



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **FIML Natural Resources, LLC**

410 17th St STE 900
Denver CO 80202

ATTN: Jim Musgrove

Pfeninnger #10-13

30 18s 31w Scott, KS

Start Date: 2011.11.03 @ 14:42:00

End Date: 2011.11.03 @ 22:36:30

Job Ticket #: 45351 DST #: 1



Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

ORIGINAL

Printed: 2011.11.11 @ 10:10:03

FIML Natural Resources, LLC 30 18s 31w Scott, KS Pfeninnger #10-13 DST # 1 LKC B 2011.11.03



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfenninger #10-13

Job Ticket: 45351

DST#: 1

ATTN: Jim Musgrove

Test Start: 2011.11.03 @ 14:42:00

GENERAL INFORMATION:

Formation: **LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:24:45

Time Test Ended: 22:36:30

Interval: **3969.00 ft (KB) To 3998.00 ft (KB) (TVD)**

Total Depth: 4134.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Straddle (Initial)

Tester: Bradley Walter

Unit No: 40

Reference Elevations: 2995.00 ft (KB)

2983.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 8652

Inside

Press@RunDepth: 206.45 psig @ 3970.00 ft (KB)

Start Date: 2011.11.03

End Date: 2011.11.03

Start Time: 14:42:05

End Time: 22:36:29

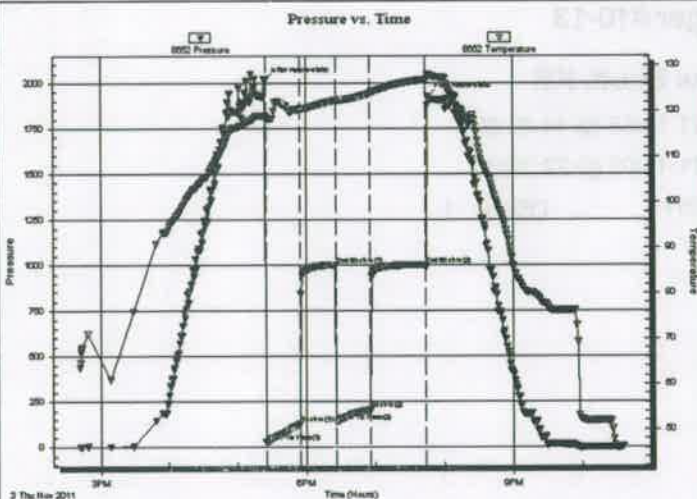
Capacity: 8000.00 psig

Last Calib.: 2011.11.03

Time On Btm: 2011.11.03 @ 17:24:30

Time Off Btm: 2011.11.03 @ 19:45:15

TEST COMMENT: IF: 9" blow.
IS: No return.
FF: 6" Blow
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2013.65	119.02	Initial Hydro-static
1	26.46	118.35	Open To Flow (1)
31	128.10	120.37	Shut-In(1)
62	1002.13	122.47	End Shut-In(1)
62	142.31	122.18	Open To Flow (2)
92	206.45	123.96	Shut-In(2)
139	1001.68	126.96	End Shut-In(2)
141	1926.66	128.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
390.00	mcw 20m 80w	2.09

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfeninnger #10-13

Job Ticket: 45351

DST#: 1

ATTN: Jim Musgrove

Test Start: 2011.11.03 @ 14:42:00

Tool Information

Drill Pipe:	Length: 3611.00 ft	Diameter: 3.80 inches	Volume: 50.65 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 371.00 ft	Diameter: 2.25 inches	Volume: 1.82 bbl	Weight to Pull Loose: 83000.00 lb
			Total Volume: 52.47 bbl	Tool Chased: 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	3969.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	3999.00 ft			
Interval between Packers:	30.00 ft			
Tool Length:	181.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3955.00	
Hydraulic tool	5.00			3960.00	
Packer	5.00			3965.00	19.00 Bottom Of Top Packer
Packer	4.00			3969.00	
Stubb	1.00			3970.00	
Recorder	0.00	8652	Inside	3970.00	
Recorder	0.00	8322	Outside	3970.00	
Perforations	26.00			3996.00	
Blank Spacing	1.00			3997.00	
Blank Off Sub	1.00			3998.00	
Blank Spacing	1.00			3999.00	30.00 Tool Interval
Packer	5.00			4004.00	
Perforations	29.00			4033.00	
Change Over Sub	1.00			4034.00	
Recorder	0.00	8360	Below	4034.00	
Drill Pipe	93.00			4127.00	
Change Over Sub	1.00			4128.00	
Bullnose	3.00			4131.00	132.00 Bottom Packers & Anchor

