



## 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 @ 07:30:10

End Date: 2011.09.06 @ 16:08:10

Job Ticket #: 44167                      DST #: 3

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
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**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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**DST#: 3**

Test Start: 2011.09.06 @ 07:30:10

## GENERAL INFORMATION:

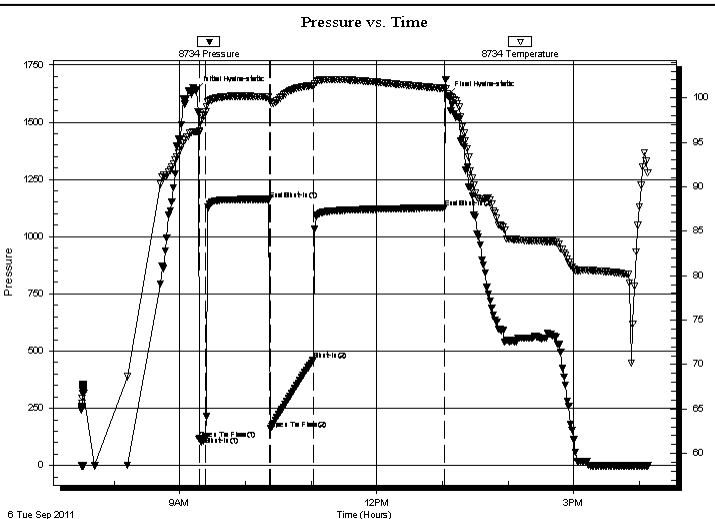
Formation: **LKC "I-J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:17:40  
 Time Test Ended: 16:08:10  
 Interval: **3357.00 ft (KB) To 3390.00 ft (KB) (TVD)**  
 Total Depth: 3390.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (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: 459.93 psig @ 3362.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.09.06 End Date: 2011.09.06 Last Calib.: 2011.09.06  
 Start Time: 07:30:11 End Time: 16:08:10 Time On Btm: 2011.09.06 @ 09:14:40  
 Time Off Btm: 2011.09.06 @ 13:04:40

**TEST COMMENT:** 5 - IFP - BOB 1 min  
 60 - ISI - BOB 3 min  
 40 - FFP - BOB 1 min GTS 20 min  
 120 - FSI - BOB 3 min



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1639.89	96.15	Initial Hydro-static
3	115.96	96.13	Open To Flow (1)
9	126.48	98.46	Shut-In(1)
67	1163.17	100.05	End Shut-In(1)
68	160.96	99.59	Open To Flow (2)
108	459.93	101.35	Shut-In(2)
227	1126.48	101.03	End Shut-In(2)
230	1617.33	100.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	GO & MCW50%G, 15%O, 20%W, 15%M	0.84
60.00	GW & MCO 20%G, 45%O, 10%W, 25%M	0.84
875.00	REVERSED OUT 5 BL FREE OIL, 3 BL HO	12.27
210.00	FREE OIL	2.95

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	3.50	6.70
Last Gas Rate			
Max. Gas Rate	0.13	6.00	7.63

\* Recovery from multiple tests





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Job Ticket: 44167

**DST#: 3**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 07:30:10

## GENERAL INFORMATION:

Formation: **LKC "I-J"**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 09:17:40

Time Test Ended: 16:08:10

Test Type: **Conventional Bottom Hole (Reset)**

Tester: **Brian Fairbank**

Unit No: **41**

**Interval: 3357.00 ft (KB) To 3390.00 ft (KB) (TVD)**

Reference Elevations: **1936.00 ft (KB)**

Total Depth: **3390.00 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 @ Run Depth: **psig @ 3322.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2011.09.06**

End Date:

**2011.09.06**

Last Calib.:

**2011.09.06**

Start Time: **07:30:47**

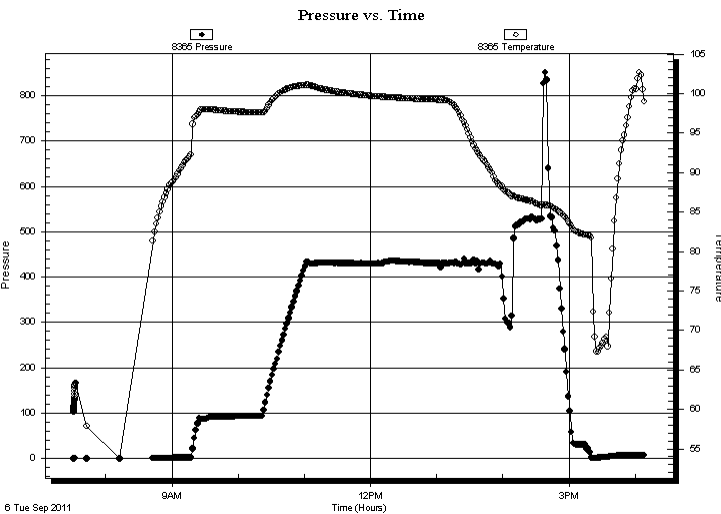
End Time:

**16:08:46**

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 5 - IFP - BOB 1 min  
60 - ISI - BOB 3 min  
40 - FFP - BOB 1 min GTS 20 min  
120 - FSI - BOB 3 min



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	GO & MCW50%G, 15%O, 20%W, 15%M	0.84
60.00	GW & MCO 20%G, 45%O, 10%W, 25%M	0.84
875.00	REVERSED OUT 5 BL FREE OIL, 3 BL HO	12.27
210.00	FREE OIL	2.95

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	3.50	6.70
Last Gas Rate			
Max. Gas Rate	0.13	6.00	7.63

\* Recovery from multiple tests



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**TOOL DIAGRAM**

Samuel Gary Jr. and Associates, Inc.

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**DST#: 3**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 07:30:10

## Tool Information

Drill Pipe:	Length: 3351.00 ft	Diameter: 3.80 inches	Volume: 47.01 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: 58000.00 lb
			Total Volume: 47.01 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3357.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Recorder	0.00	8365	Fluid	3322.00	
Blank Spacing	5.00			3327.00	
Shut In Tool	5.00			3332.00	
Sampler	3.00			3335.00	
Hydraulic tool	5.00			3340.00	
Jars	5.00			3345.00	
Safety Joint	2.00			3347.00	
Packer	5.00			3352.00	35.00 Bottom Of Top Packer
Packer	5.00			3357.00	
Stubb	1.00			3358.00	
Perforations	4.00			3362.00	
Recorder	0.00	8372	Inside	3362.00	
Recorder	0.00	8734	Outside	3362.00	
Perforations	25.00			3387.00	
Bullnose	3.00			3390.00	33.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**



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**FLUID SUMMARY**

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Job Ticket: 44167

**DST#: 3**

ATTN: Clayton Camozzi

Test Start: 2011.09.06 @ 07:30:10

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

35000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5700.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	GO & MCW50%G, 15%O, 20%W, 15%M	0.842
60.00	GW & MCO 20%G, 45%O, 10%W, 25%M	0.842
875.00	REVERSED OUT 5 BL FREE OIL, 3 BL HOCLM	12.274
210.00	FREE OIL	2.946

