



## DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. and Associates, Inc.**

1515 Wynkoop St. Ste 700  
Denver, CO 80202

ATTN: Clayton Camozzi

**32-15-15 Russell, Ks**

**Hopkins et al 1-31**

Start Date: 2011.09.06 @ 23:47:45

End Date: 2011.09.07 @ 06:41:45

Job Ticket #: 44168                      DST #: 4

Trilobite Testing, Inc  
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TESTING, INC.**

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**32-15-15 Russell, Ks**

Job Ticket: 44168

**DST#: 4**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 23:47:45

## GENERAL INFORMATION:

Formation: **LKC "K-M"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:44:45  
 Time Test Ended: 06:41:45  
 Interval: **3394.00 ft (KB) To 3428.00 ft (KB) (TVD)**  
 Total Depth: 3428.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brian Fairbank  
 Unit No: 41  
 Reference Elevations: 1936.00 ft (KB)  
 1926.00 ft (CF)  
 KB to GR/CF: 10.00 ft

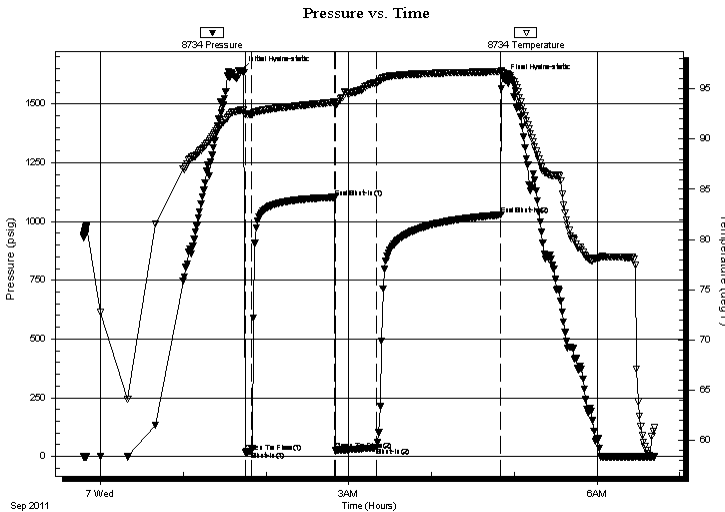
## Serial #: 8734

**Outside**

Press @ Run Depth: 38.11 psig @ 3400.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.09.06 End Date: 2011.09.07 Last Calib.: 2011.09.07  
 Start Time: 23:47:46 End Time: 06:41:45 Time On Btm: 2011.09.07 @ 01:41:45  
 Time Off Btm: 2011.09.07 @ 04:52:15

**TEST COMMENT:** 5 - IFP - weak blow throughout 1/4" - 1"  
 60 - ISI - no blow back  
 30 - FFP - no blow 4 min - 3"  
 90 - FSI - no blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1640.47	92.87	Initial Hydro-static
3	18.27	92.41	Open To Flow (1)
8	22.96	92.44	Shut-In(1)
68	1103.04	93.69	End Shut-In(1)
69	24.39	93.37	Open To Flow (2)
98	38.11	95.59	Shut-In(2)
189	1028.03	96.73	End Shut-In(2)
191	1608.26	96.54	Final Hydro-static

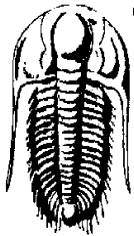
## Recovery

Length (ft)	Description	Volume (bbl)
10.00	MUD 100%	0.14
30.00	MW 85%W, 15%M w / scum O on top	0.42

\* Recovery from multiple tests

## Gas Rates

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

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ATTN: Clayton Camozzi

Job Ticket: 44168

**DST#: 4**

Test Start: 2011.09.06 @ 23:47:45

**GENERAL INFORMATION:**Formation: **LKC "K-M"**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 01:44:45

Tester: Brian Fairbank

Time Test Ended: 06:41:45

Unit No: 41

Interval: **3394.00 ft (KB) To 3428.00 ft (KB) (TVD)**

Reference Elevations: 1936.00 ft (KB)

Total Depth: 3428.00 ft (KB) (TVD)

1926.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8365 Fluid**

Press@RunDepth: psig @ 3359.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.09.06

End Date:

2011.09.07

Last Calib.:

