

DRILL STEM TEST REPORT

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

1515 Wynkoop St. Ste 700
Denver, CO 80202

ATTN: Tom Fertal

Patrick #1-12

12-16s-17w Rush,KS

Start Date: 2012.02.10 @ 10:21:17

End Date: 2012.02.10 @ 18:36:17

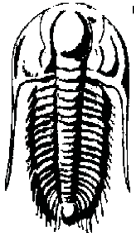
Job Ticket #: 46422 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.02.15 @ 09:06:22



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Samuel Gary Jr. and Associates, Inc.

12-16s-17w Rush, KS

1515 Wynkoop St. Ste 700
Denver, CO 80202

Patrick #1-12

Job Ticket: 46422

DST#: 3

ATTN: Tom Fertal

Test Start: 2012.02.10 @ 10:21:17

GENERAL INFORMATION:

Formation: **Penn Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 12:01:47
 Time Test Ended: 18:36:17
 Interval: **3503.00 ft (KB) To 3542.00 ft (KB) (TVD)**
 Total Depth: 3542.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brian Fairbank
 Unit No: 41
 Reference Elevations: 1984.00 ft (KB)
 1974.00 ft (CF)
 KB to GR/CF: 10.00 ft

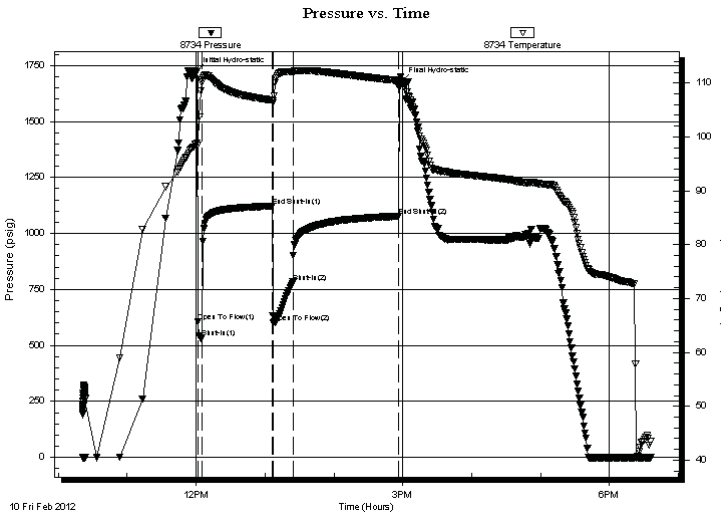
Serial #: 8734

Outside

Press@RunDepth: 782.25 psig @ 3506.00 ft (KB)
 Start Date: 2012.02.10 End Date: 2012.02.10
 Start Time: 10:21:18 End Time: 18:36:17
 Capacity: 8000.00 psig
 Last Calib.: 2012.02.10
 Time On Btm: 2012.02.10 @ 11:59:47
 Time Off Btm: 2012.02.10 @ 14:59:17

TEST COMMENT: 5 - IFP - BOB 30 sec
 60 - ISI - BOB 4 min
 20 - FFP - BOB 20 sec
 90 - FSI - BOB 3 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1723.06	98.71	Initial Hydro-static
2	606.68	98.55	Open To Flow (1)
6	535.60	110.63	Shut-In(1)
67	1121.97	106.83	End Shut-In(1)
68	602.50	106.28	Open To Flow (2)
85	782.25	112.10	Shut-In(2)
177	1076.30	110.43	End Shut-In(2)
180	1677.73	110.11	Final Hydro-static

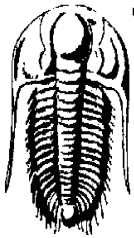
Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMCO 10%G, 30%O, 60%M	1.68
1865.00	REVERSED OUT OIL	26.16
15.00	FREE OIL	0.21

* Recovery from multiple tests

Gas Rates

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



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Patrick #1-12

Job Ticket: 46422

DST#: 3

ATTN: Tom Fertal

Test Start: 2012.02.10 @ 10:21:17

GENERAL INFORMATION:

Formation:	Penn Sand		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened:	12:01:47		Tester: Brian Fairbank
Time Test Ended:	18:36:17		Unit No: 41
Interval:	3503.00 ft (KB) To 3542.00 ft (KB) (TVD)		Reference Elevations: 1984.00 ft (KB)
Total Depth:	3542.00 ft (KB) (TVD)		1974.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition: Good	KB to GR/CF: 10.00 ft