Total Tool Length: 181.00



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfenninger #10-13

Job Ticket: 45351

DST#: 1

ATTN: Jim Musgrove

Test Start: 2011.11.03 @ 14:42:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 51.00 sec/qt
Water Loss: 7.96 in³
Resistivity: ohm.m
Salinity: 2000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 0 deg API
Water Salinity: 26000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
390.00	mcw 20m80w	2.091

Total Length: 390.00 ft Total Volume: 2.091 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: rw is .30 @ 60 = 26000ppm

Serial #: 8652

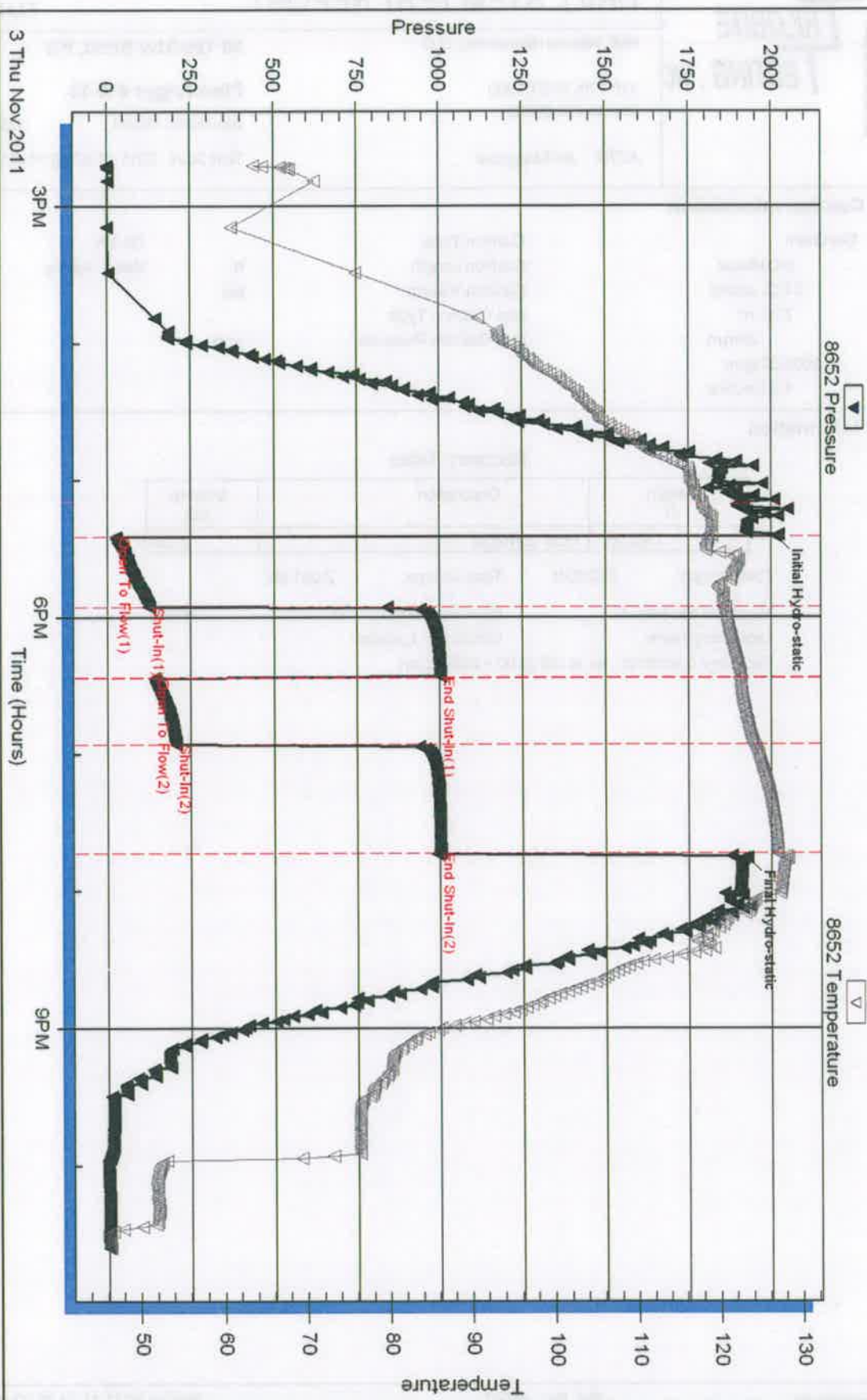
Inside

FML Natural Resources, LLC

Prelinger #10-13

DST Test Number: 1

Pressure vs. Time



Trickle Testing, Inc

Ref. No: 45351

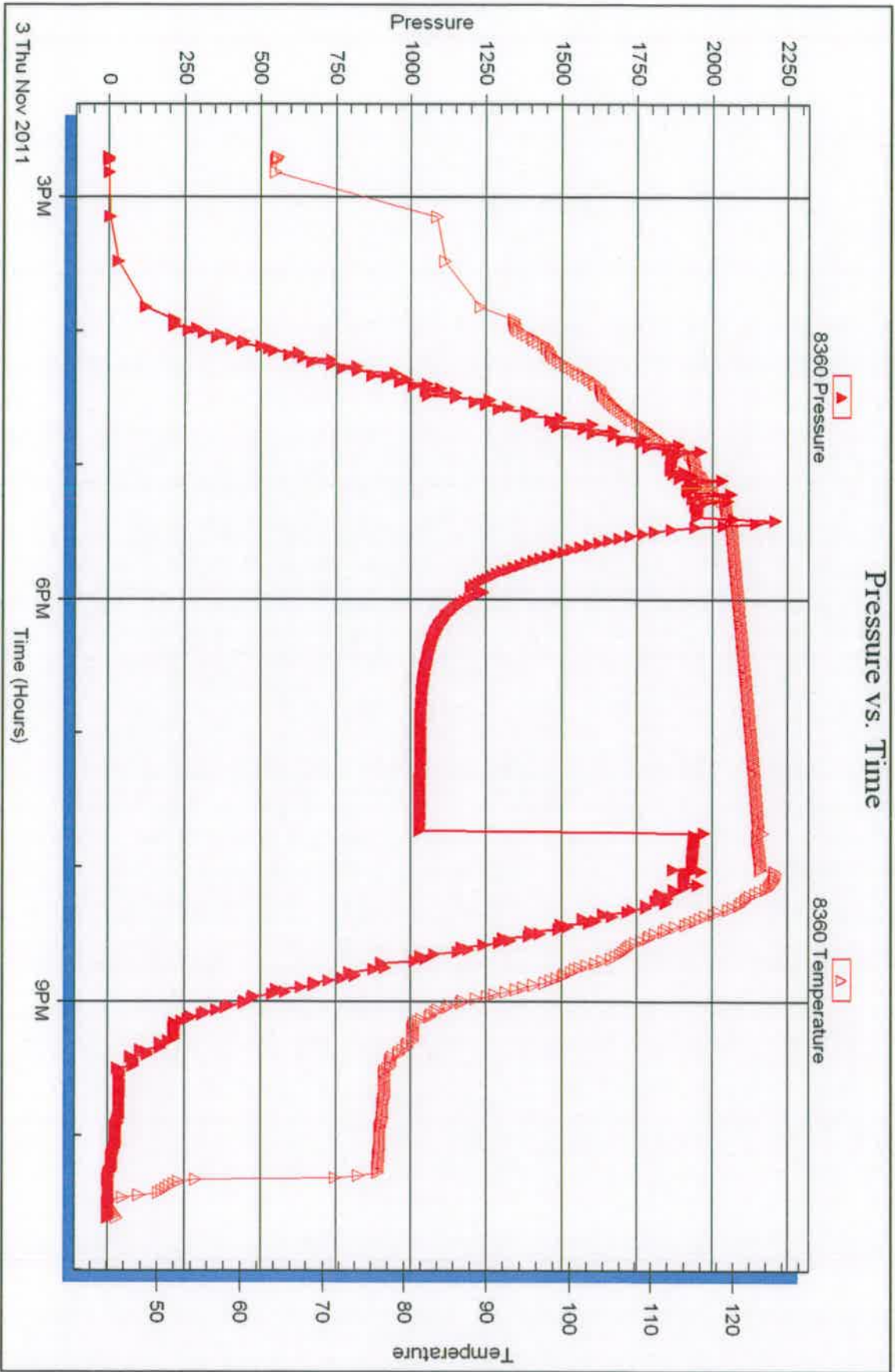
Printed: 2011.11.11 @ 10:10:04

Serial #: 8360

Below (Stratfield) Natural Resources, LLC

Ferlinger #10-13

DST Test Number: 1



DRILL STEM TEST REPORT



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **FIML Natural Resources, LLC**

