	112.81	124.0000	0.007
	2.00	96.8	21.4	112.86	62.5000	0.009
	3.00	111.1	35.7	112.91	42.0000	0.012
	4.00	127.9	52.5	112.96	31.7500	0.016
	5.00	146.9	71.5	113.01	25.6000	0.022
	6.00	172.1	96.7	113.06	21.5000	0.030
	7.00	203.2	127.7	113.13	18.5714	0.041
	8.00	238.9	163.4	113.19	16.3750	0.057
	9.00	278.9	203.4	113.26	14.6667	0.078
	10.00	318.4	243.0	113.31	13.3000	0.101
	11.00	354.5	279.1	113.37	12.1818	0.126
	12.00	384.0	308.6	113.41	11.2500	0.147
	13.00	406.5	331.0	113.46	10.4615	0.165
	14.00	422.9	347.5	113.51	9.7857	0.179
	15.00	433.9	358.5	113.54	9.2000	0.188
	16.00	441.8	366.3	113.57	8.6875	0.195
	17.00	447.7	372.3	113.59	8.2353	0.200
	18.00	451.8	376.3	113.61	7.8333	0.204
	19.00	454.4	378.9	113.63	7.4737	0.206
	20.00	456.6	381.2	113.64	7.1500	0.209
	21.00	458.7	383.3	113.65	6.8571	0.210
	22.00	459.7	384.3	113.67	6.5909	0.211
	23.00	460.9	385.5	113.68	6.3478	0.212
	24.00	461.8	386.4	113.69	6.1250	0.213
	25.00	462.9	387.5	113.71	5.9200	0.214
	26.00	463.6	388.2	113.72	5.7308	0.215
	27.00	464.3	388.8	113.73	5.5556	0.216
	28.00	464.8	389.3	113.73	5.3929	0.216
	29.00	465.2	389.8	113.73	5.2414	0.216
	30.00	465.6	390.2	113.75	5.1000	0.217
	31.00	466.0	390.6	113.75	4.9677	0.217
	32.00	466.0	390.6	113.75	4.8438	0.217
	33.00	466.6	391.2	113.76	4.7273	0.218

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8470 DST #6 Michaelis #4 A..L.Abercrombie

DATE: 12/06/95 TIME: 12:51:33

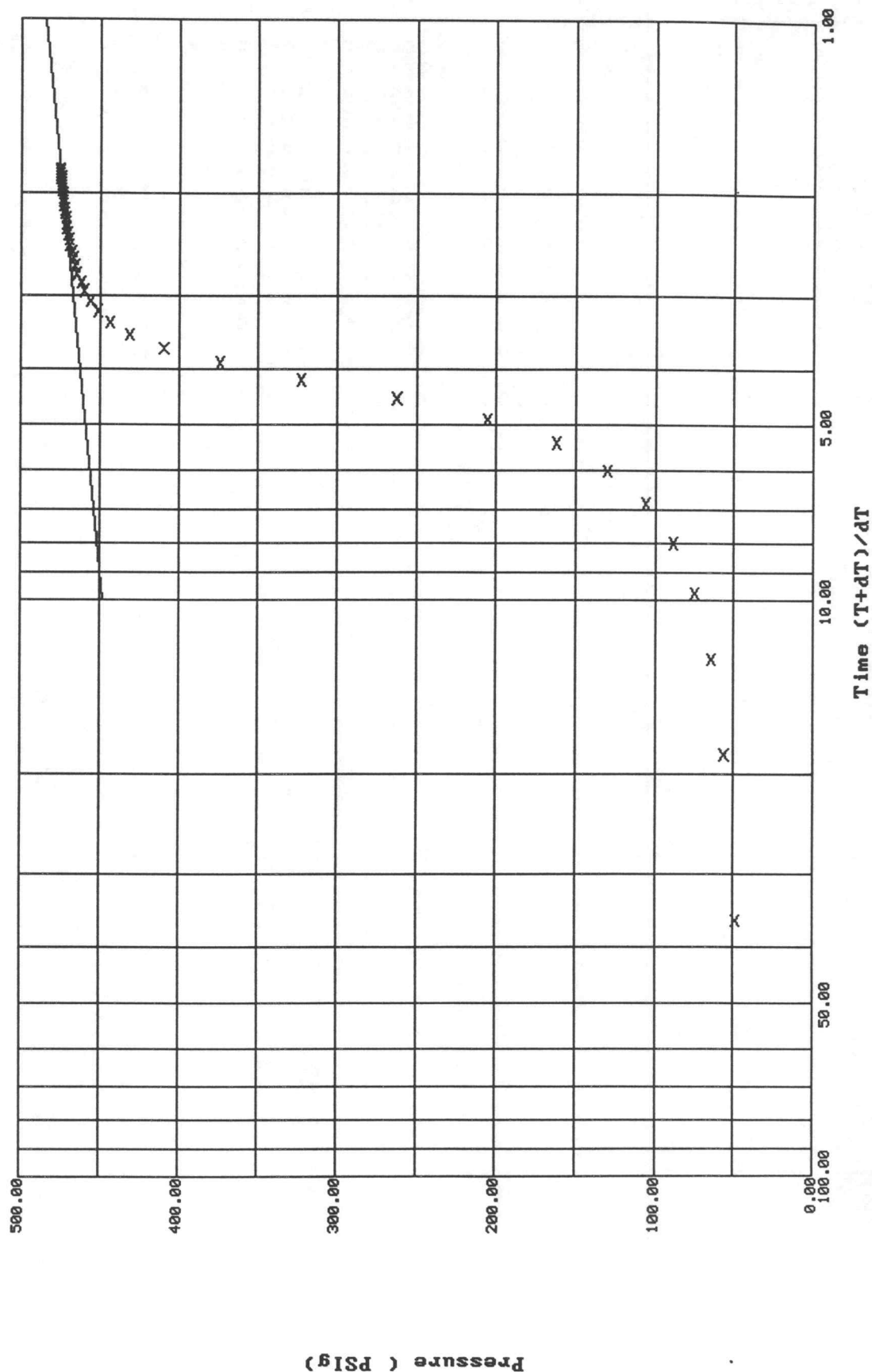
	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	34.00	466.9	391.4	113.77	4.6176	0.218
	35.00	467.2	391.8	113.77	4.5143	0.218
	36.00	467.1	391.7	113.78	4.4167	0.218
	37.00	467.3	391.9	113.77	4.3243	0.218
	38.00	467.9	392.4	113.78	4.2368	0.219
	39.00	467.8	392.4	113.79	4.1538	0.219
	40.00	468.0	392.5	113.79	4.0750	0.219
	41.00	468.2	392.8	113.80	4.0000	0.219
	42.00	468.6	393.2	113.81	3.9286	0.220
	43.00	468.5	393.0	113.81	3.8605	0.219
***** End Shut-in 2	44.00	468.8	393.4	113.82	3.7955	0.220
***** Final Hydro.	304.00	2040.1	0.0	113.82		

Horner Plot: shut-in #1

8470 DST #6 Michaelis #4 A..L.Abercrombie

Slope: 37.0716 PSig/cycle

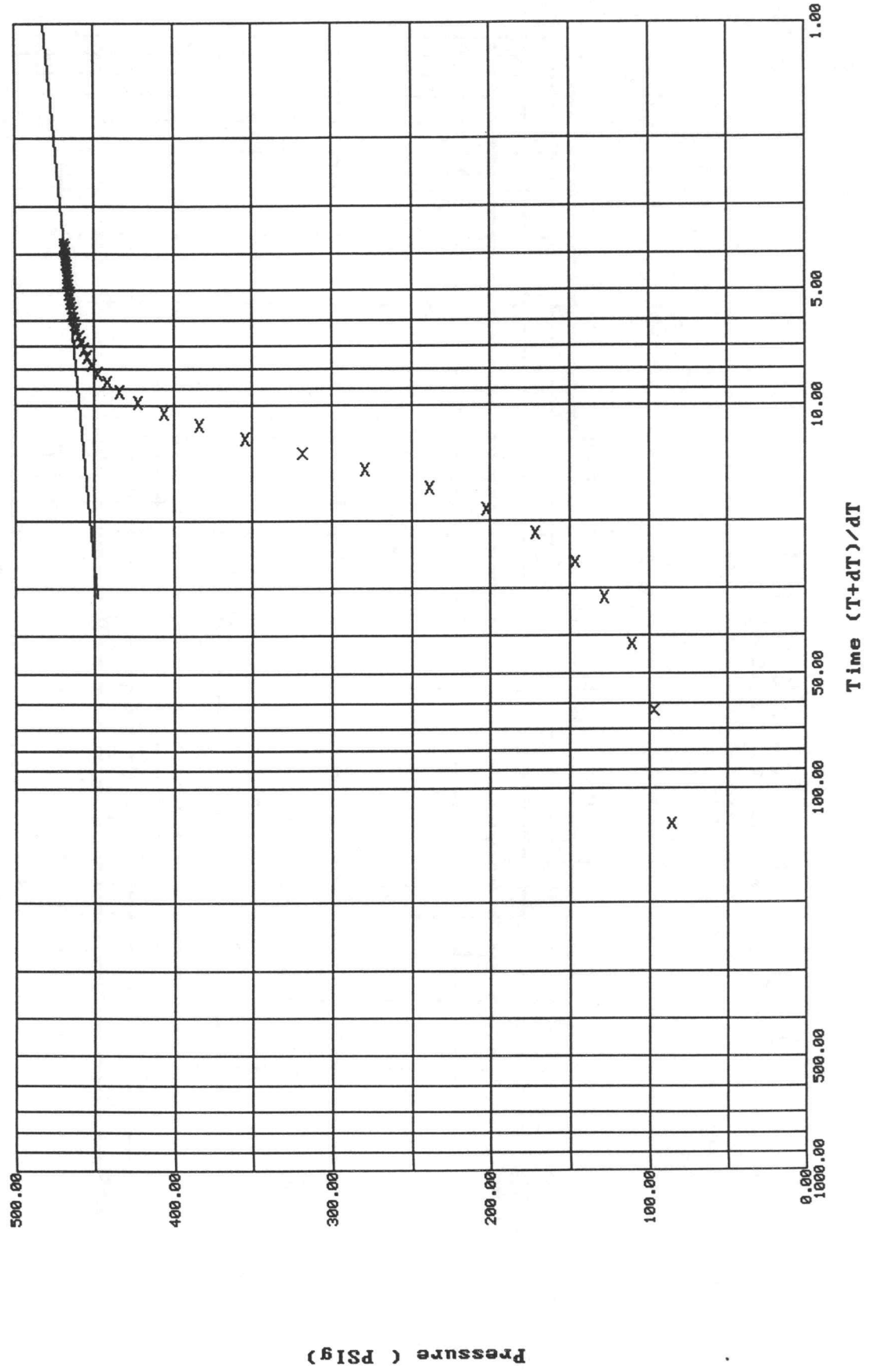
Ext. Pressure: 485.3824 PSig



Horner Plot: shut-in #2

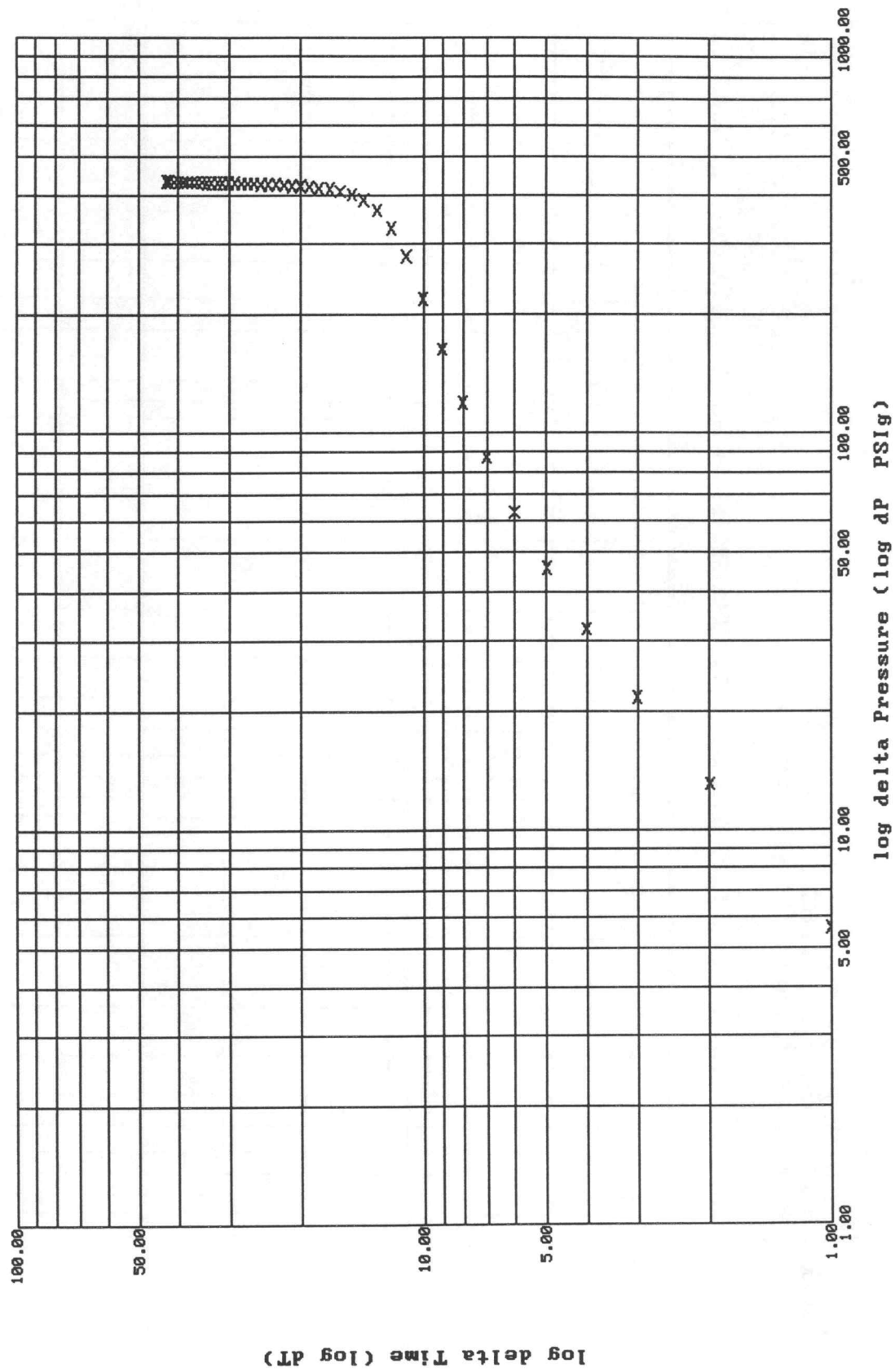
8470 DST #6 Michaelis #4 A..L.Abercrombie

