



## DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. & Associates**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202

ATTN: Neil Sharp

**11-16s-17w-Rush**

**Younger et al #1-11**

Start Date: 2011.09.19 @ 00:32:08

End Date: 2011.09.19 @ 08:30:53

Job Ticket #: 43483                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483

**DST#: 2**

Test Start: 2011.09.19 @ 00:32:08

## GENERAL INFORMATION:

Formation: **I-J-K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:28:08

Time Test Ended: 08:30:53

Test Type: Conventional Straddle

Tester: Jason McLemore

Unit No: 54

**Interval: 3410.00 ft (KB) To 3483.00 ft (KB) (TVD)**

Reference Elevations: 1972.00 ft (KB)

Total Depth: 3659.00 ft (KB) (TVD)

1962.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8673**

**Inside**

Press @ Run Depth: 130.74 psig @ 3476.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.09.19

End Date:

2011.09.19

Last Calib.:

2011.09.19

Start Time:

00:32:10

End Time:

08:30:53

Time On Btm:

2011.09.19 @ 02:27:38

Time Off Btm:

2011.09.19 @ 05:23:08

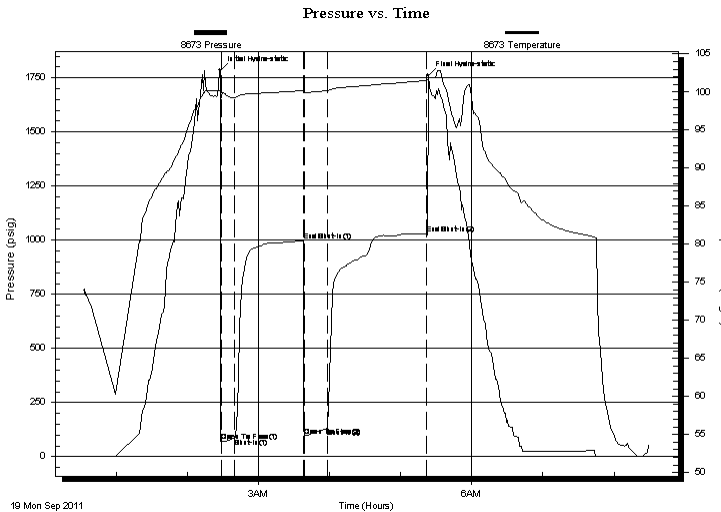
**TEST COMMENT:** IFP-Strong, BOB in 1-1/2 Min.

ISI-Dead

FFP-Strong, BOB in 45 Seconds

FSI- Blow back Built to 3"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1783.97	100.19	Initial Hydro-static
1	73.35	99.00	Open To Flow (1)
12	86.72	99.30	Shut-In(1)
70	996.50	100.20	End Shut-In(1)
71	96.45	99.95	Open To Flow (2)
91	130.74	100.18	Shut-In(2)
175	1031.33	101.51	End Shut-In(2)
176	1761.40	101.82	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Free Oil-10%G-90%O	0.84
160.00	Gassy MCO-35%G-40%O-25%M	2.24
0.00	1940' Gas In Pipe	0.00

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

Younger et al #1-11

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

11-16s-17w-Rush

Job Ticket: 43483

DST#: 2

Test Start: 2011.09.19 @ 00:32:08

### GENERAL INFORMATION:

Formation: **I-J-K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:28:08

Time Test Ended: 08:30:53

Test Type: Conventional Straddle

Tester: Jason McLemore

Unit No: 54

Interval: **3410.00 ft (KB) To 3483.00 ft (KB) (TVD)**

Reference Elevations: 1972.00 ft (KB)

Total Depth: 3659.00 ft (KB) (TVD)

1962.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8650 Below (Straddle)**

Press @ Run Depth: psig @ 3501.00 ft (KB)

Start Date: 2011.09.19

End Date: 2011.09.19

Start Time: 00:26:20

End Time: 08:23:14

Capacity: 8000.00 psig

Last Calib.: 2011.09.19

Time On Btm:

Time Off Btm:

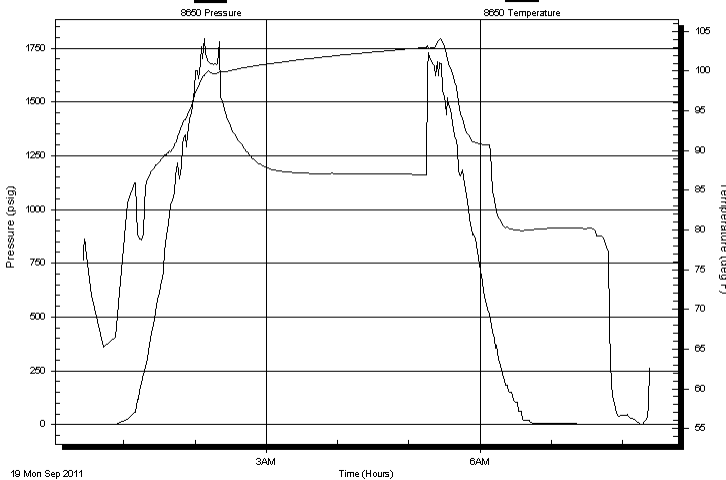
**TEST COMMENT:** IFP-Strong, BOB in 1-1/2 Min.

