



DRILL STEM TEST REPORT

Prepared For: **SamGary Jr. Associates**

1515 Wynkoop STE 700
Denver Co

ATTN: Cloayton Camozzi

1-16-16, Rush Ks

Wagner Trust 3-1

Start Date: 2011.02.19 @ 09:25:21

End Date: 2011.02.19 @ 16:48:51

Job Ticket #: 41921 DST #: 2

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



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TESTING, INC.**

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1-16-16, Rush Ks

ATTN: Cloayton Camozzi

Job Ticket: 41921

DST#: 2

Test Start: 2011.02.19 @ 09:25:21

GENERAL INFORMATION:

Formation: **KC "F,G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:11:21

Time Test Ended: 16:48:51

Test Type: Conventional Bottom Hole

Tester: Brett Dickinson

Unit No: 47

Interval: 3266.00 ft (KB) To 3300.00 ft (KB) (TVD)

Reference Elevations: 1941.00 ft (KB)

Total Depth: 3300.00 ft (KB) (TVD)

1933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8369 Outside

Press @ Run Depth: 161.30 psig @ 3270.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.19

End Date:

2011.02.19

Last Calib.:

2011.02.19

Start Time:

09:25:26

End Time:

16:48:50

Time On Btm:

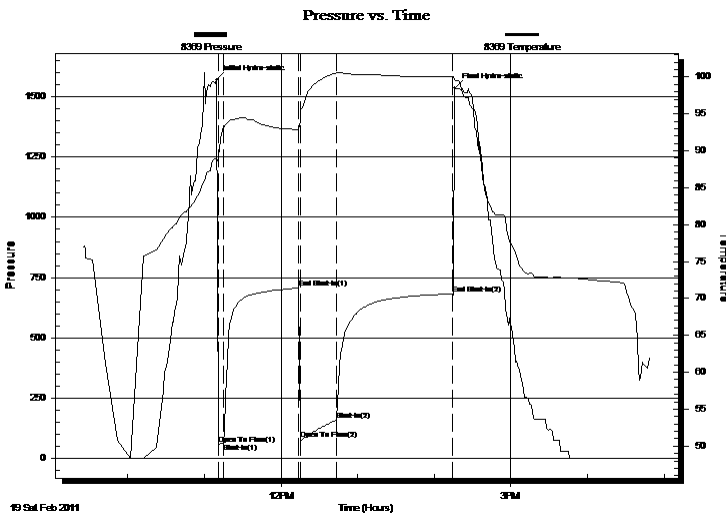
2011.02.19 @ 11:09:51

Time Off Btm:

2011.02.19 @ 14:16:21

TEST COMMENT: IF 5 MIN-BOB in 1.5min
ISI 60 MIN-No blow
FF 30 MIN-BOB in 30sec
FSI 90 MIN-BOB in 13min

PRESSURE SUMMARY



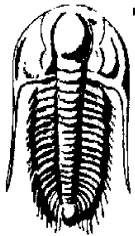
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1569.06 | 89.00 | Initial Hydro-static |
| 2 | 61.62 | 89.32 | Open To Flow (1) |
| 5 | 64.68 | 93.34 | Shut-In(1) |
| 64 | 707.28 | 92.93 | End Shut-In(1) |
| 66 | 79.35 | 95.41 | Open To Flow (2) |
| 94 | 161.30 | 100.58 | Shut-In(2) |
| 185 | 682.50 | 100.04 | End Shut-In(2) |
| 187 | 1535.16 | 99.56 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------------|--------------|
| 90.00 | V SOMCW 2%O 5%M 93%W | 0.99 |
| 250.00 | V SM&WCGO 5%W 5%M 30%G 60%O | 3.51 |
| 0.00 | 640ft GIP | 0.00 |
| | | |
| | | |

Gas Rates

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



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1933.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6719 Inside

Press @ Run Depth: psig @ 3270.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.19

End Date:

2011.02.19

Last Calib.:

2011.02.19

Start Time: 09:25:20

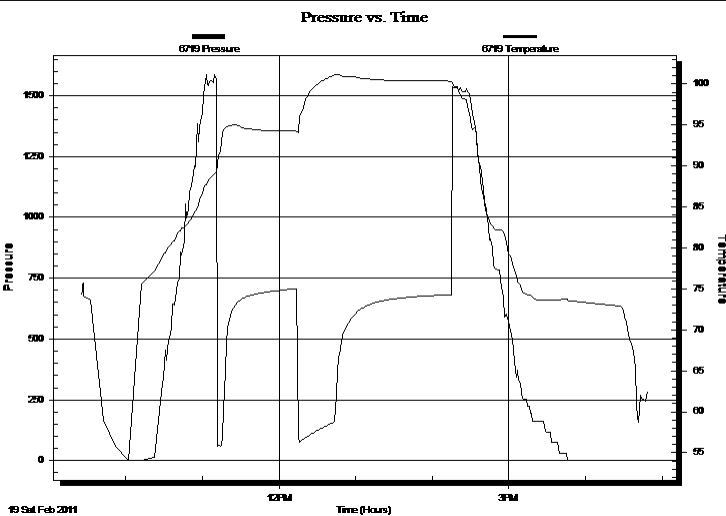
End Time:

16:49:14

Time On Btm:

Time Off Btm:

TEST COMMENT: IF 5 MIN-BOB in 1.5min
ISI 60 MIN-No blow
FF 30 MIN-BOB in 30sec
FSI 90 MIN-BOB in 13min



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
| | | | |
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Recovery

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| 250.00 | V SM&WCGO 5%W 5%M 30%G 60%O | 3.51 |
| 0.00 | 640ft GIP | 0.00 |
| | | |
| | | |
| | | |

Gas Rates

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



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TOOL DIAGRAM

SamGary Jr. Associates

Wagner Trust 3-1

1515 Wynkoop STE 700
Denver Co

1-16-16, Rush Ks

Job Ticket: 41921

DST#: 2

ATTN: Cloayton Camozzi

Test Start: 2011.02.19 @ 09:25:21

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|----------------------|------------------------|-------------|
| Drill Pipe: | Length: 3230.00 ft | Diameter: 3.80 inches | Volume: 45.31 bbl | Tool Weight: | 2500.00 lb |
| Heavy Wt. Pipe: | Length: ft | Diameter: 2.70 inches | Volume: - bbl | Weight set on Packer: | 25000.00 lb |
| Drill Collar: | Length: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: | 55000.00 lb |
| | | | <u>Total Volume:</u> | Tool Chased | 0.00 ft |
| | | | - bbl | String Weight: Initial | 46000.00 lb |
| Drill Pipe Above KB: | 30.00 ft | | | Final | 48000.00 lb |
| Depth to Top Packer: | 3266.00 ft | | | | |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 34.00 ft | | | | |
| Tool Length: | 70.00 ft | | | | |
| Number of Packers: | 2 | Diameter: | 6.75 inches | | |
| Tool Comments: | | | | | |

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 3231.00 | |
| Recorder | 0.00 | 8319 | Fluid | 3231.00 | |
| Drill Pipe | 5.00 | | | 3236.00 | |
| Shut In Tool | 5.00 | | | 3241.00 | |
| Sampler | 3.00 | | | 3244.00 | |
| Hydraulic tool | 5.00 | | | 3249.00 | |
| Jars | 5.00 | | | 3254.00 | |
| Safety Joint | 3.00 | | | 3257.00 | |
| Packer | 4.00 | | | 3261.00 | 36.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3266.00 | |
| Stubb | 1.00 | | | 3267.00 | |
| Perforations | 3.00 | | | 3270.00 | |
| Recorder | 0.00 | 8369 | Outside | 3270.00 | |
| Recorder | 0.00 | 6719 | Inside | 3270.00 | |
| Perforations | 27.00 | | | 3297.00 | |
| Bullnose | 3.00 | | | 3300.00 | 34.00 Bottom Packers & Anchor |
| Total Tool Length: | 70.00 | | | | |