Slope: 22.8144 PSig/cycle
Ext. Pressure: 481.9864 PSig



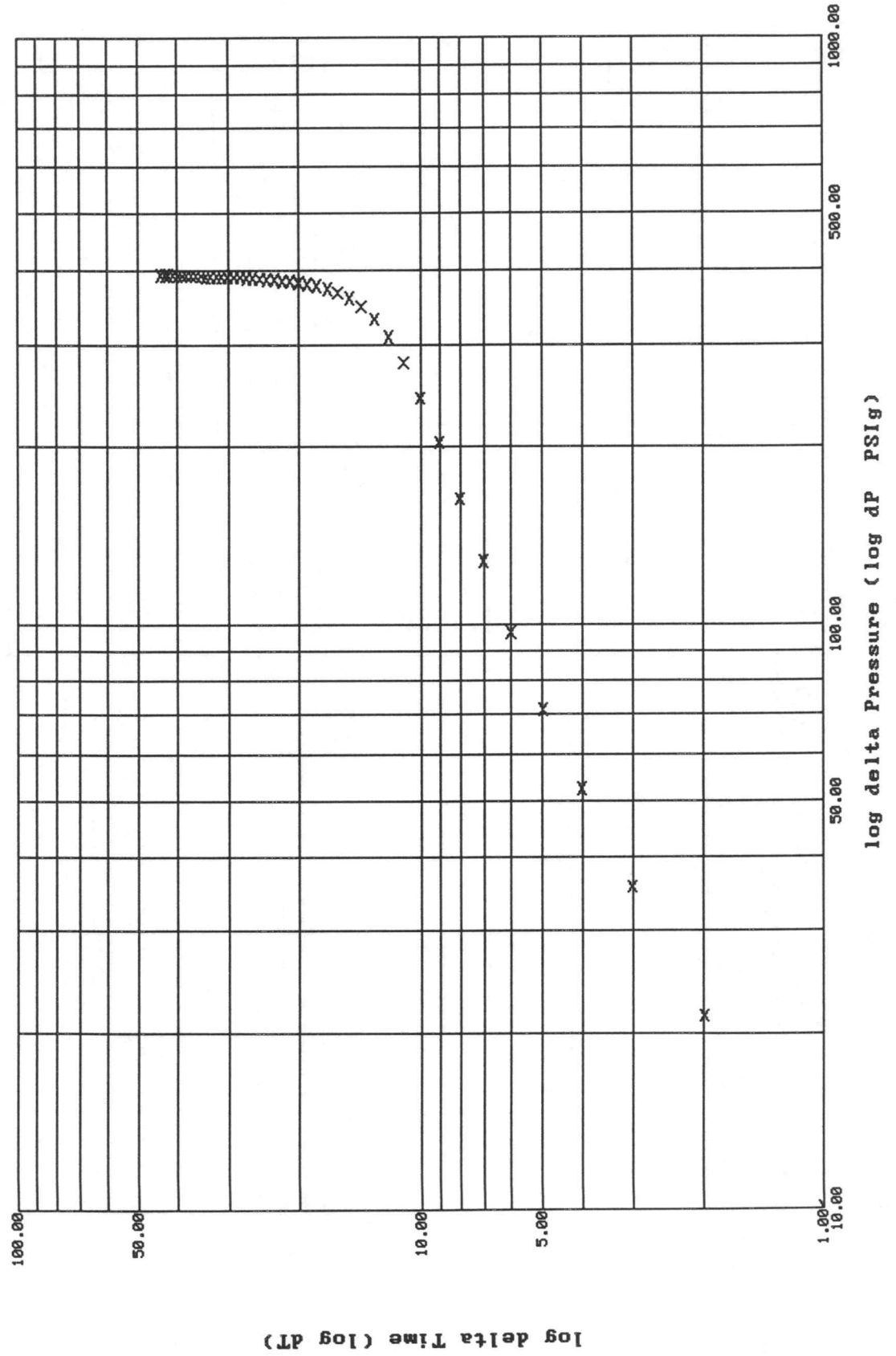
McKinley Plot: shut-in #1

8470 DST #6 Michaelis #4 A..L.Abercrombie

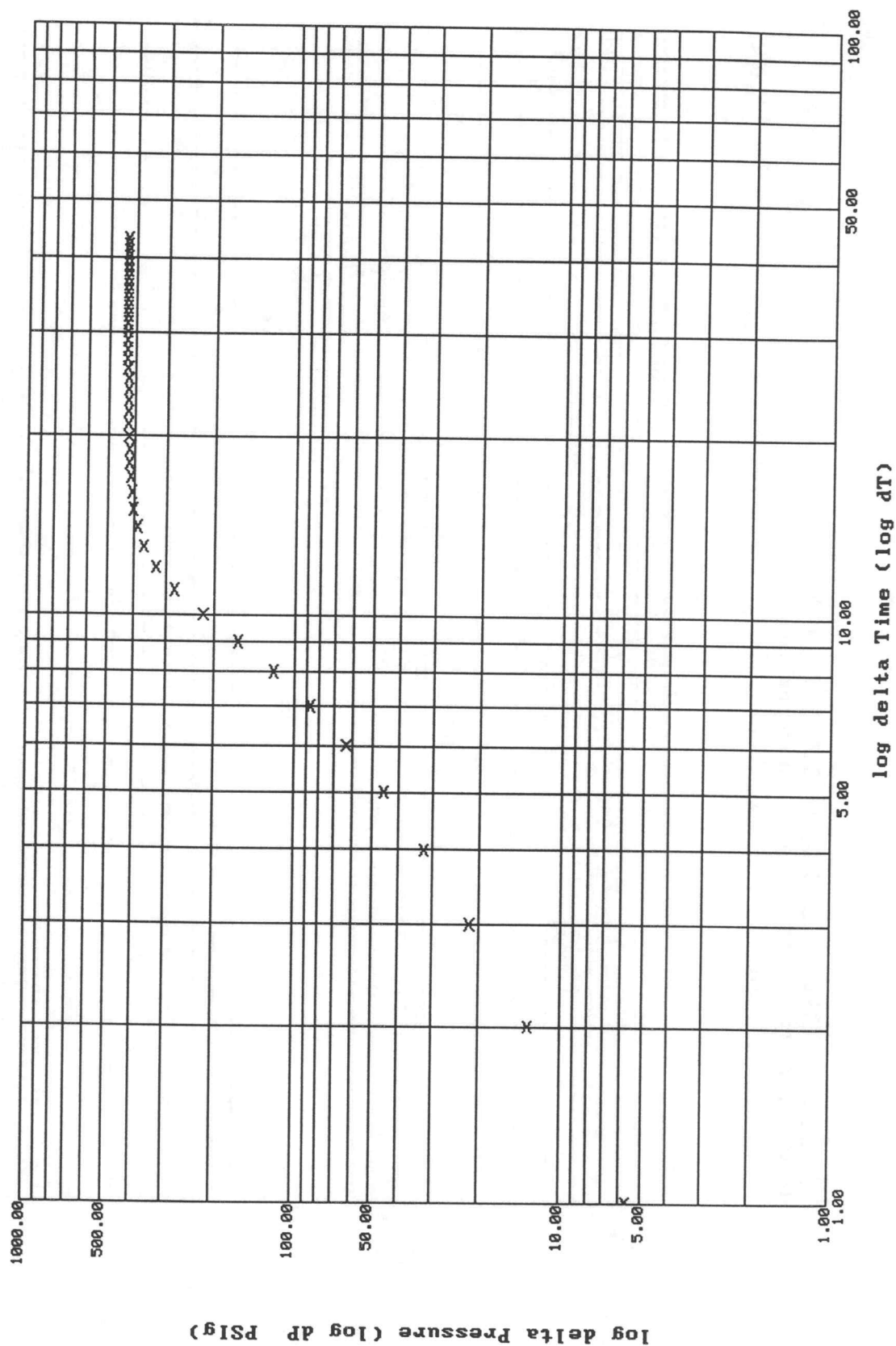


McKinley Plot: shut-in #2

8470 DST #6 Michaelis #4 A..L.Abercrombie

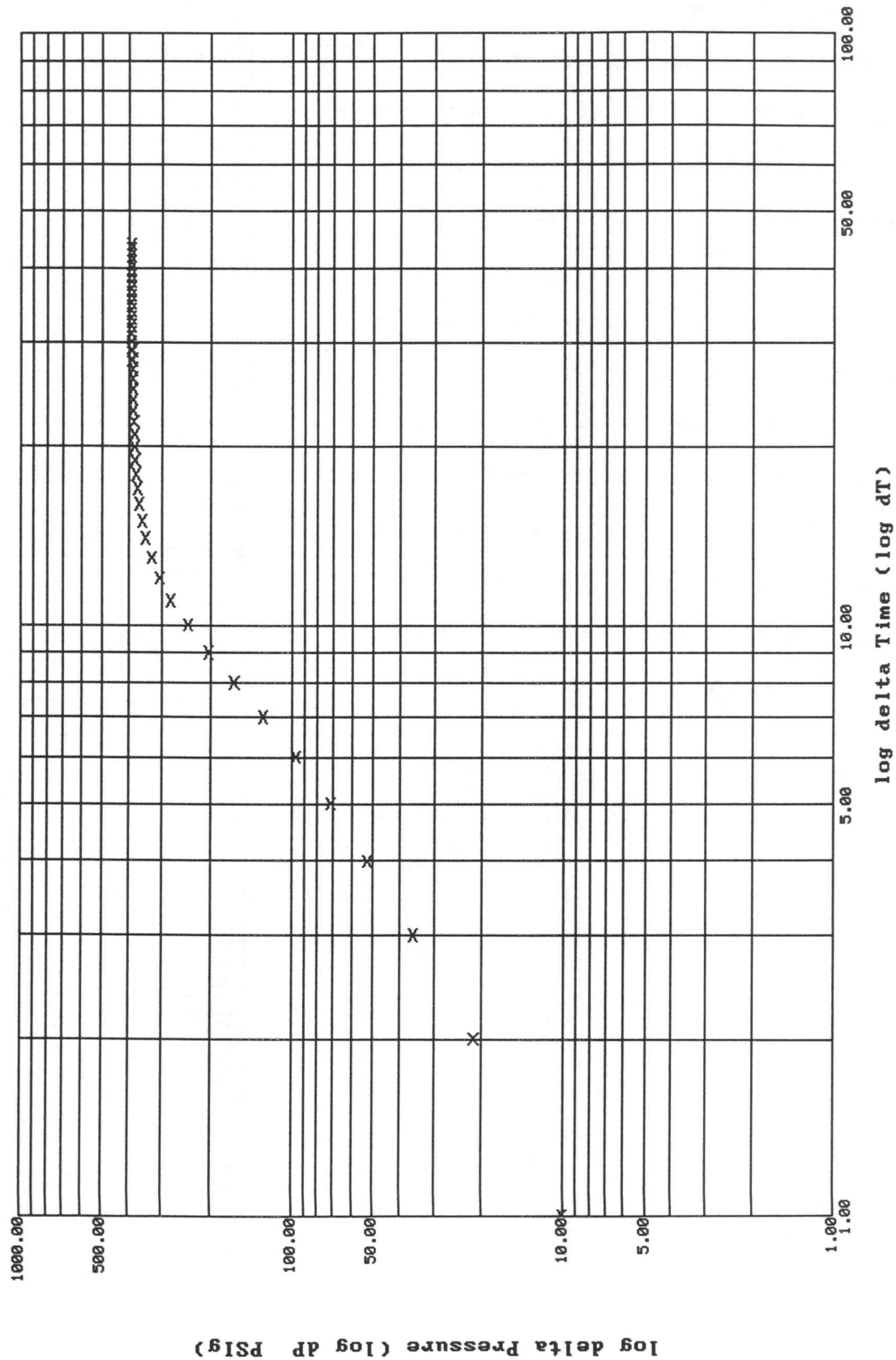


Ramey Plot: shut-in #1 8470 DST #6 Michaelis #4 A..L.Abercrombie



Ramey Plot: shut-in #2

8470 DST #6 Michaelis #4 A..L.Abercrombie



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Michaelis #4

LOCATION : 15-12S-33W, Logan Cty KS

TICKET No. 8470 D.S.T. No. 6 DATE 12-06-95

TOTAL TOOL TO BOTTOM OF TOP PACKERS 20

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 24

TOTAL TOOL 44

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 44

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands68 Single Total 4269

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4313

TOTAL DEPTH 4292

TOTAL DRILL PIPE ABOVE K.B. 21

REMARKS:

P.O. SUB 120' above WP	4128
C.O. SUB 1'	4248
S.I. TOOL 5'	4254
HMV 5'	4259
JARS n/a	
SAFETY JOINT n/a	
PACKER 5'	4263
PACKER 5'	4268
DEPTH 4268	
STUBB 1'	4269
ANCHOR	
Alpine recorder	4270
18' perf	4287
T.C. DEPTH	
AK-1 recorder	4287
BULLNOSE 5' perf	
T.D.	4292

TRILOBITE TESTING L.L.C.

OPERATOR : A.L.Abercrombie Inc.

DATE 12-07-95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8471 DST #7

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Ft.Scott/Myrik Sta.

INTERVAL : 4494.00 To 4544.00 ft

TD 4544.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins			Field	1	2	3	4	TIME DATA-----
PF	30	Rec.	13339	13339	2351			PF Fr. 1912 to 1942 hr
SI	45	Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 1942 to 2027 hr
SF	60	Clock(hrs)	AK-1	AK-1	Alpin			SF Fr. 2027 to 2127 hr
FS	45	Depth(ft)	4539.0	4539.0	4496.0	0.0	0.0	FS Fr. 2127 to 2212 hr

	Field	1	2	3	4	
A. Init Hydro	2213.0	2213.0	2179.0	0.0	0.0	T STARTED 1735 hr
B. First Flow	93.0	135.0	60.0	0.0	0.0	T ON BOTM 1910 hr
B1. Final Flow	228.0	270.0	274.0	0.0	0.0	T OPEN 1912 hr
C. In Shut-in	769.0	804.0	795.0	0.0	0.0	T PULLED 2212 hr
D. Init Flow	322.0	360.0	288.0	0.0	0.0	T OUT 0110 hr
E. Final Flow	405.0	455.0	439.0	0.0	0.0	
F. Fl Shut-in	719.0	766.0	762.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2183.0	2189.0	2146.0	0.0	0.0	Tool Wt. 1800.00 lbs
Inside/Outside	O	O	I			Wt Set On Packer 20000.00 lbs

RECOVERY

Tot Fluid	890.00 ft of	0.00 ft in DC and	890.00 ft in DP
340.00	ft of Gas in pipe		
20.00	ft of Free oil - 10% gas, 90% oil		
30.00	ft of Gassy water & mud cut oil -		
	20% gas, 45% oil, 15% water, 10% mud		
120.00	ft of Gassy oil & mud cut water -		
	10% gas, 10% oil, 45% water, 35% mud		
720.00	ft of Salt water - 100% water		
	RW .16 @ 80 F		
SALINITY	40000.00 P.P.M.	A.P.I. Gravity	26.60

TOOL DATA-----		
Tool Wt.	1800.00	lbs
Wt Set On Packer	20000.00	lbs
Wt Pulled Loose	70000.00	lbs
Initial Str Wt	45000.00	lbs
Unseated Str Wt	50000.00	lbs
Bot Choke	0.75	in
Hole Size	7.88	in
D Col. ID	0.00	in
D. Pipe ID	3.80	in
D.C. Length	0.00	ft
D.P. Length	3914.00	ft
H.W. I.D	2.70	in
H.W. Length	600.00	ft

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/c
Vis.	50.00 S/L
W.L.	8.80 in3
F.C.	0.00 in
Mud Drop N	

BLOW DESCRIPTION

Initial Flow -
Fair to strong off bottom in 6 min

Initial Shutin -
Bled off blow, surface return, steady
throughout

Final Flow -
Fair to strong off bottom in 11 min

Final Shutin -
Bled off blow, surface return built
to 2"

SAMPLES:

SENT TO:

Amt. of fill	0.00	ft
Btm. H. Temp.	129.00	F
Hole Condition	Good	
% Porosity	0.00	
Packer Size	6.75	in
No. of Packers	2	
Cushion Amt.	0.00	
Cushion Type		
Reversed Out	N	
Tool Chased	N	
Tester	Rod Stinbrink	
Co. Rep.	Arden Ratzlaff	
Contr.	Abercrombie	
Rig #	.	#8
Unit #		
Pump T.		