ISI-Dead

FFP-Strong, BOB in 45 Seconds

FSI- Blow back Built to 3"

Pressure vs. Time



### PRESSURE SUMMARY

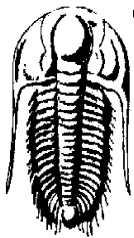
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	Free Oil-10%G-90%O	0.84
160.00	Gassy MCO-35%G-40%O-25%M	2.24
0.00	1940' Gas In Pipe	0.00

### Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483      **DST#: 2**  
Test Start: 2011.09.19 @ 00:32:08

## GENERAL INFORMATION:

Formation: **I-J-K-L**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 02:28:08  
Time Test Ended: 08:30:53  
Interval: **3410.00 ft (KB) To 3483.00 ft (KB) (TVD)**  
Total Depth: 3659.00 ft (KB) (TVD)  
Hole Diameter: 7.80 inches  
Hole Condition: Good  
Test Type: Conventional Straddle  
Tester: Jason McLemore  
Unit No: 54  
Reference Elevations: 1972.00 ft (KB)  
1962.00 ft (CF)  
KB to GR/CF: 10.00 ft

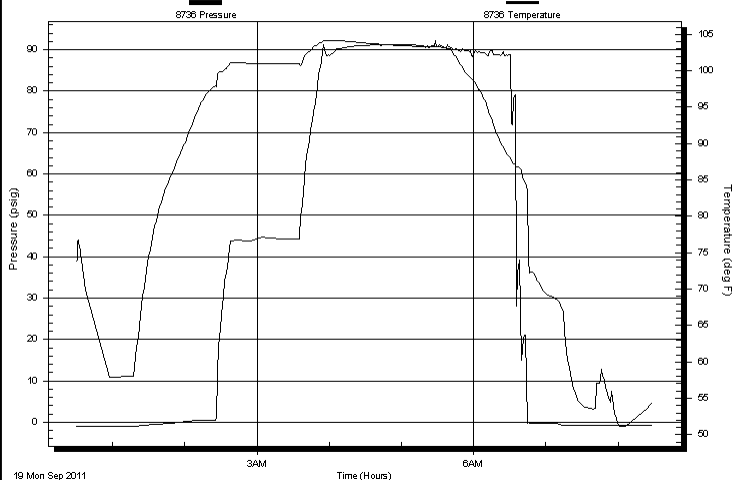
## Serial #: 8736

## Fluid

Press @ Run Depth: psig @ 3376.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.09.19      End Date: 2011.09.19      Last Calib.: 2011.09.19  
Start Time: 00:30:21      End Time: 08:28:49      Time On Btm:  
Time Off Btm:

TEST COMMENT: IFP-Strong, BOB in 1-1/2 Min.  
ISI-Dead  
FFP-Strong, BOB in 45 Seconds  
FSI- Blow back Built to 3"

Pressure vs. Time



## PRESSURE SUMMARY

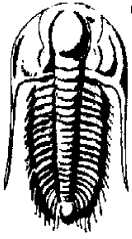
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Free Oil-10%G-90%O	0.84
160.00	Gassy MCO-35%G-40%O-25%M	2.24
0.00	1940' Gas In Pipe	0.00

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483                      **DST#: 2**

Test Start: 2011.09.19 @ 00:32:08

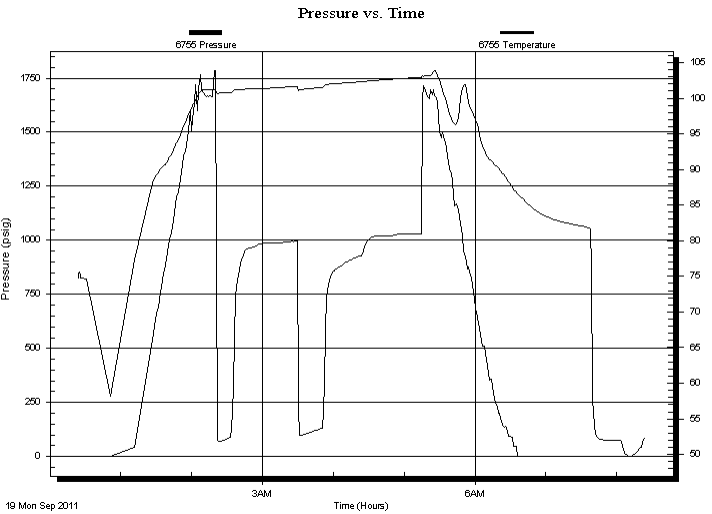
### GENERAL INFORMATION:

Formation:	<b>I-J-K-L</b>		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Straddle
Time Tool Opened:	02:28:08		Tester: Jason McLemore
Time Test Ended:	08:30:53		Unit No: 54
<b>Interval:</b>	<b>3410.00 ft (KB) To 3483.00 ft (KB) (TVD)</b>		Reference Elevations: 1972.00 ft (KB)
Total Depth:	3659.00 ft (KB) (TVD)		1962.00 ft (CF)
Hole Diameter:	7.80 inches	Hole Condition: Good	KB to GR/CF: 10.00 ft