410 17th St STE 900
Denver CO 80202

ATTN: Jim Musgrove

Pfeninnger #10-13

30 18s 31w Scott, KS

Start Date: 2011.11.04 @ 13:20:00

End Date: 2011.11.04 @ 20:38:30

Job Ticket #: 45352 DST #: 2



Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

FIML Natural Resources, LLC 30 18s 31w Scott, KS Pfeninnger #10-13 DST # 2 LKC J 2011.11.04



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FIML Natural Resources, LLC
 410 17th St STE 900
 Denver CO 80202
 ATTN: Jim Musgrove

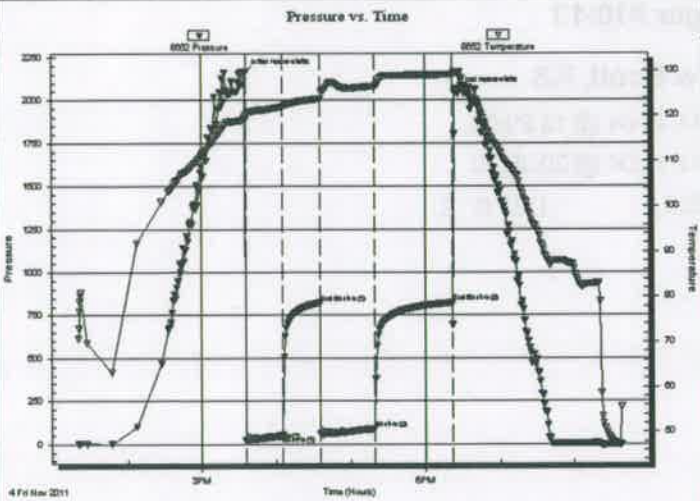
30 18s 31w Scott, KS
Pfeninnger #10-13
 Job Ticket: 45352 DST#: 2
 Test Start: 2011.11.04 @ 13:20:00

GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:35:45
 Time Test Ended: 20:38:30
 Interval: **4217.00 ft (KB) To 4264.00 ft (KB) (TVD)**
 Total Depth: 4217.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 40
 Reference Elevations: 2995.00 ft (KB)
 2983.00 ft (CF)
 KB to GR/CF: 12.00 ft

Serial #: 8652 Inside
 Press@RunDepth: 90.07 psig @ 4218.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.11.04 End Date: 2011.11.04 Last Calib.: 2011.11.04
 Start Time: 13:20:05 End Time: 20:38:29 Time On Btm: 2011.11.04 @ 15:35:30
 Time Off Btm: 2011.11.04 @ 18:23:15

TEST COMMENT: IF: 2 1/2" blow.
 IS: No return
 FF: 1 1/2" blow.
 FSI: No return.



PRESSURE SUMMARY

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.63	120.12	Initial Hydro-static
1	20.98	119.29	Open To Flow (1)
30	48.59	122.05	Shut-In(1)
60	823.20	123.75	End Shut-In(1)
61	56.71	123.58	Open To Flow (2)
105	90.07	126.56	Shut-In(2)
166	823.62	129.08	End Shut-In(2)
168	2050.90	129.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	w cm 45w 55m (oil spots)	0.59

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfenninger #10-13

Job Ticket: 45352

DST#: 2

ATTN: Jim Musgrove

Test Start: 2011.11.04 @ 13:20:00

Tool Information

Drill Pipe:	Length: 3831.00 ft	Diameter: 3.80 inches	Volume: 53.74 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 371.00 ft	Diameter: 2.25 inches	Volume: 1.82 bbl	Weight to Pull Loose: 100000.0 lb
			Total Volume: 55.56 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4217.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4197.00	
Shut In Tool	5.00			4202.00	
Hydraulic tool	5.00			4207.00	
Packer	5.00			4212.00	21.00 Bottom Of Top Packer
Packer	5.00			4217.00	
Stubb	1.00			4218.00	
Recorder	0.00	8360	Outside	4218.00	
Recorder	0.00	8322	Inside	4218.00	
Perforations	10.00			4228.00	
Change Over Sub	1.00			4229.00	
Drill Pipe	31.00			4260.00	
Change Over Sub	1.00			4261.00	
Bullnose	3.00			4264.00	47.00 Bottom Packers & Anchor

