

## DRILL STEMTEST REPORT

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

1515 Wynkoop st  
suite 700  
Denver Co 80202

ATTN Tom Feral

**Elsie 1-13**

**13-16s-17wRush**

Start Date 2011.11.05 @ 22:30:17

End Date 2011.11.06 @ 07:00:47

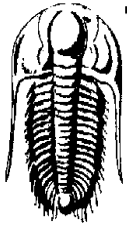
Job Ticket #: 44869 DST #: 3

Trilobite Testing Inc

PO Box 362 Hays, KS 67601

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

Printed 2011.11.06 @ 08:13:12



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Samuel Gary, Jr & Associates

13-16s-17w-Rush

1515 Wyrkopp st  
suite 700  
Denver Co 80202  
ATTN: Tom Feral

Elsie 1-13

Job Ticket: 44869

DST# 3

Test Start: 2011.11.05 @ 22:30:17

## GENERAL INFORMATION

Formation: **Lansing-F&G**

Deviated: No Whipstock ft (KB)

Time Tool Opened: 00:37:47

Time Test Ended: 07:00:47

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brown

Unit No: 44

Interval: **3328.00 ft (KB) To 3380.00 ft (KB) (TVD)**

Reference Elevations: 1983.00 ft (KB)

Total Depth: 3380.00 ft (KB) (TVD)

1973.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GRCF: 10.00 ft

Serial #: **8321**

Inside

Press@Run Depth: 421.39 psig @ 3364.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.05 End Date: 2011.11.05

Last Calib.: 2011.11.05

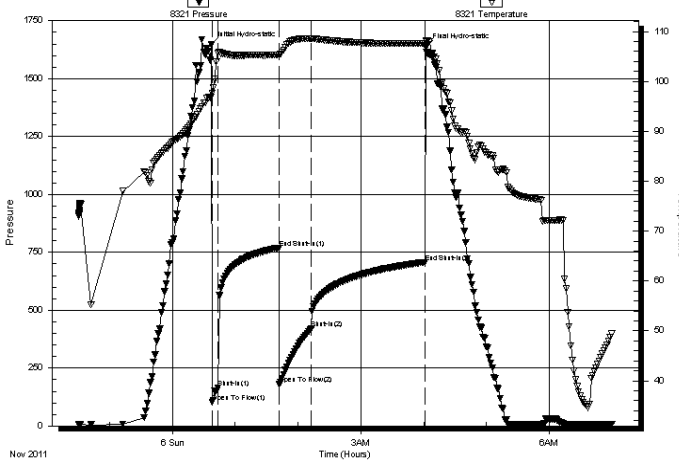
Start Time: 22:30:18 End Time: 08:59:47

Time On Btm: 2011.11.06 @ 00:37:17

Time Off Btm: 2011.11.06 @ 04:02:17

**TEST COMMENT:** FP5-min-Strong blow BOB in 1 1/2 min  
IS-60-min-Weak surface blow back ded out in 6 min  
FP30-min-Strong blow BOB in 2 min  
FS-105-Min-Dead no blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min)	Pressure (psig)	Temp (deg F)	Annotation
0	1646.16	96.88	Initial Hydro-static
1	10229	97.64	Open To Flow(1)
6	16408	105.72	Shut-h(1)
65	76937	105.36	End Shut-h(1)
65	18106	105.25	Open To Flow(2)
96	42139	108.58	Shut-h(2)
204	70737	107.62	End Shut-h(2)
205	163428	108.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
504.00	MW with oil spots 10% M80% N	7.07
126.00	GMW with a sound of oil 10% G10% M80% N 1.77	
63.00	GM 10% G25% N 65% M	0.88
108.00	GM with a sound of oil 5% G35% M	1.51
0.00	50 GP	0.00

\* Recovery from multiple tests

Gas Rates

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







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## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary, Jr & Associates