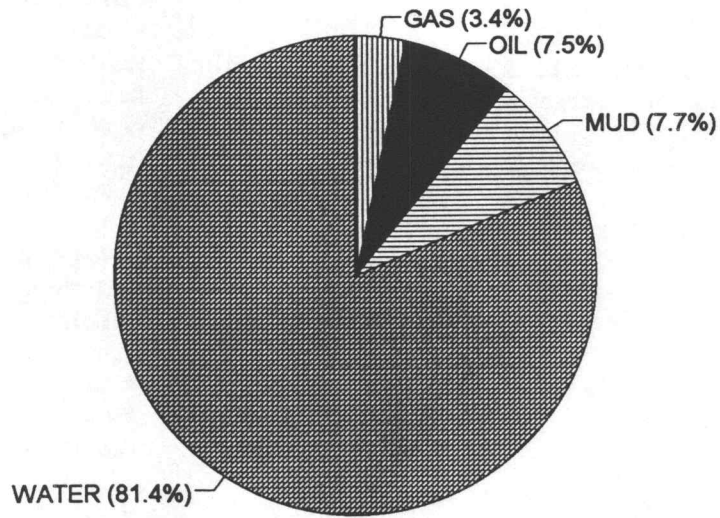
Test Successful: Y

CALCULATED RECOVERY ANALYSIS

DST # 7

TICKET # 8471

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL PIPE	1	20	10	2	90	18	0		0	
	2	30	20	6	45	13.5	15	4.5	10	3
	3	120	10	12	10	12	45	54	35	42
	4	120		0		0	100	120		0
	5			0		0		0		0
	6			0		0		0		0
WEIGHT PIPE	1	600		0		0	100	600		0
	2			0		0		0		0
	3			0		0		0		0
	4			0		0		0		0
DRL COLLAR	1			0		0		0		0
	2			0		0		0		0
	3			0		0		0		0
	4			0		0		0		0
	5			0		0		0		0
TOTAL	890	2.247191	20	4.88764	43.5	87.47191	778.5	5.05618	45	
HRS OPE BBL/DAY										
BBL OIL=	0.61857	*	1.50	9.89712						
BBL WATER=	6.73827	*		107.8123						
BBL MUD=	0.6399									
BBL GAS =	0.2844									



TEST HISTORY

8471 DST #7 Michaelis #4 A.L.Abercrombie

Flag Points

t(Min.) P(PSig)

A:	0.00	2178.93
B:	0.00	59.75
C:	30.00	273.76
D:	45.00	794.70
E:	0.00	288.37
F:	63.00	438.77
G:	42.00	761.89
Q:	0.00	2146.11

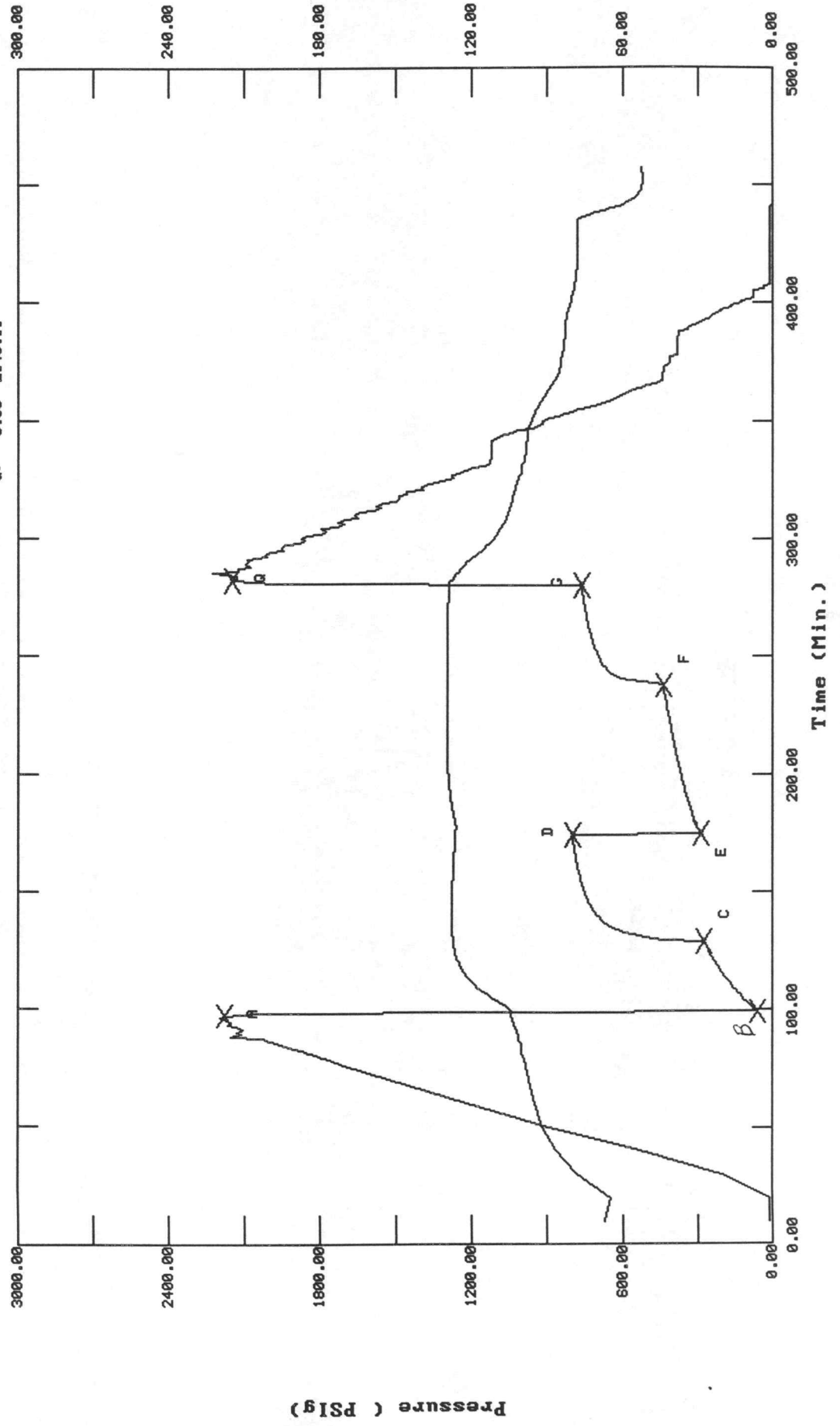
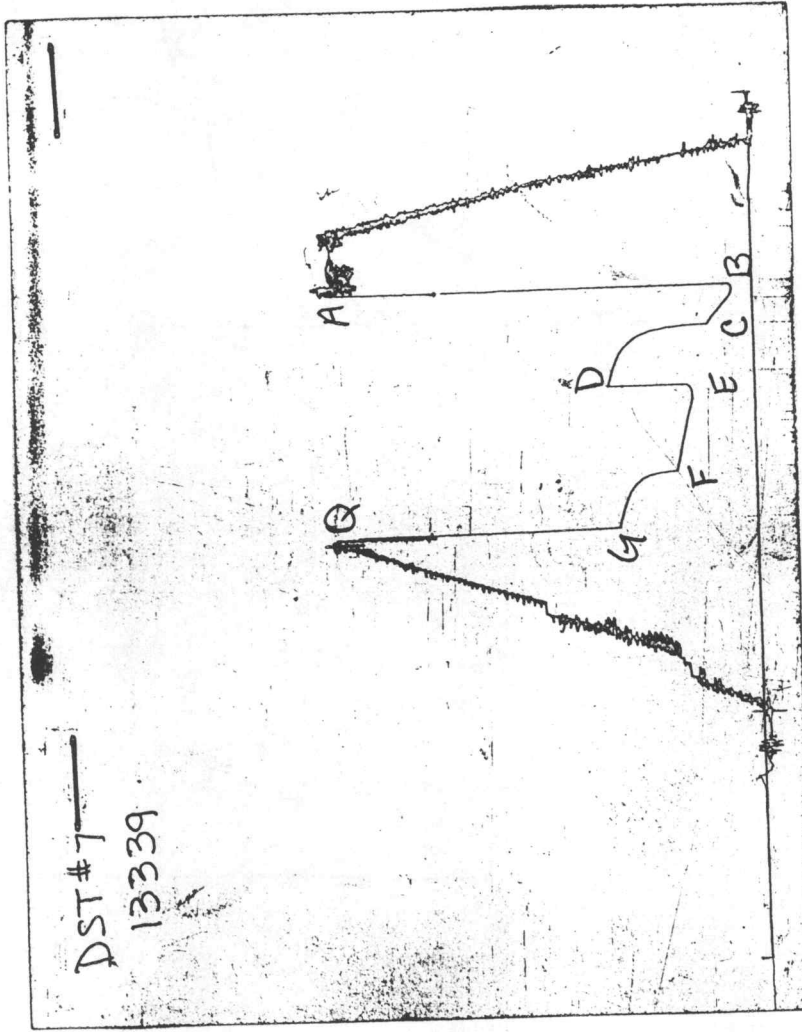


CHART PAGE



This is an actual photograph of recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8471 DST #7 Michaelis #4 A.L.Abercrombie

DATE: 12/07/95

TIME: 17:35:11

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	97.00	2178.9	0.0	104.19		
***** Start Flow 1	0.00	59.7	0.0	104.51		
	1.00	68.8	9.1	105.14		
	2.00	80.1	20.4	106.15		
	3.00	89.5	29.7	107.32		
	4.00	98.9	39.1	108.85		
	5.00	109.1	49.3	110.41		
	6.00	118.3	58.6	111.93		
	7.00	125.8	66.1	113.46		
	8.00	134.7	74.9	114.71		
	9.00	143.1	83.3	116.15		
	10.00	151.6	91.8	117.33		
	11.00	159.8	100.0	118.36		
	12.00	167.4	107.7	119.39		
	13.00	174.4	114.6	120.21		
	14.00	181.8	122.0	121.01		
	15.00	188.9	129.2	121.78		
	16.00	195.6	135.9	122.42		
	17.00	201.7	141.9	123.06		
	18.00	208.2	148.5	123.64		
	19.00	214.3	154.6	124.14		
	20.00	220.1	160.3	124.61		
	21.00	226.3	166.5	125.02		
	22.00	232.1	172.3	125.39		
	23.00	237.4	177.7	125.70		
	24.00	243.4	183.6	125.99		
	25.00	248.8	189.1	126.24		
	26.00	253.8	194.0	126.48		
	27.00	258.8	199.1	126.69		
	28.00	264.0	204.3	126.86		
	29.00	268.8	209.1	127.02		
***** End Flow 1	30.00	273.8	214.0	127.17		
***** Start Shutin 1	0.00	273.8	0.0	127.17	0.0000	0.075
	1.00	438.3	164.5	127.30	31.0000	0.192
	2.00	511.8	238.0	127.43	16.0000	0.262
	3.00	562.3	288.5	127.54	11.0000	0.316
	4.00	598.0	324.2	127.64	8.5000	0.358
	5.00	623.3	349.6	127.71	7.0000	0.389
	6.00	642.7	368.9	127.76	6.0000	0.413
	7.00	658.1	384.3	127.81	5.2857	0.433
	8.00	670.9	397.1	127.84	4.7500	0.450
	9.00	681.5	407.7	127.86	4.3333	0.464
	10.00	690.7	417.0	127.87	4.0000	0.477
	11.00	698.9	425.1	127.88	3.7273	0.488
	12.00	706.1	432.3	127.88	3.5000	0.499
	13.00	712.6	438.9	127.86	3.3077	0.508
	14.00	718.5	444.7	127.85	3.1429	0.516
	15.00	724.0	450.3	127.82	3.0000	0.524
	16.00	729.1	455.3	127.80	2.8750	0.532
	17.00	733.9	460.1	127.78	2.7647	0.539
	18.00	737.9	464.1	127.75	2.6667	0.544

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8471 DST #7 Michaelis #4 A.L.Abercrombie

