



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: 2011.09.04 @ 21:11:55

End Date: 2011.09.05 @ 04:56:25

Job Ticket #: 44165 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2011.09.28 @ 14:53:53



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DRILL STEM TEST REPORT

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Denver, CO 80202

32-15-15 Russell, Ks

Job Ticket: 44165

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2011.09.04 @ 21:11:55

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:05:55

Time Test Ended: 04:56:25

Test Type: Conventional Bottom Hole (Initial)

Tester: Brian Fairbank

Unit No: 41

Interval: 3214.00 ft (KB) To 3260.00 ft (KB) (TVD)

Reference Elevations: 1936.00 ft (KB)

Total Depth: 3260.00 ft (KB) (TVD)

1926.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8372 Inside

Press @ Run Depth: 89.18 psig @ 3251.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.09.04

End Date:

2011.09.05

Last Calib.:

2011.09.05

Start Time:

21:11:56

End Time:

04:56:25

Time On Btm:

2011.09.04 @ 23:04:25

Time Off Btm:

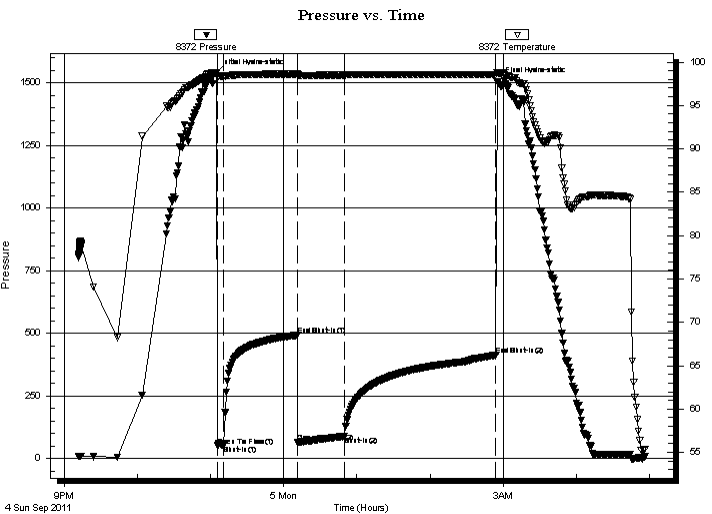
2011.09.05 @ 02:55:55

TEST COMMENT: 5 - IFP - weak to fair blow 1" - 5"

60 - ISI - no blow back

40 - FFP - BOB 34 min

120 - FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1534.96	98.81	Initial Hydro-static
2	51.74	98.43	Open To Flow (1)
7	55.46	98.34	Shut-In(1)
67	492.85	98.62	End Shut-In(1)
67	65.06	98.49	Open To Flow (2)
106	89.18	98.50	Shut-In(2)
230	413.89	98.55	End Shut-In(2)
232	1505.04	98.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.07
135.00	MW 90%W, 10%M	1.89

Gas Rates

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



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Job Ticket: 44165

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2011.09.04 @ 21:11:55

GENERAL INFORMATION:

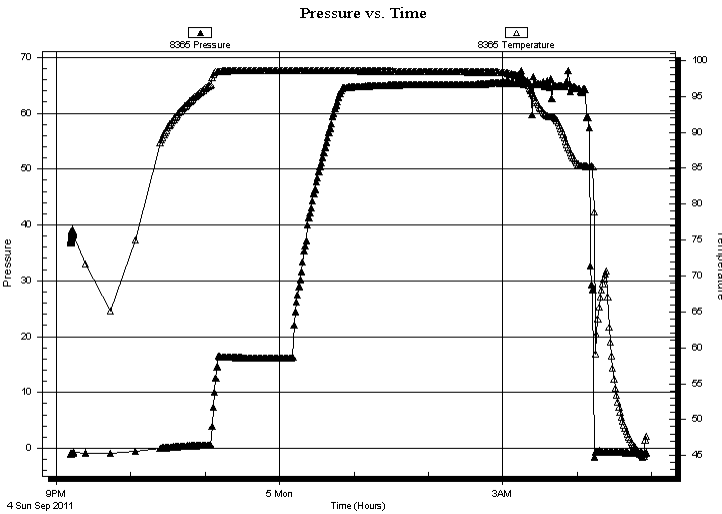
Formation: LKC "C-D"			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Initial)	
Time Tool Opened: 23:05:55		Tester: Brian Fairbank	
Time Test Ended: 04:56:25		Unit No: 41	
Interval: 3214.00 ft (KB) To 3260.00 ft (KB) (TVD)		Reference Elevations:	1936.00 ft (KB)
Total Depth: 3260.00 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 @ 3179.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2011.09.04	End Date: 2011.09.05
Start Time: 21:11:40	End Time: 04:55:39
	Last Calib.: 2011.09.05
	Time On Btm:
	Time Off Btm:

TEST COMMENT: 5 - IFP - weak to fair blow 1" - 5"
60 - ISI - no blow back
40 - FFP - BOB 34 min
120 - FSI - no blow back



PRESSURE SUMMARY

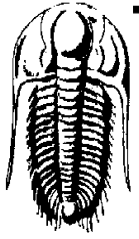
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.07
135.00	MW 90%W, 10%M	1.89

Gas Rates

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



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Job Ticket: 44165

DST#: 1

ATTN: Clayton Camozzi

Test Start: 2011.09.04 @ 21:11:55

GENERAL INFORMATION:

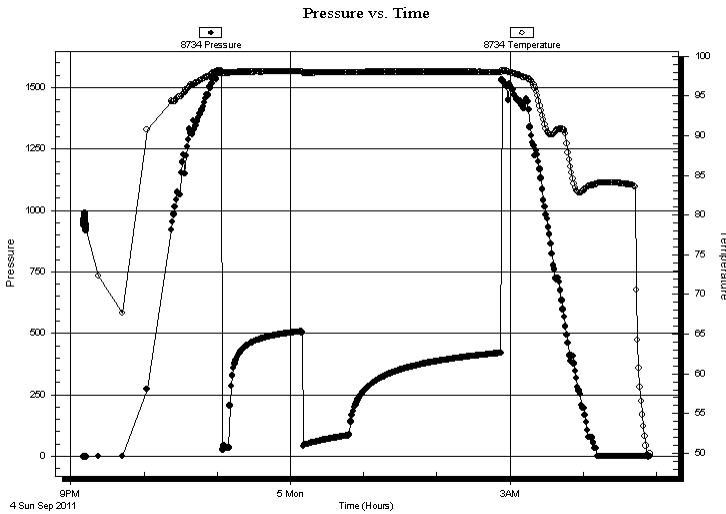
Formation: **LKC "C-D"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 23:05:55
 Tester: Brian Fairbank
 Time Test Ended: 04:56:25
 Unit No: 41
Interval: 3214.00 ft (KB) To 3260.00 ft (KB) (TVD)
 Reference Elevations: 1936.00 ft (KB)
 Total Depth: 3260.00 ft (KB) (TVD)
 1926.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 10.00 ft

Serial #: 8734 Outside

Press @ Run Depth: psig @ 3251.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.09.04 End Date: 2011.09.05 Last Calib.: 2011.09.05
 Start Time: 21:10:29 End Time: 04:54:58 Time On Btm:
 Time Off Btm:

TEST COMMENT: 5 - IFP - weak to fair blow 1" - 5"
 60 - ISI - no blow back
 40 - FFP - BOB 34 min
 120 - FSI - no blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.07
135.00	MW 90%W, 10%M	1.89

Gas Rates

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



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TOOL DIAGRAM

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ATTN: Clayton Camozzi

Job Ticket: 44165

DST#: 1

Test Start: 2011.09.04 @ 21:11:55

Tool Information

Drill Pipe:	Length: 3195.00 ft	Diameter: 3.80 inches	Volume: 44.82 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: 52000.00 lb
			<u>Total Volume: 44.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3214.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	81.00 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	3179.00	
Blank Spacing	5.00			3184.00	
Shut In Tool	5.00			3189.00	
Sampler	3.00			3192.00	
Hydraulic tool	5.00			3197.00	
Jars	5.00			3202.00	
Safety Joint	2.00			3204.00	
Packer	5.00			3209.00	35.00 Bottom Of Top Packer
Packer	5.00			3214.00	
Stubb	1.00			3215.00	
Perforations	4.00			3219.00	
Change Over Sub	1.00			3220.00	
Blank Spacing	31.00			3251.00	
Recorder	0.00	8372	Inside	3251.00	
Recorder	0.00	8734	Outside	3251.00	
Change Over Sub	1.00			3252.00	
Perforations	5.00			3257.00	
Bullnose	3.00			3260.00	46.00 Bottom Packers & Anchor