### Serial #: 6755          Outside

Press @RunDepth:	psig @	3476.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2011.09.19	End Date:	2011.09.19	Last Calib.:	2011.09.19
Start Time:	00:24:24	End Time:	08:23:37	Time On Btm:	
				Time Off Btm:	

**TEST COMMENT:** IFP-Strong,BOB in 1-1/2 Min.  
ISI-Dead  
FFP-Strong,BOB in 45 Seconds  
FSI- Blow back Built to 3"



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	Free Oil-10%G-90%O	0.84
160.00	Gassy MCO-35%G-40%O-25%M	2.24
0.00	1940' Gas In Pipe	0.00

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483

**DST#: 2**

Test Start: 2011.09.19 @ 00:32:08

## Tool Information

Drill Pipe:	Length: 3406.00 ft	Diameter: 3.80 inches	Volume: 47.78 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 47.78 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3410.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	3484.00 ft			
Interval between Packers:	74.00 ft			
Tool Length:	284.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Recorder	0.00	8736	Fluid	3376.00	
Change Over Sub	4.00			3380.00	
Shut In Tool	5.00			3385.00	
Sampler	3.00			3388.00	
Hydraulic tool	5.00			3393.00	
Jars	5.00			3398.00	
Safety Joint	2.00			3400.00	
Packer	5.00			3405.00	34.00 Bottom Of Top Packer
Packer	5.00			3410.00	
Stubb	1.00			3411.00	
Perforations	1.00			3412.00	
Change Over Sub	1.00			3413.00	
Blank Spacing	62.00			3475.00	
Change Over Sub	1.00			3476.00	
Recorder	0.00	8673	Inside	3476.00	
Recorder	0.00	6755	Outside	3476.00	
Perforations	4.00			3480.00	
Blank Off Sub	1.00			3481.00	
Blank Spacing	3.00			3484.00	74.00 Tool Interval
Packer	1.00			3485.00	
Stubb	1.00			3486.00	
Perforations	14.00			3500.00	
Change Over Sub	1.00			3501.00	
Recorder	0.00	8650	Below	3501.00	
Blank Spacing	155.00			3656.00	
Change Over Sub	1.00			3657.00	



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483

**DST#: 2**

Test Start: 2011.09.19 @ 00:32:08

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5100.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	Free Oil-10%G-90%O	0.842
160.00	Gassy MCO-35%G-40%O-25%M	2.244
0.00	1940' Gas In Pipe	0.000

Total Length: 220.00 ft      Total Volume: 3.086 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler-200#, 4 CF Gas, 2000ml Oil



