



## DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop St. Ste. 700  
Denver, Co  
80202

ATTN: Clayton Camozzi

**1-16-16/Rush**

**Wagner Trust 2-1**

Start Date: 2010.11.02 @ 08:23:46

End Date: 2010.11.02 @ 16:10:40

Job Ticket #: 40325                      DST #: 4

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



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**Wagner Trust 2-1**  
**1-16-16/Rush**  
 Job Ticket: 40325 **DST#: 4**  
 Test Start: 2010.11.02 @ 08:23:46

## GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:56:11  
 Time Test Ended: 16:10:40

Test Type: Conventional Straddle  
 Tester: Brian Fairbank  
 Unit No: 41

**Interval: 3343.00 ft (KB) To 3352.00 ft (KB) (TVD)**  
 Total Depth: 3374.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 1910.00 ft (KB)  
 1900.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8647**

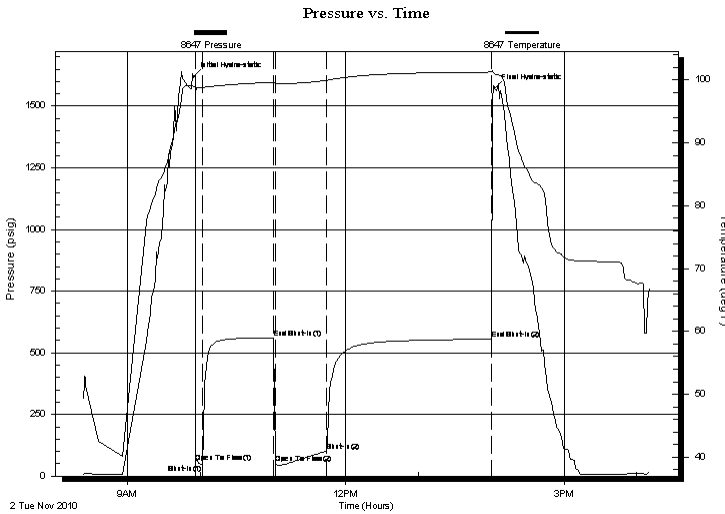
**Inside**

Press @ Run Depth: 100.79 psig @ 3344.00 ft (KB)  
 Start Date: 2010.11.02 End Date: 2010.11.02  
 Start Time: 08:23:46 End Time: 16:10:40

Capacity: 8000.00 psig  
 Last Calib.: 2010.11.02  
 Time On Btm: 2010.11.02 @ 09:54:41  
 Time Off Btm: 2010.11.02 @ 14:02:40

**TEST COMMENT:** IFP - BOB 1 1/2 min  
 ISI - no blow back  
 FFP - BOB 30 sec  
 FSI - BOB 8 min GTS

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1618.64	98.95	Initial Hydro-static
2	57.91	98.03	Open To Flow (1)
7	46.43	98.73	Shut-In(1)
66	561.53	99.65	End Shut-In(1)
68	50.36	99.47	Open To Flow (2)
110	100.79	99.94	Shut-In(2)
246	554.67	101.28	End Shut-In(2)
248	1571.93	101.02	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
240.00	FREE OIL 95%O, 5%M	3.37

## Gas Rates

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



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1900.00 ft (CF)  
KB to GR/CF: 10.00 ft