2011.09.07

Start Time: 23:47:18

End Time:

06:41:17

Time On Btm:

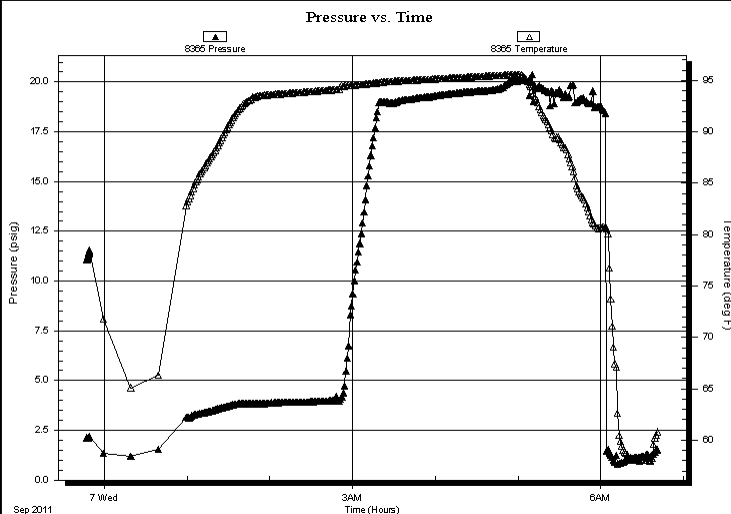
Time Off Btm:

**TEST COMMENT:** 5 - IFP - weak blow throughout 1/4" - 1"

60 - ISI - no blow back

30 - FFP - no blow 4 min - 3"

90 - FSI - no blow back

**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
10.00	MUD 100%	0.14
30.00	MW 85%W, 15%M w / scum O on top	0.42

**Gas Rates**

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

\* Recovery from multiple tests



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Job Ticket: 44168

DST#: 4

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 23:47:45

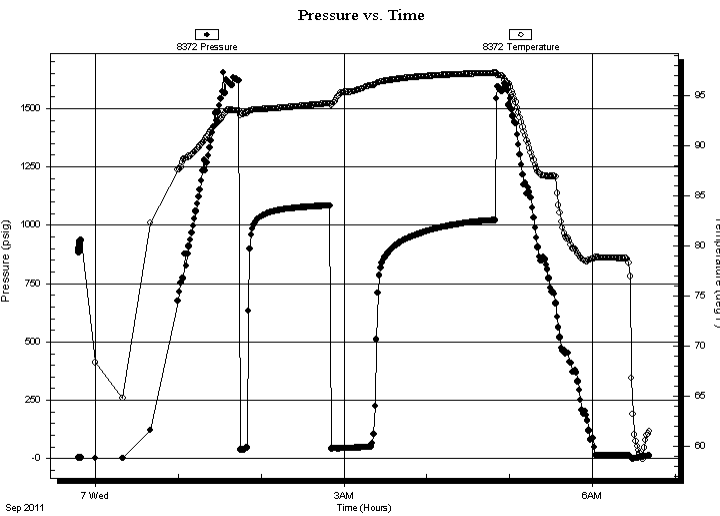
### GENERAL INFORMATION:

Formation: **LKC "K-M"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 01:44:45  
Time Test Ended: 06:41:45  
Interval: **3394.00 ft (KB) To 3428.00 ft (KB) (TVD)**  
Total Depth: 3428.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Brian Fairbank  
Unit No: 41  
Reference Elevations: 1936.00 ft (KB)  
1926.00 ft (CF)  
KB to GR/CF: 10.00 ft

### Serial #: 8372 Inside

Press @ RunDepth: psig @ 3400.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2011.09.06 End Date: 2011.09.07 Last Calib.: 2011.09.07  
Start Time: 23:47:39 End Time: 06:41:38 Time On Btm:  
Time Off Btm:

TEST COMMENT: 5 - IFP - weak blow throughout 1/4" - 1"  
60 - ISI - no blow back  
30 - FFP - no blow 4 min - 3"  
90 - FSI - no blow back



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
10.00	MUD 100%	0.14
30.00	MW 85%W, 15%M w / scum O on top	0.42

\* Recovery from multiple tests

### Gas Rates

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



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**TOOL DIAGRAM**

Samuel Gary Jr. and Associates, Inc.