Total Tool Length: 68.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfeninnger #10-13

Job Ticket: 45352

DST#: 2

ATTN: Jim Musgrove

Test Start: 2011.11.04 @ 13:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API: deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft Water Salinity: 17000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.56 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	w cm 45w 55m (oil spots)	0.590

Total Length: 120.00 ft

Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .45 @ 60 = 17000ppm

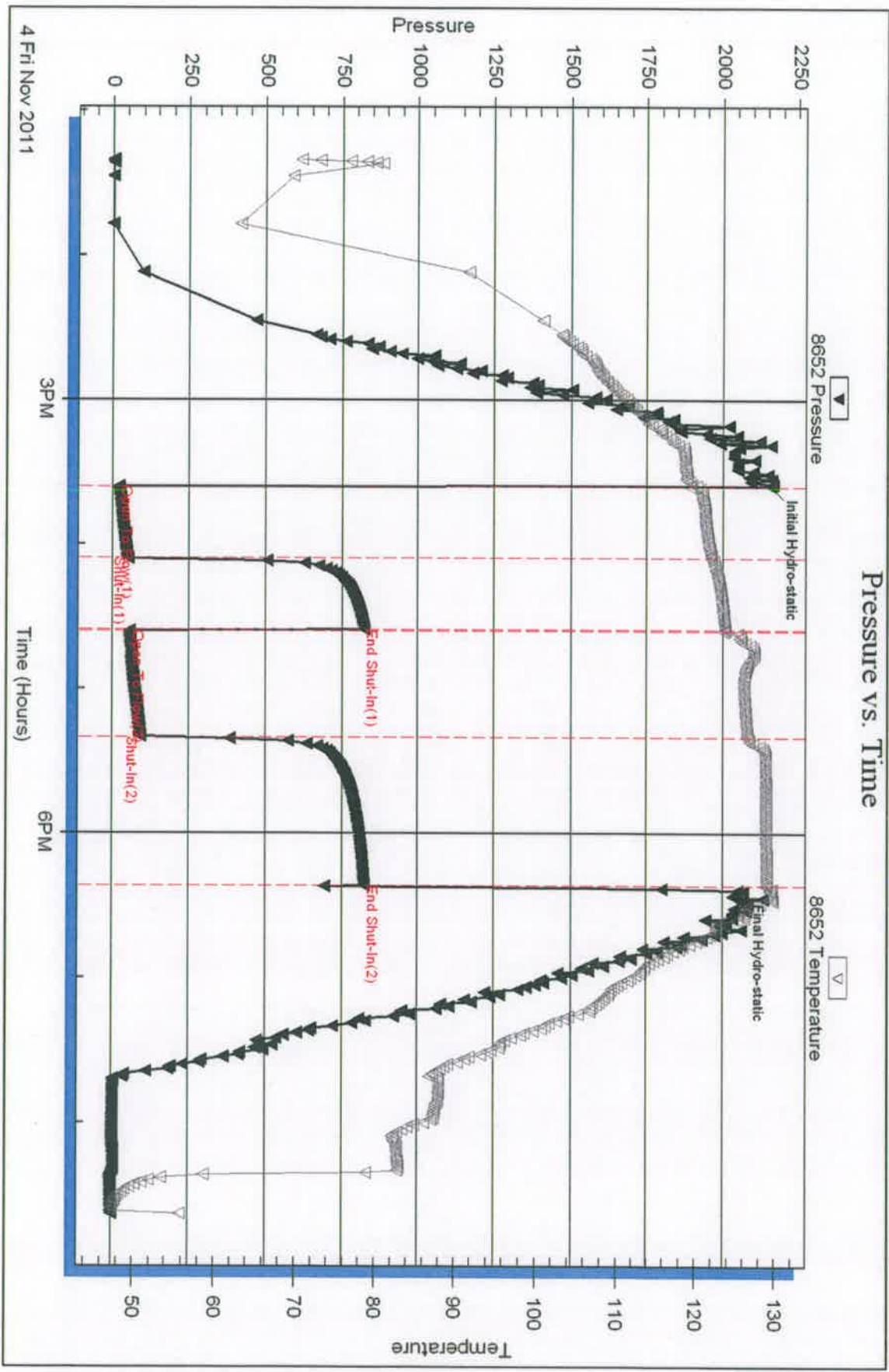
Serial #: 8652

Inside

FIM Natural Resources, LLC

Perlinger #10-13

DST Test Number: 2





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **FIML Natural Resources, LLC**