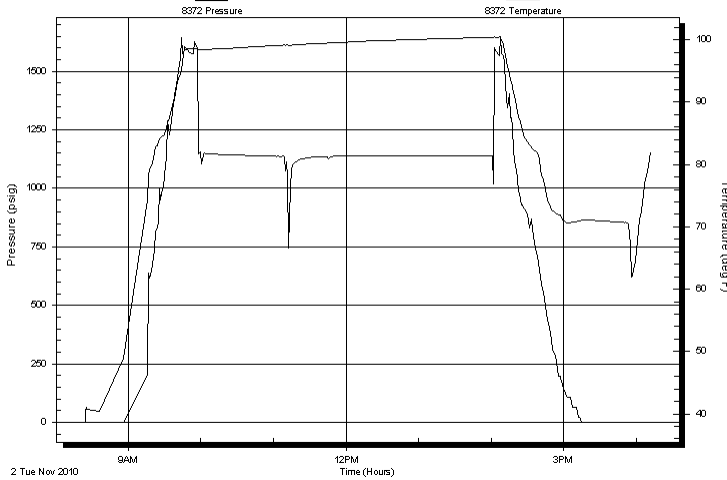
**Serial #: 8372 Below (Straddle)**

Press @ Run Depth: psig @ 3358.00 ft (KB)  
Start Date: 2010.11.02 End Date: 2010.11.02  
Start Time: 08:23:59 End Time: 16:12:23

Capacity: 8000.00 psig  
Last Calib.: 2010.11.02  
Time On Btm:  
Time Off Btm:

**TEST COMMENT:** IFP - BOB 1 1/2 min  
ISI - no blow back  
FFP - BOB 30 sec  
FSI - BOB 8 min GTS

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
240.00	FREE OIL 95%O, 5%M	3.37

## Gas Rates

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





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**TOOL DIAGRAM**

Sam Gary  
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**Wagner Trust 2-1**  
**1-16-16/Rush**  
Job Ticket: 40325      **DST#: 4**  
Test Start: 2010.11.02 @ 08:23:46

**Tool Information**

Drill Pipe:	Length: 3344.00 ft	Diameter: 3.80 inches	Volume: 46.91 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: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 46.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3343.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	3352.00 ft			
Interval between Packers:	9.00 ft			
Tool Length:	66.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			3318.00	
Sampler	3.00			3321.00	
Hydraulic tool	5.00			3326.00	
Jars	5.00			3331.00	
Safety Joint	2.00			3333.00	
Packer	5.00			3338.00	30.00      Bottom Of Top Packer
Packer	5.00			3343.00	
Stubb	1.00			3344.00	
Recorder	0.00	8647	Inside	3344.00	
Recorder	0.00	8371	Outside	3344.00	
Perforations	3.00			3347.00	
Blank Off Sub	1.00			3348.00	
Blank Spacing	4.00			3352.00	9.00      Tool Interval
Packer	5.00			3357.00	
Stubb	1.00			3358.00	
Recorder	0.00	8372	Below	3358.00	
Perforations	18.00			3376.00	
Bullnose	3.00			3379.00	27.00      Bottom Packers & Anchor

**Total Tool Length: 66.00**



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**FLUID SUMMARY**

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**Mud and Cushion Information**

Mud Type: Gel Chem	Cushion Type:	Oil API: 41 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 46.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.39 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 6200.00 ppm		
Filter Cake: inches		