DATE: 12/07/95

TIME: 17:35:11

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	19.00	742.2	468.4	127.71	2.5789	0.551
	20.00	745.9	472.2	127.68	2.5000	0.556
	21.00	749.6	475.8	127.63	2.4286	0.562
	22.00	752.9	479.1	127.59	2.3636	0.567
	23.00	755.8	482.0	127.55	2.3043	0.571
	24.00	758.8	485.0	127.50	2.2500	0.576
	25.00	761.6	487.9	127.45	2.2000	0.580
	26.00	764.6	490.8	127.40	2.1538	0.585
	27.00	766.8	493.1	127.36	2.1111	0.588
	28.00	769.2	495.4	127.30	2.0714	0.592
	29.00	771.9	498.1	127.27	2.0345	0.596
	30.00	774.1	500.3	127.22	2.0000	0.599
	31.00	776.2	502.5	127.17	1.9677	0.603
	32.00	778.1	504.3	127.12	1.9375	0.605
	33.00	780.0	506.3	127.06	1.9091	0.608
	34.00	782.2	508.4	127.01	1.8824	0.612
	35.00	784.0	510.3	126.95	1.8571	0.615
	36.00	785.5	511.7	126.90	1.8333	0.617
	37.00	787.5	513.7	126.86	1.8108	0.620
	38.00	789.1	515.3	126.81	1.7895	0.623
	39.00	790.4	516.7	126.76	1.7692	0.625
	40.00	791.9	518.2	126.71	1.7500	0.627
	41.00	793.4	519.7	126.67	1.7317	0.630
	42.00	794.9	521.1	126.60	1.7143	0.632
	43.00	796.5	522.7	126.55	1.6977	0.634
	44.00	797.8	524.0	126.51	1.6818	0.636
***** End Shut-in 1	45.00	794.7	520.9	126.46	1.6667	0.632
***** Start Flow 2	0.00	288.4	0.0	126.38		
	1.00	292.7	4.4	126.29		
	2.00	297.8	9.4	126.19		
	3.00	301.7	13.3	126.20		
	4.00	305.5	17.1	126.33		
	5.00	309.9	21.6	126.51		
	6.00	313.7	25.3	126.70		
	7.00	316.9	28.5	126.89		
	8.00	320.6	32.2	127.11		
	9.00	323.9	35.5	127.31		
	10.00	327.2	38.9	127.50		
	11.00	330.3	42.0	127.68		
	12.00	333.4	45.1	127.84		
	13.00	336.5	48.2	128.00		
	14.00	339.7	51.4	128.15		
	15.00	342.3	54.0	128.28		
	16.00	345.0	56.7	128.40		
	17.00	347.2	58.8	128.49		
	18.00	350.1	61.8	128.59		
	19.00	352.5	64.1	128.66		
	20.00	354.8	66.5	128.74		
	21.00	357.4	69.1	128.80		
	22.00	359.7	71.3	128.87		
	23.00	362.0	73.6	128.94		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8471 DST #7 Michaelis #4 A.L.Abercrombie

DATE: 12/07/95

TIME: 17:35:11

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	24.00	364.2	75.8	129.03		
	25.00	366.8	78.4	129.11		
	26.00	368.6	80.2	129.29		
	27.00	371.0	82.7	129.39		
	28.00	372.9	84.5	129.39		
	29.00	375.3	86.9	129.39		
	30.00	377.3	89.0	129.39		
	31.00	379.3	91.0	129.39		
	32.00	381.7	93.3	129.39		
	33.00	383.5	95.2	129.39		
	34.00	385.8	97.4	129.40		
	35.00	387.7	99.4	129.40		
	36.00	389.7	101.3	129.40		
	37.00	392.1	103.7	129.40		
	38.00	393.8	105.4	129.39		
	39.00	396.0	107.7	129.40		
	40.00	398.1	109.7	129.40		
	41.00	399.7	111.3	129.40		
	42.00	401.6	113.2	129.40		
	43.00	403.7	115.3	129.39		
	44.00	405.4	117.1	129.40		
	45.00	407.3	118.9	129.40		
	46.00	409.1	120.8	129.40		
	47.00	411.1	122.7	129.40		
	48.00	412.7	124.4	129.40		
	49.00	414.8	126.4	129.40		
	50.00	416.5	128.2	129.41		
	51.00	418.3	129.9	129.40		
	52.00	420.1	131.8	129.40		
	53.00	421.7	133.4	129.40		
	54.00	423.3	135.0	129.40		
	55.00	425.1	136.7	129.40		
	56.00	426.8	138.5	129.40		
	57.00	428.8	140.4	129.40		
	58.00	430.5	142.1	129.40		
	59.00	431.8	143.4	129.40		
	60.00	433.5	145.1	129.40		
	61.00	435.4	147.0	129.40		
	62.00	437.2	148.8	129.40		
***** End Flow 2	63.00	438.8	150.4	129.40		
***** Start Shutin 2	0.00	438.8	0.0	129.40	0.0000	0.193
	1.00	480.9	42.1	129.40	94.0000	0.231
	2.00	574.6	135.9	129.40	47.5000	0.330
	3.00	611.6	172.8	129.40	32.0000	0.374
	4.00	633.2	194.5	129.40	24.2500	0.401
	5.00	647.7	209.0	129.40	19.6000	0.420
	6.00	658.6	219.8	129.40	16.5000	0.434
	7.00	667.1	228.4	129.40	14.2857	0.445
	8.00	674.4	235.6	129.40	12.6250	0.455
	9.00	680.2	241.5	129.40	11.3333	0.463
	10.00	686.0	247.3	129.39	10.3000	0.471

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8471 DST #7 Michaelis #4 A.L.Abercrombie

DATE: 12/07/95

TIME: 17:35:11

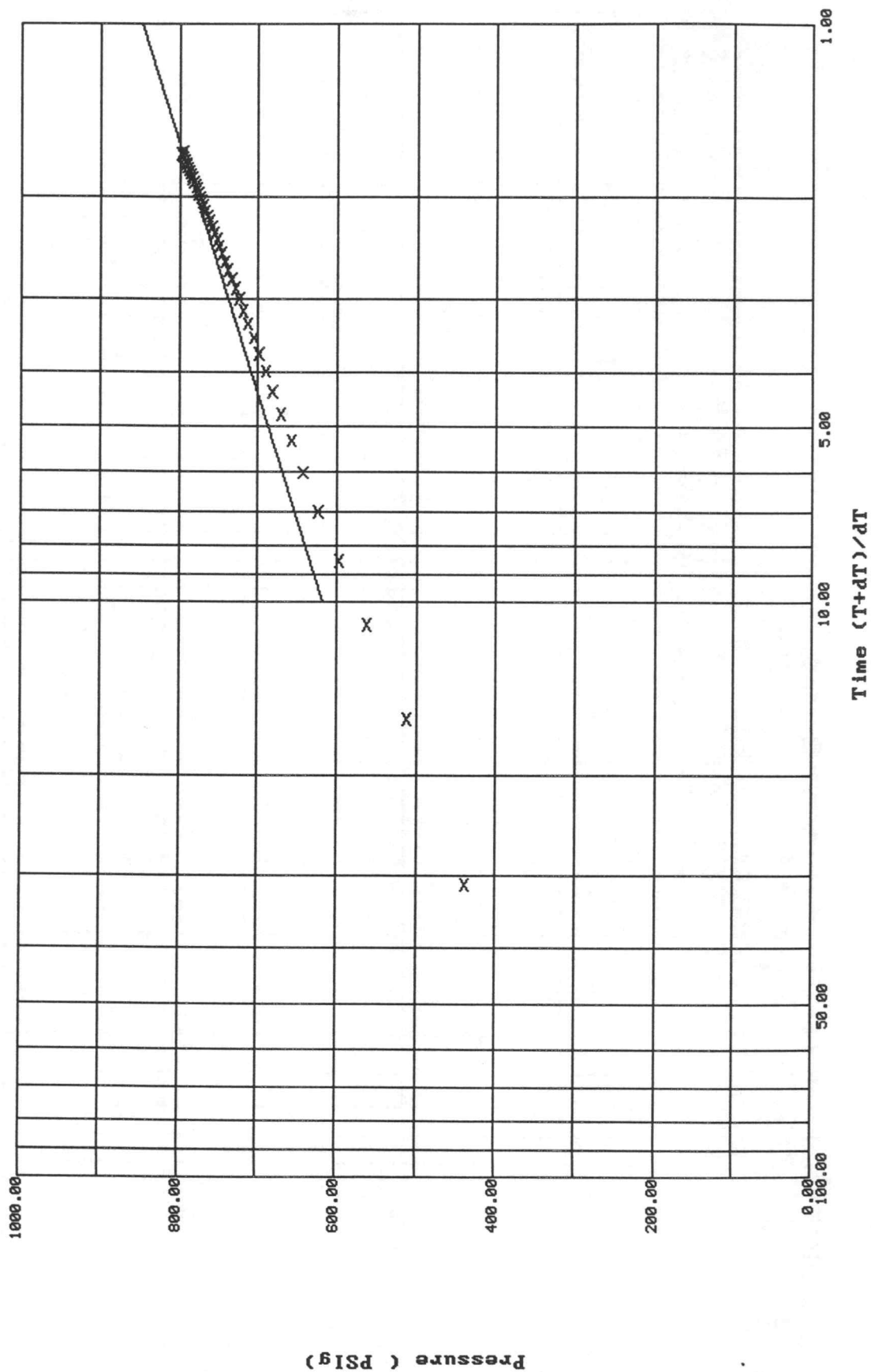
	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	11.00	690.9	252.1	129.40	9.4545	0.477
	12.00	695.2	256.4	129.40	8.7500	0.483
	13.00	699.5	260.8	129.39	8.1538	0.489
	14.00	703.4	264.6	129.40	7.6429	0.495
	15.00	706.7	268.0	129.39	7.2000	0.499
	16.00	710.3	271.5	129.40	6.8125	0.504
	17.00	713.5	274.8	129.39	6.4706	0.509
	18.00	716.2	277.5	129.39	6.1667	0.513
	19.00	719.3	280.6	129.39	5.8947	0.517
	20.00	722.1	283.3	129.40	5.6500	0.521
	21.00	724.5	285.7	129.39	5.4286	0.525
	22.00	727.0	288.2	129.39	5.2273	0.528
	23.00	729.6	290.8	129.39	5.0435	0.532
	24.00	731.8	293.1	129.39	4.8750	0.536
	25.00	734.0	295.3	129.39	4.7200	0.539
	26.00	736.0	297.3	129.39	4.5769	0.542
	27.00	738.1	299.4	129.39	4.4444	0.545
	28.00	740.2	301.4	129.39	4.3214	0.548
	29.00	741.7	302.9	129.39	4.2069	0.550
	30.00	743.8	305.1	129.39	4.1000	0.553
	31.00	745.3	306.5	129.39	4.0000	0.555
	32.00	747.0	308.3	129.39	3.9062	0.558
	33.00	748.7	309.9	129.35	3.8182	0.561
	34.00	750.3	311.5	129.24	3.7353	0.563
	35.00	751.9	313.1	129.15	3.6571	0.565
	36.00	753.4	314.6	129.08	3.5833	0.568
	37.00	755.0	316.2	129.02	3.5135	0.570
	38.00	756.3	317.6	128.95	3.4474	0.572
	39.00	757.8	319.0	128.92	3.3846	0.574
	40.00	759.2	320.4	128.89	3.3250	0.576
	41.00	760.5	321.8	128.83	3.2683	0.578
***** End Shut-in 2	42.00	761.9	323.1	128.79	3.2143	0.580
***** Final Hydro.	282.00	2146.1	0.0	128.24		