Total Length: 1205.00 ft      Total Volume: 16.904 bbl

Num Fluid Samples: 0

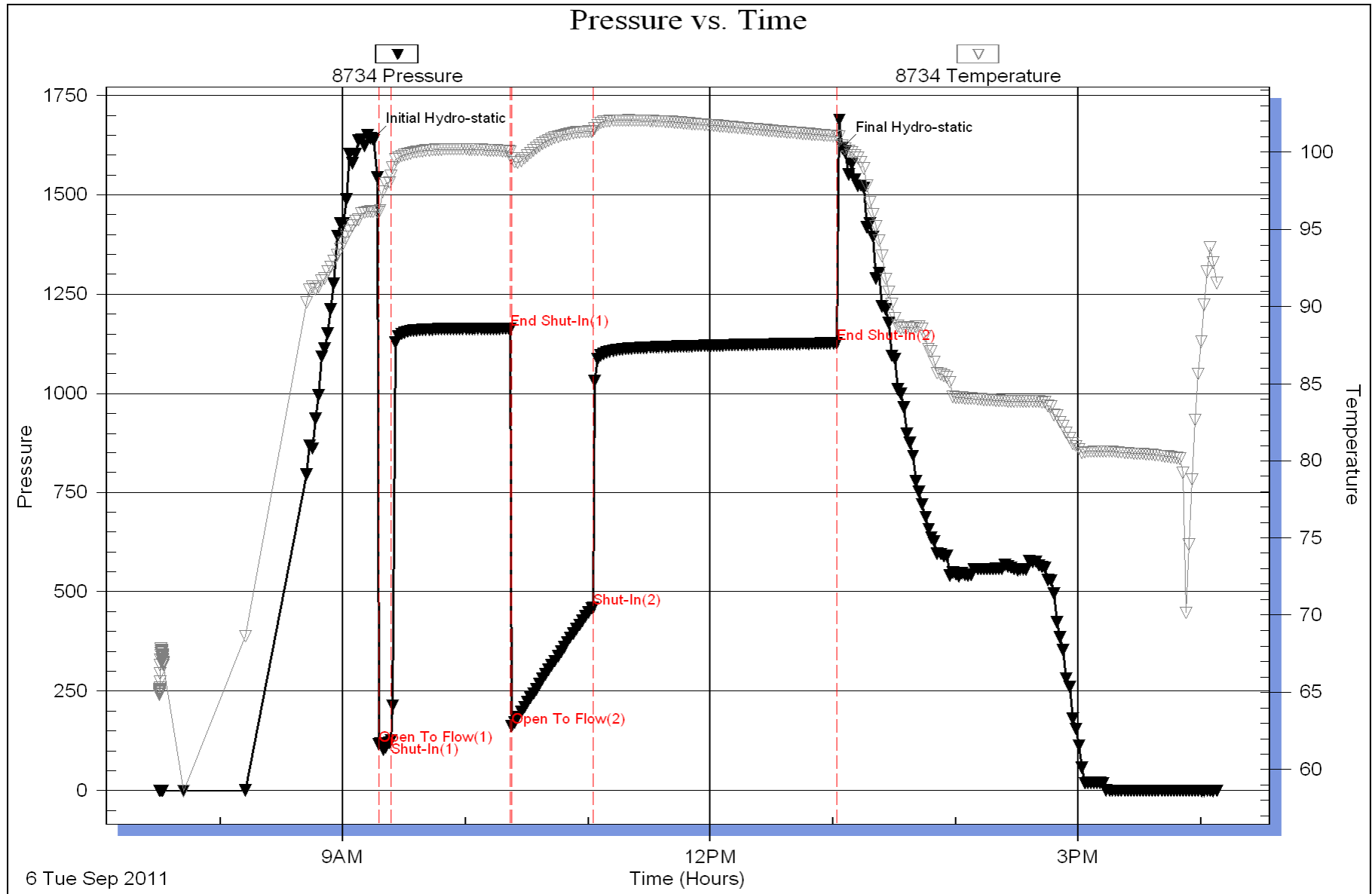