Total Tool Length: 81.00



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FLUID SUMMARY

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Test Start: 2011.09.04 @ 21:11:55

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:

50000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4100.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	MUD 100%	0.070
135.00	MW 90%W, 10%M	1.894

Total Length: 140.00 ft Total Volume: 1.964 bbl

Num Fluid Samples: 0

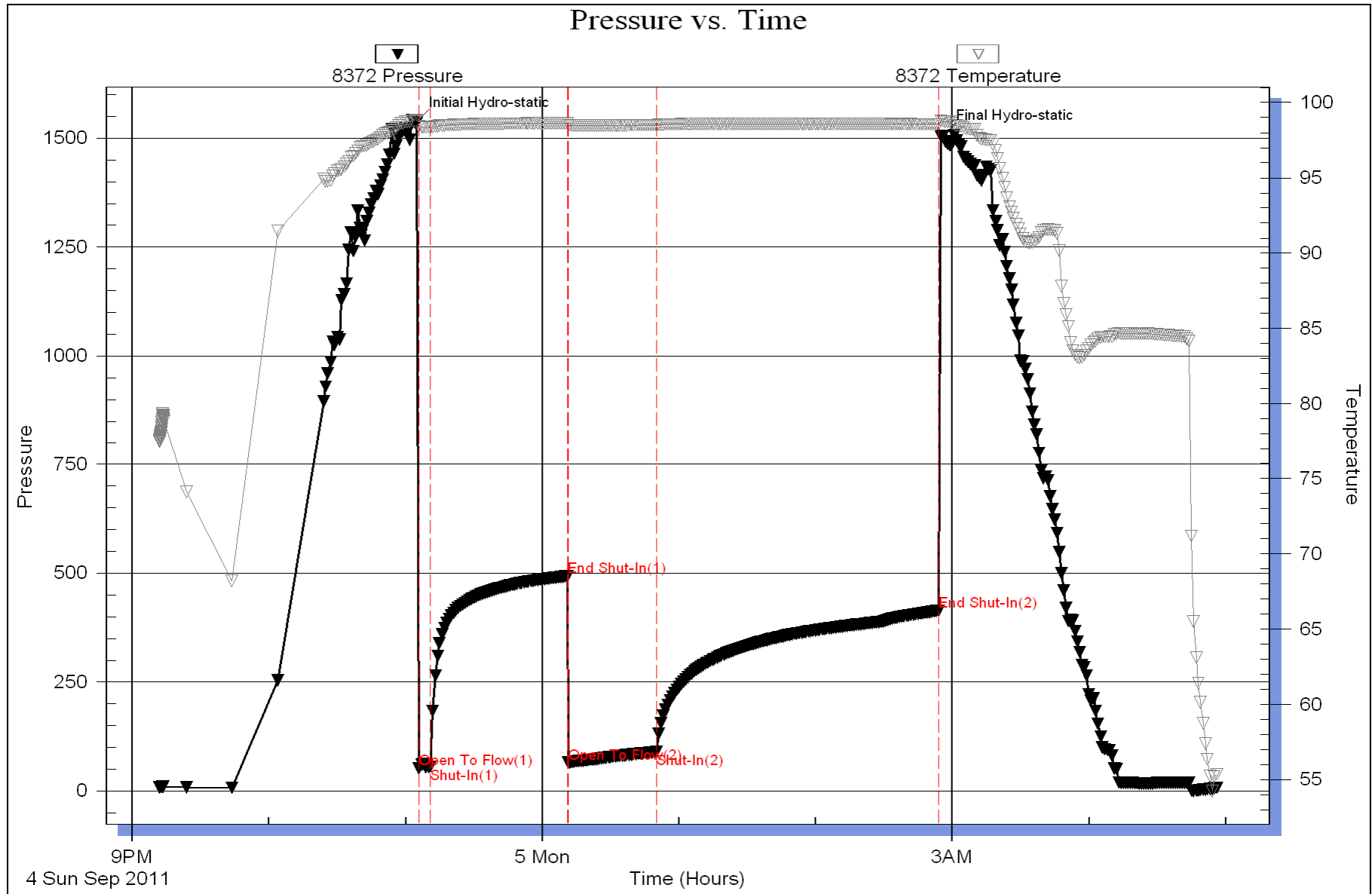
Num Gas Bombs: 0

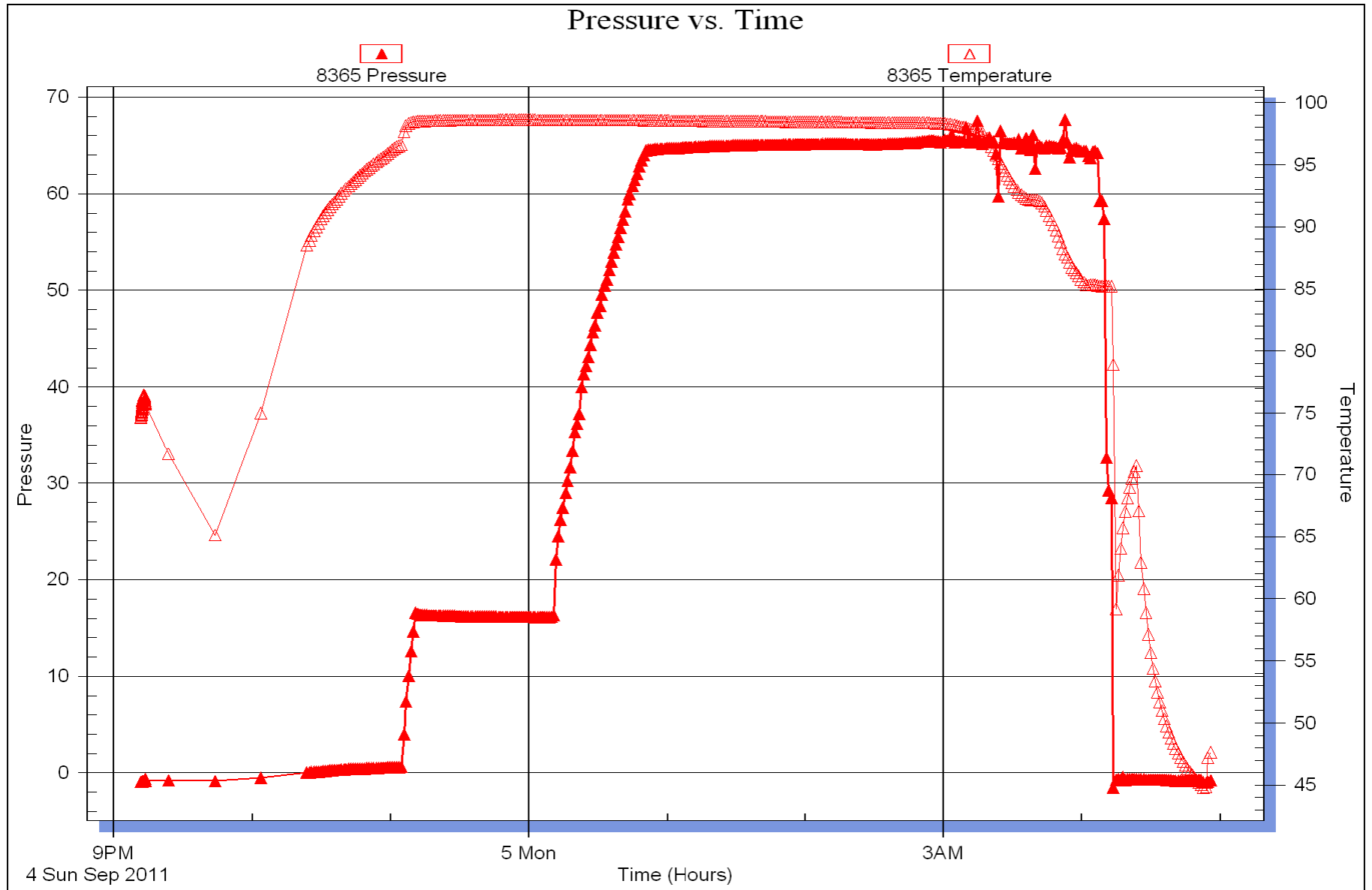
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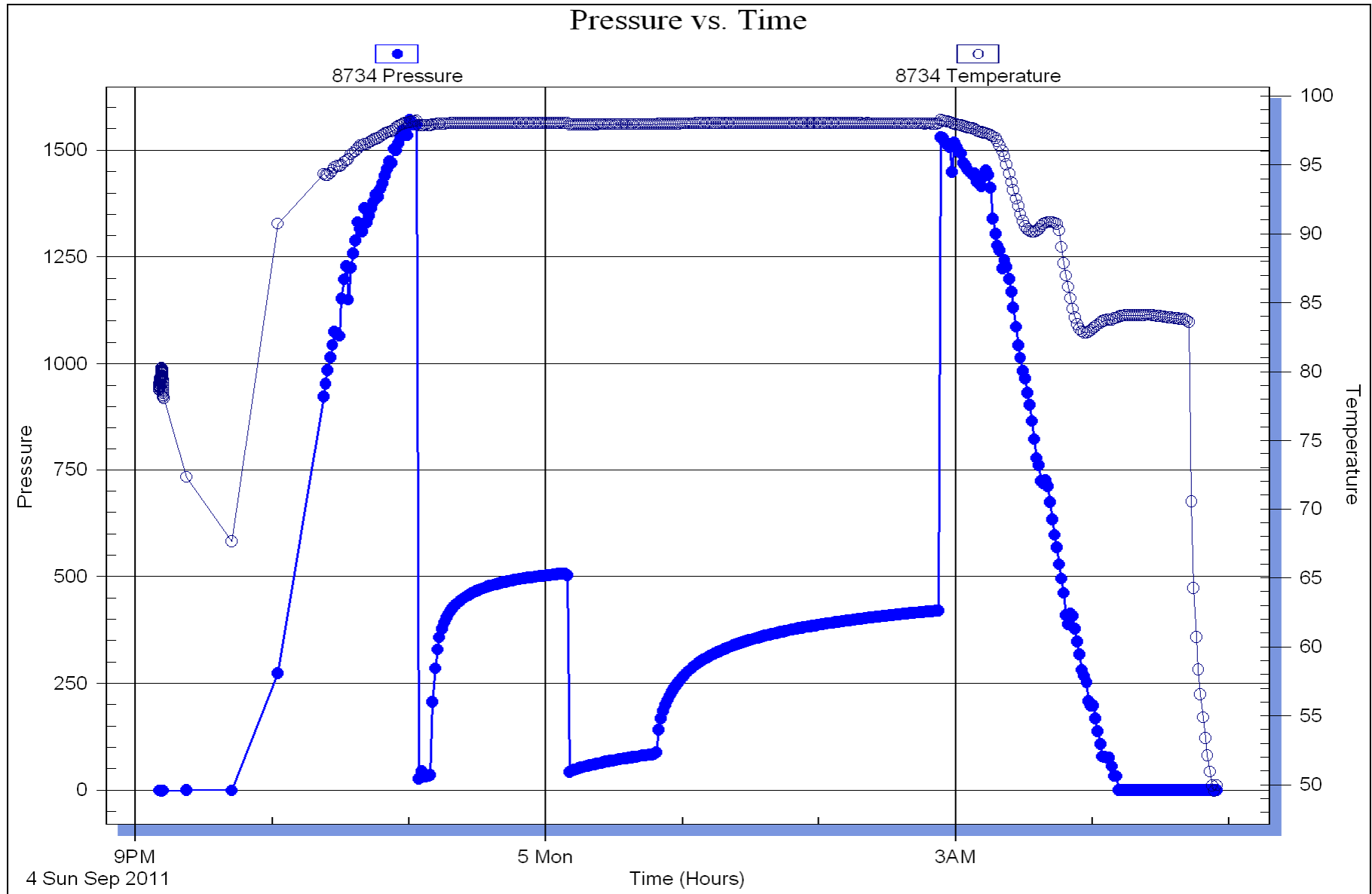
Laboratory Name:

Laboratory Location:

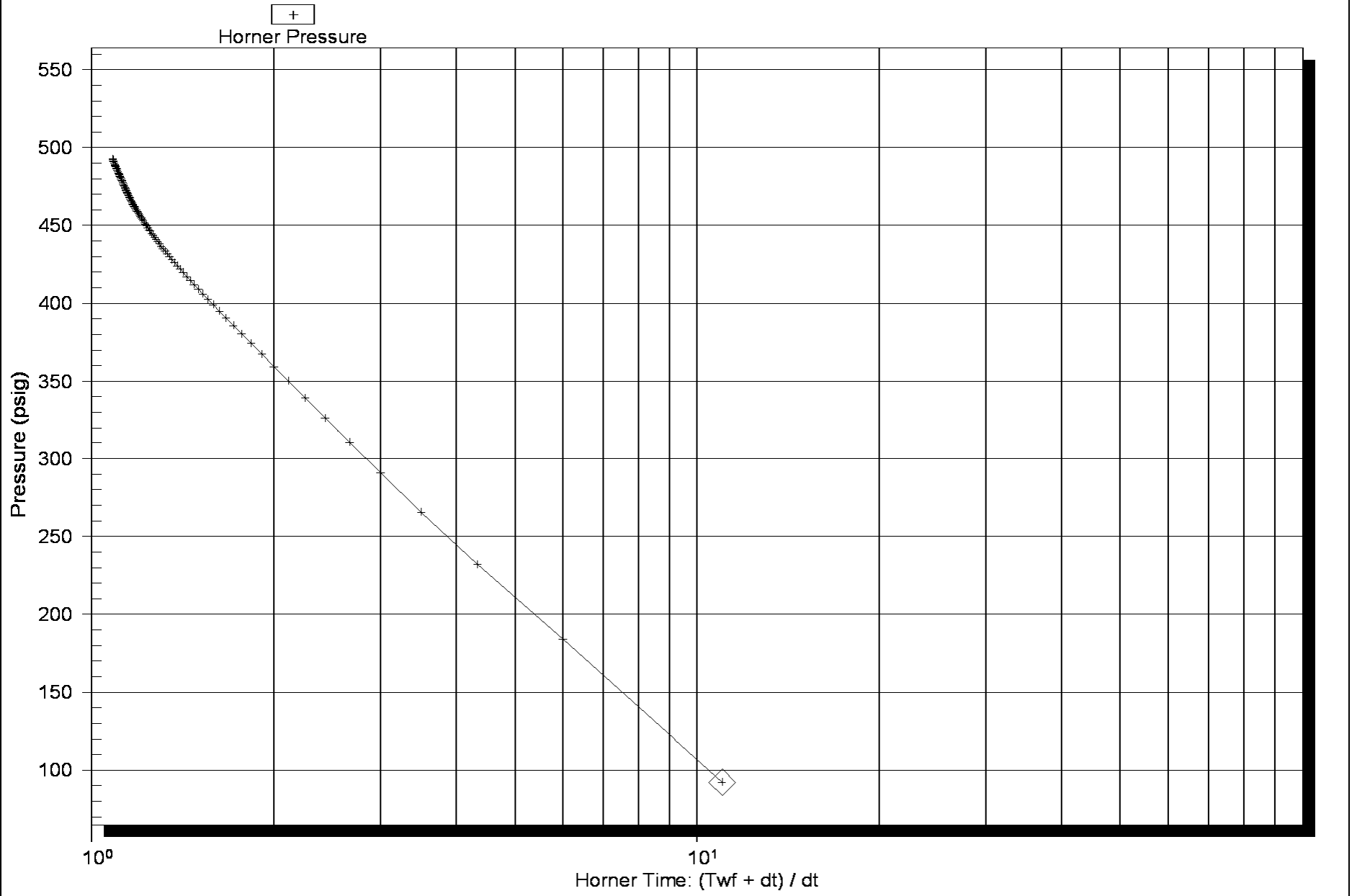
Recovery Comments: 800 ml Mud, 3200 ml Water, 220 LBS. Water w as .226 @ 51F = 50,000 Chl