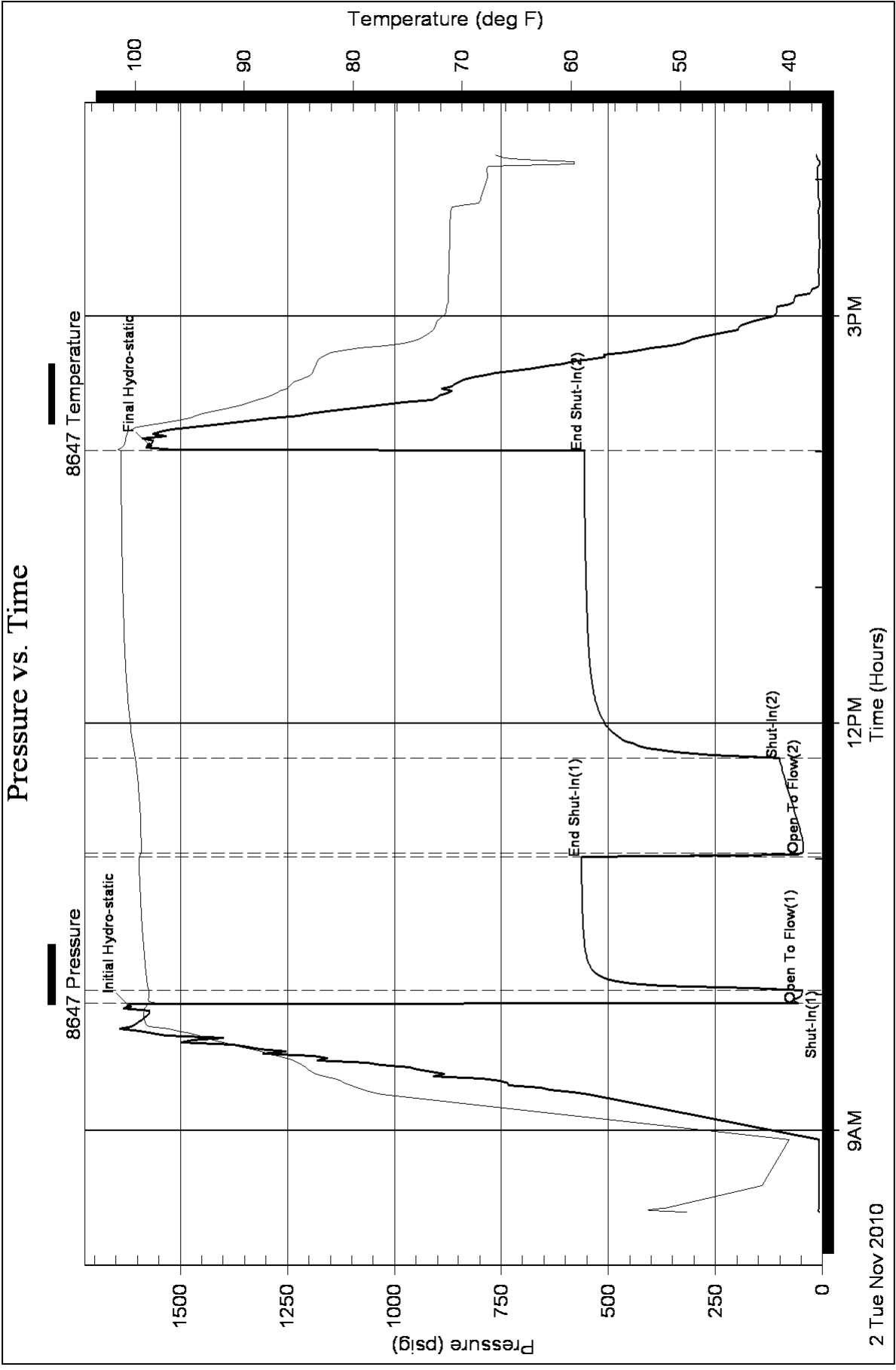
**Recovery Information**

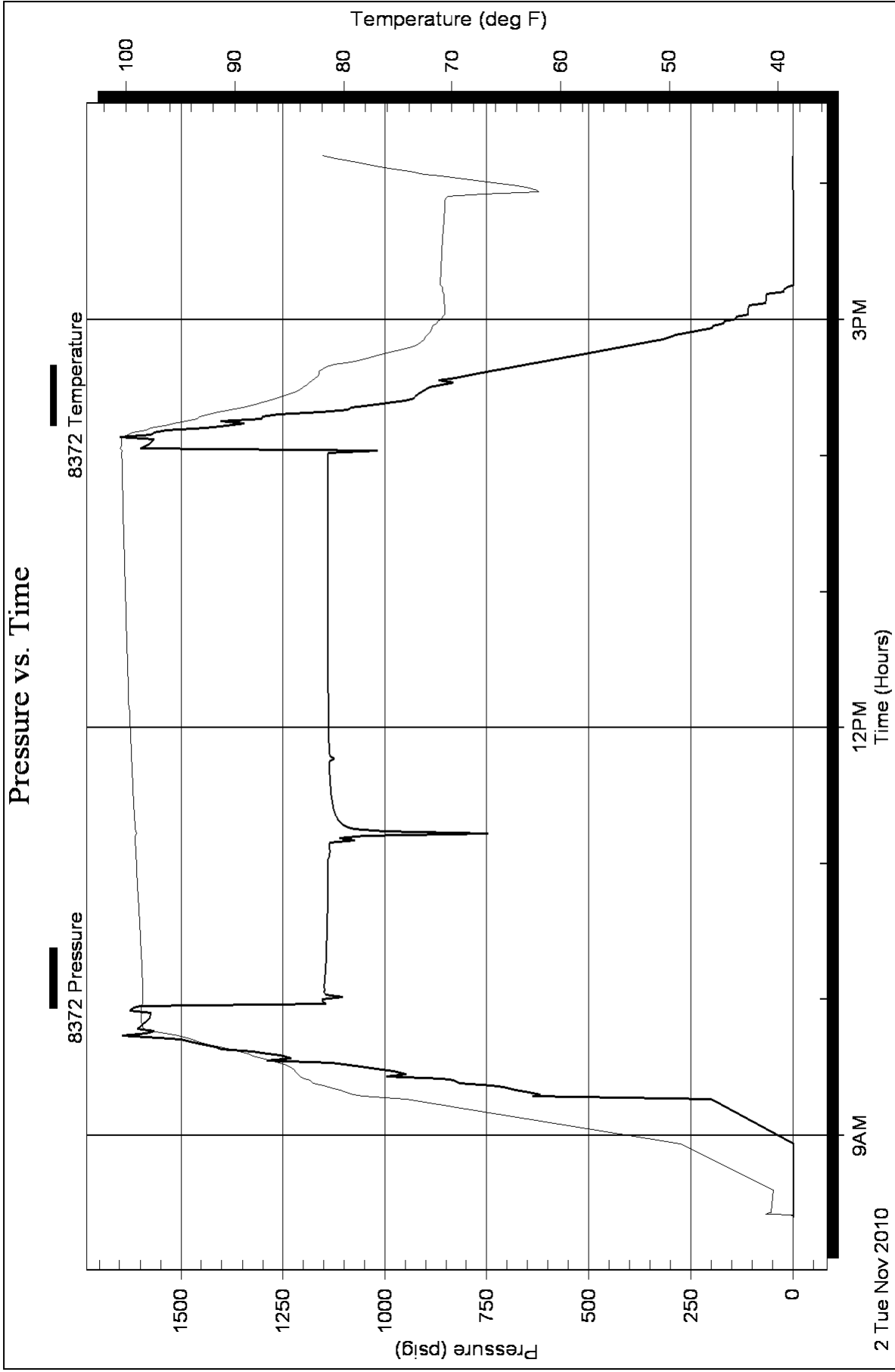
Recovery Table

Length ft	Description	Volume bbl
240.00	FREE OIL 95%O, 5%M	3.367

Total Length: 240.00 ft      Total Volume: 3.367 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