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FLUID SUMMARY

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Job Ticket: 41921

DST#: 2

ATTN: Cloayton Camozzi

Test Start: 2011.02.19 @ 09:25:21

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

124000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbbl |
|--------------|----------------------------|----------------|
| 90.00 | VSOMCW 2%O 5%M 93%W | 0.989 |
| 250.00 | VSM&WCGO 5%W 5%M 30%G 60%O | 3.507 |
| 0.00 | 640ft GIP | 0.000 |

Total Length: 340.00 ft Total Volume: 4.496 bbl

Num Fluid Samples: 0

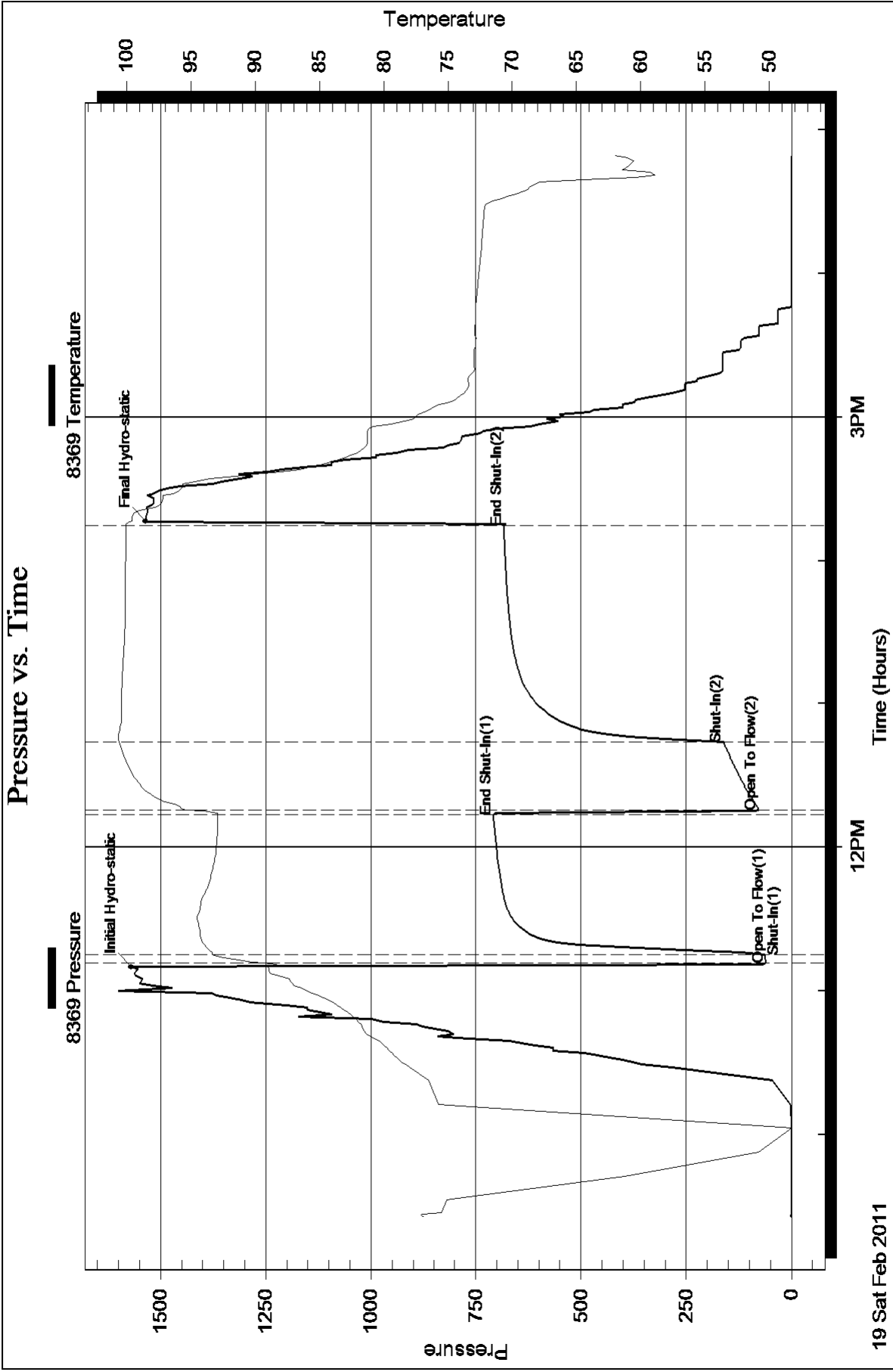
Num Gas Bombs: 0

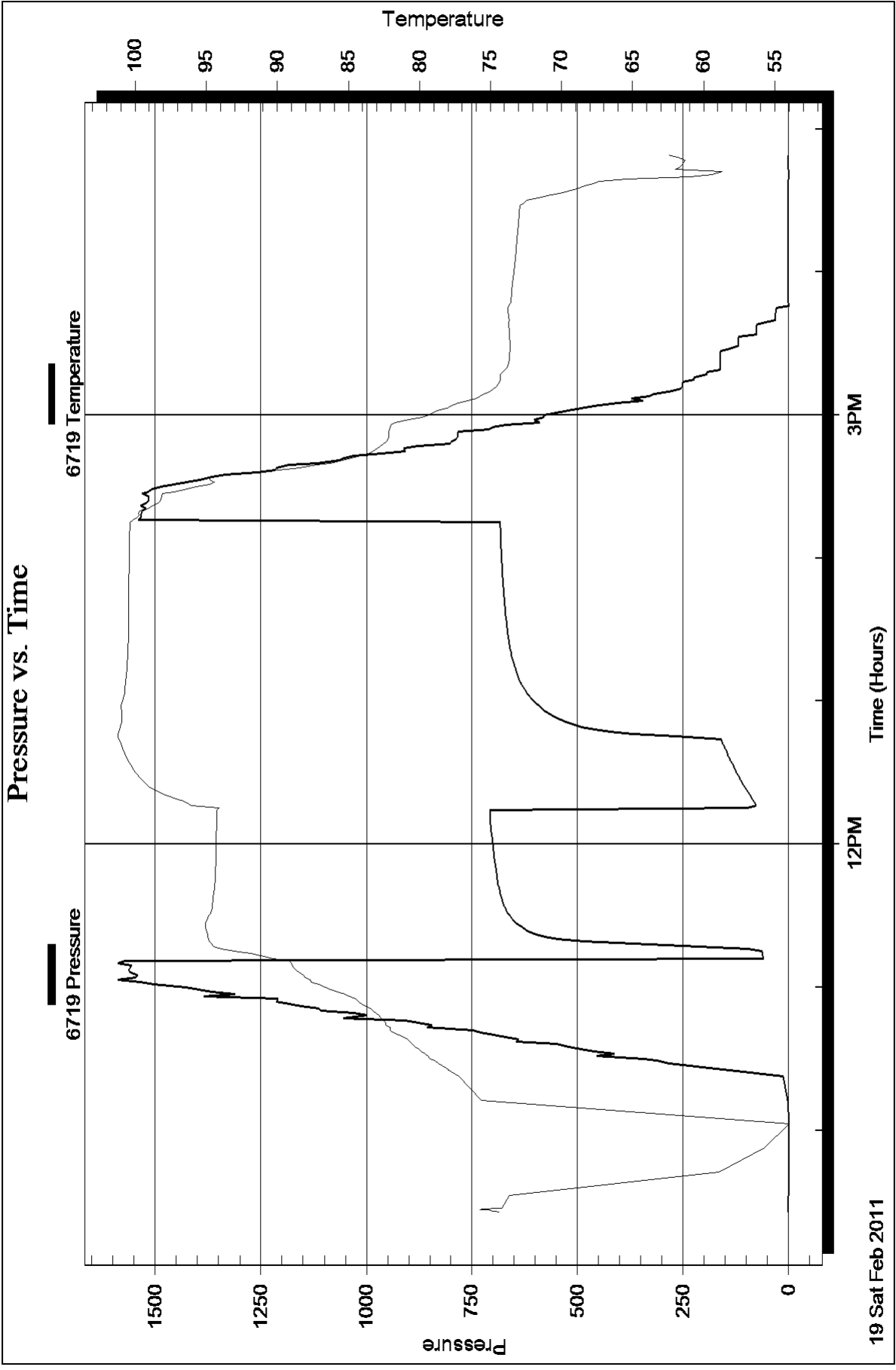
Serial #:

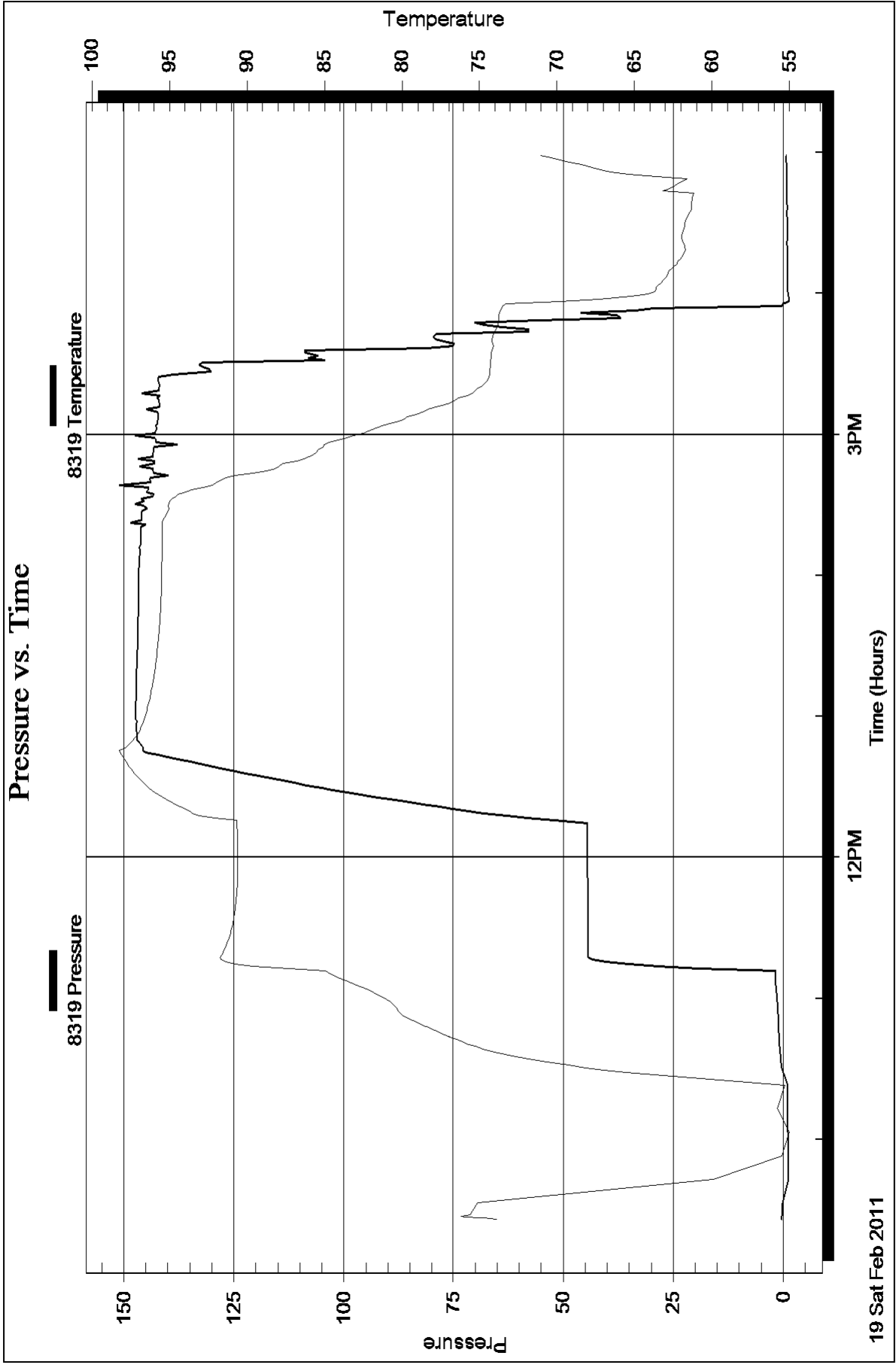
Laboratory Name:

Laboratory Location:

Recovery Comments: Sampler Data: Gas 1300ml: Oil 2200ml: Water 50ml; .08 @ 60dgr Chlorides

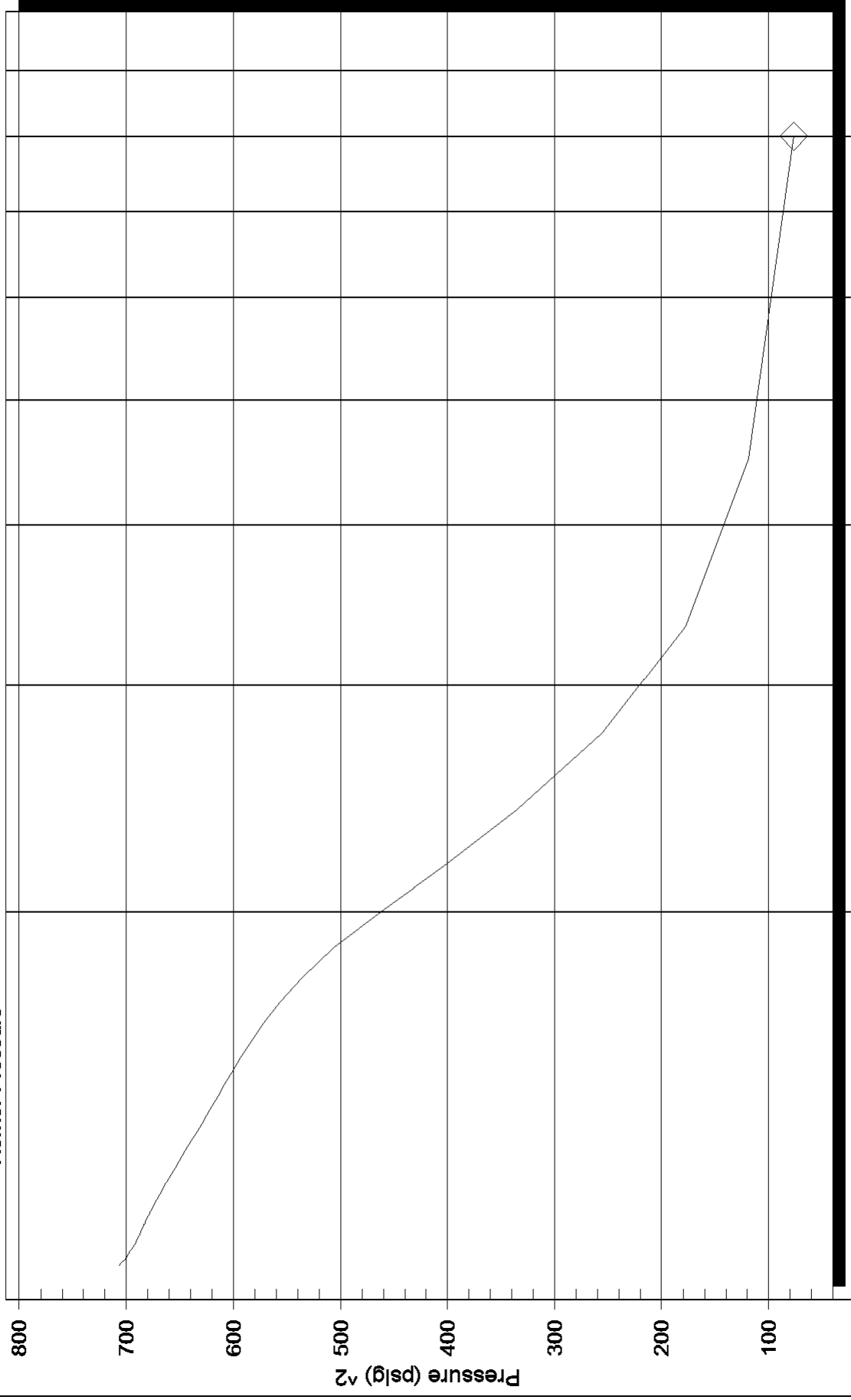