410 17th St STE 900
Denver CO 80202

ATTN: Jim Musgrove

Pfeninnger #10-13

30 18s 31w Scott, KS

Start Date: 2011.11.05 @ 14:14:00

End Date: 2011.11.06 @ 00:04:15

Job Ticket #: 45353 DST #: 3



Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.11.11 @ 10:13:41

FIML Natural Resources, LLC 30 18s 31w Scott, KS Pfeninnger #10-13 DST # 3 Marnaton 2011.11.05



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfeninnger #10-13

Job Ticket: 45353

DST#: 3

ATTN: Jim Musgrove

Test Start: 2011.11.05 @ 14:14:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:28:00

Time Test Ended: 00:04:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 40

Interval: 4305.00 ft (KB) To 4406.00 ft (KB) (TVD)

Total Depth: 4406.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2995.00 ft (KB)

2983.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 8652

Inside

Press@RunDepth: 801.19 psig @ 4306.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.05 End Date: 2011.11.06

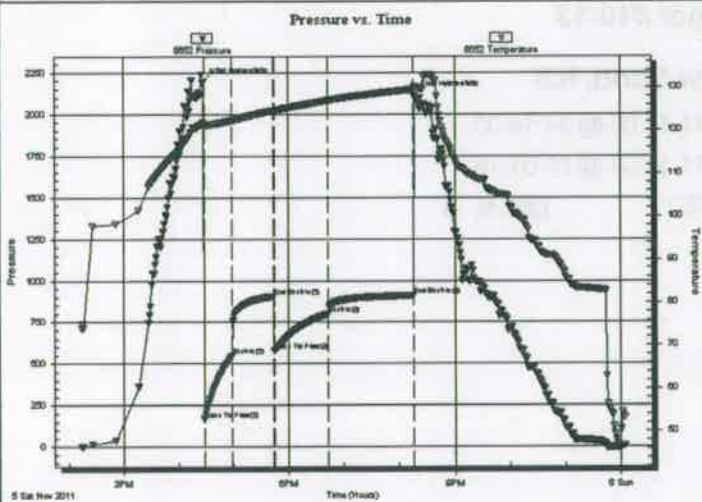
Last Calib.: 2011.11.05

Start Time: 14:14:05 End Time: 00:04:15

Time On Btm: 2011.11.05 @ 16:27:30

Time Off Btm: 2011.11.05 @ 20:17:00

TEST COMMENT: IF: BOB @ 30 seconds.
IS: BOB @ 13 minutes.
FF: BOB @ 90 seconds.
FS: 7" return blow.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2194.52	121.86	Initial Hydro-static
1	167.36	121.25	Open To Flow (1)
31	548.30	122.28	Shut-In(1)
76	906.14	124.60	End Shut-In(1)
77	578.92	124.53	Open To Flow (2)
136	801.19	126.97	Shut-In(2)
228	908.96	129.54	End Shut-In(2)
230	2115.59	130.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
370.00	gow cm 20g 20o 30w 30m	1.82
940.00	gmco 15g 5m 80o	13.18
760.00	go 40g 60o	10.66

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfeninnger #10-13

Job Ticket: 45353

DST#: 3

ATTN: Jim Musgrove

Test Start: 2011.11.05 @ 14:14:00

Tool Information

Drill Pipe:	Length: 3925.00 ft	Diameter: 3.80 inches	Volume: 55.06 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 371.00 ft	Diameter: 2.25 inches	Volume: 1.82 bbl	Weight to Pull Loose: 87000.00 lb
			Total Volume: 56.88 bbl	Tool Chased: 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	4305.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	101.00 ft			
Tool Length:	122.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4285.00	
Shut In Tool	5.00			4290.00	
Hydraulic tool	5.00			4295.00	
Packer	5.00			4300.00	21.00 Bottom Of Top Packer
Packer	5.00			4305.00	
Stubb	1.00			4306.00	
Recorder	0.00	8360	Outside	4306.00	
Recorder	0.00	8652	Inside	4306.00	
Perforations	32.00			4338.00	
Change Over Sub	1.00			4339.00	
Drill Pipe	63.00			4402.00	
Change Over Sub	1.00			4403.00	
Bullnose	3.00			4406.00	101.00 Bottom Packers & Anchor
Total Tool Length:	122.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

