



DRILL STEM TEST REPORT

Prepared For: **Samuel Gary Jr. and Associates, Inc.**

1515 Wynkoop St. Ste 700
Denver, CO 80202

ATTN: Claton Camozzi

15-16-16 Rush, Ks

Scheuerman-Hopkins et al 1-15

Start Date: 2011.07.31 @ 12:57:57

End Date: 2011.07.31 @ 18:46:27

Job Ticket #: 44159 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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TESTING, INC.**

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Test Start: 2011.07.31 @ 12:57:57

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:39:57

Time Test Ended: 18:46:27

Test Type: Conventional Bottom Hole

Tester: Brian Fairbank

Unit No: 41

Interval: 3371.00 ft (KB) To 3435.00 ft (KB) (TVD)

Reference Elevations: 1943.00 ft (KB)

Total Depth: 3435.00 ft (KB) (TVD)

1935.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8734 Outside

Press @ Run Depth: 47.29 psig @ 3406.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.07.31

End Date:

2011.07.31

Last Calib.: 2011.07.31

Start Time: 12:57:58

End Time:

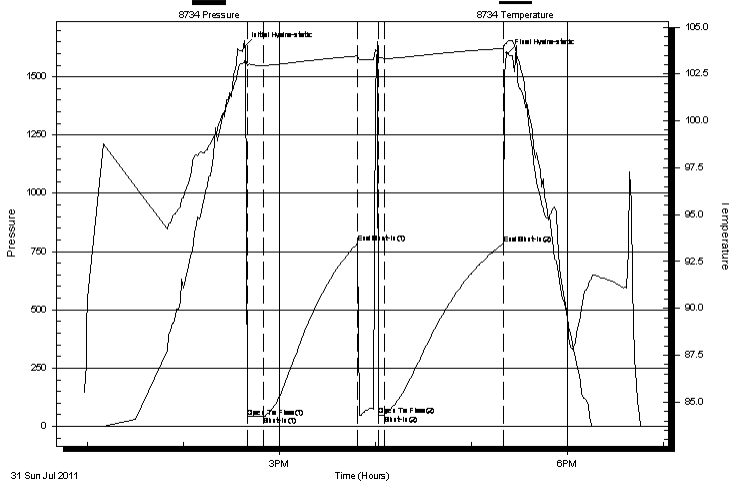
18:46:27

Time On Btm: 2011.07.31 @ 14:38:27

Time Off Btm: 2011.07.31 @ 17:22:27

TEST COMMENT: 10 - IFP - no blow
60 - ISI - no blow back
15 - FFP - no blow - flush tool - no blow
75 - FSI - no blow back

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1628.92 | 103.17 | Initial Hydro-static |
| 2 | 41.39 | 102.96 | Open To Flow (1) |
| 12 | 42.48 | 102.96 | Shut-In(1) |
| 71 | 785.68 | 103.46 | End Shut-In(1) |
| 84 | 46.58 | 103.37 | Open To Flow (2) |
| 87 | 47.29 | 103.34 | Shut-In(2) |
| 162 | 784.17 | 103.87 | End Shut-In(2) |
| 164 | 1600.39 | 104.20 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------|--------------|
| 20.00 | drl mud 100% | 0.10 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



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TOOL DIAGRAM

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ATTN: Claton Camozzi

Test Start: 2011.07.31 @ 12:57:57

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3315.00 ft | Diameter: 3.80 inches | Volume: 46.50 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: 30.00 ft | Diameter: 2.25 inches | Volume: 0.15 bbl | Weight to Pull Loose: 64000.00 lb |
| | | | <u>Total Volume: 46.65 bbl</u> | Tool Chased 10.00 ft |
| Drill Pipe Above KB: | 8.00 ft | | | String Weight: Initial 48000.00 lb |
| Depth to Top Packer: | 3371.00 ft | | | Final 48000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 64.00 ft | | | |
| Tool Length: | 98.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Recorder | 0.00 | 8365 | Fluid | 3337.00 | |
| Blank Spacing | 5.00 | | | 3342.00 | |
| Shut In Tool | 5.00 | | | 3347.00 | |
| Sampler | 2.00 | | | 3349.00 | |
| Hydraulic tool | 5.00 | | | 3354.00 | |
| Jars | 5.00 | | | 3359.00 | |
| Safety Joint | 2.00 | | | 3361.00 | |
| Packer | 5.00 | | | 3366.00 | 34.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3371.00 | |
| Stubb | 1.00 | | | 3372.00 | |
| Perforations | 2.00 | | | 3374.00 | |
| Change Over Sub | 1.00 | | | 3375.00 | |
| Blank Spacing | 31.00 | | | 3406.00 | |
| Recorder | 0.00 | 8372 | Inside | 3406.00 | |
| Recorder | 0.00 | 8734 | Outside | 3406.00 | |
| Change Over Sub | 1.00 | | | 3407.00 | |
| Perforations | 25.00 | | | 3432.00 | |
| Bullnose | 3.00 | | | 3435.00 | 64.00 Bottom Packers & Anchor |