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Denver, CO 80202

**32-15-15 Russell, Ks**

Job Ticket: 44168

**DST#: 4**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 23:47:45

## Tool Information

Drill Pipe:	Length: 3382.00 ft	Diameter: 3.80 inches	Volume: 47.44 bbl	Tool Weight: 2500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 47.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3394.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Recorder	0.00	8365	Fluid	3359.00	
Blank Spacing	5.00			3364.00	
Shut In Tool	5.00			3369.00	
Sampler	3.00			3372.00	
Hydraulic tool	5.00			3377.00	
Jars	5.00			3382.00	
Safety Joint	2.00			3384.00	
Packer	5.00			3389.00	35.00 Bottom Of Top Packer
Packer	5.00			3394.00	
Stubb	1.00			3395.00	
Perforations	5.00			3400.00	
Recorder	0.00	8372	Inside	3400.00	
Recorder	0.00	8734	Outside	3400.00	
Perforations	25.00			3425.00	
Bullnose	3.00			3428.00	34.00 Bottom Packers & Anchor

**Total Tool Length: 69.00**



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**FLUID SUMMARY**

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Job Ticket: 44168

**DST#: 4**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 23:47:45

## 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:

35000 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
10.00	MUD 100%	0.140
30.00	MW 85%W, 15%M w / scum O on top	0.421