# Pressure vs. Time







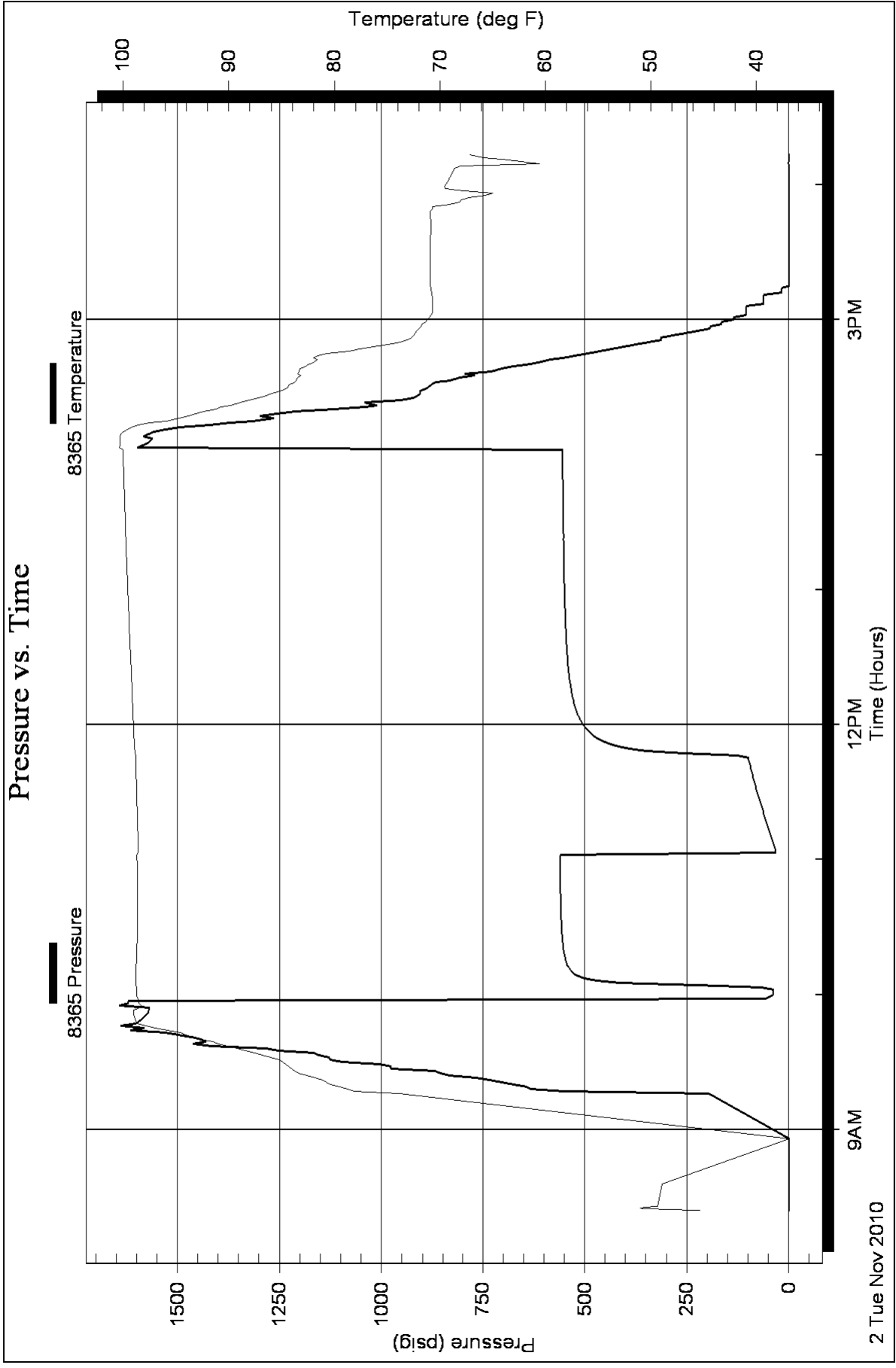
Serial #: 8365

Sam Gary

1-16-16/Rush