**13-16s-17w-Rush**

1515 Wyrkoop st  
suite 700  
Denver Co 80202  
ATTN: Tom Fernal

**Elsie 1-13**

Job Ticket: 44869

**DST# 3**

Test Start: 2011.11.05 @22:30:17

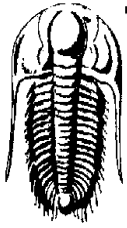
### Tool Information

Drill Pipe:	Length: 3321.00 ft	Diameter: 3.80 inches	Volume: 46.58 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 46.58 bbl</u>	Tool Chased: 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3328.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	86.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No	Position	Depth (ft)	Accum Lengths
Recorder	0.00	8679	Fluid	3294.00	
Stub	5.00			3299.00	
Shut In Tool	5.00			3304.00	
Sampler	2.00			3306.00	
Hydraulic tool	5.00			3311.00	
Jars	5.00			3316.00	
Safety Joint	3.00			3319.00	
Packer	4.00			3323.00	34.00 Bottom of Top Packer
Packer	5.00			3328.00	
Stub	1.00			3329.00	
Perforations	2.00			3331.00	
Change Over Sub	1.00			3332.00	
Drill Pipe	31.00			3363.00	
Change Over Sub	1.00			3364.00	
Recorder	0.00	8321	Inside	3364.00	
Recorder	0.00	8737	Outside	3364.00	
Perforations	13.00			3377.00	
Bullnose	3.00			3380.00	52.00 Bottom Packers & Anchor

**Total Tool Length: 86.00**



**TRILOBITE  
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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Samuel Gary, Jr & Associates

**13-16s-17w-Rush**

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suite 700  
Denver Co 80202  
ATTN Tom Fernal

**Elsie 1-13**

Job Ticket: 44869

**DST# 3**

Test Start: 2011.11.05 @22:30:17

**Mud and Cushion Information**

Mud Type:	Gel Chem	Cushion Type:		CI AP:	deg AP
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbd		
Water Loss:	6.80 in <sup>3</sup>	Gas Cushion Type:			
Resistivity:	ohmm	Gas Cushion Pressure:	psig		
Salinity:	2900.00 ppm				
Filter Cake:	inches				

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbd
504.00	MW with oil spots 10% (M80%) (V)	7.070
126.00	GMW with a sound of oil 10% (G10%) (M80%) (V)	1.767
63.00	GMW 10% (G25%) (M65%) (M)	0.884
108.00	GMW with a sound of oil 5% (G5%) (M)	1.515
0.00	50 GP	0.000

Total Length: 801.00 ft      Total Volume: 11.236 bbd

Num Fluid Samples: 0      Num Gas Bonts: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: 2500 ML MW with a sound of oil  
360 PSI  
2450 ML of Water 50 ML of Mud