Num Gas Bombs: 0

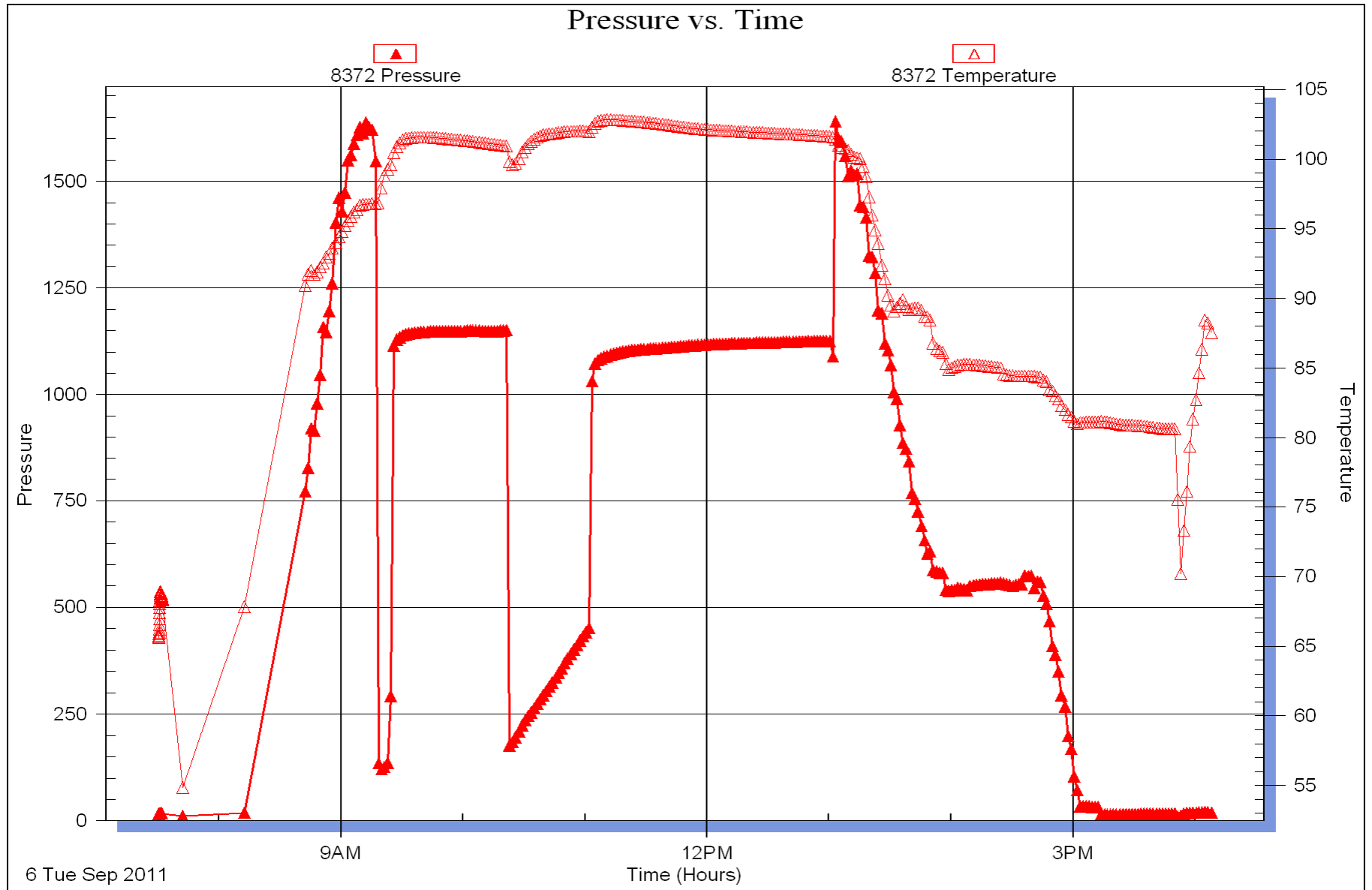
Serial #:

Laboratory Name:

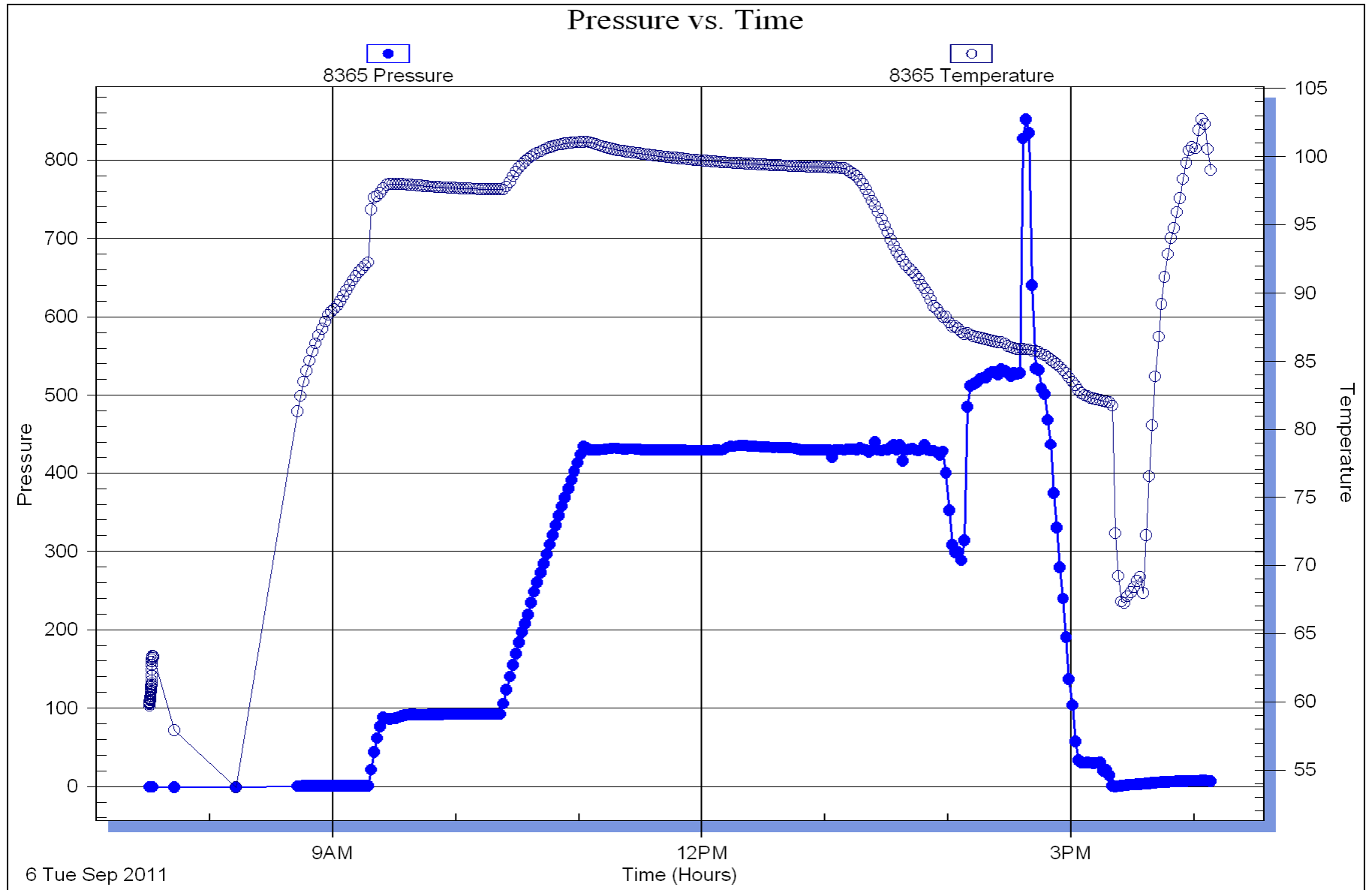
Laboratory Location:

Recovery Comments: 1500 ML G, 2125 ML O, 250 ML M, 125 ML W, 875 LBS. Water w as .170 @ 82F = 35,000 Chl