FIML Natural Resources, LLC

30 18s 31w Scott, KS

410 17th St STE 900
Denver CO 80202

Pfeninnger #10-13

Job Ticket: 45353

DST#: 3

ATTN: Jim Musgrove

Test Start: 2011.11.05 @ 14:14:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
370.00	gow cm 20g 20o 30w 30m	1.820
940.00	gmco 15g 5m 80o	13.177
760.00	go 40g 60o	10.661

Total Length: 2070.00 ft

Total Volume: 25.658 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8652

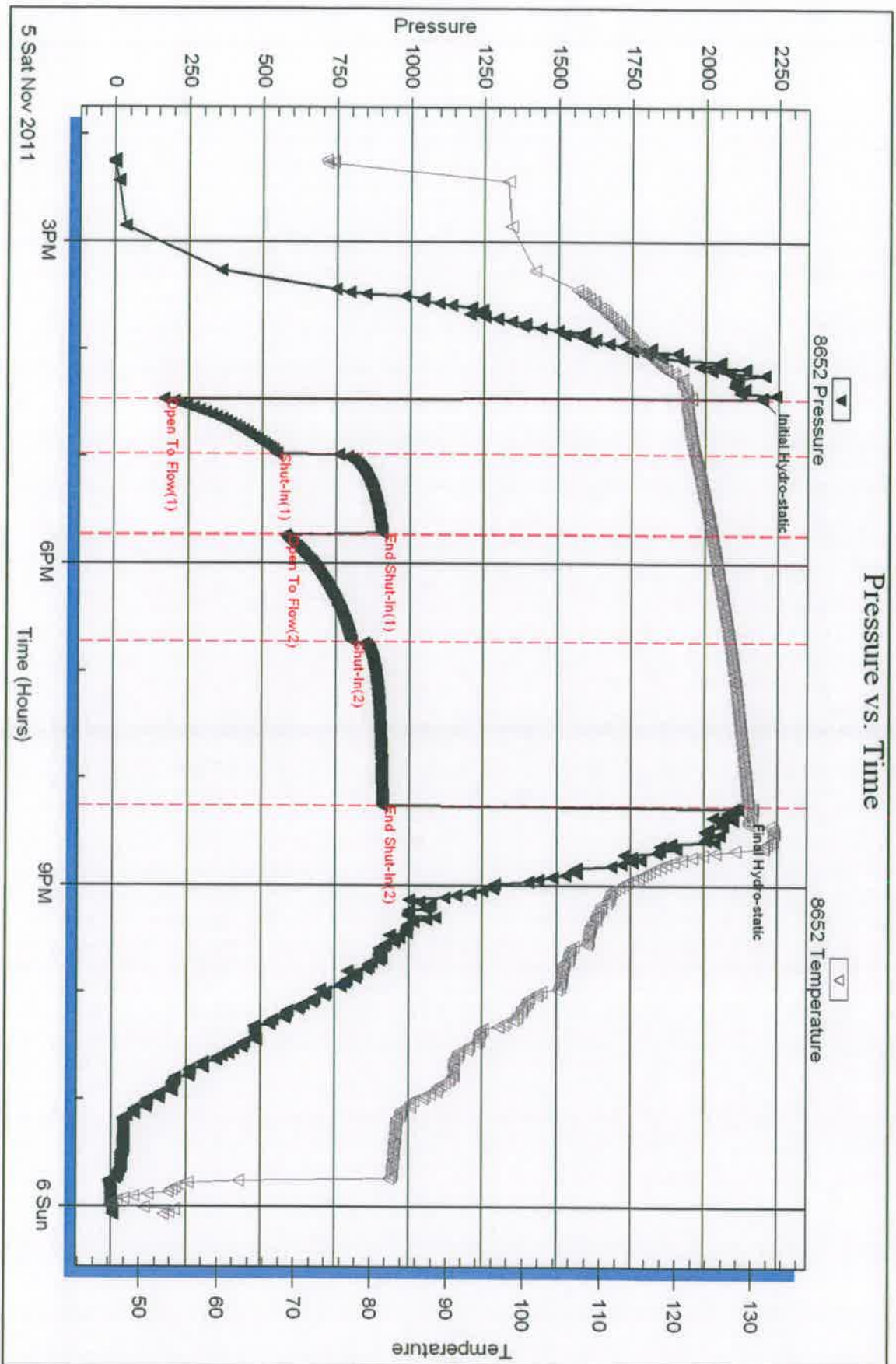
Inside

FML Natural Resources, LLC

Freninger #10-13

DST Test Number: 3

Pressure vs. Time



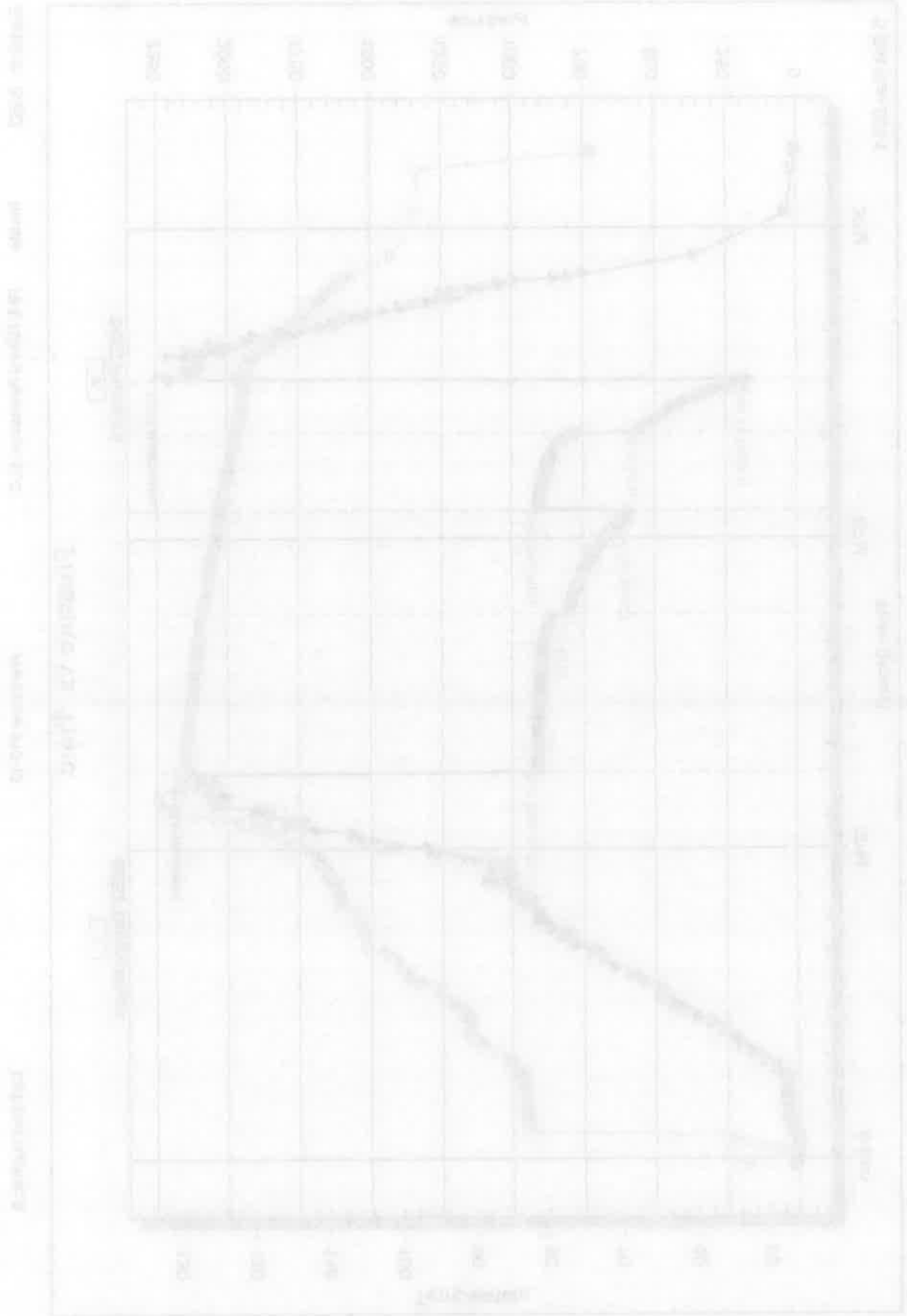


Figure 1: Comparison of Temperature vs. Time for two different conditions.