Serial #: 8321

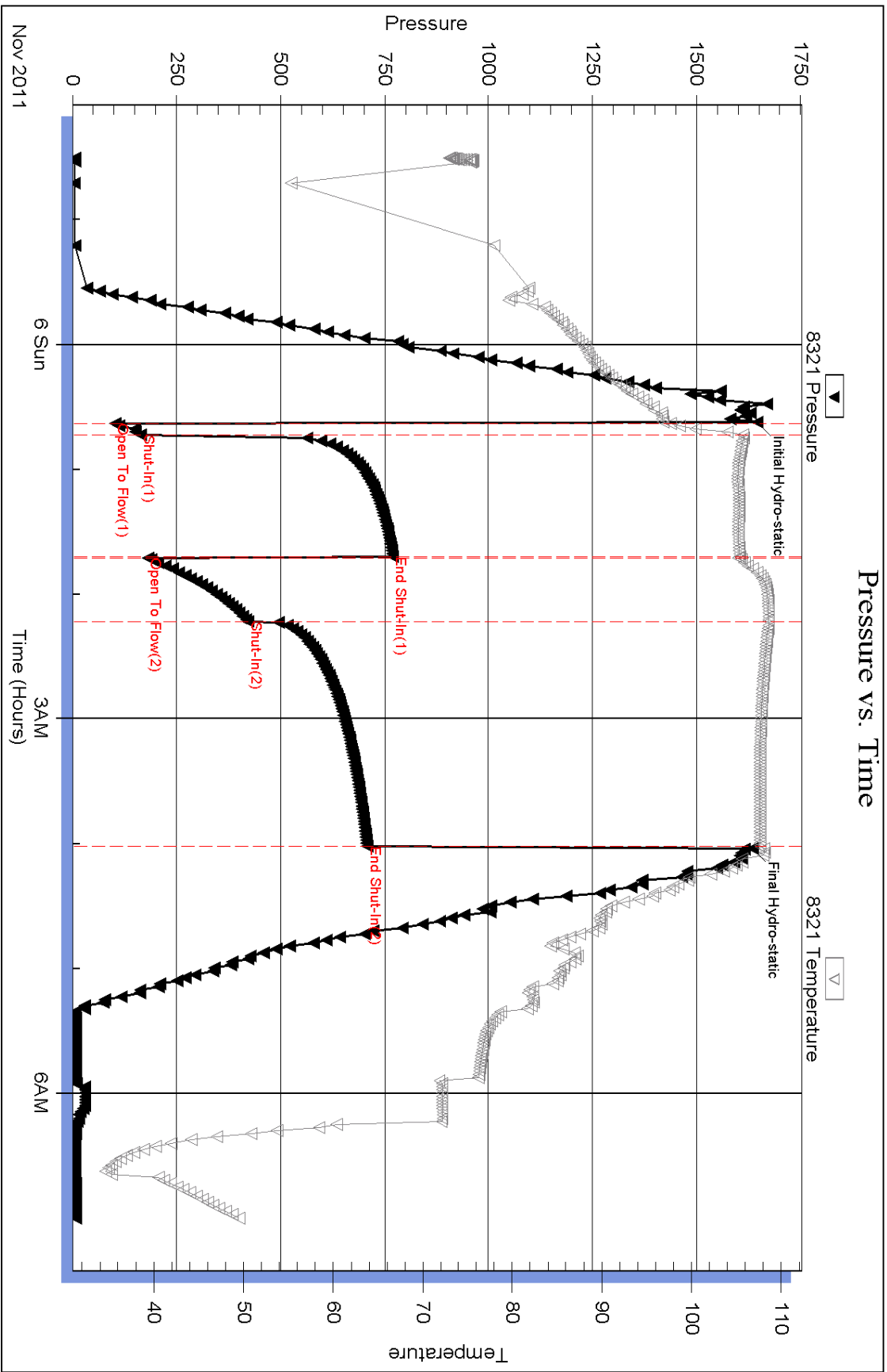
Inside

Samuel Gary, Jr. & Associates

Esle 1-13

DST Test Number: 3

### Pressure vs. Time



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Ref. No: 44869

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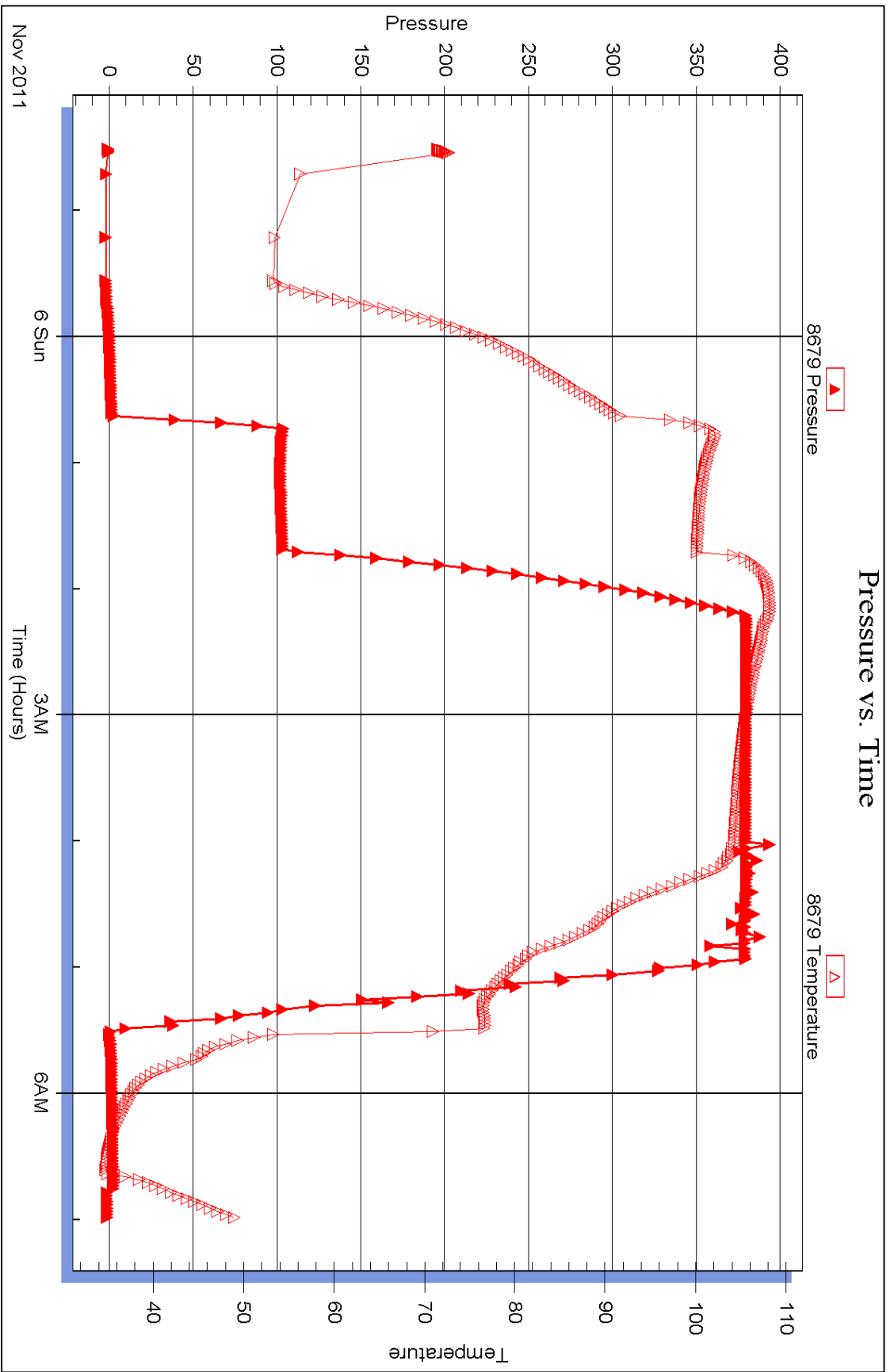
Serial #: 8679