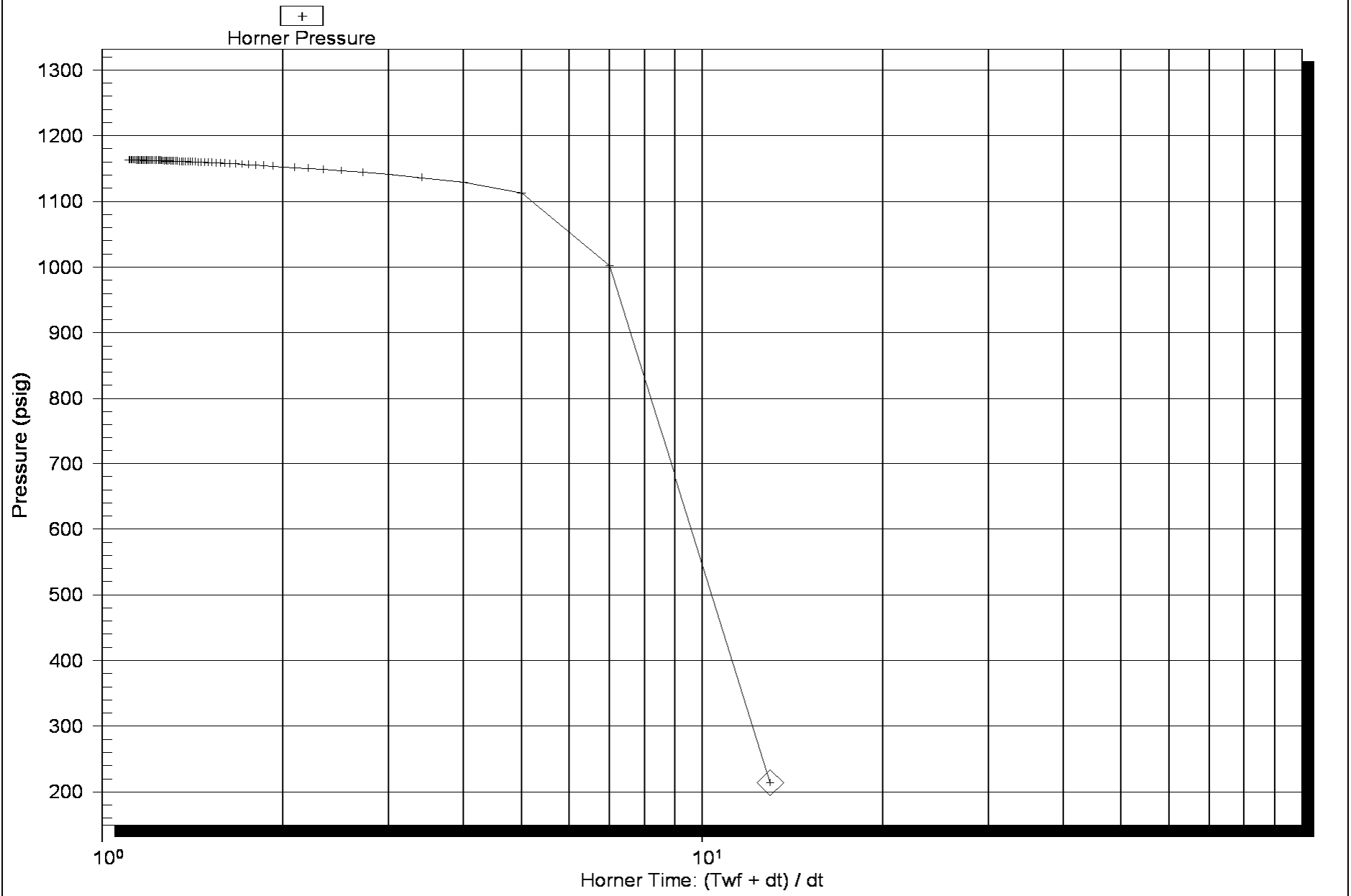




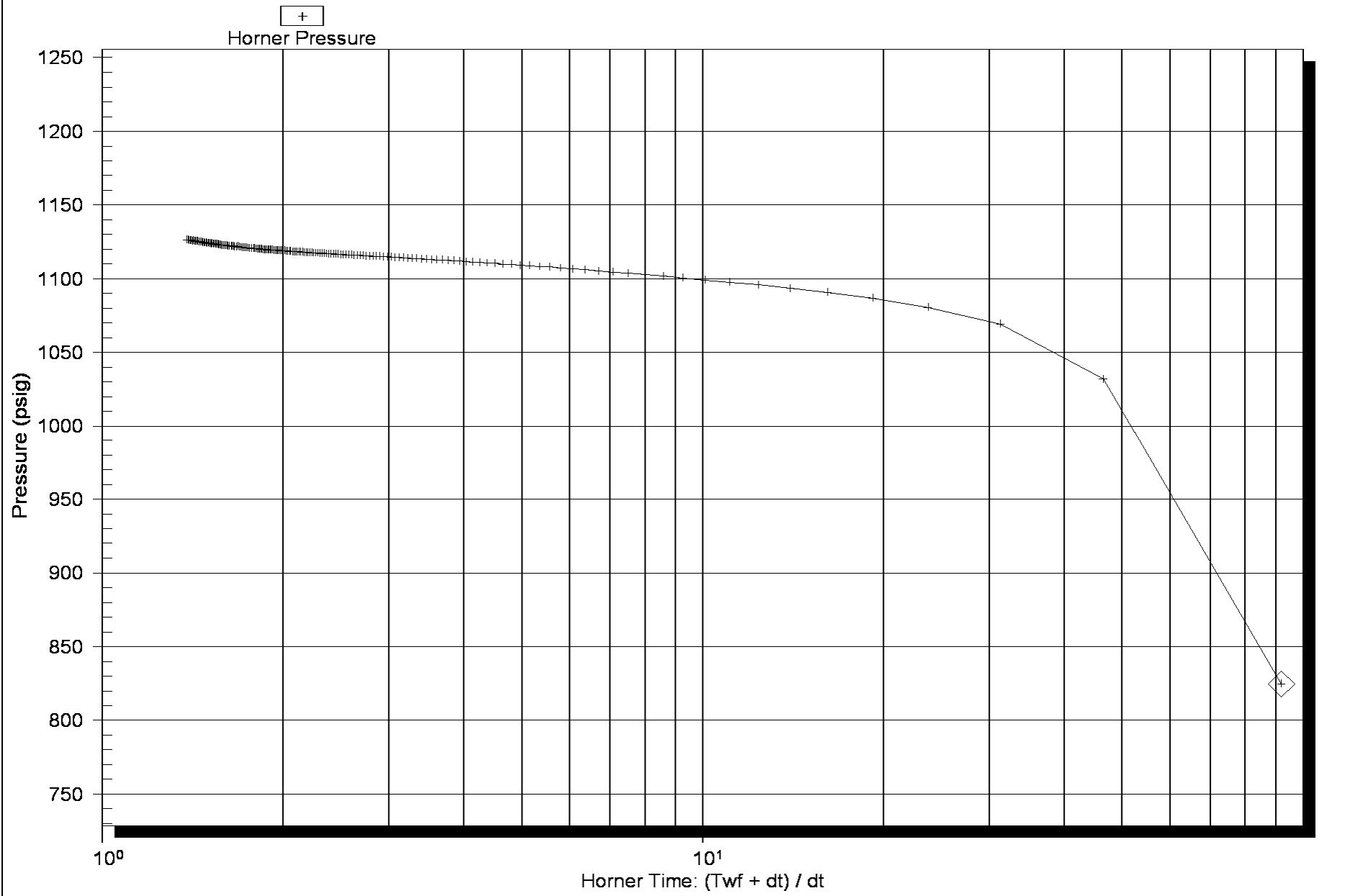