Total Length: 40.00 ft      Total Volume: 0.561 bbl

Num Fluid Samples: 0

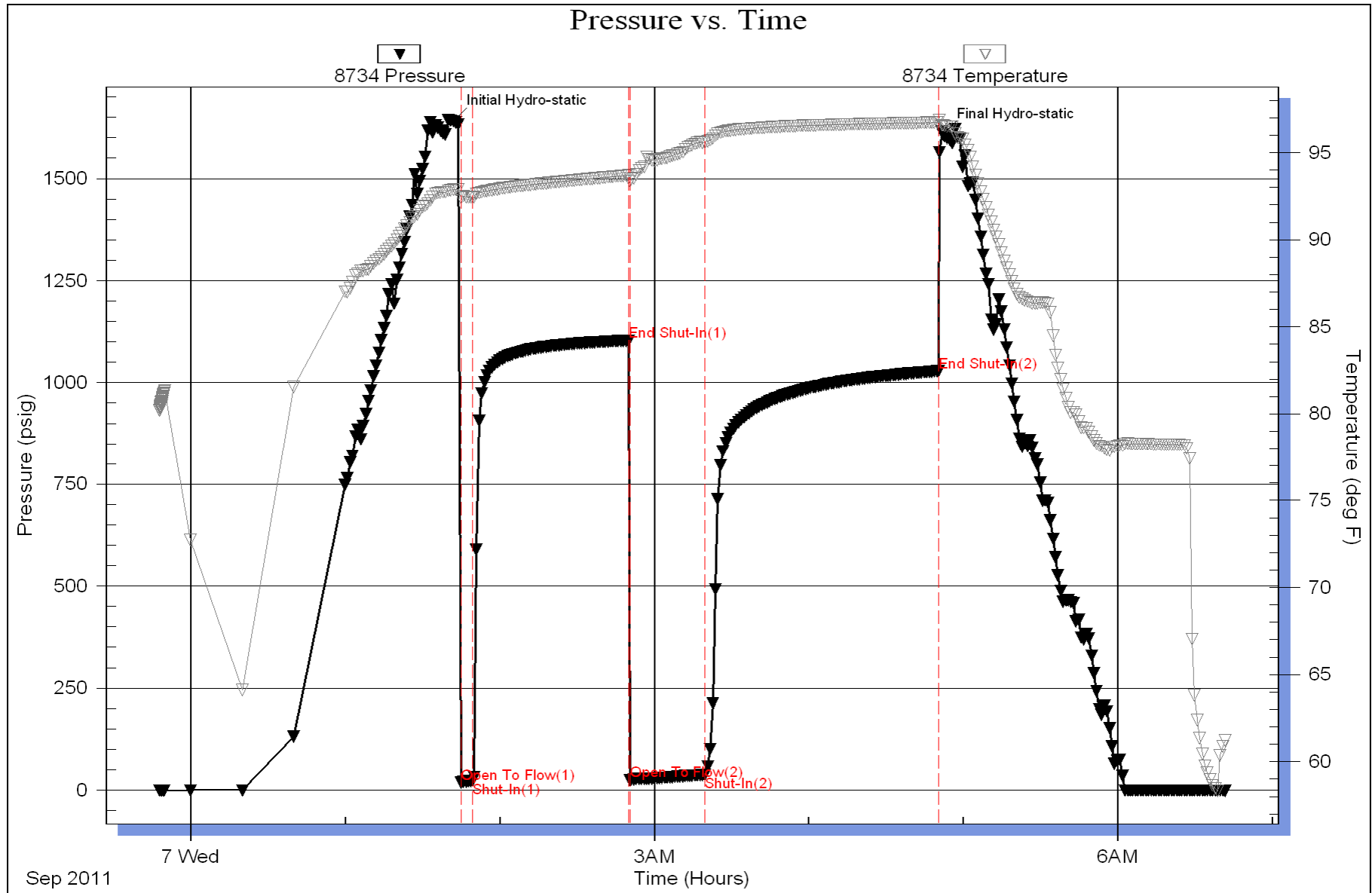
Num Gas Bombs: 0

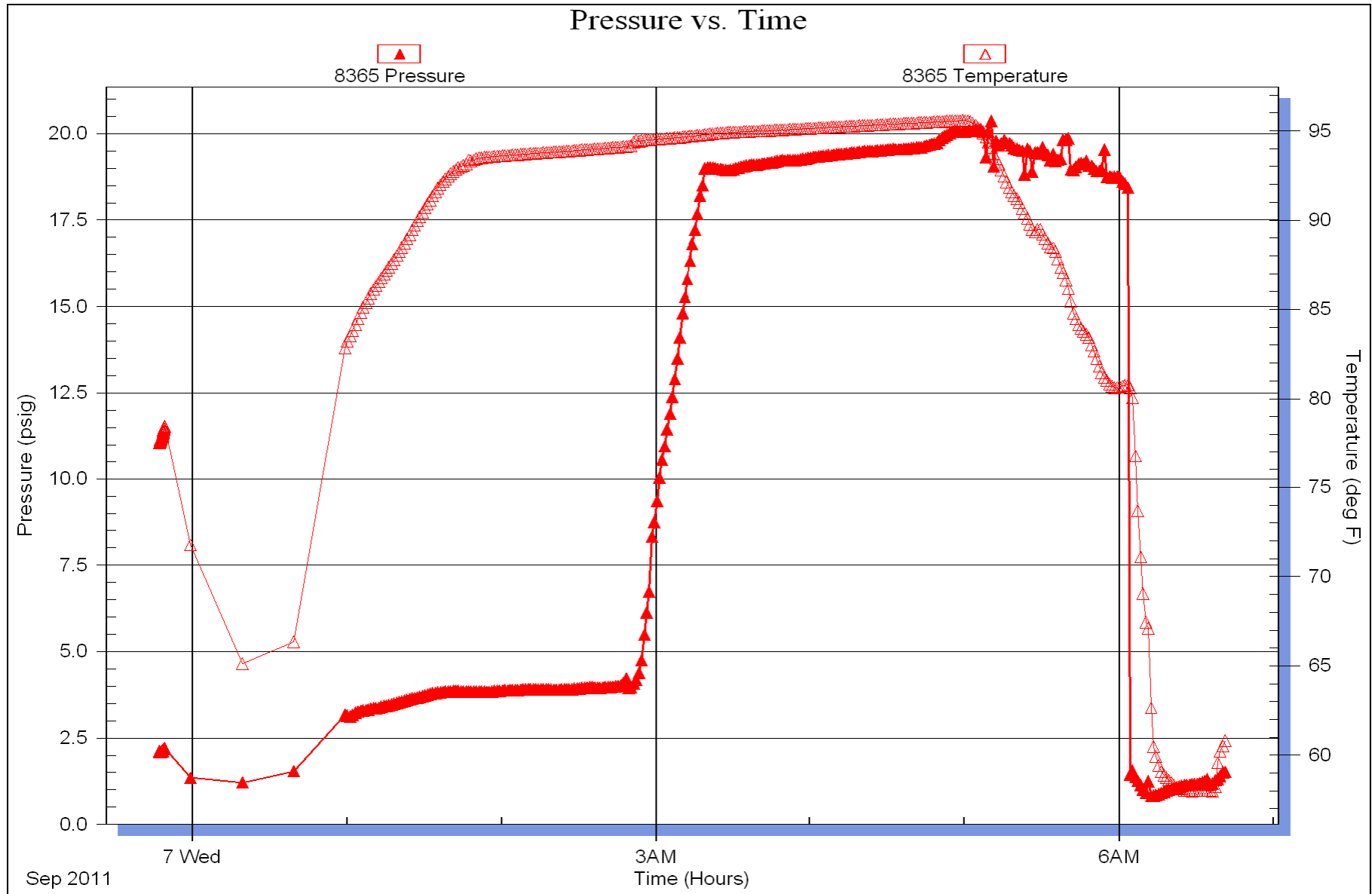
Serial #:

Laboratory Name:

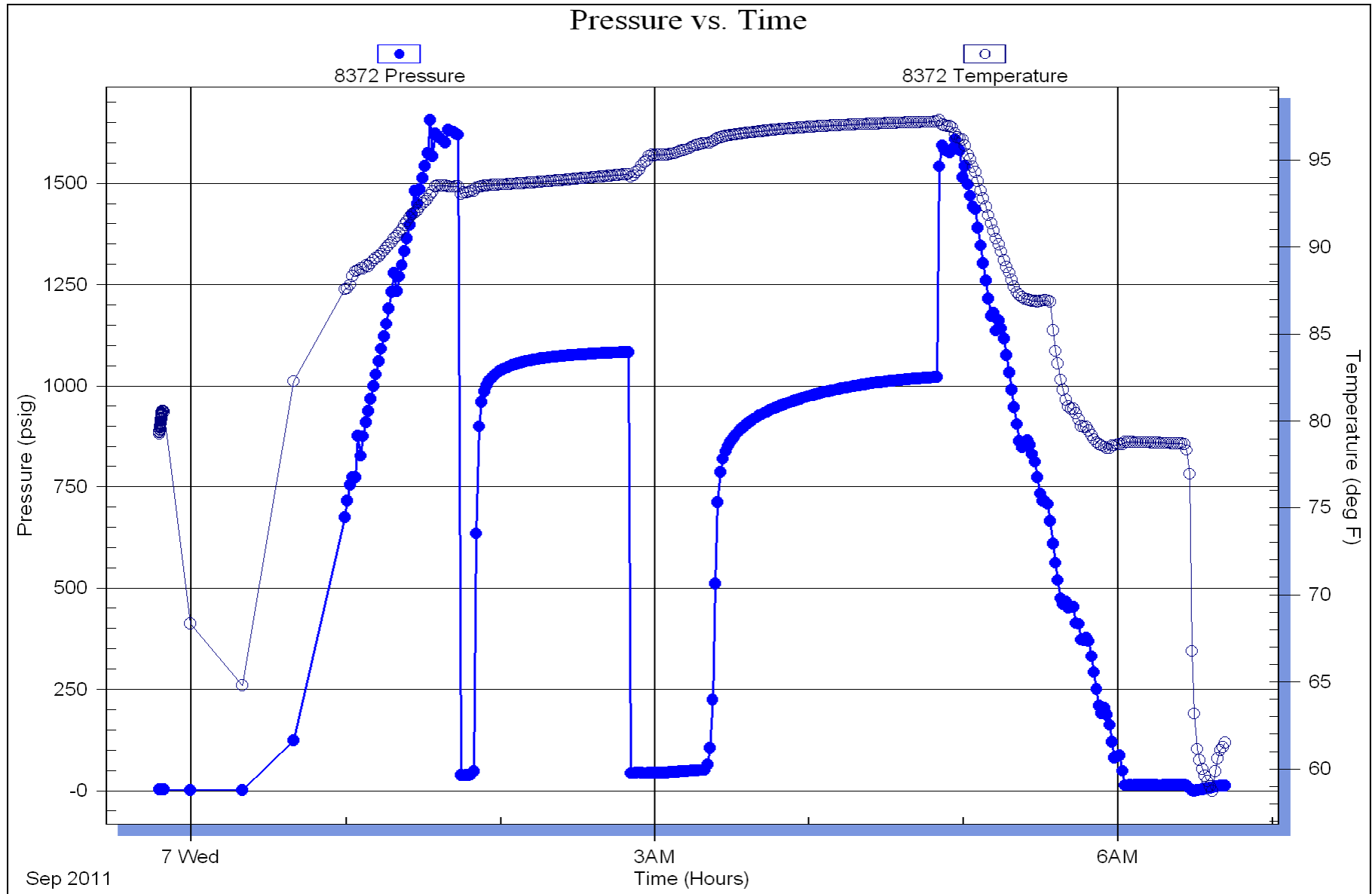
Laboratory Location:

Recovery Comments: 600 ML M, 3400 ML W, 220 LBS, Water w as .251 @ 59F=35000 Chl

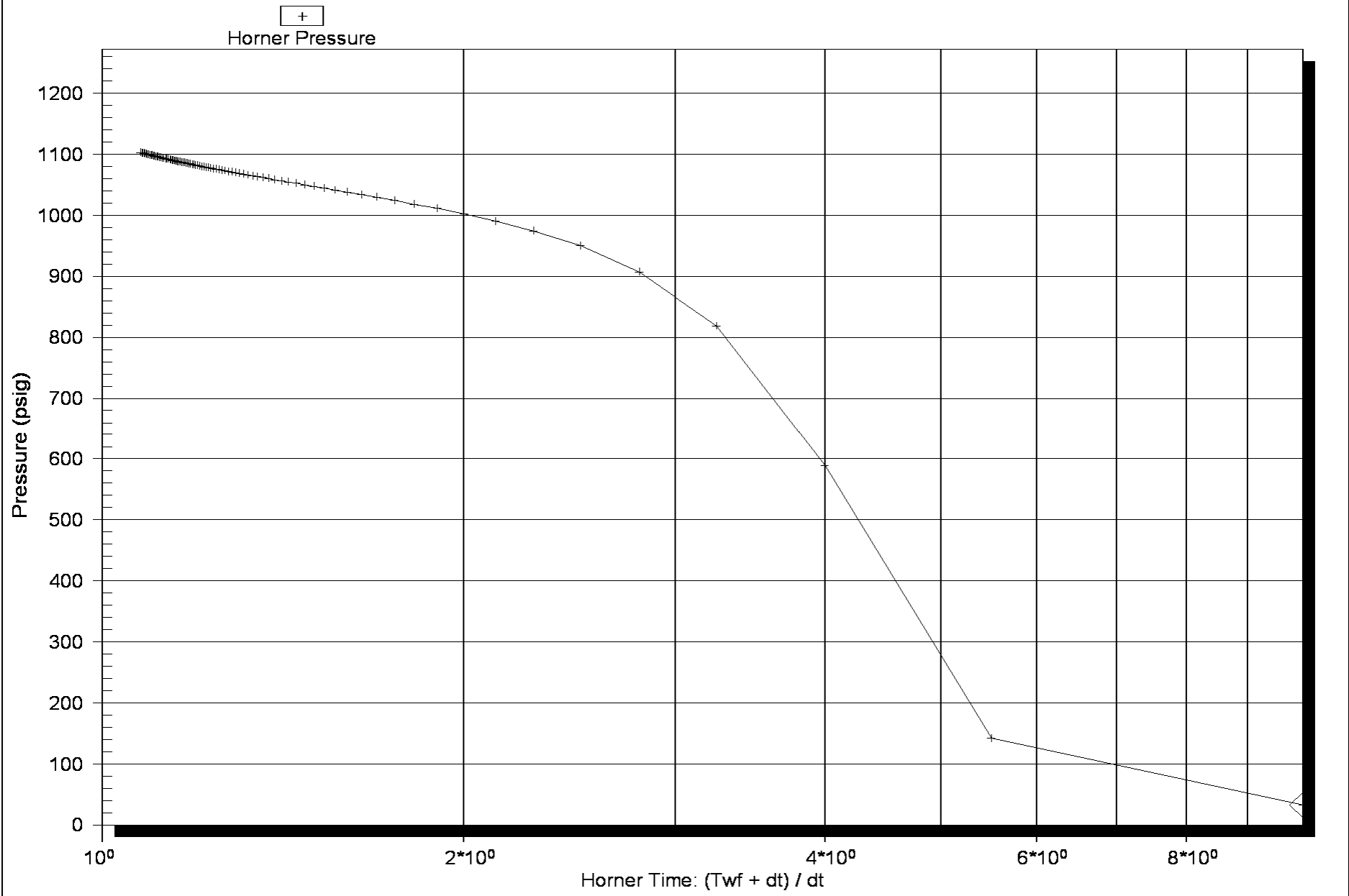




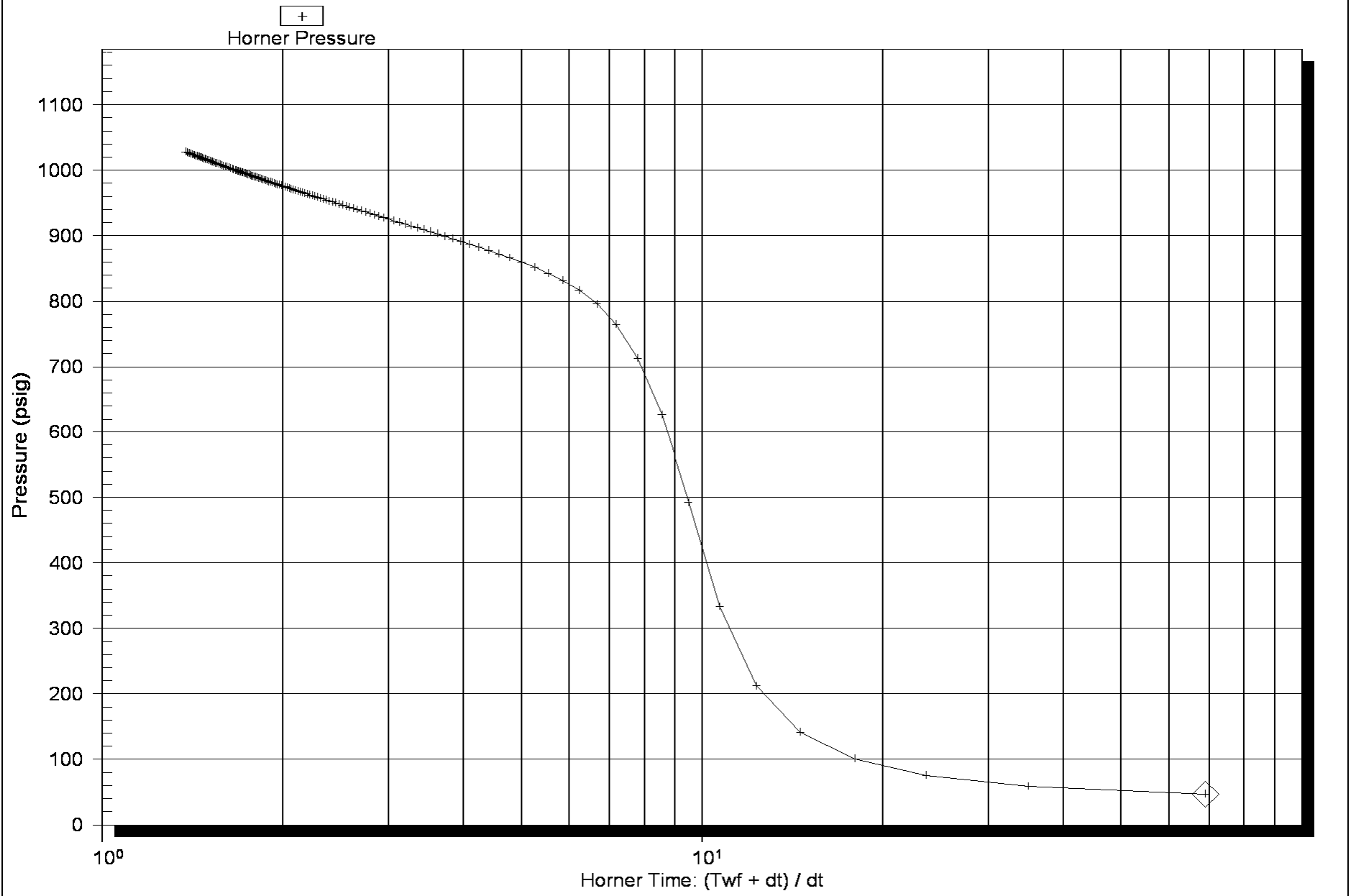