Horner Plot: shut-in #1

8471 DST #7 Michaelis #4 A.L.Abercrombie

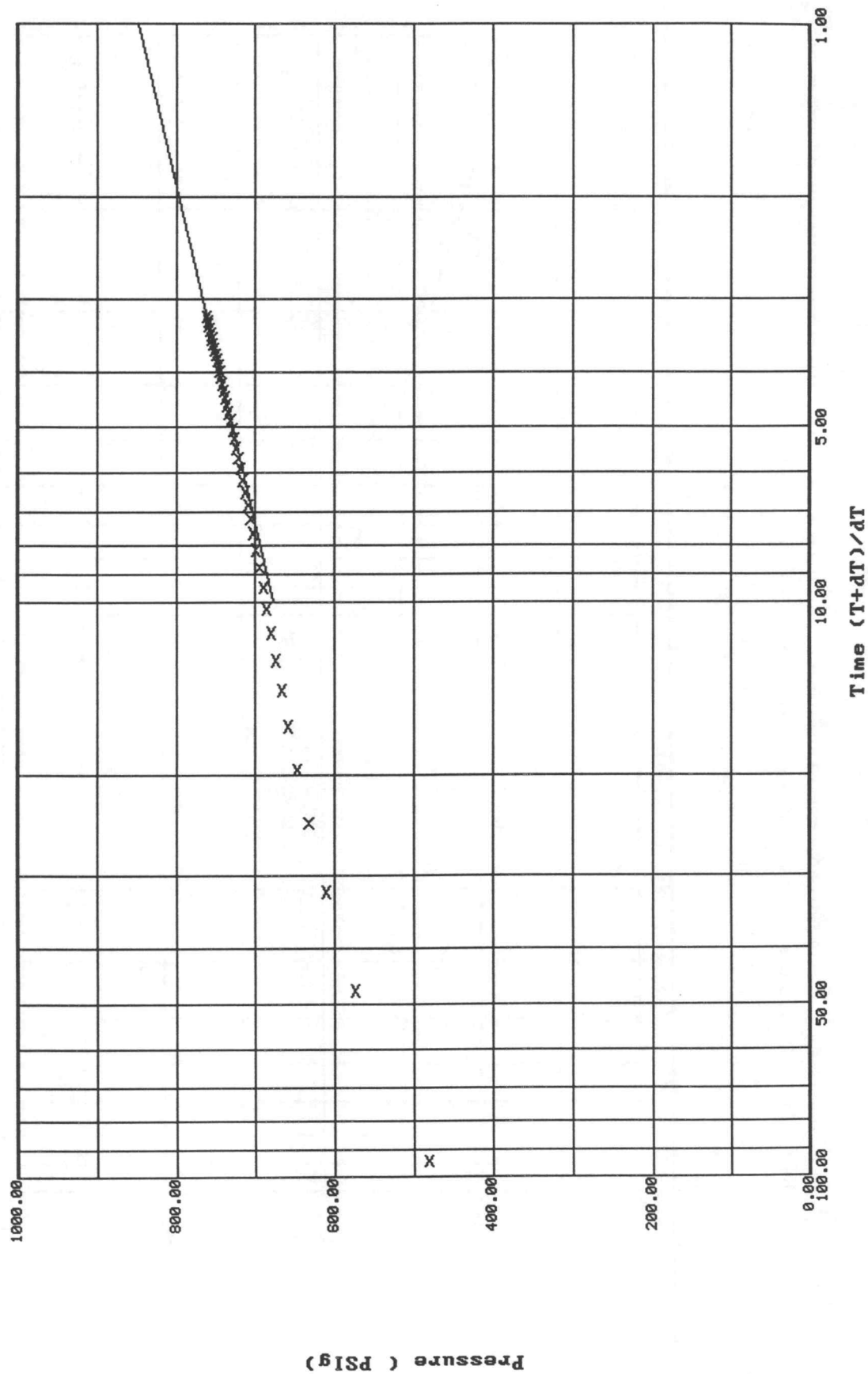
Slope: 231.6335 PSig/cycle

Ext. Pressure: 848.5333 PSig



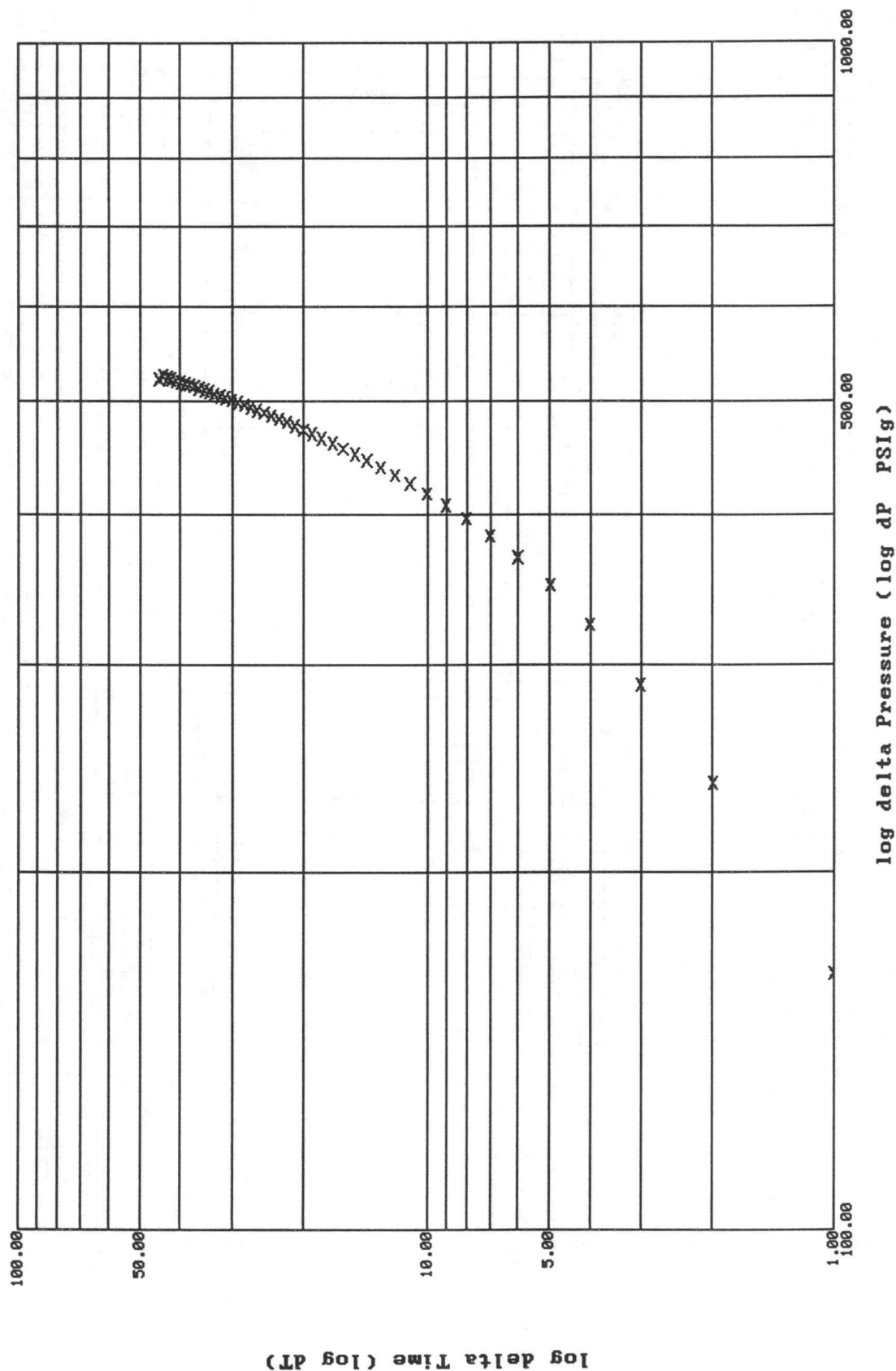
Horner Plot: shut-in #2 8471 DST #7 Michaelis #4 A.L.Abercrombie

Slope: 170.1874 PSig/cycle
Ext. Pressure: 847.9855 PSig



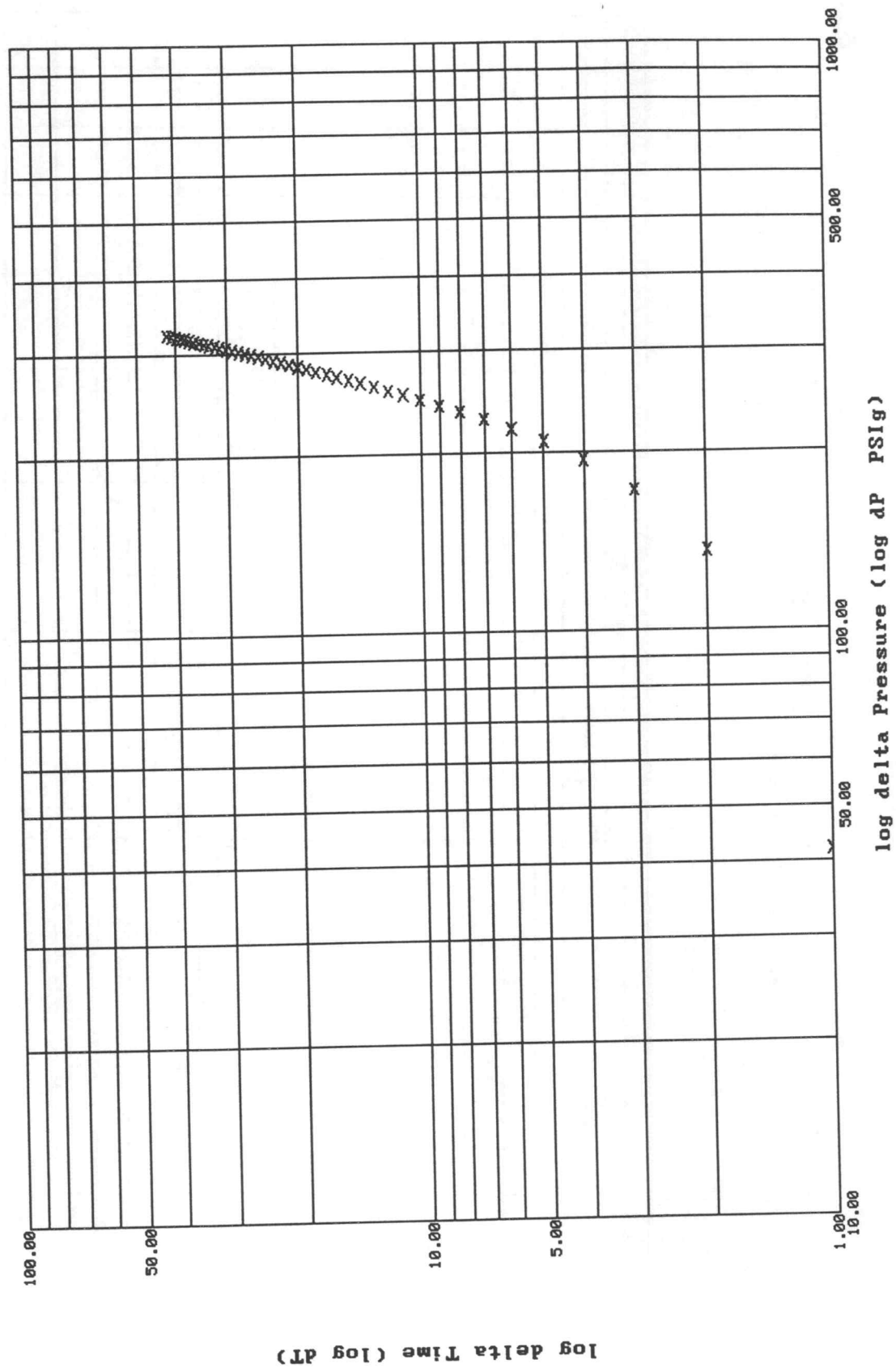
McKinley Plot: shut-in #1

8471 DST #7 Michaelis #4 A.L.Abercrombie

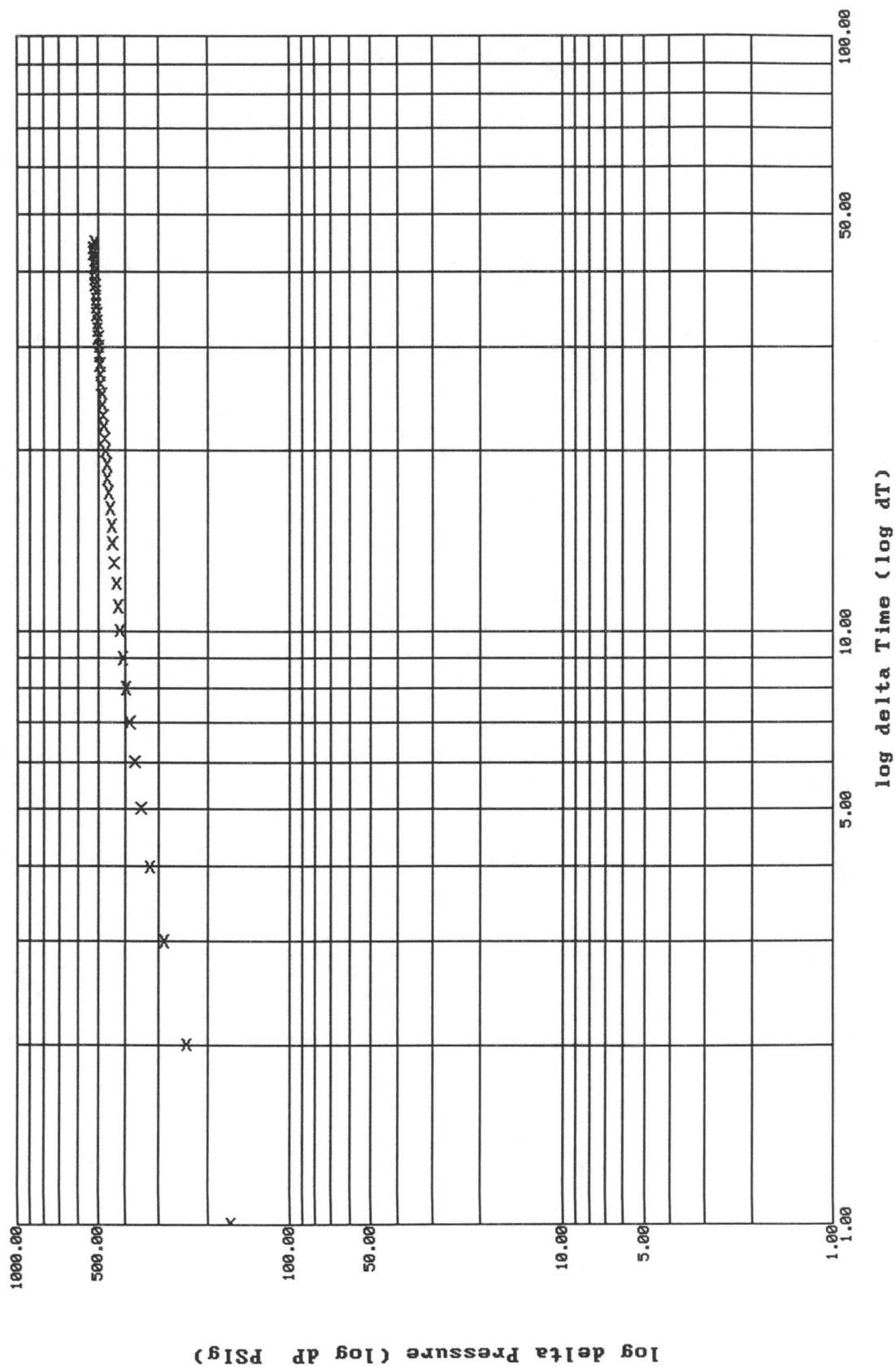


McKinley Plot: shut-in #2

8471 DST #7 Michaelis #4 A.L.Abercrombie

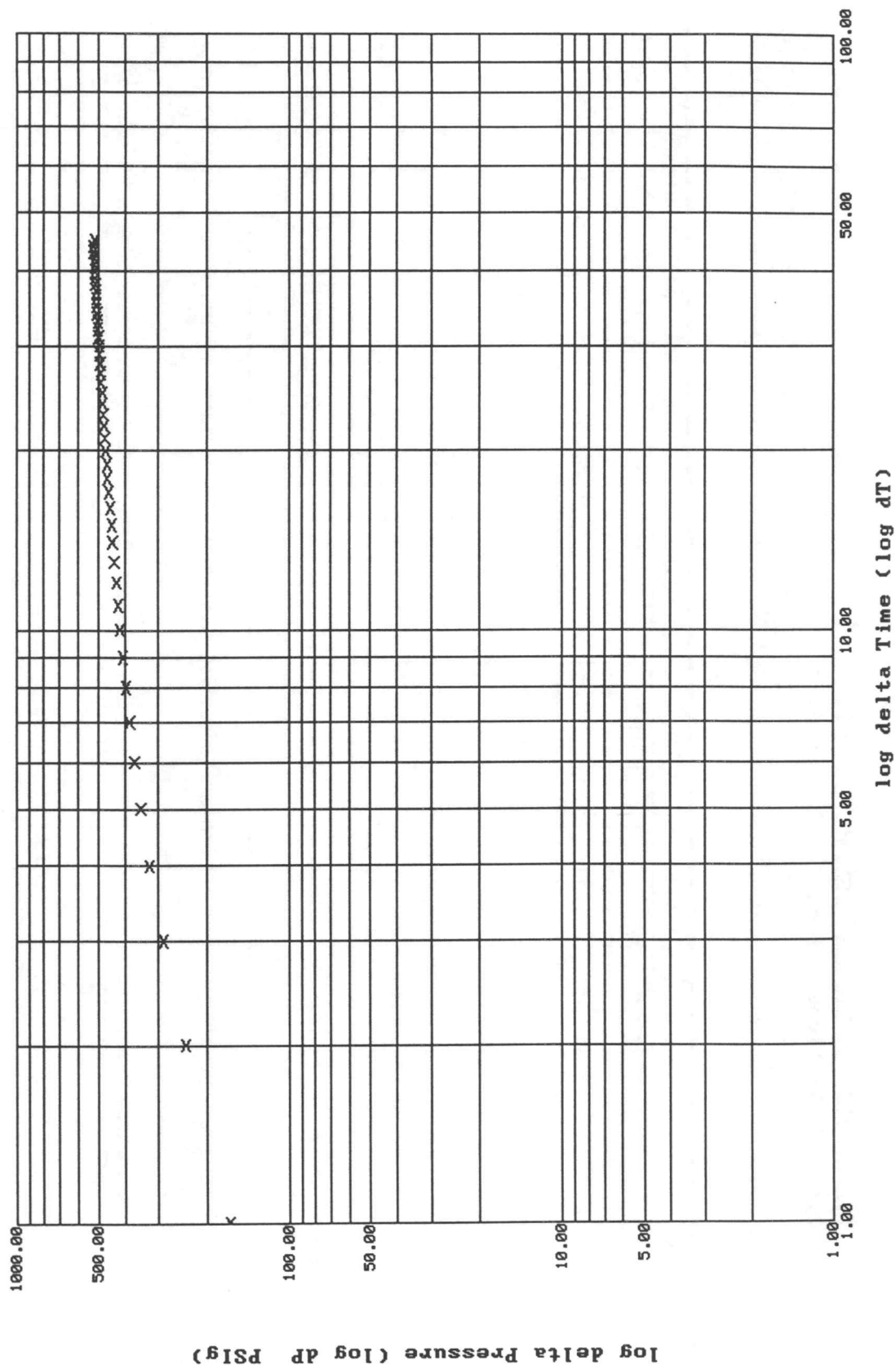


Ramey Plot: shut-in #1 8471 DST #7 Michaelis #4 A.L.Abercrombie



Ramey Plot: shut-in #1

8471 DST #7 Michaelis #4 A.L. Abercrombie



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Michaelis #4

LOCATION : 15-12s-33w Logan KS

TICKET No. 8471 D.S.T. No. 7 DATE 12-07-95

TOTAL TOOL TO BOTTOM OF TOP PACKERS 16

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 25

TOTAL TOOL 41

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single 1 Total 30

TOTAL ASSEMBLY 71

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands71 Single 1 Total 4484

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4555

TOTAL DEPTH 4544

TOTAL DRILL PIPE ABOVE K.B. 11

REMARKS:

FLUID SAMPLER DATA

RW .16 @ 80 deg = 40,000 Chlor.