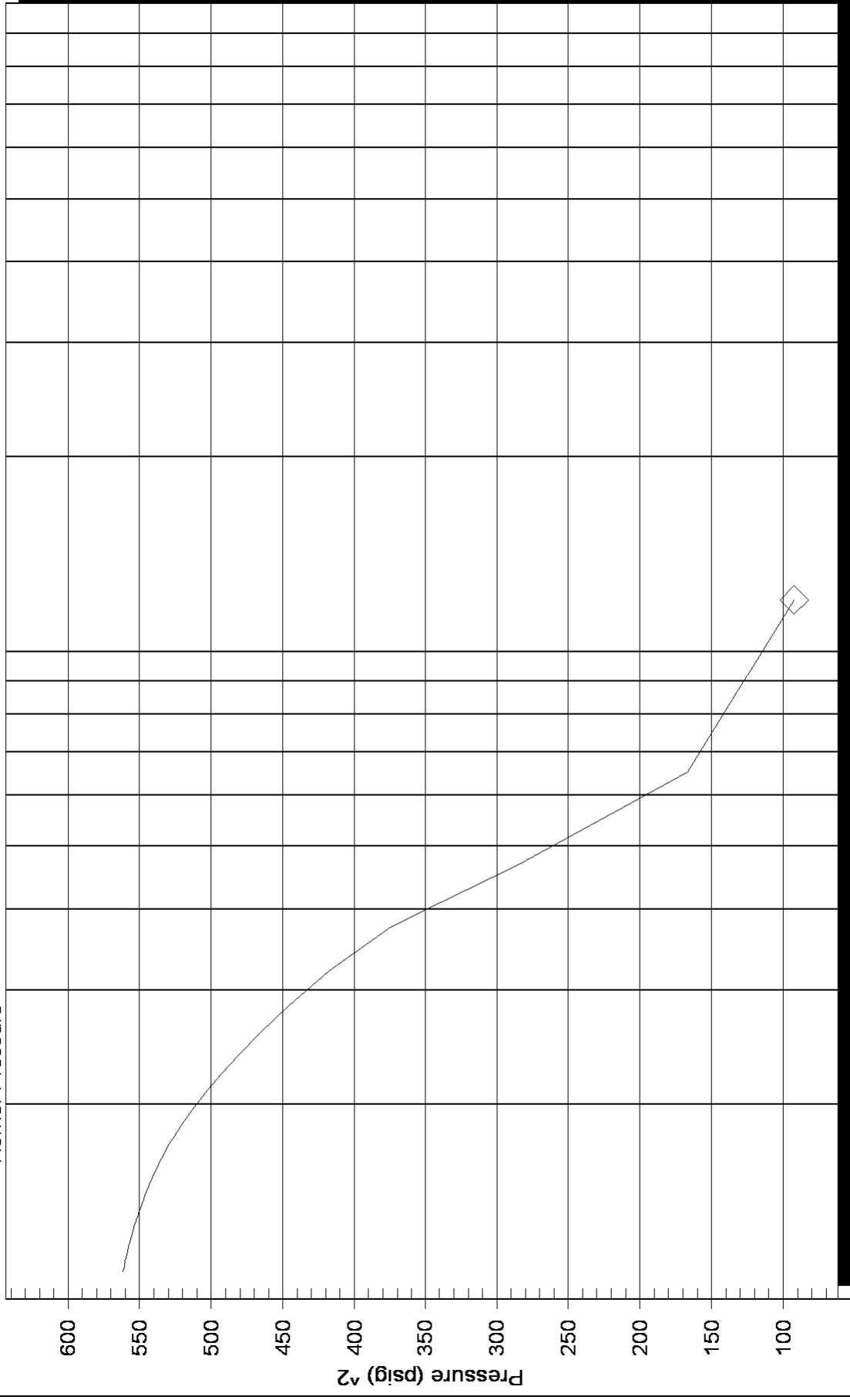
DST Test Number: 4

### Pressure vs. Time



### Homer Plot

Horner Pressure