Total Tool Length: 98.00



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FLUID SUMMARY

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Test Start: 2011.07.31 @ 12:57:57

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: | ppm |
| Viscosity: 48.00 sec/qt | Cushion Volume: bbl | | |
| Water Loss: 9.19 in ³ | Gas Cushion Type: | | |
| Resistivity: ohm.m | Gas Cushion Pressure: psig | | |
| Salinity: 6900.00 ppm | | | |
| Filter Cake: inches | | | |

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------|---------------|
| 20.00 | drl mud 100% | 0.098 |

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

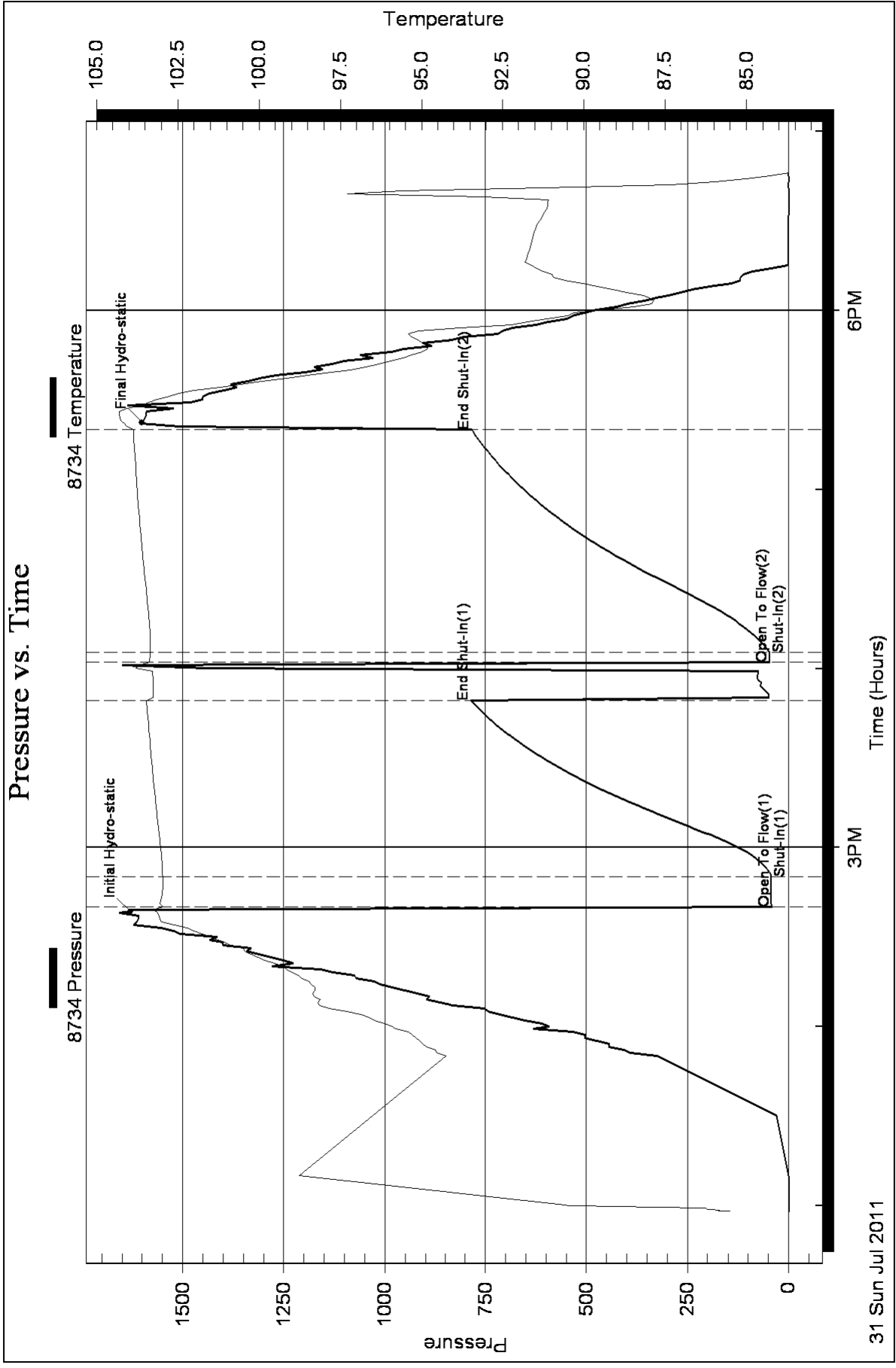
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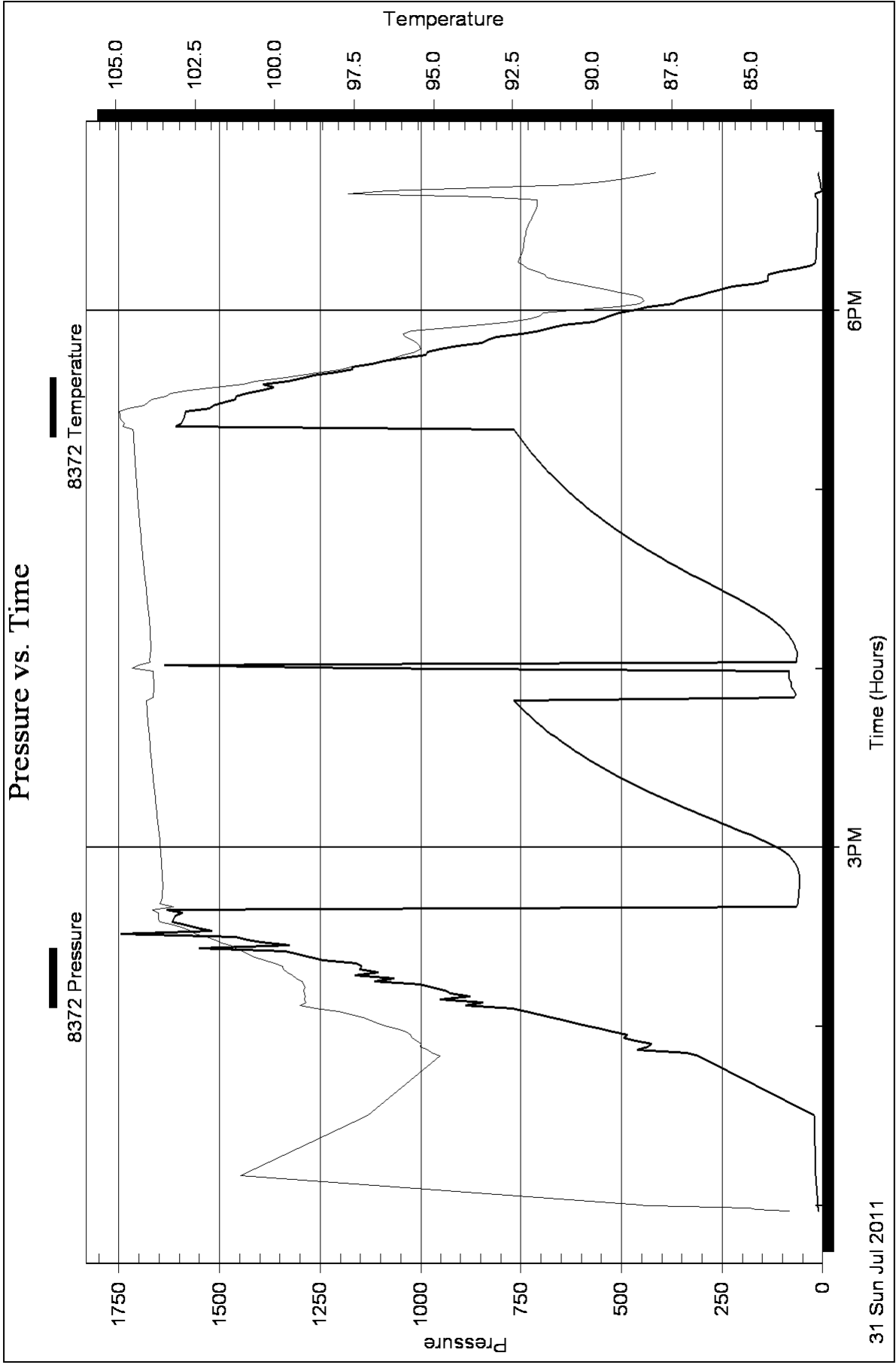
Laboratory Name:

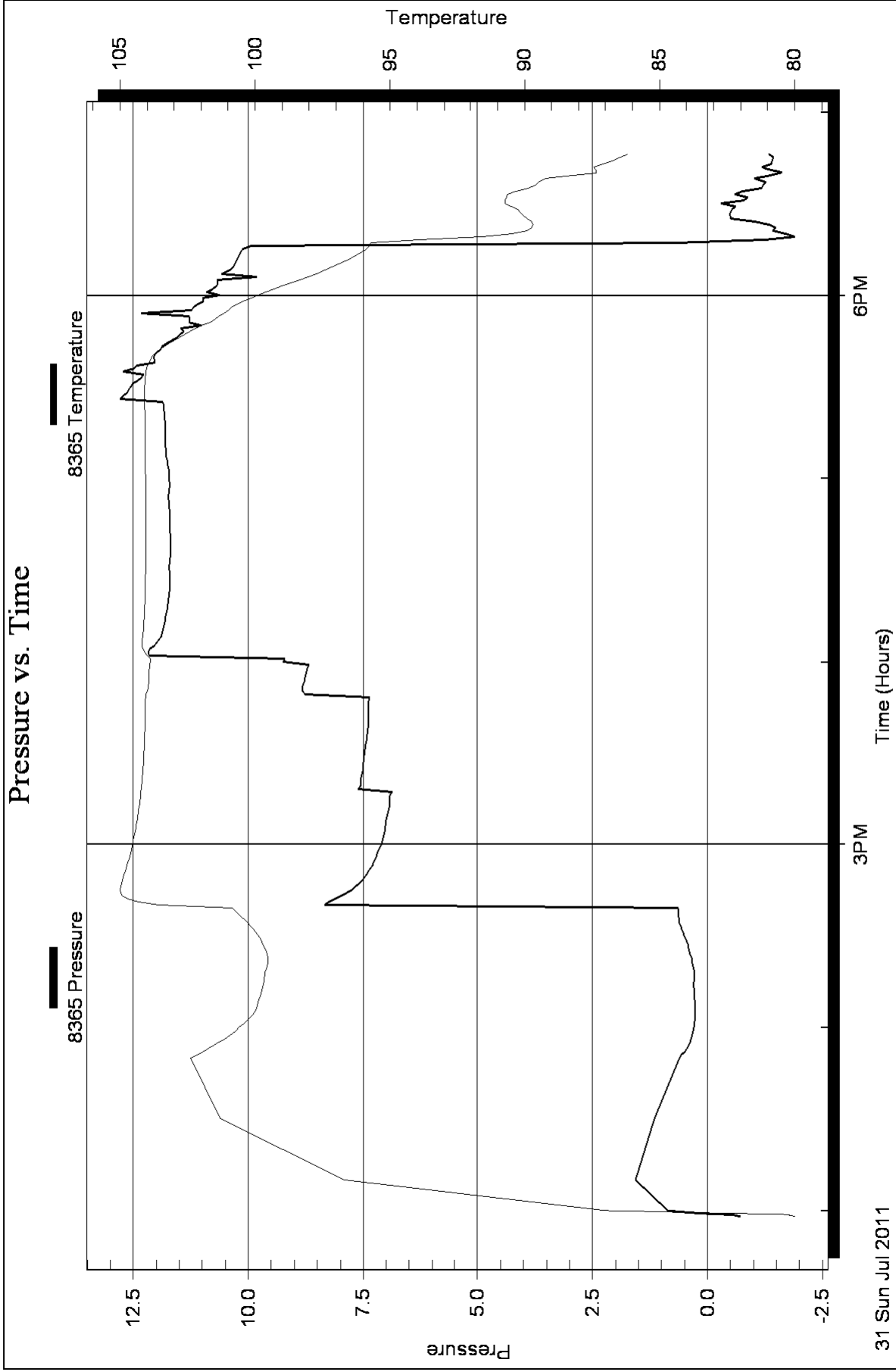
Laboratory Location:

Recovery Comments: 4000 ml mud, 40 lbs

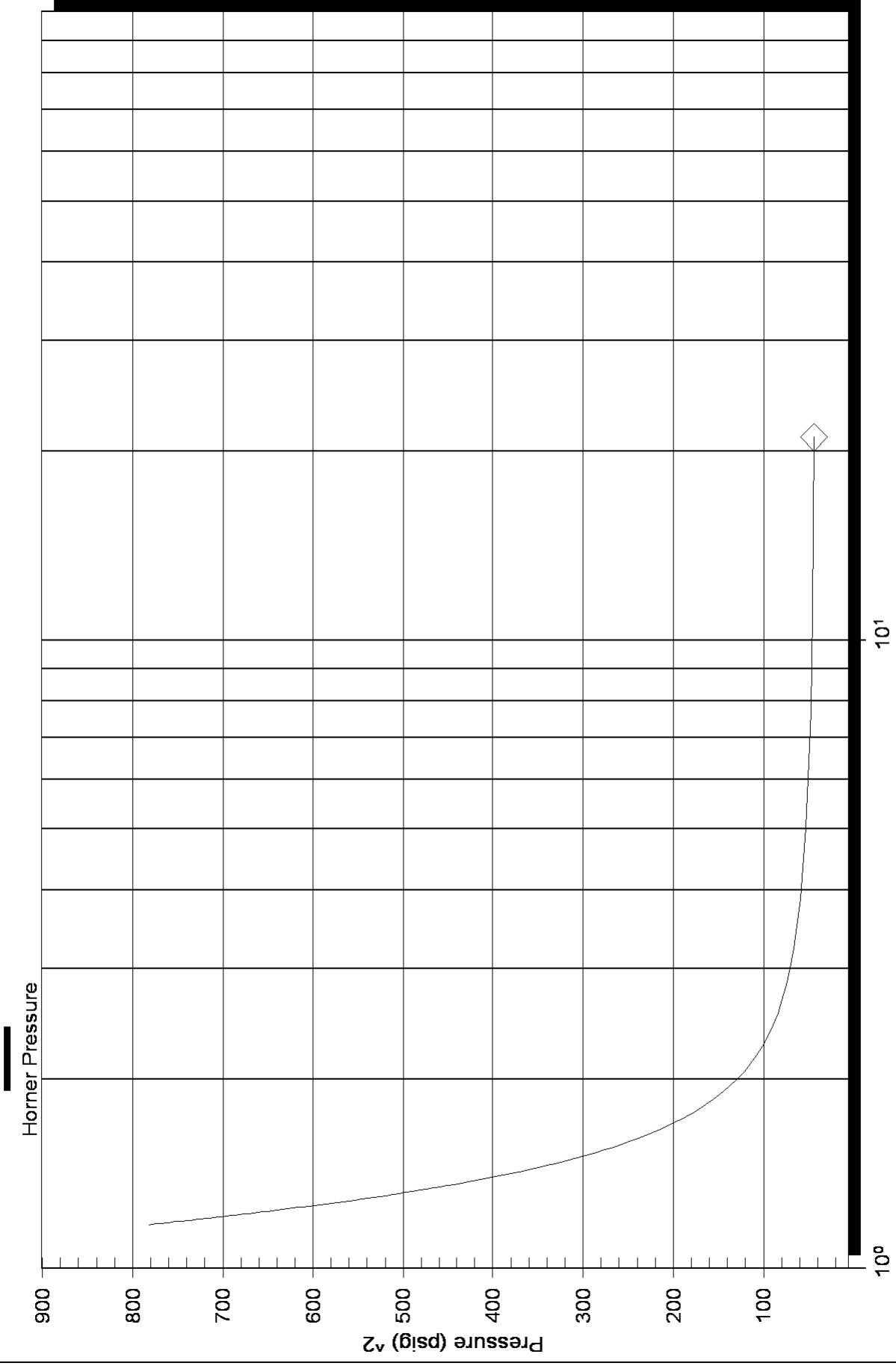
Pressure vs. Time