Fluid

Samuel Gary, Jr. & Associates

Est# 1-13

DST Test Number: 3



Triobite Testing, Inc.

Ref. No: 44869

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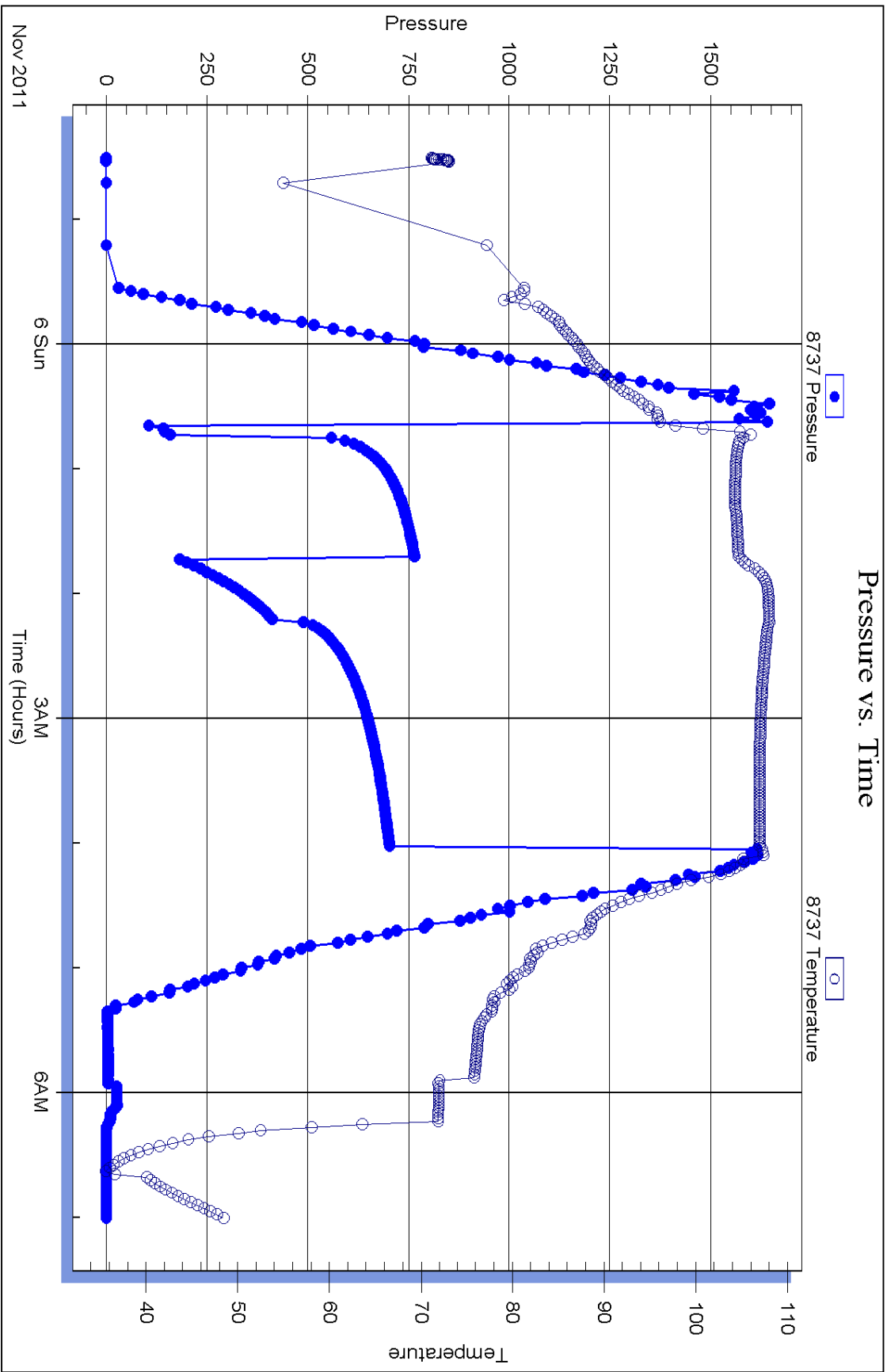