Horner Time: (Twf + dt) / dt

Slope (m) : kpa/log cycle

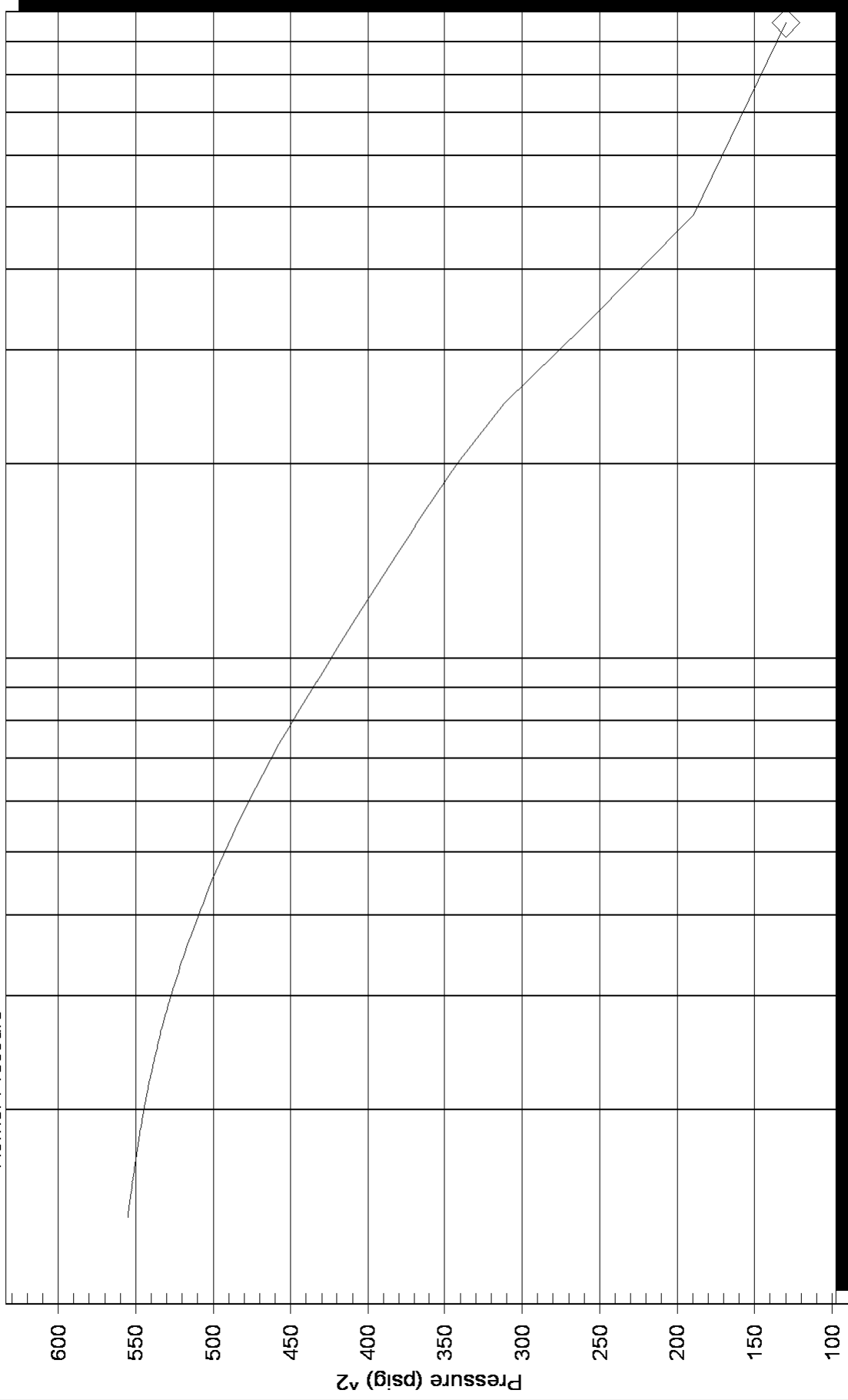
P\* :

Serial Number: 8647 (Inside)