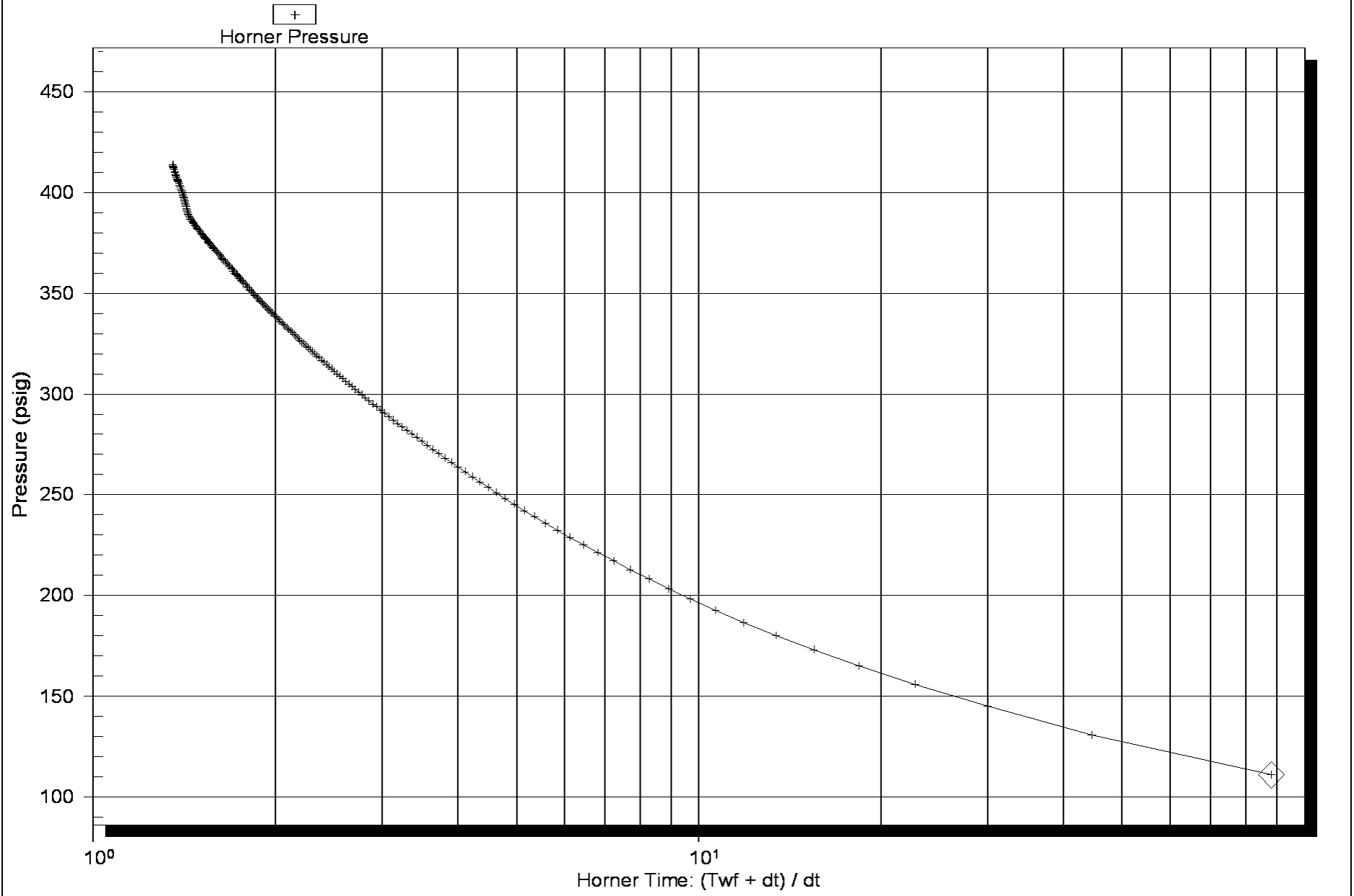




Horner Plot



Horner Plot



Log-Log and Pseudo-Derivative