26 API @ 54 deg = 26.6 Corrected Gravity API

P.O. SUB 120' above WP	4353
C.O. SUB 1'	4473
S.I. TOOL 5'	4479
HMV 5'	4484
JARS n/a	
SAFETY JOINT n/a	
PACKER 5'	4489
PACKER 5'	4494
DEPTH 4494	
STUBB 1'	4495
ANCHOR	
Alpine recorder	4496
9' perf	4504
30' DP f/anchor	4534
T.C.	
DEPTH	
5' perf	4534
AK-1 recorder	4539
BULLNOSE 5'perf	
T.D.	4544

TRILOBITE TESTING L.L.C.

OPERATOR : A.L. Abercrombie

DATE 12-08-95

WELL NAME: Michaelis #4

KB 3095.00 ft

TICKET NO: 8472

DST #8

LOCATION : 15-12S-33W, Logan Cty KS

GR 3090.00 ft

FORMATION: Johnson

INTERVAL : 4570.00 To 4612.00 ft

TD 4612.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13339	13339	2351			PF Fr. 1259 to 1329 hr
SI 45 Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 1329 to 1414 hr
SF 60 Clock(hrs)	AK-1	AK-1	Alpin			SF Fr. 1414 to 1514 hr
FS 45 Depth(ft)	4607.0	4607.0	4572.0	0.0	0.0	FS Fr. 1514 to 1559 hr

	Field	1	2	3	4	
A. Init Hydro	2273.0	2286.0	2229.0	0.0	0.0	T STARTED 1100 hr
B. First Flow	72.0	75.0	41.0	0.0	0.0	T ON BOTM 1256 hr
B1. Final Flow	83.0	92.0	96.0	0.0	0.0	T OPEN 1259 hr
C. In Shut-in	259.0	270.0	288.0	0.0	0.0	T PULLED 1559 hr
D. Init Flow	114.0	123.0	94.0	0.0	0.0	T OUT 1830 hr
E. Final Flow	135.0	148.0	154.0	0.0	0.0	
F. Fl Shut-in	259.0	270.0	285.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2253.0	2266.0	2244.0	0.0	0.0	Tool Wt. 1800.00 lbs
Inside/Outside	0	0	I			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 62000.00 lbs
						Initial Str Wt 45000.00 lbs
						Unseated Str Wt 50000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 0.00 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 3975.00 ft
						H.W. I.D 2.70 in
						H.W. Length 600.00 ft

RECOVERY

Tot Fluid 300.00 ft of 0.00 ft in DC and 300.00 ft in DP
 120.00 ft of Gassy oil cut mud -
 20% gas, 7% oil, 73% mud
 60.00 ft of Gassy oil cut mud -
 30% gas, 10% oil, 60% mud
 30.00 ft of Gassy mud cut oil -
 40% gas, 45% oil, 15% mud
 90.00 ft of Gassy oil - 30% gas, 70% oil

SALINITY 0.00 P.P.M. A.P.I. Gravity 33.40

BLOW DESCRIPTION

Initial Flow -
 Strong blow off bottom in 2 min
 Initial Shutin -
 Bled off blow, surface return died in
 20 min
 Final Flow -
 Strong return off bottom in 2 min;
 Gas to surface @ 32 min, flammable
 Final Shutin -
 Bled off blow, weak surface return
 died in 5 min

SAMPLES:

SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.20 lb/c
Vis.	50.00 S/L
W.L.	9.20 in3
F.C.	0.00 in
Mud Drop N	

Amt. of fill	0.00 ft
Btm. H. Temp.	120.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00

Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Rod Steinbrink
Co. Rep.	Arden Ratzlaff
Contr.	Abercrombie
Rig #	#8
Unit #	
Pump T.	

Test Successful: Y

CALCULATED RECOVERY ANALYSIS WEIGHT PIPE

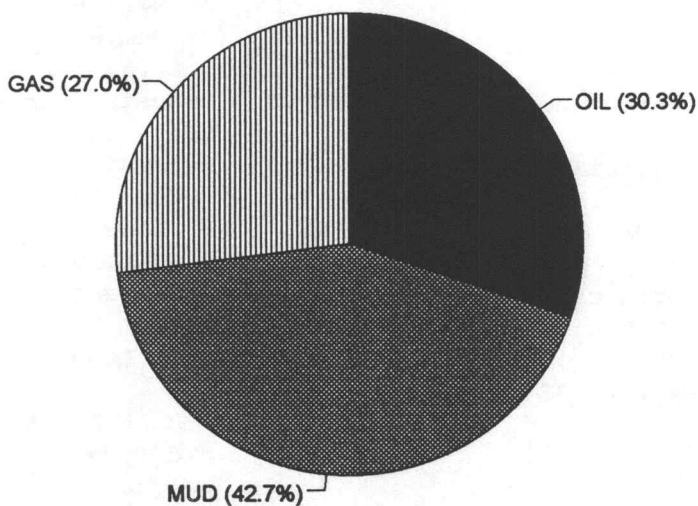
DST # 8

TICKET # 8472

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	120	20	24	7	8.4		0	73	87.6
2	60	30	18	10	6		0	60	36
3	30	40	12	45	13.5		0	15	4.5
4	90	30	27	70	63		0		0
5			0		0		0		0
TOTAL	300	27	81	30.3	90.9	0	0	42.7	128.1

BBL OIL= 0.6363
BBL WAT= 0
BBL MUD= 0.8967
BBL GAS= 0.567

HRS OPE BBL/DAY
1.50 10.1808



TEST HISTORY 8472 DST #8 Michaelis #4 A.L.Abercrombie

Flag Points

t(Min.) P(PSig)

A: 0.00 2228.61
 B: 0.00 41.20
 C: 31.00 95.92
 D: 44.00 287.61
 E: 0.00 93.74
 F: 62.00 154.17
 G: 44.00 285.01
 Q: 0.00 2243.63

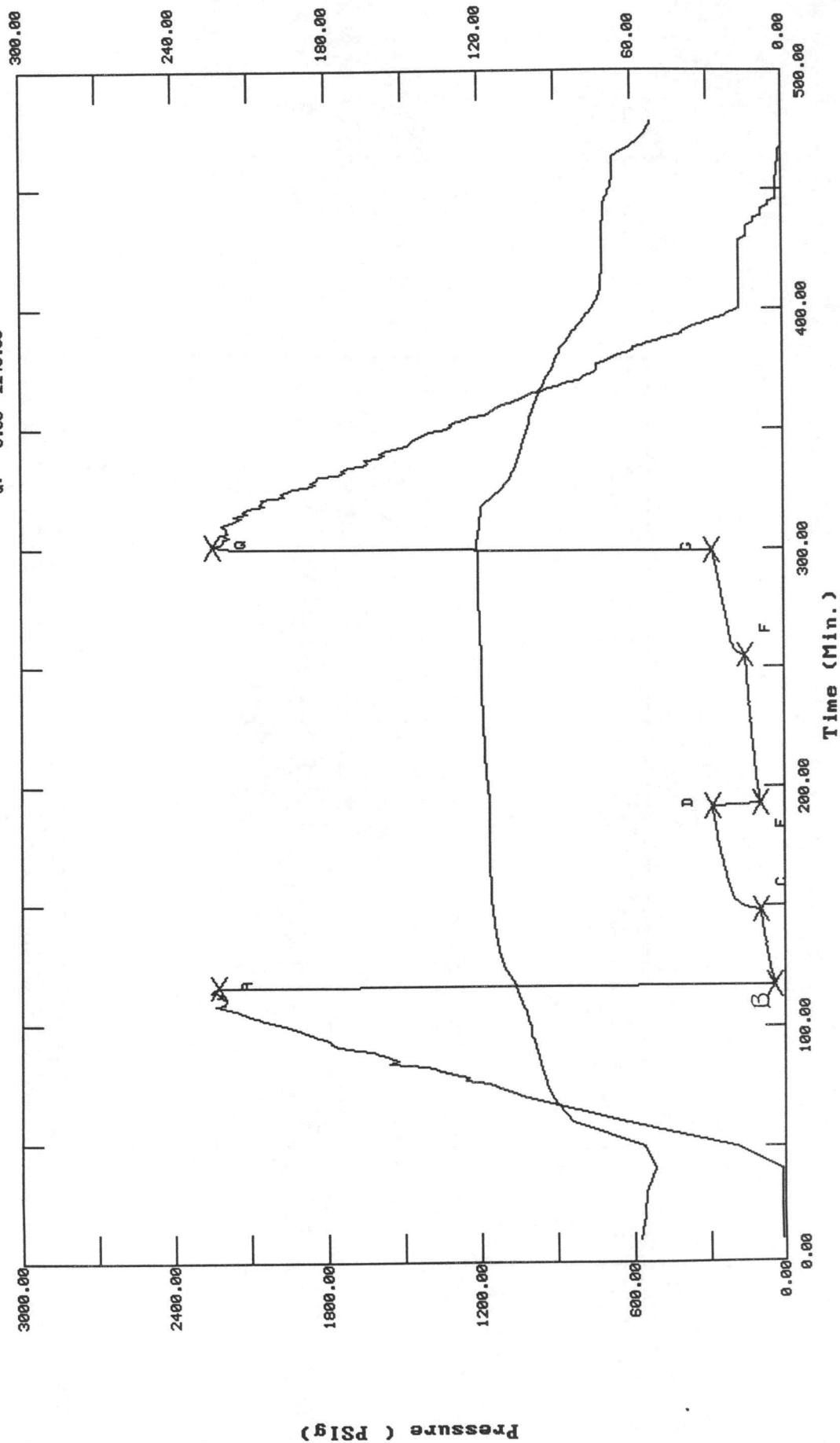
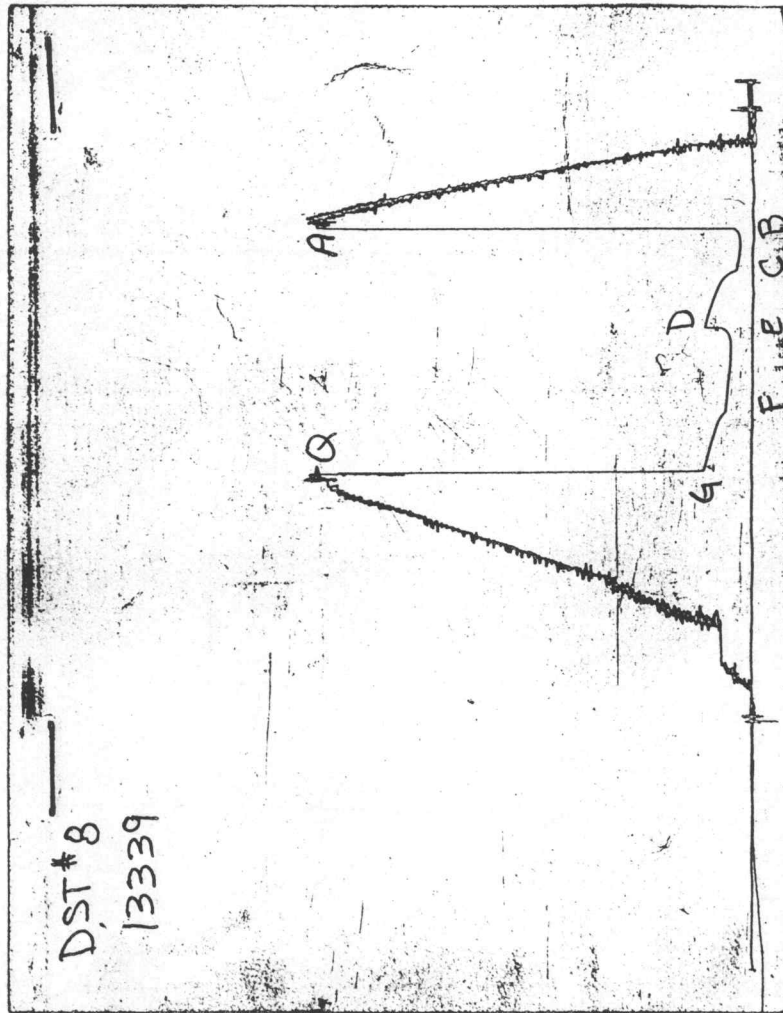


CHART PAGE



This is an actual photograph of recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8472 DST #8 Michaelis #4 A.L.Abercrombie

DATE: 12/08/95

TIME: 11:02:56

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
***** Initial Hydro.	116.00	2228.6	0.0	105.98		
***** Start Flow 1	0.00	41.2	0.0	106.17		
	1.00	38.4	-2.8	106.66		
	2.00	42.5	1.3	107.30		
	3.00	44.7	3.5	108.02		
	4.00	47.9	6.7	108.68		
	5.00	50.8	9.6	109.26		
	6.00	54.3	13.1	109.77		
	7.00	56.5	15.3	110.27		
	8.00	58.5	17.3	110.69		
	9.00	60.3	19.1	111.04		
	10.00	62.7	21.5	111.39		
	11.00	63.8	22.6	111.71		
	12.00	66.0	24.8	111.95		
	13.00	68.2	27.0	112.23		
	14.00	71.2	30.0	112.47		
	15.00	70.8	29.6	112.70		
	16.00	74.2	33.0	112.91		
	17.00	72.4	31.2	113.11		
	18.00	78.0	36.8	113.30		
	19.00	77.5	36.3	113.49		
	20.00	79.1	37.9	113.66		
	21.00	80.9	39.7	113.84		
	22.00	82.5	41.3	114.00		
	23.00	84.0	42.8	114.16		
	24.00	85.2	44.0	114.34		
	25.00	88.0	46.8	114.59		
	26.00	88.6	47.4	114.65		
	27.00	90.4	49.2	114.65		
	28.00	91.8	50.6	114.67		
	29.00	94.0	52.8	114.82		
	30.00	94.9	53.7	114.99		
***** End Flow 1	31.00	95.9	54.7	115.11		
***** Start Shutin 1	0.00	95.9	0.0	115.11	0.0000	0.009
	1.00	133.4	37.4	115.24	32.0000	0.018
	2.00	169.9	73.9	115.37	16.5000	0.029
	3.00	186.4	90.5	115.48	11.3333	0.035
	4.00	193.6	97.7	115.56	8.7500	0.037
	5.00	200.3	104.4	115.65	7.2000	0.040
	6.00	205.4	109.5	115.71	6.1667	0.042
	7.00	209.9	114.0	115.78	5.4286	0.044
	8.00	213.3	117.3	115.80	4.8750	0.045
	9.00	216.6	120.7	115.85	4.4444	0.047
	10.00	219.0	123.1	115.89	4.1000	0.048
	11.00	221.7	125.8	115.93	3.8182	0.049
	12.00	224.1	128.2	115.95	3.5833	0.050
	13.00	226.9	131.0	115.98	3.3846	0.051
	14.00	229.2	133.3	115.99	3.2143	0.053
	15.00	231.4	135.5	116.02	3.0667	0.054
	16.00	233.8	137.9	116.03	2.9375	0.055
	17.00	236.8	140.8	116.05	2.8235	0.056