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

**GAS RATES**

Samuel Gary Jr. & Associates

**Younger et al #1-11**

1515 Wynkoop  
Suite 700  
Denver, CO. 80202  
ATTN: Neil Sharp

**11-16s-17w-Rush**

Job Ticket: 43483

**DST#: 2**

Test Start: 2011.09.19 @ 00:32:08

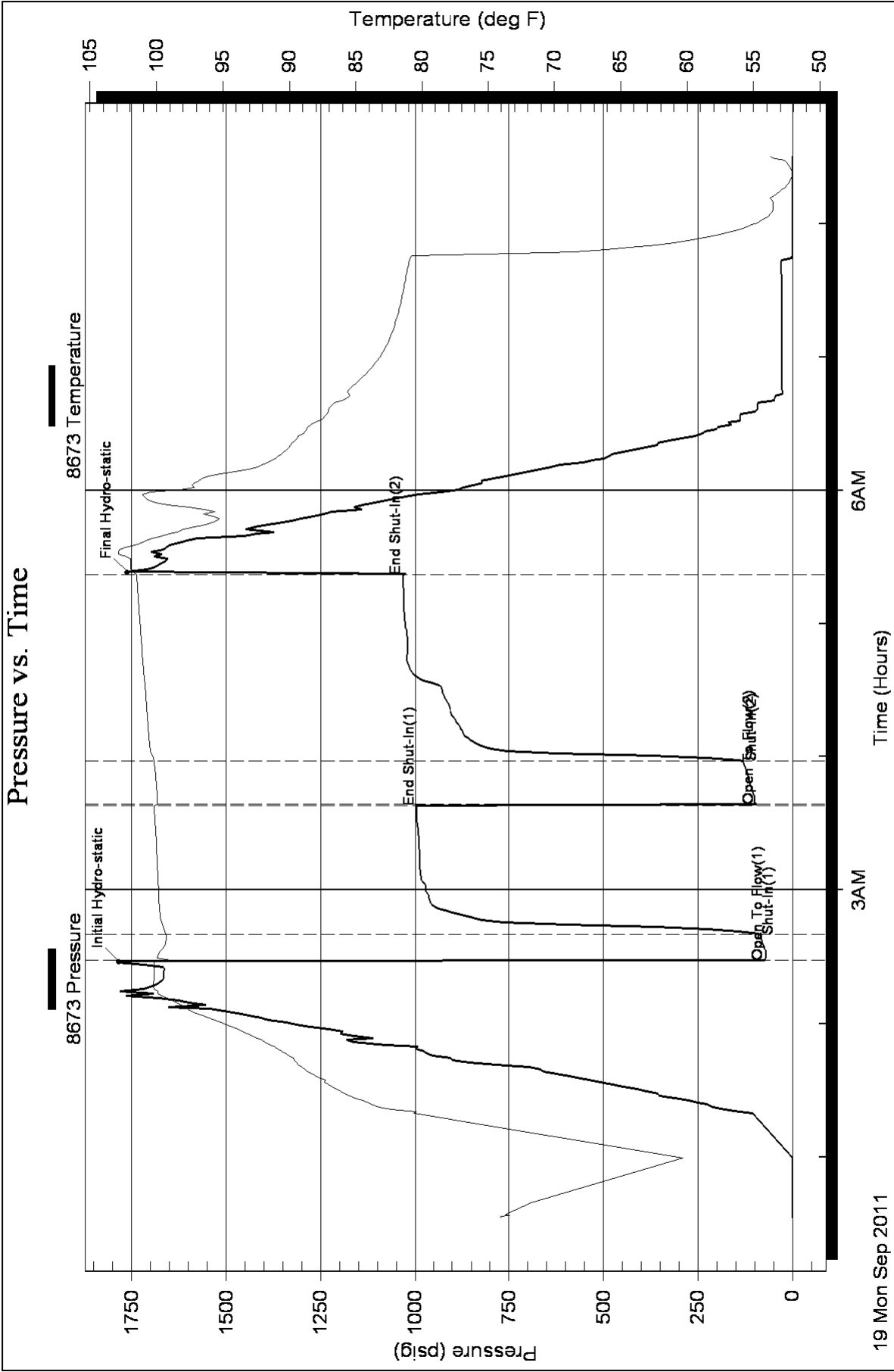
## Gas Rates Information

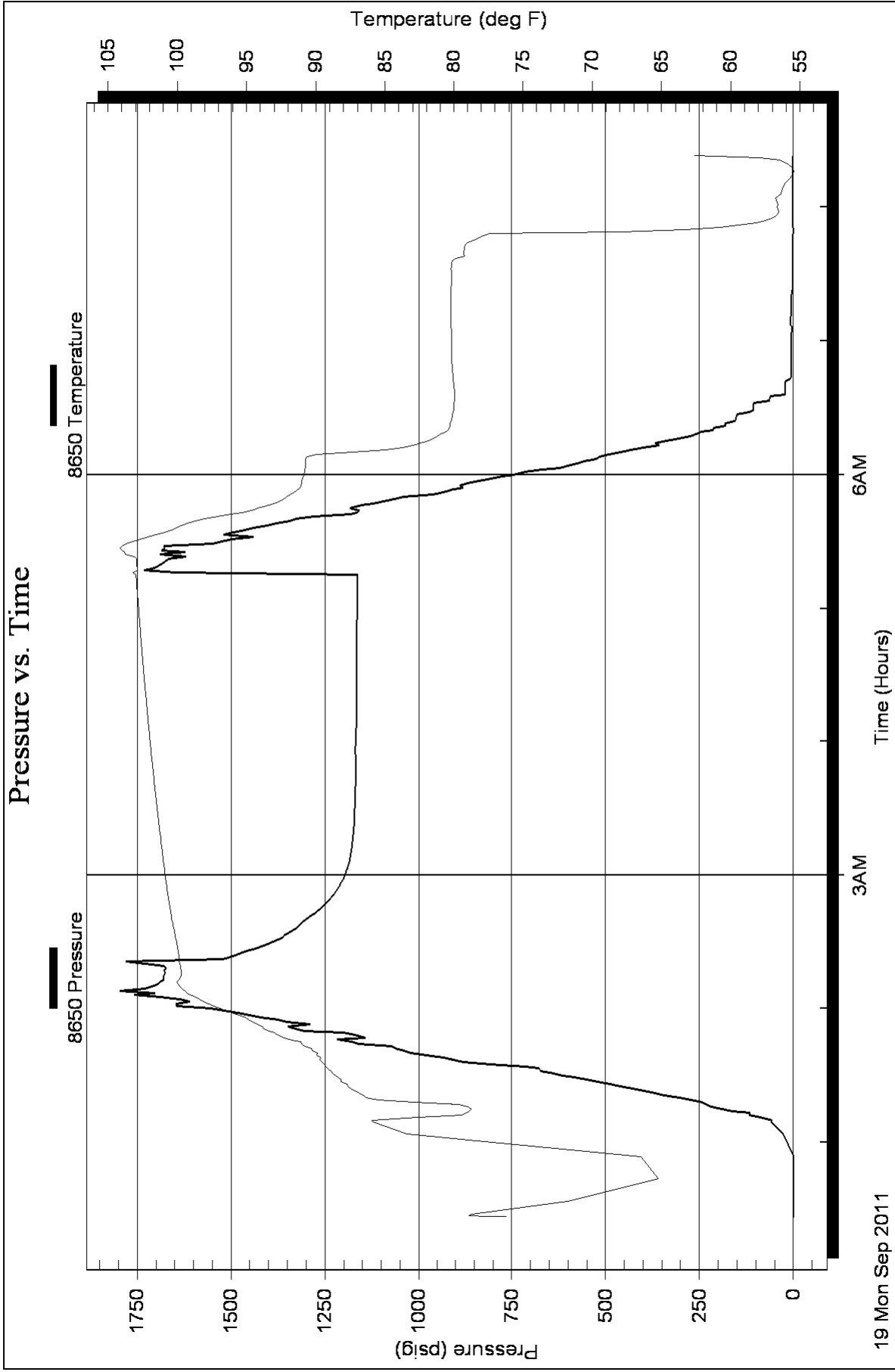
Temperature: 59 deg C  
Relative Density: 0.65  
Z Factor: 0.8