Serial #: 8737

Outside Samuel Gary, Jr. & Associates

Est# 1-13

DST Test Number: 3

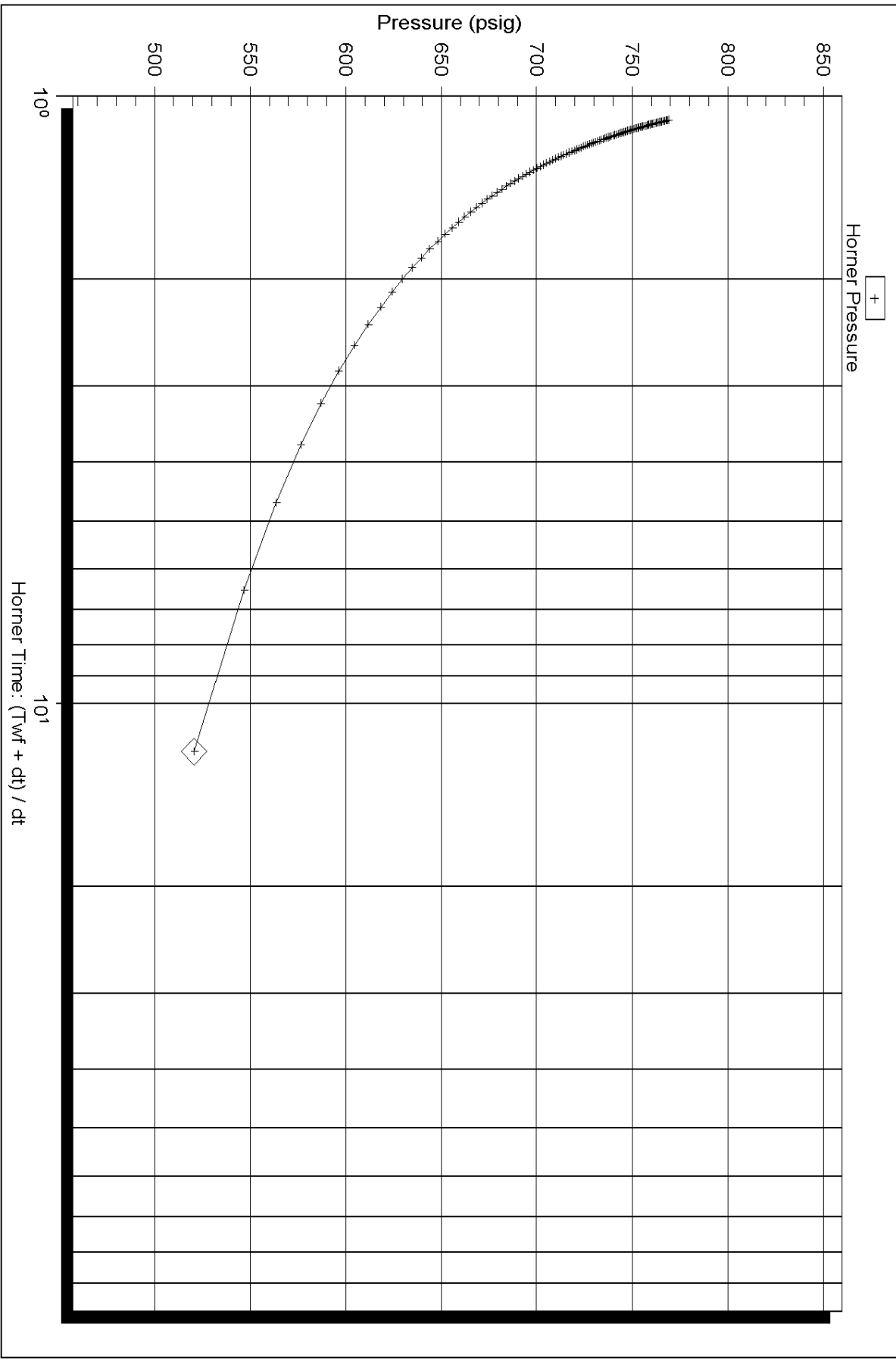


Triotech Testing, Inc.