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 8472 DST #8 Michaelis #4 A.L.Abercrombie

DATE: 12/08/95

TIME: 11:02:56

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P^2/10^6
	18.00	239.2	143.3	116.07	2.7222	0.057
	19.00	241.6	145.7	116.08	2.6316	0.058
	20.00	244.3	148.4	116.09	2.5500	0.060
	21.00	246.7	150.8	116.11	2.4762	0.061
	22.00	249.5	153.6	116.12	2.4091	0.062
	23.00	251.9	156.0	116.14	2.3478	0.063
	24.00	253.9	158.0	116.15	2.2917	0.064
	25.00	256.1	160.2	116.16	2.2400	0.066
	26.00	258.5	162.6	116.17	2.1923	0.067
	27.00	260.5	164.6	116.19	2.1481	0.068
	28.00	262.5	166.6	116.19	2.1071	0.069
	29.00	264.4	168.5	116.20	2.0690	0.070
	30.00	266.0	170.0	116.22	2.0333	0.071
	31.00	267.6	171.7	116.22	2.0000	0.072
	32.00	269.2	173.3	116.23	1.9688	0.072
	33.00	270.8	174.9	116.24	1.9394	0.073
	34.00	272.3	176.3	116.25	1.9118	0.074
	35.00	274.1	178.2	116.26	1.8857	0.075
	36.00	275.6	179.7	116.27	1.8611	0.076
	37.00	276.8	180.9	116.28	1.8378	0.077
	38.00	278.8	182.9	116.28	1.8158	0.078
	39.00	280.3	184.4	116.29	1.7949	0.079
	40.00	282.0	186.1	116.29	1.7750	0.080
	41.00	283.2	187.2	116.31	1.7561	0.080
	42.00	284.9	189.0	116.32	1.7381	0.081
	43.00	286.2	190.3	116.32	1.7209	0.082
***** End Shut-in 1	44.00	287.6	191.7	116.33	1.7045	0.083
***** Start Flow 2	0.00	93.7	0.0	116.32		
	1.00	93.4	-0.3	116.35		
	2.00	97.9	4.1	116.40		
	3.00	99.1	5.4	116.49		
	4.00	99.7	6.0	116.55		
	5.00	101.3	7.6	116.65		
	6.00	103.5	9.7	116.75		
	7.00	104.1	10.4	116.86		
	8.00	105.2	11.5	116.97		
	9.00	106.0	12.3	117.08		
	10.00	109.0	15.3	117.18		
	11.00	109.3	15.5	117.27		
	12.00	111.0	17.3	117.37		
	13.00	111.2	17.5	117.47		
	14.00	114.0	20.2	117.56		
	15.00	114.1	20.4	117.64		
	16.00	115.3	21.6	117.72		
	17.00	117.0	23.2	117.80		
	18.00	118.3	24.6	117.87		
	19.00	119.3	25.5	117.92		
	20.00	119.7	25.9	117.99		
	21.00	120.3	26.5	118.05		
	22.00	121.9	28.2	118.10		
	23.00	123.1	29.4	118.16		

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING
 TEST: 8472 DST #8 Michaelis #4 A.L.Abercrombie
 DATE: 12/08/95 TIME: 11:02:56

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
24.00	125.5	31.7	118.22		
25.00	125.2	31.5	118.28		
26.00	125.9	32.1	118.32		
27.00	126.9	33.2	118.33		
28.00	127.6	33.8	118.38		
29.00	129.3	35.6	118.46		
30.00	129.6	35.8	118.52		
31.00	130.2	36.5	118.56		
32.00	131.6	37.9	118.63		
33.00	131.3	37.5	118.69		
34.00	133.1	39.4	118.74		
35.00	132.3	38.5	118.79		
36.00	134.2	40.5	118.84		
37.00	135.5	41.7	118.88		
38.00	136.3	42.6	118.91		
39.00	138.3	44.6	118.95		
40.00	137.0	43.2	118.98		
41.00	139.1	45.4	119.02		
42.00	138.6	44.9	119.04		
43.00	139.4	45.7	119.07		
44.00	140.2	46.4	119.10		
45.00	141.2	47.5	119.14		
46.00	142.7	48.9	119.16		
47.00	142.9	49.2	119.19		
48.00	142.8	49.1	119.23		
49.00	142.3	48.6	119.25		
50.00	145.6	51.9	119.25		
51.00	145.1	51.4	119.28		
52.00	145.0	51.3	119.32		
53.00	147.5	53.8	119.34		
54.00	147.5	53.7	119.37		
55.00	149.3	55.6	119.42		
56.00	150.3	56.6	119.45		
57.00	150.1	56.4	119.52		
58.00	151.5	57.7	119.56		
59.00	151.3	57.6	119.56		
60.00	151.6	57.8	119.56		
61.00	152.4	58.7	119.56		
62.00	154.2	60.4	119.56		

***** End Flow 2

***** Start Shutin 2	0.00	154.2	0.0	119.56	0.0000	0.024
	1.00	185.6	31.4	119.56	94.0000	0.034
	2.00	193.6	39.4	119.56	47.5000	0.037
	3.00	199.3	45.2	119.57	32.0000	0.040
	4.00	203.9	49.8	119.60	24.2500	0.042
	5.00	207.8	53.6	119.66	19.6000	0.043
	6.00	211.7	57.6	119.72	16.5000	0.045
	7.00	214.1	59.9	119.77	14.2857	0.046
	8.00	216.6	62.4	119.81	12.6250	0.047
	9.00	218.4	64.2	119.86	11.3333	0.048
	10.00	219.7	65.5	119.91	10.3000	0.048
	11.00	220.9	66.7	119.94	9.4545	0.049

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

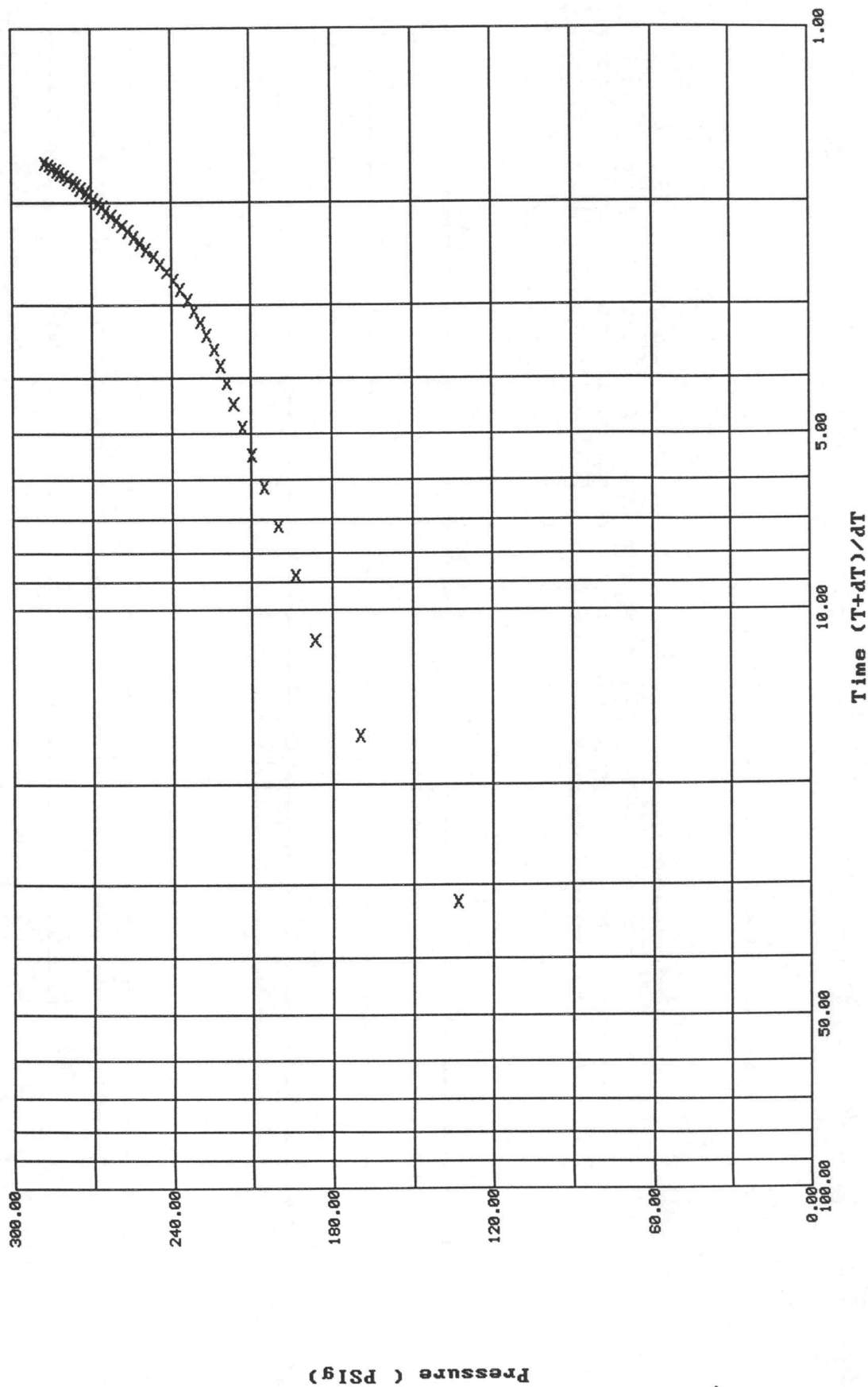
TEST: 8472 DST #8 Michaelis #4 A.L.Abercrombie

DATE: 12/08/95

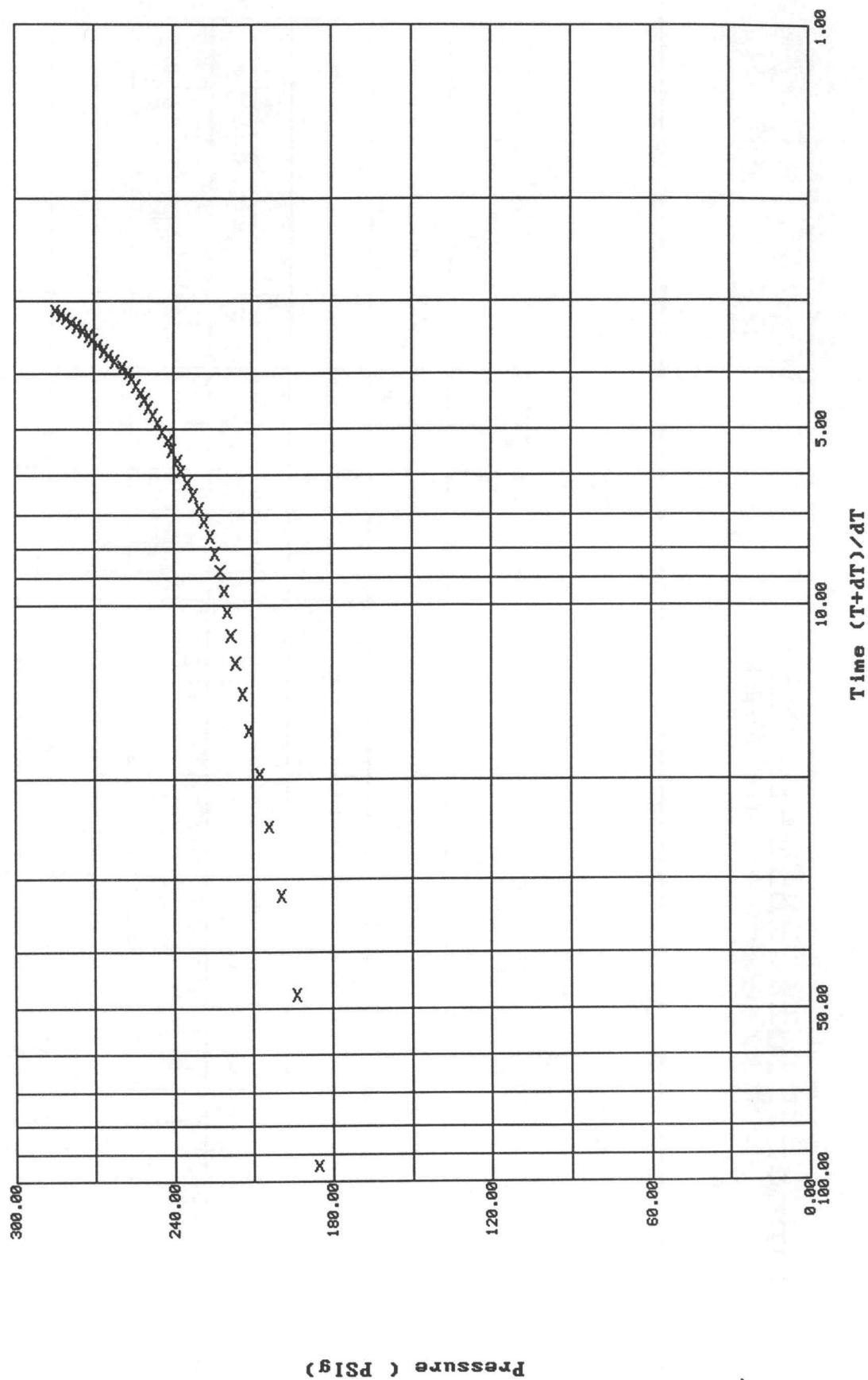
TIME: 11:02:56

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	12.00	222.5	68.3	119.95	8.7500	0.049
	13.00	224.4	70.2	119.98	8.1538	0.050
	14.00	226.1	71.9	120.00	7.6429	0.051
	15.00	228.4	74.3	120.09	7.2000	0.052
	16.00	230.4	76.2	120.09	6.8125	0.053
	17.00	232.8	78.6	120.18	6.4706	0.054
	18.00	234.7	80.5	120.19	6.1667	0.055
	19.00	237.1	82.9	120.21	5.8947	0.056
	20.00	238.6	84.4	120.23	5.6500	0.057
	21.00	240.7	86.5	120.25	5.4286	0.058
	22.00	242.0	87.9	120.28	5.2273	0.059
	23.00	244.1	89.9	120.29	5.0435	0.060
	24.00	245.8	91.6	120.33	4.8750	0.060
	25.00	247.6	93.4	120.33	4.7200	0.061
	26.00	249.3	95.1	120.38	4.5769	0.062
	27.00	250.9	96.8	120.40	4.4444	0.063
	28.00	252.3	98.1	120.41	4.3214	0.064
	29.00	254.3	100.1	120.42	4.2069	0.065
	30.00	256.0	101.8	120.43	4.1000	0.066
	31.00	257.2	103.1	120.47	4.0000	0.066
	32.00	259.4	105.2	120.48	3.9062	0.067
	33.00	262.2	108.0	120.51	3.8182	0.069
	34.00	264.4	110.2	120.54	3.7353	0.070
	35.00	266.3	112.1	120.56	3.6571	0.071
	36.00	268.7	114.6	120.57	3.5833	0.072
	37.00	270.7	116.5	120.63	3.5135	0.073
	38.00	272.3	118.2	120.63	3.4474	0.074
	39.00	274.5	120.4	120.64	3.3846	0.075
	40.00	276.6	122.5	120.67	3.3250	0.077
	41.00	278.8	124.6	120.69	3.2683	0.078
	42.00	280.9	126.7	120.71	3.2143	0.079
	43.00	282.6	128.4	120.74	3.1628	0.080
***** End Shut-in 2	44.00	285.0	130.8	120.75	3.1136	0.081
***** Final Hydro.	301.00	2243.6	0.0	120.98		