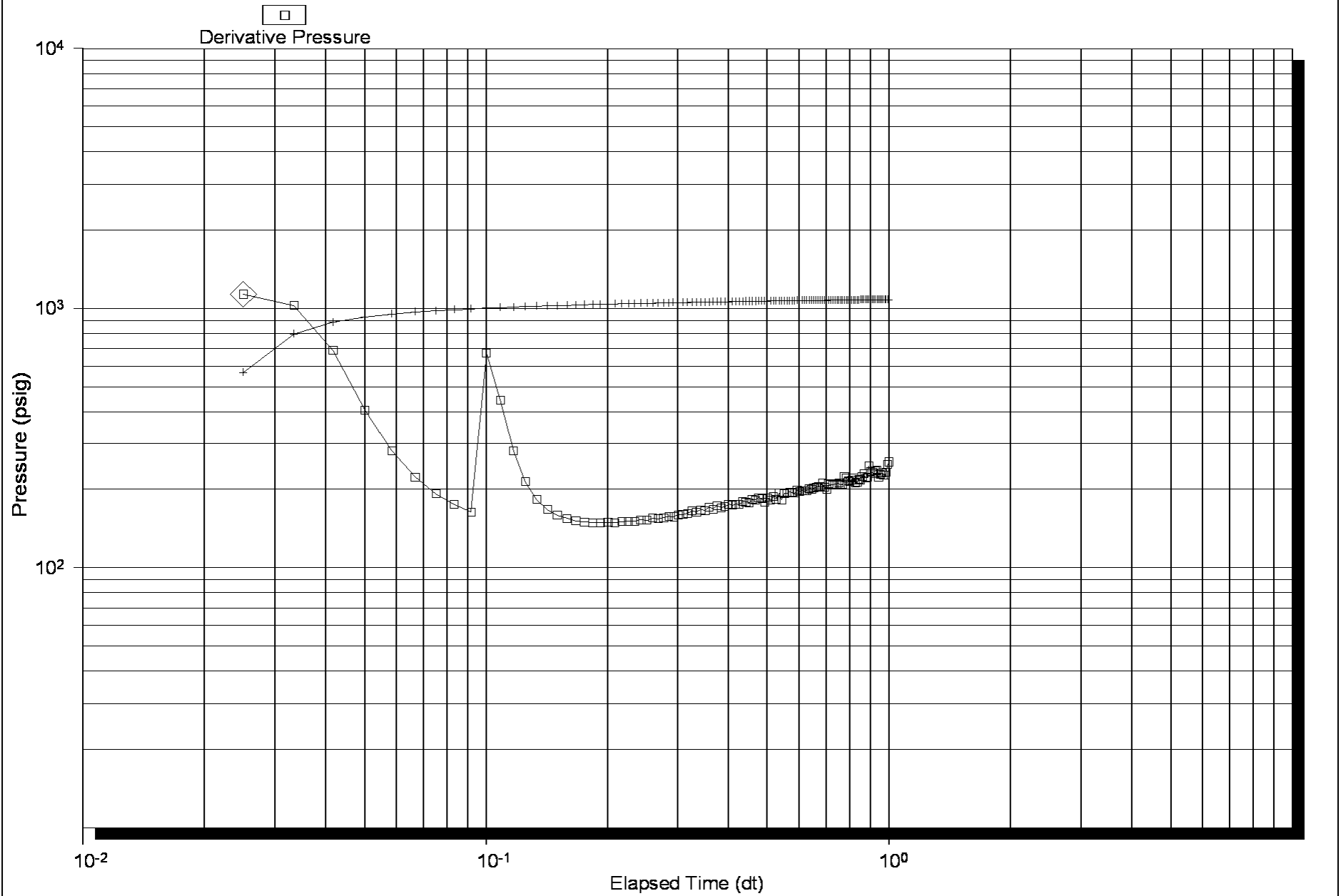
### Horner Plot



### Horner Plot



### Log-Log and Pseudo-Derivative



### Log-Log and Pseudo-Derivative