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### Horner Plot



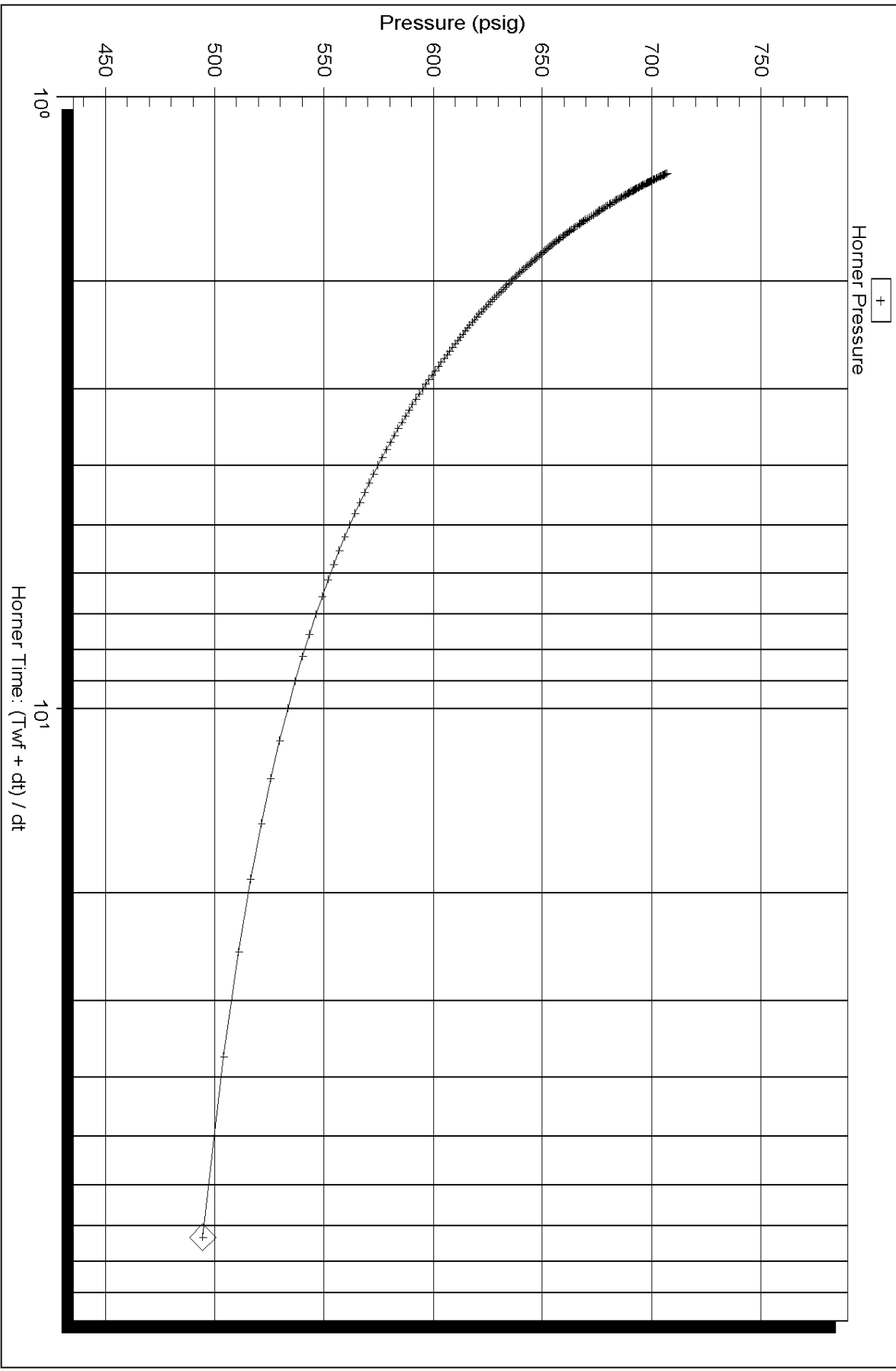
Serial Number: 8821 (Inside)