Horner Plot: shut-in #1 8472 DST #8 Michaelis #4 A.L. Abercrombie

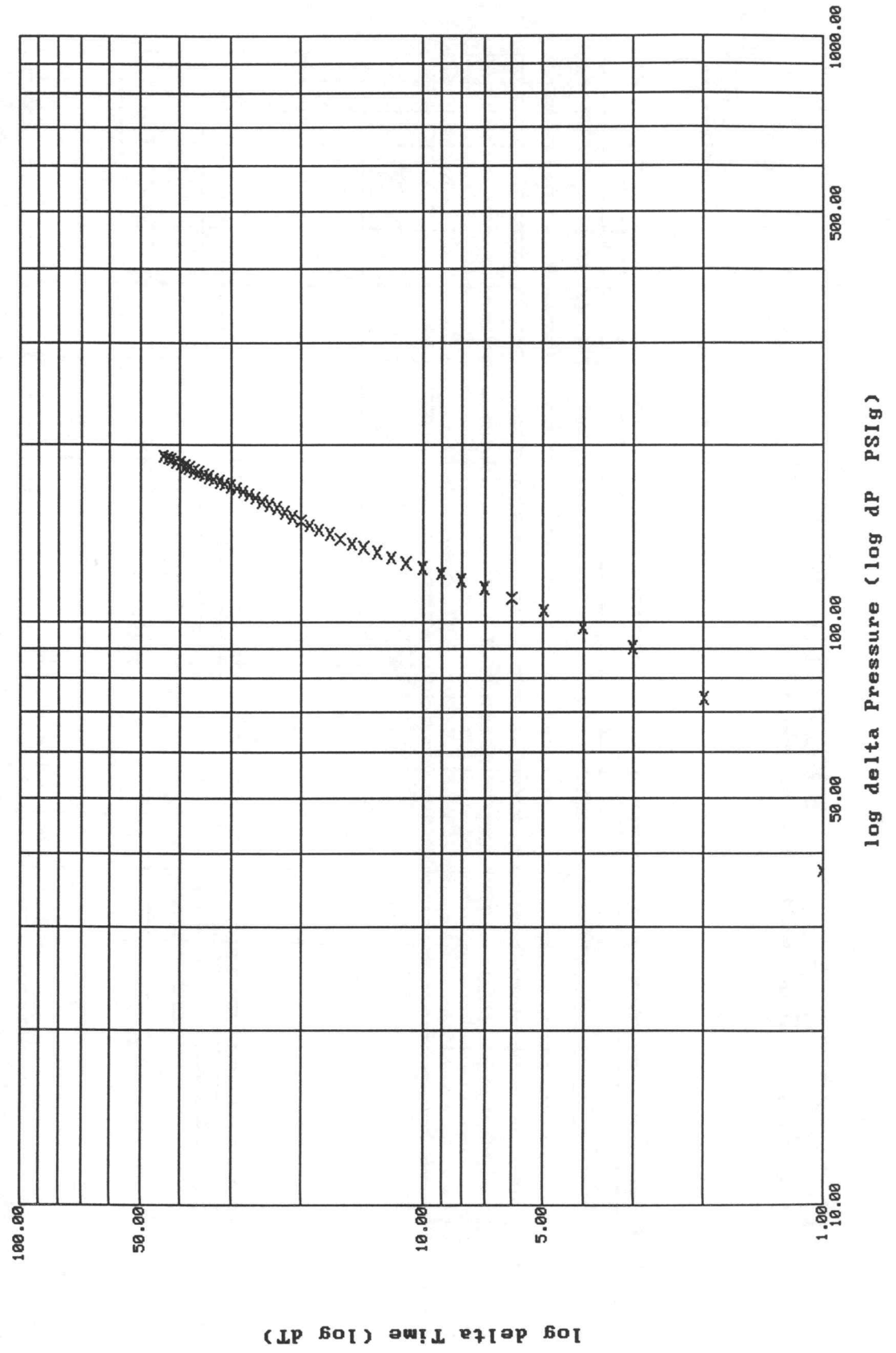


Horner Plot: shut-in #2 8472 DST #8 Michaelis #4 A.L. Abercrombie



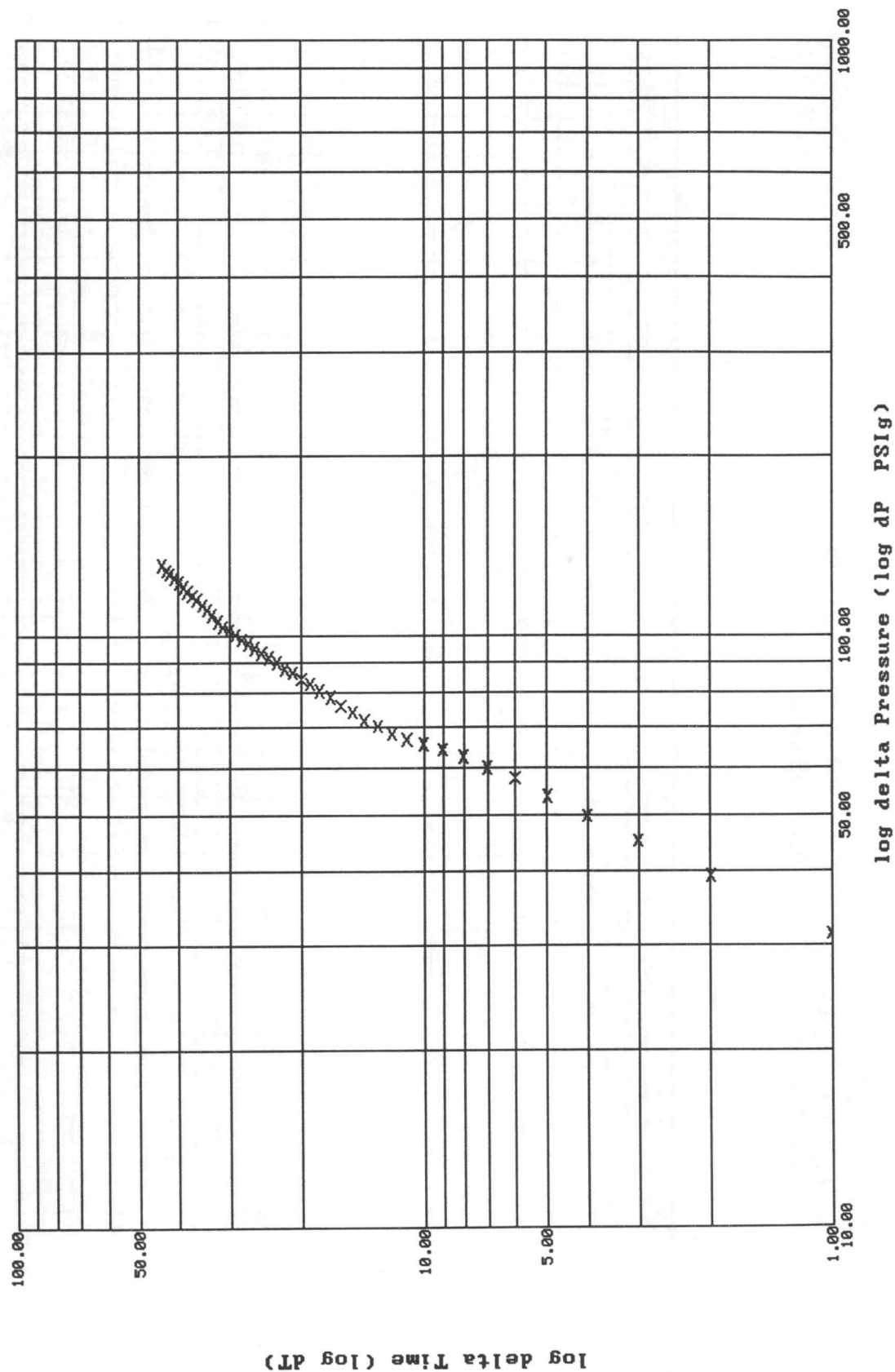
McKinley Plot: shut-in #1

8472 DST #8 Michaelis #4 A.L. Abercrombie



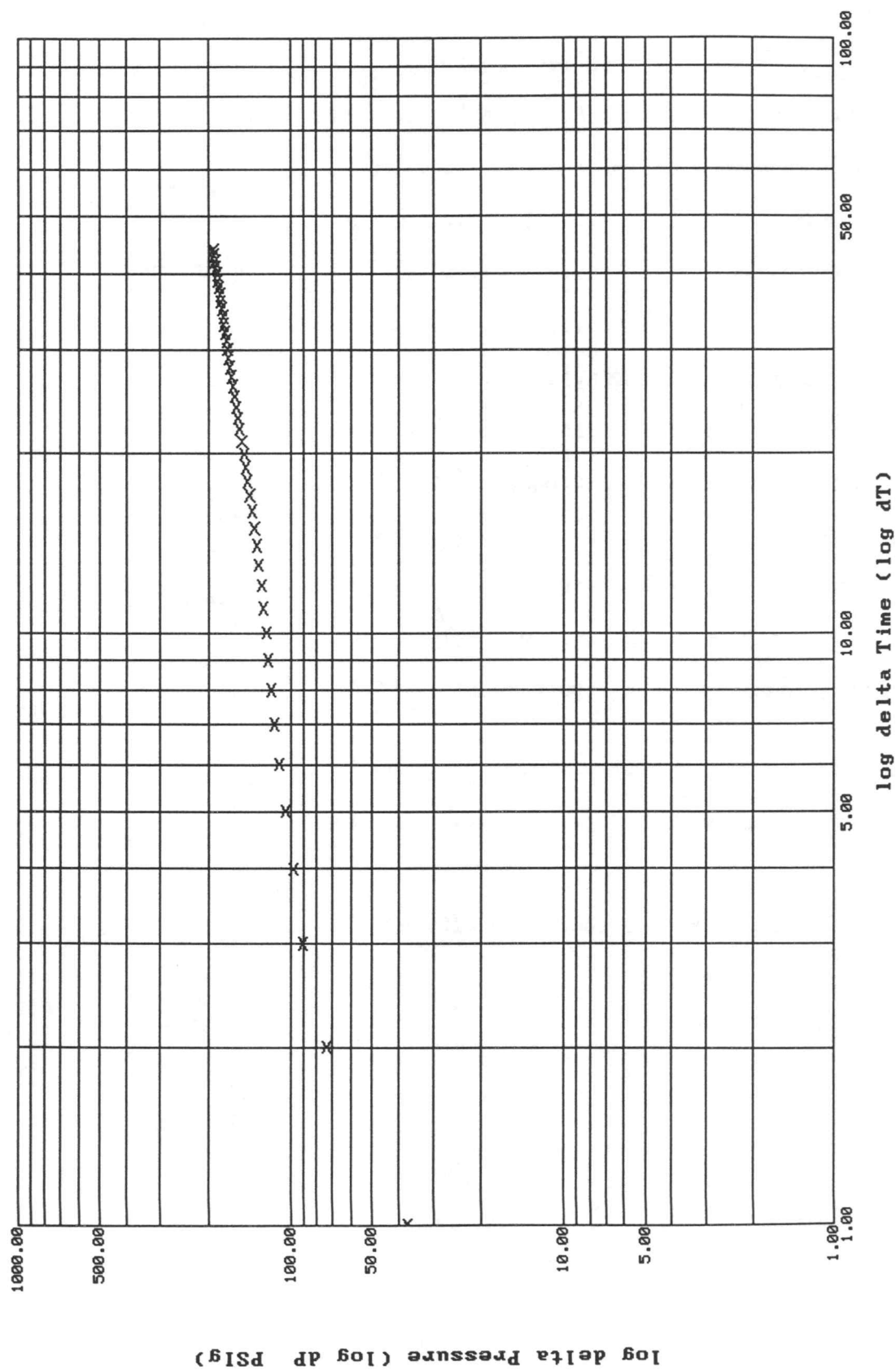
McKinley Plot: shut-in #2

8472 DST #8 Michaelis #4 A.L. Abercrombie



Ramey Plot: shut-in #1

8472 DST #8 Michaelis #4 A.L.Abercrombie



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Michaelis #4

LOCATION : 15-12S-33W, Logan Cty KS

TICKET No. 8472 D.S.T. No. 8 DATE 12-08-95

TOTAL TOOL TO BOTTOM OF TOP PACKERS 20

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 42

TOTAL TOOL 62

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 62

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands73 Single Total 4575

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 4637

TOTAL DEPTH 4612

TOTAL DRILL PIPE ABOVE K.B. 25

REMARKS:

32 API @ 46 deg = 33.4 Corrected Gravity API

P.O. SUB 120' above WP	4430
C.O. SUB 1'	4550
S.I. TOOL 5'	4556
HMV 5'	4561
JARS n/a	
SAFETY JOINT n/a	
PACKER 5'	4565
PACKER 5'	4570
DEPTH 4570	
STUBB 1'	4571
ANCHOR	
Alpine recorder	4572
36' perf	4607
T.C. DEPTH	
AK-1 recorder	4607
BULLNOSE 5' perf T.D.	4612