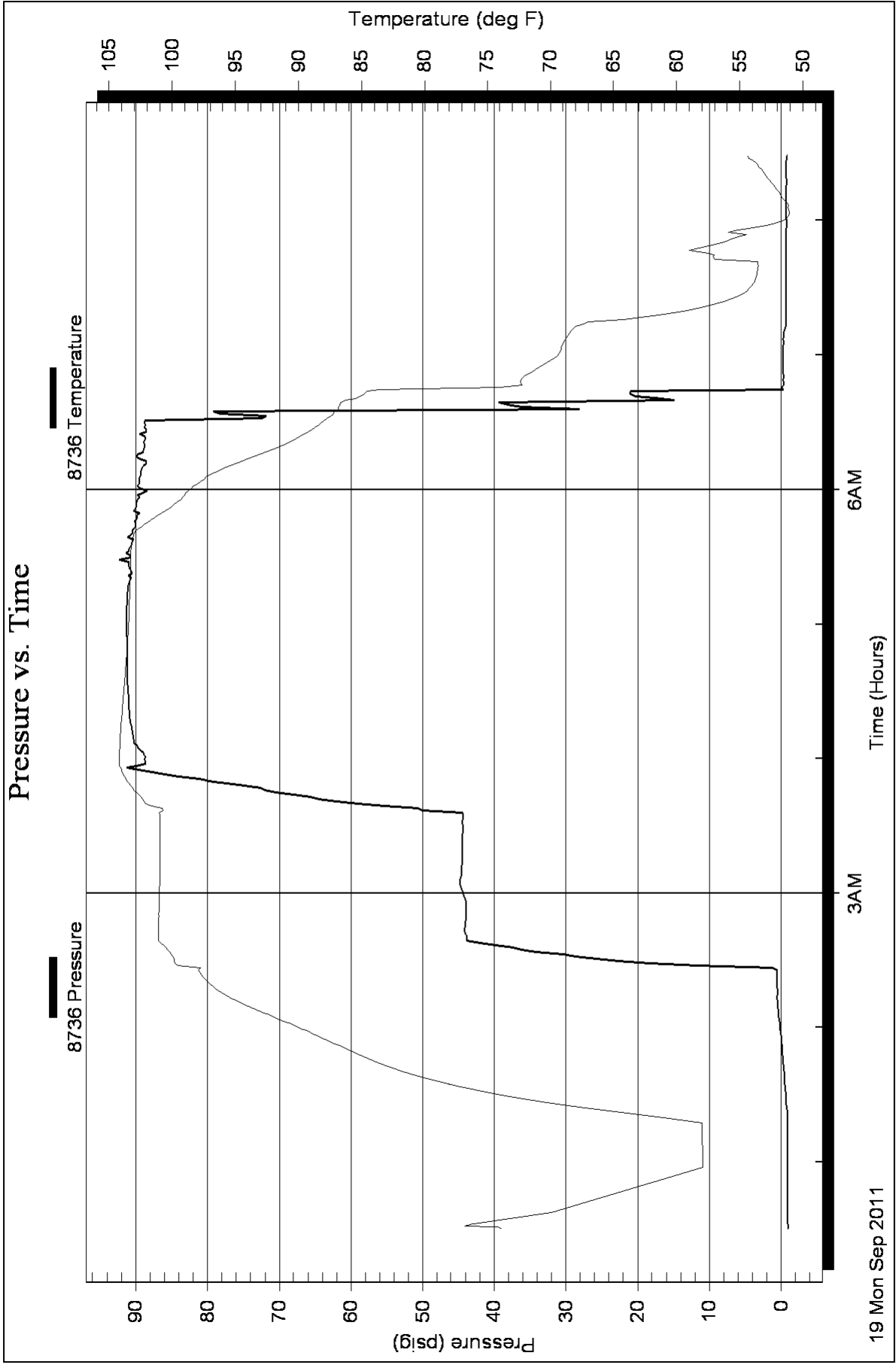
Gas Rates Table

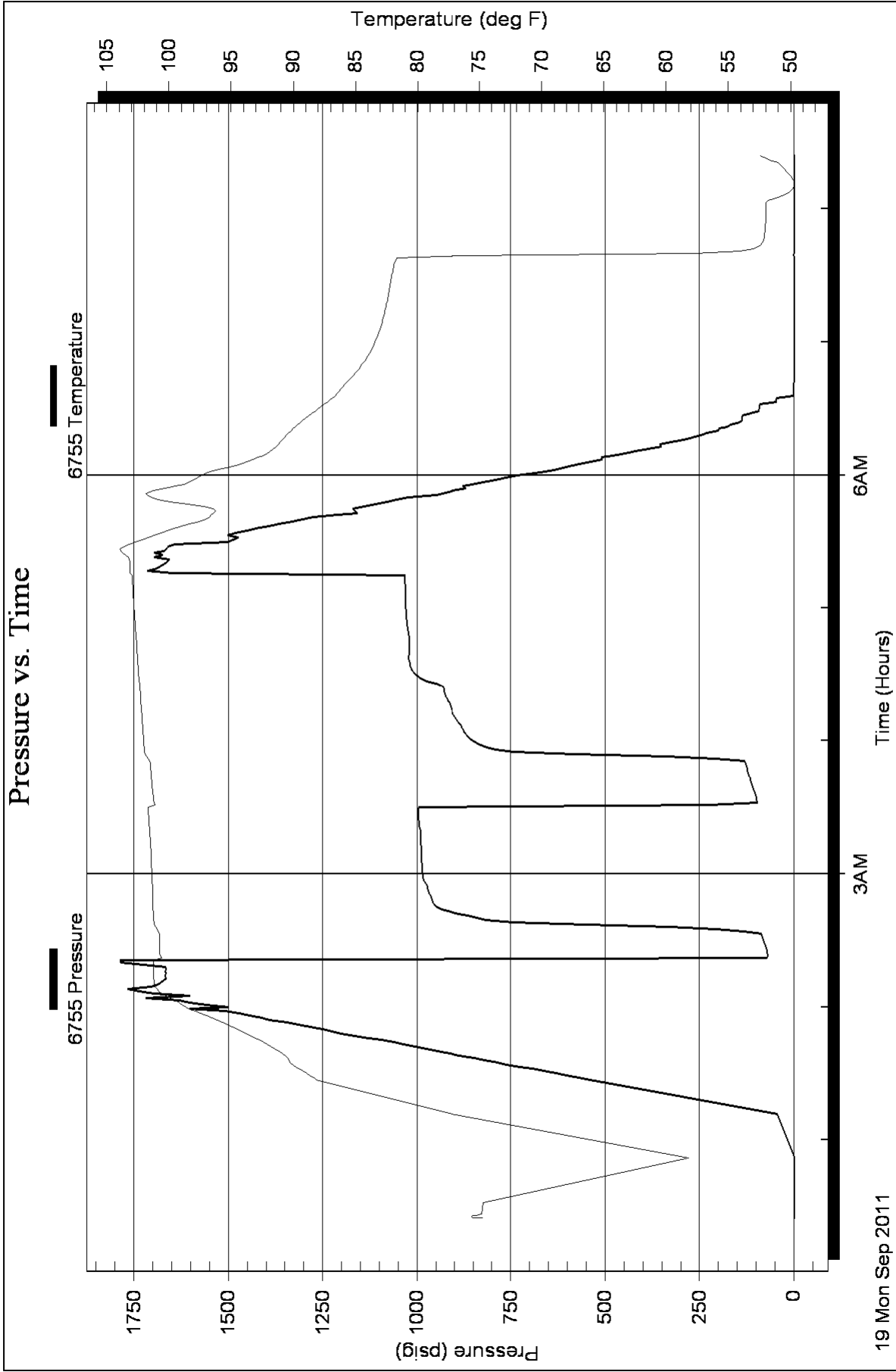
Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m <sup>3</sup> /d)
		0.00	0.00	0.00