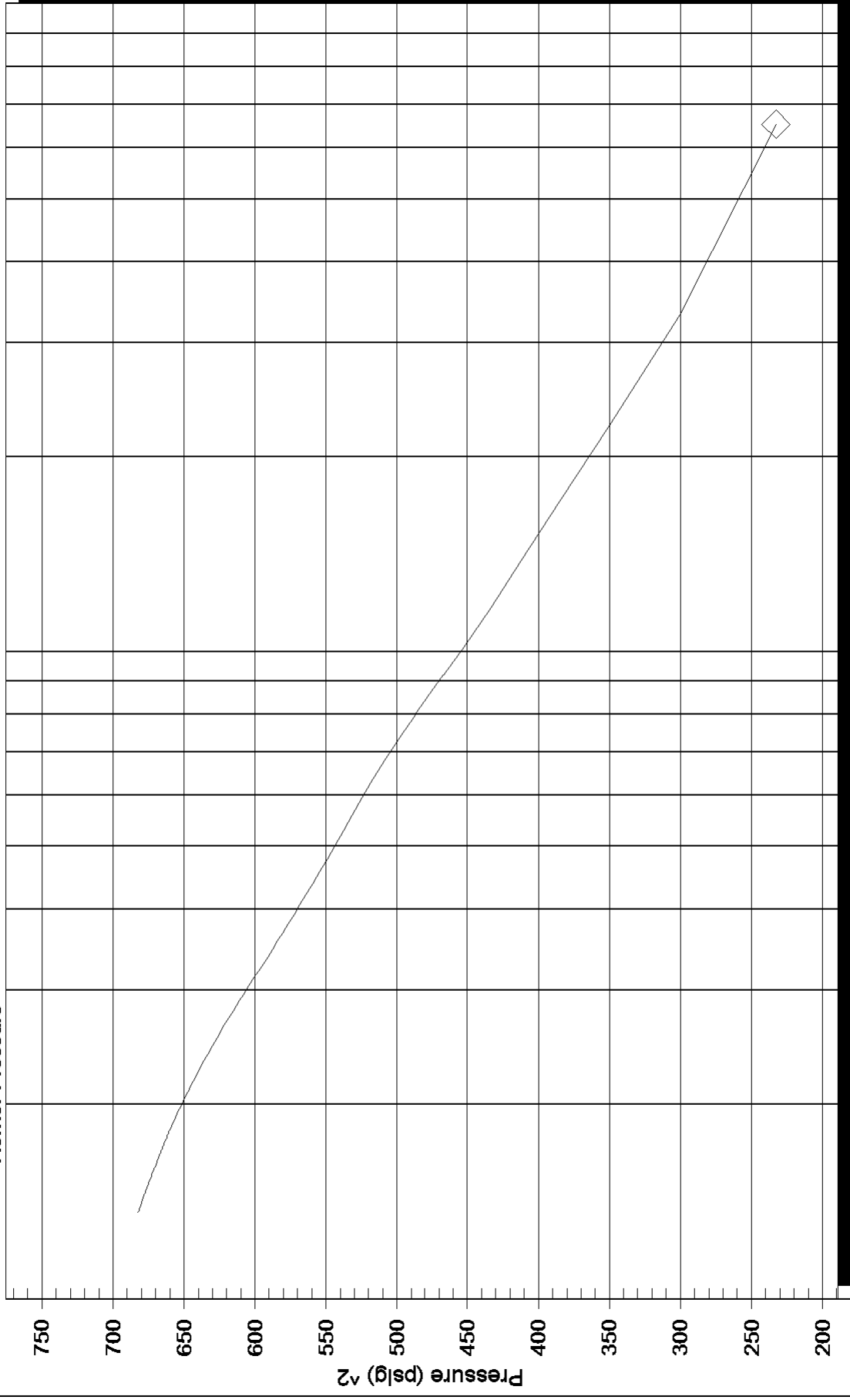
Homer Plot

Homer Pressure



Homer Plot

Homer Pressure



10⁰

10¹

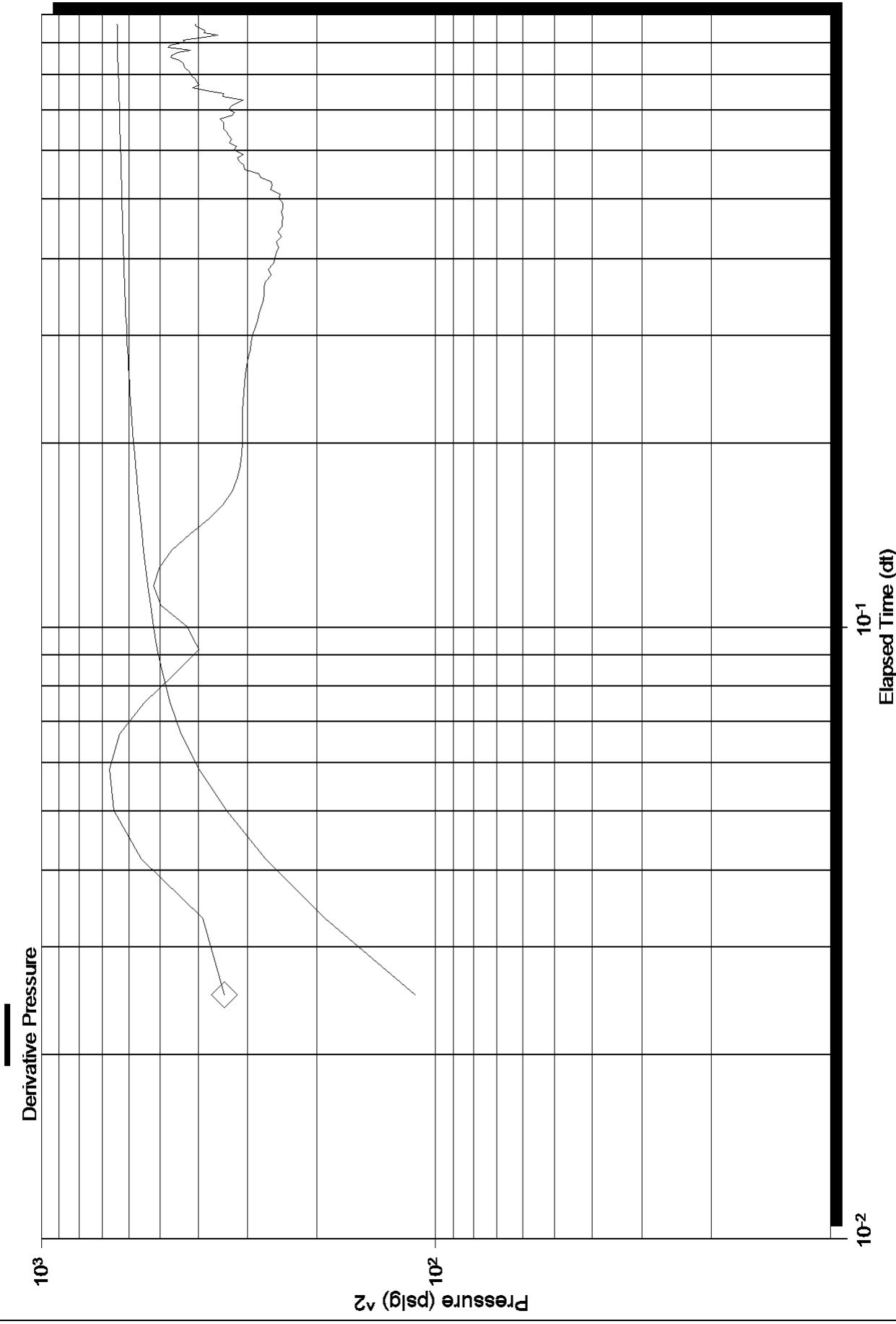
Homer Time: (Twf + dt) / dt

Serial Number: 8369 (Outside)

P* : Slope (m) : kpa/log cycle

Flow Cycle: 2

Log-Log and Pseudo-Derivative



Log-Log and Pseudo-Derivative