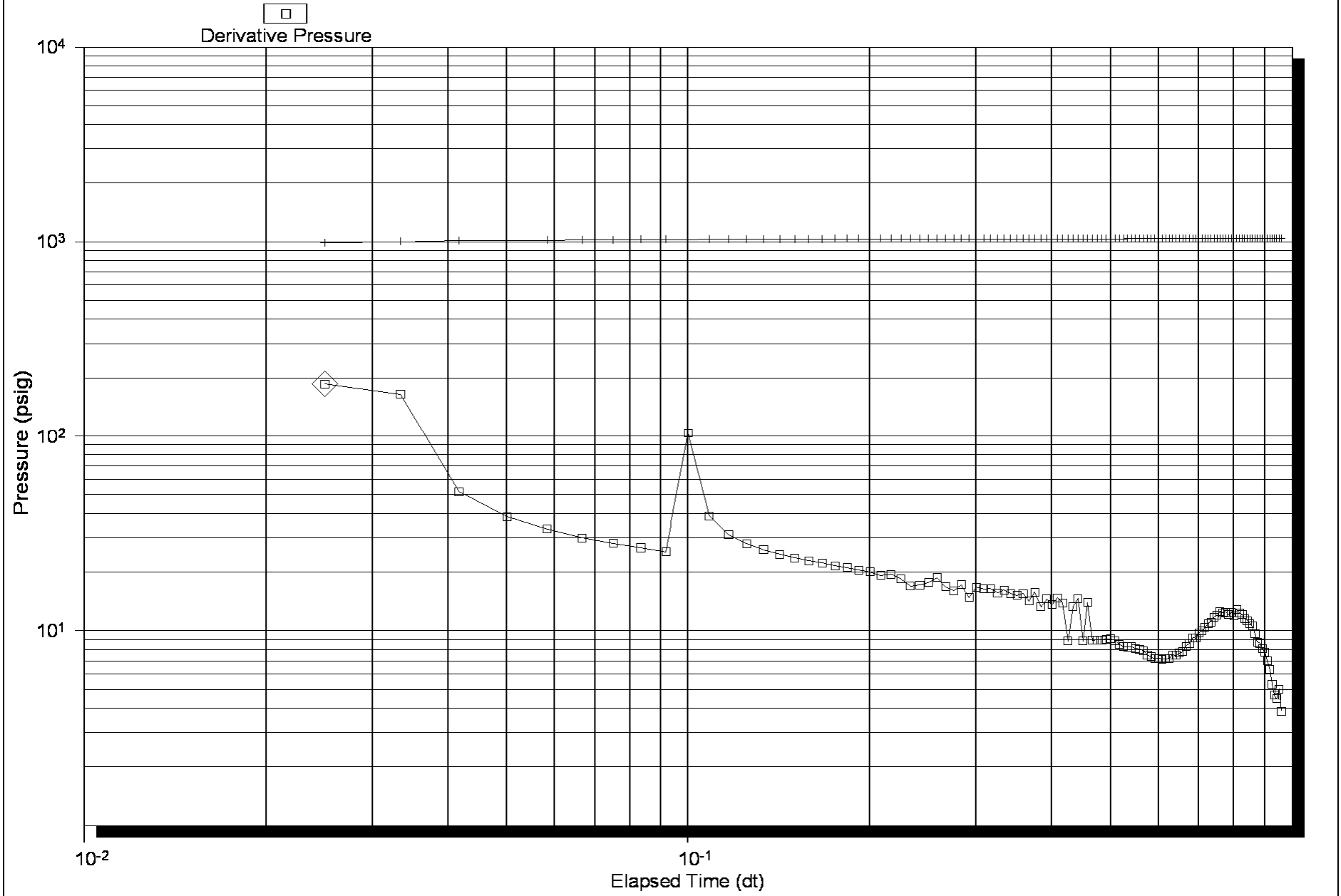
### Horner Plot



### Horner Plot



### Log-Log and Pseudo-Derivative



### Log-Log and Pseudo-Derivative