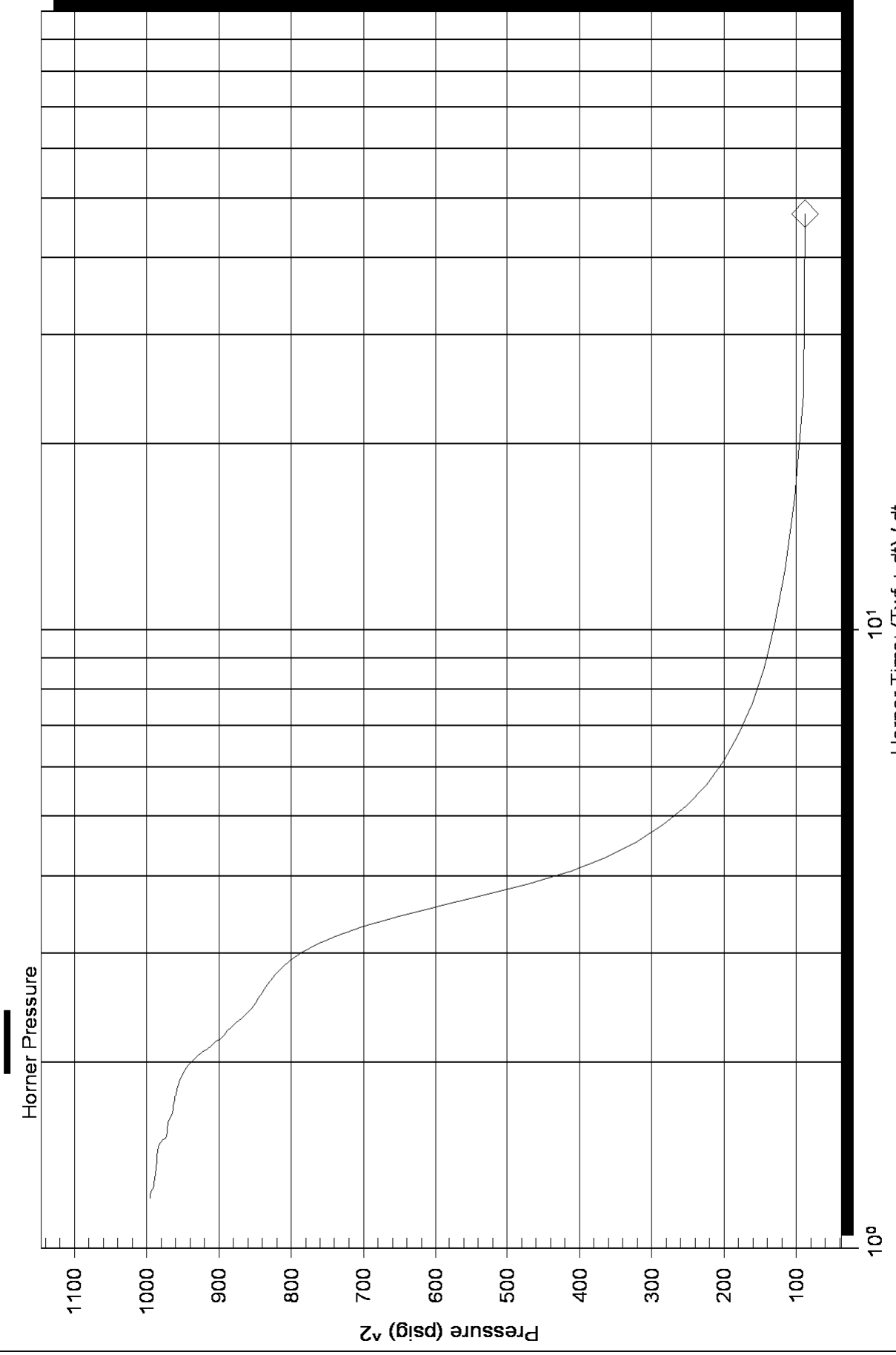




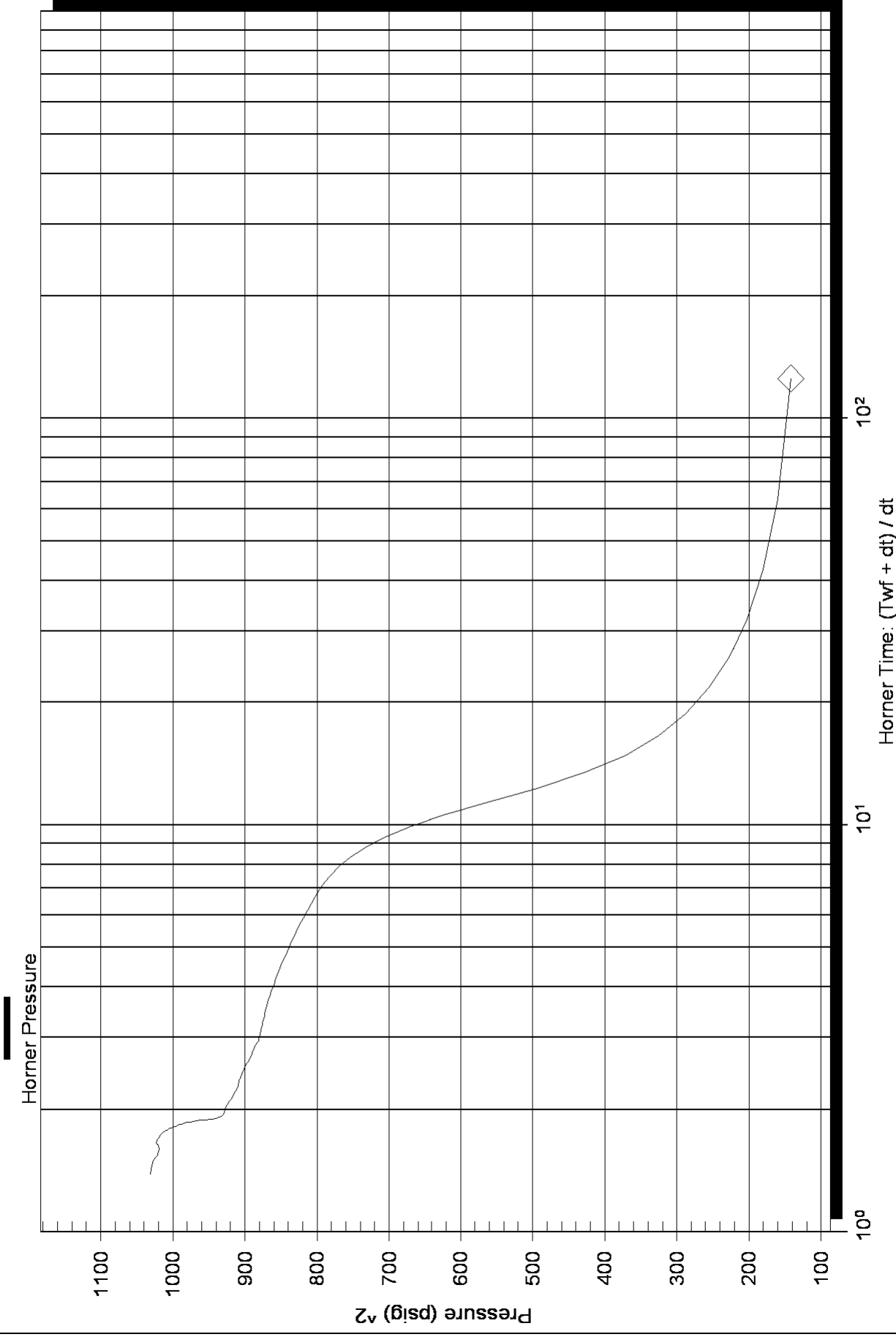




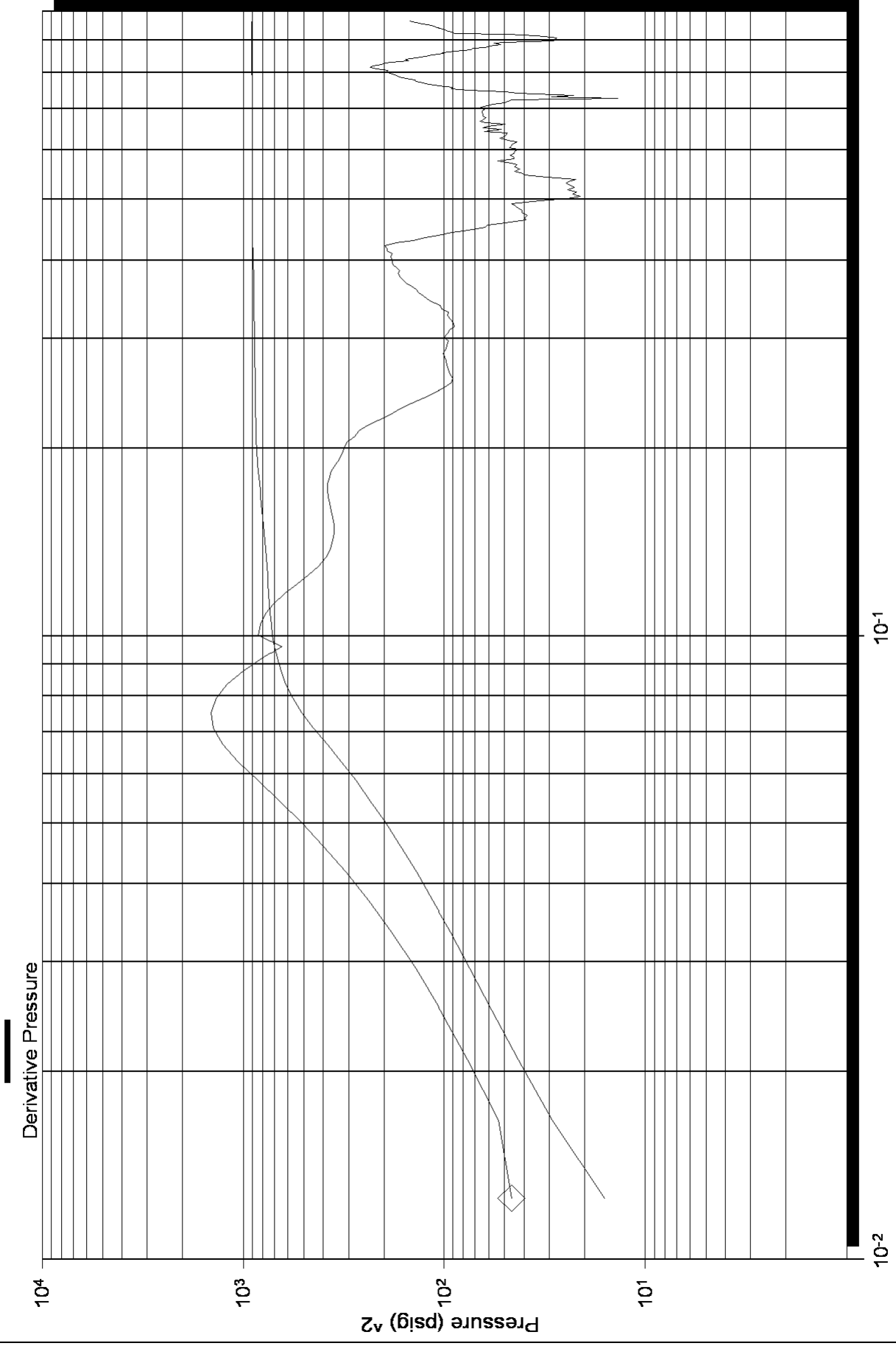
### Homer Plot



### Homer Plot



# Log-Log and Pseudo-Derivative



# Log-Log and Pseudo-Derivative