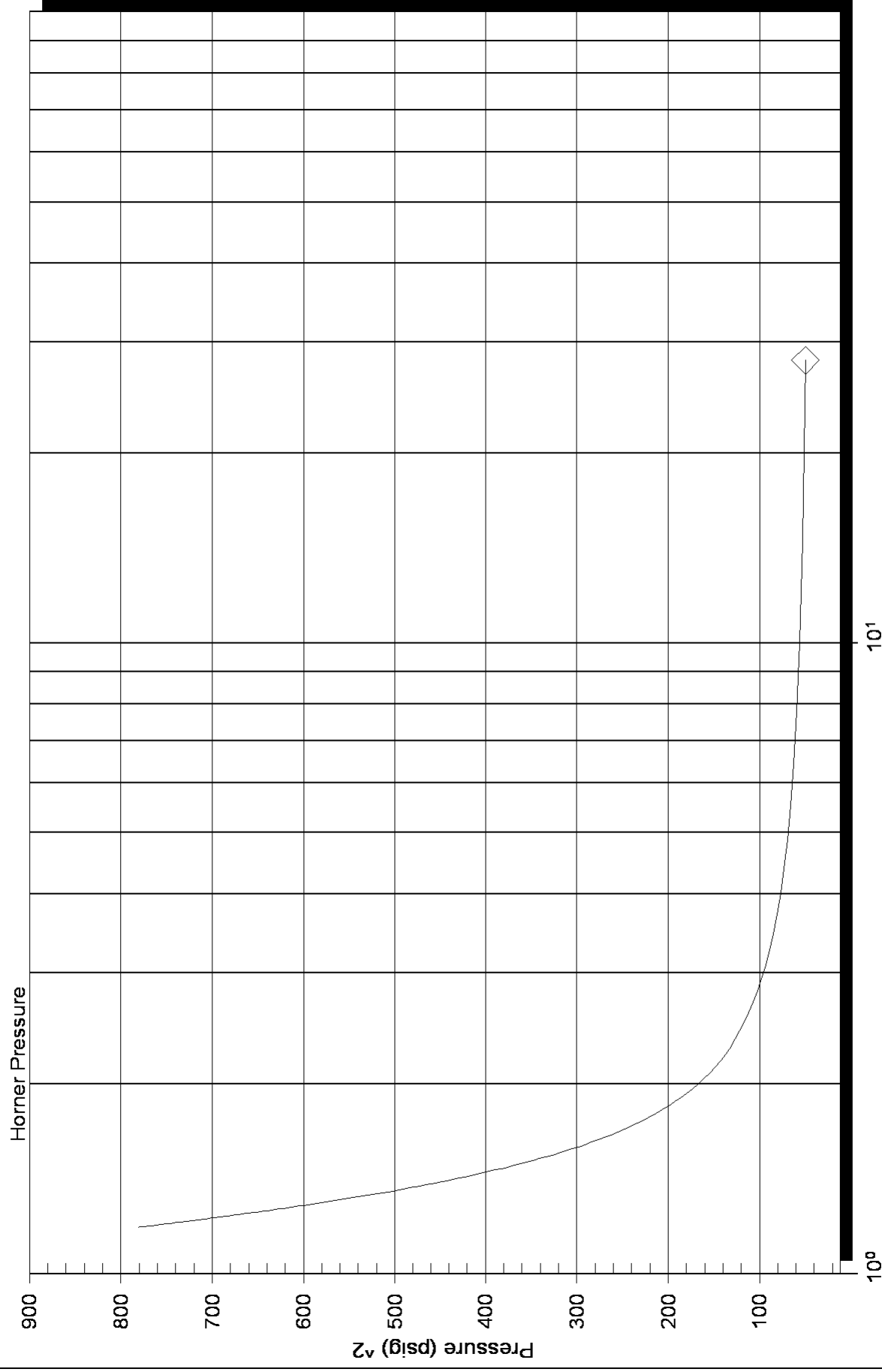




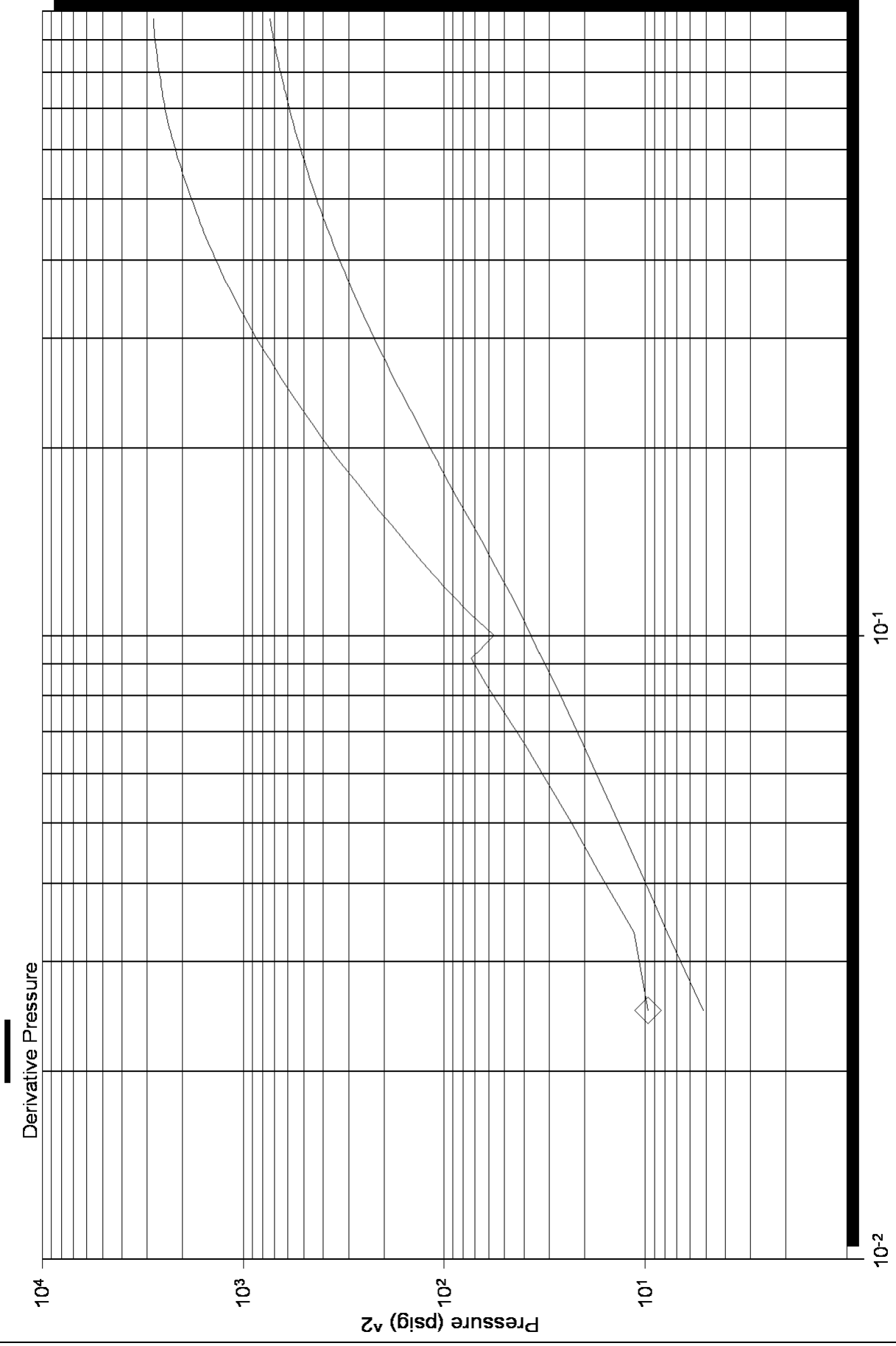
Homer Plot



Homer Plot



Log-Log and Pseudo-Derivative



Log-Log and Pseudo-Derivative