Flow Cycle: 1

### Homer Plot

Horner Pressure



Horner Time: (Twf + dt) / dt

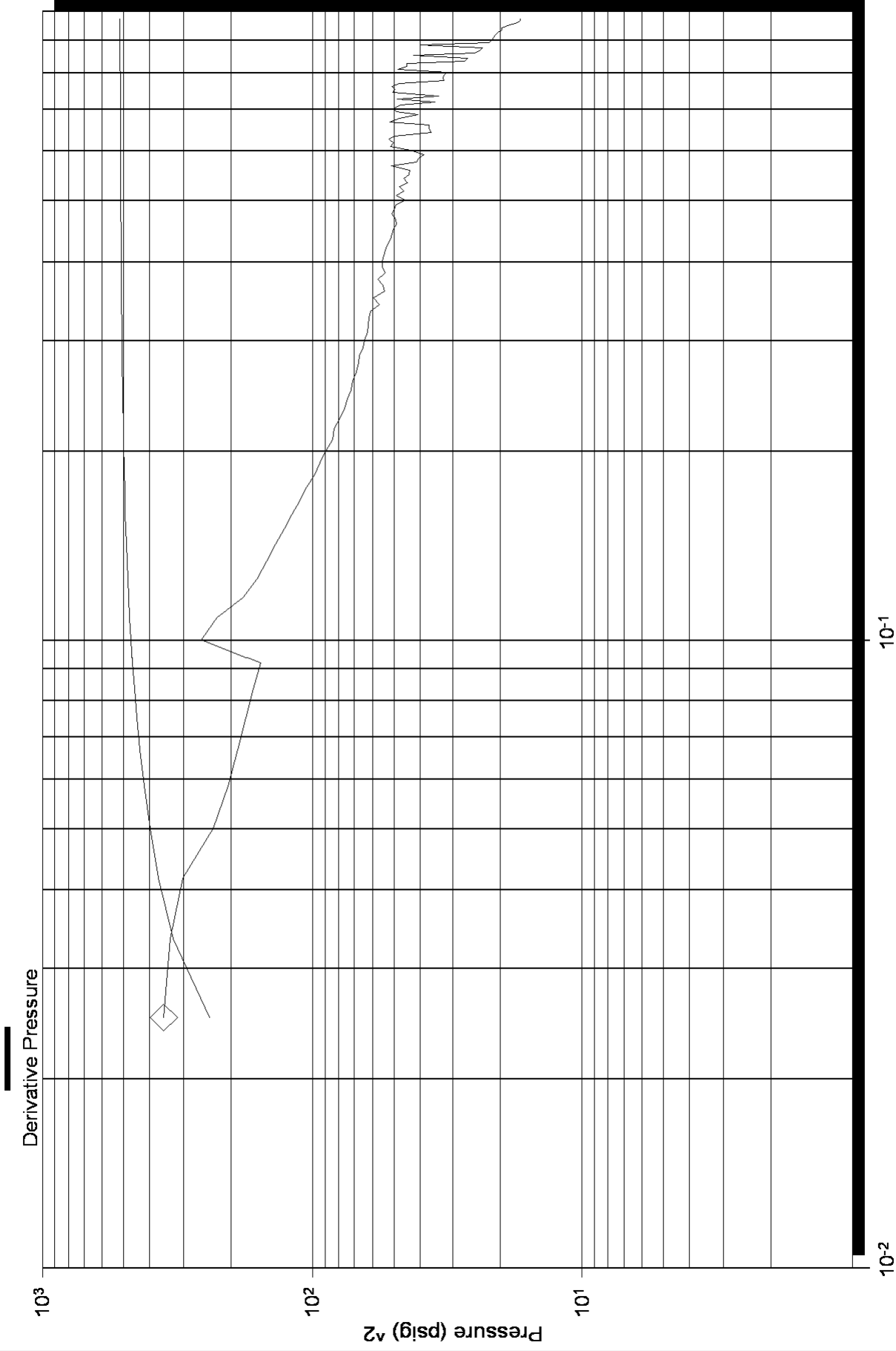
Slope (m) : kpa/log cycle

P\* :

Serial Number: 8647 (Inside)

Flow Cycle: 2

# Log-Log and Pseudo-Derivative



# Log-Log and Pseudo-Derivative