P<sub>w</sub>:

Slope (m) : kpa/log cycle

Flow Cycle: 1

### Horner Plot



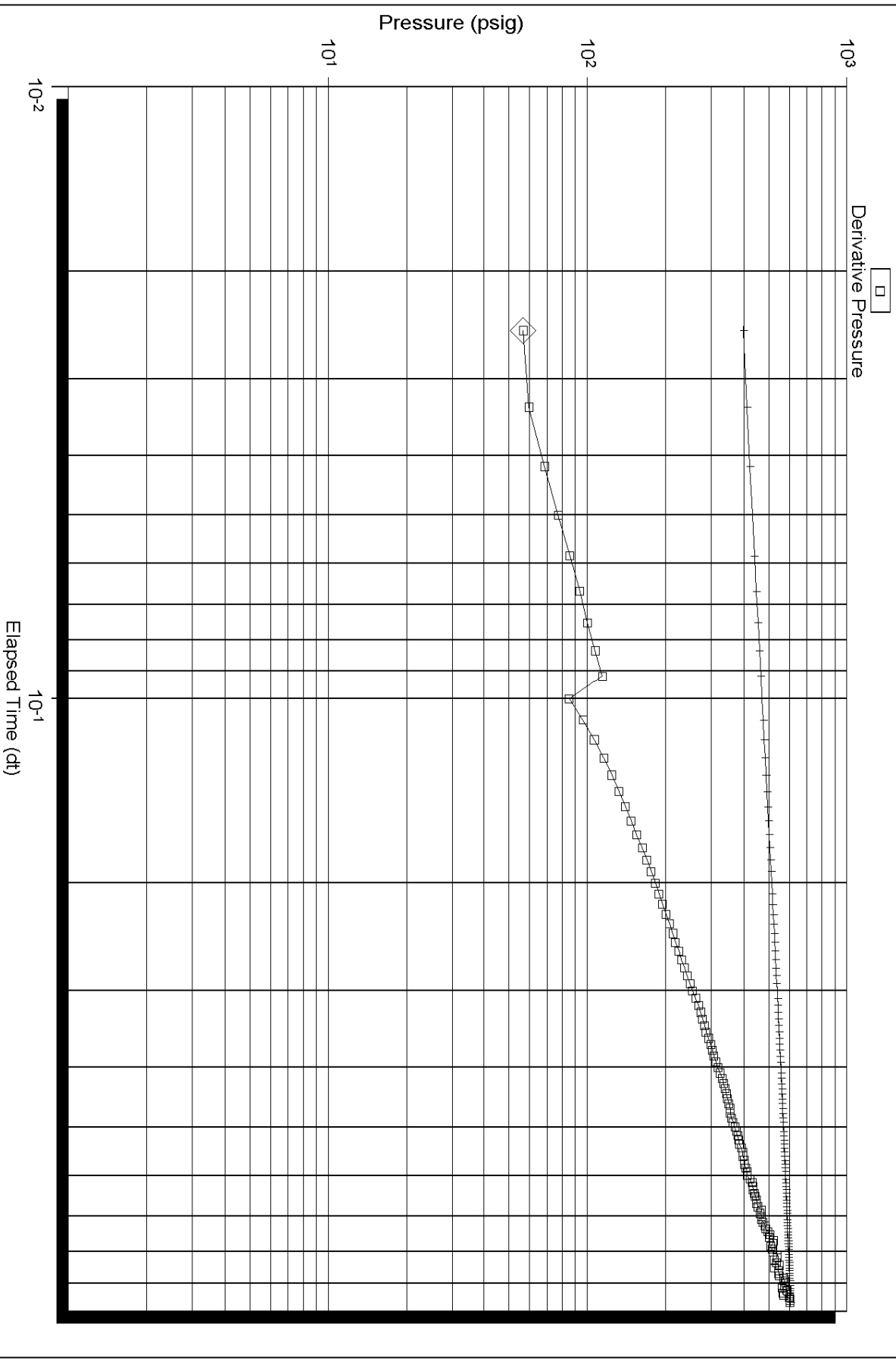
Serial Number: 8821 (Inside)

P<sub>w</sub>:

Slope (m) : kpa/log cycle

Flow Cycle: 2

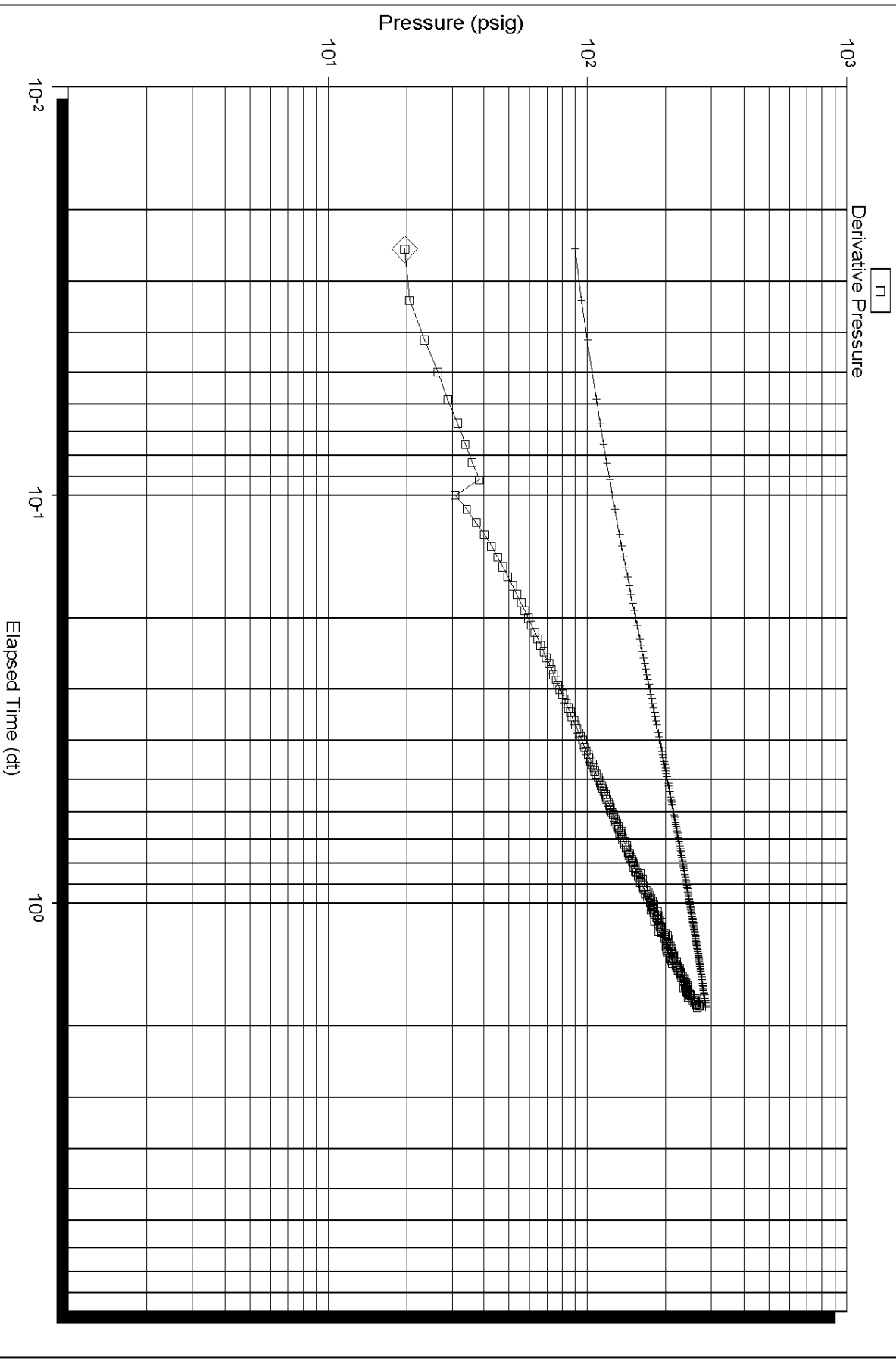
### Log-Log and Pseudo-Derivative



Serial Number: 8821 (Inside)

Flow Cycle: 1

### Log-Log and Pseudo-Derivative



Serial Number: 8821 (Inside)

Flow Cycle: 2