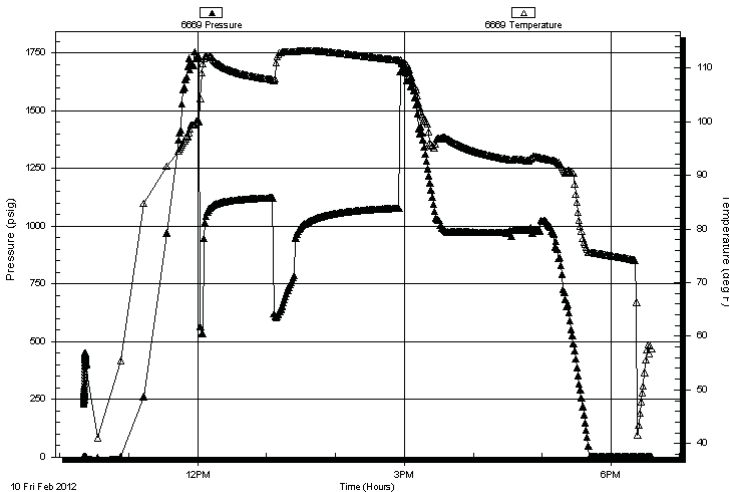
Serial #: 6669

Inside

Press@RunDepth:	psig @ 3506.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2012.02.10	End Date:	2012.02.10
Start Time:	10:20:48	End Time:	18:35:47
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: 5 - IFF - BOB 30 sec
60 - ISI - BOB 4 min
20 - FFP - BOB 20 sec
90 - FSI - BOB 3 min

Pressure vs. Time



PRESSURE SUMMARY

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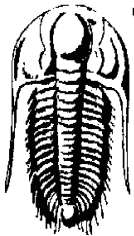
Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMCO 10%G, 30%O, 60%M	1.68
1865.00	REVERSED OUT OIL	26.16
15.00	FREE OIL	0.21

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



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DRILL STEM TEST REPORT

Samuel Gary Jr. and Associates, Inc.

12-16s-17w Rush, KS

1515 Wynkoop St. Ste 700
Denver, CO 80202

Patrick #1-12

Job Ticket: 46422

DST#: 3

ATTN: Tom Fertal

Test Start: 2012.02.10 @ 10:21:17

GENERAL INFORMATION:

Formation: **Penn Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:01:47

Time Test Ended: 18:36:17

Test Type: Conventional Bottom Hole (Reset)

Tester: Brian Fairbank

Unit No: 41

Interval: 3503.00 ft (KB) To 3542.00 ft (KB) (TVD)

Reference Elevations: 1984.00 ft (KB)

Total Depth: 3542.00 ft (KB) (TVD)

1974.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8365 Fluid

Press@RunDepth: psig @ 3469.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.10

End Date: 2012.02.10

Last Calib.: 2012.02.10

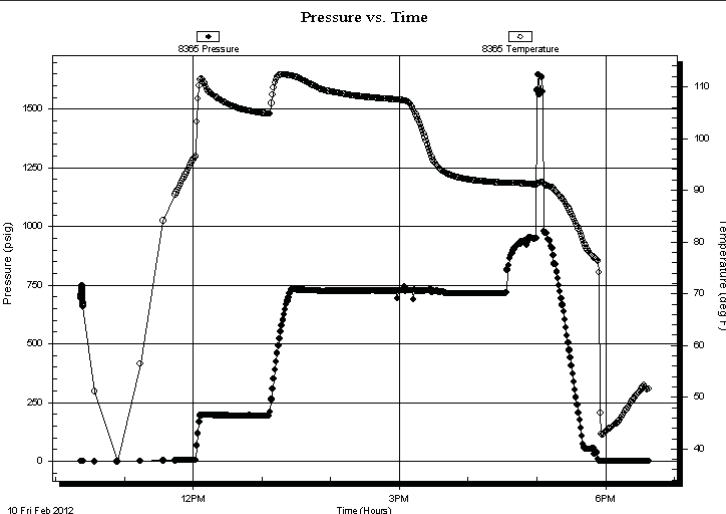
Start Time: 10:21:50

End Time: 18:37:19

Time On Btm

Time Off Btm

TEST COMMENT: 5 - IFP - BOB 30 sec
60 - ISI - BOB 4 min
20 - FFP - BOB 20 sec
90 - FSI - BOB 3 min



10 Fri Feb 2012

PRESSURE SUMMARY

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

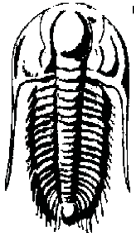
Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMCO 10%G, 30%O, 60%M	1.68
1865.00	REVERSED OUT OIL	26.16
15.00	FREE OIL	0.21

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Samuel Gary Jr. and Associates, Inc.

12-16s-17w Rush,KS

1515 Wynkoop St. Ste 700
Denver, CO 80202

Patrick #1-12

Job Ticket: 46422

DST#: 3

ATTN: Tom Fertal

Test Start: 2012.02.10 @ 10:21:17

Tool Information

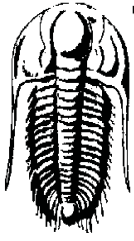
Drill Pipe:	Length: 3479.00 ft	Diameter: 3.80 inches	Volume: 48.80 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 48.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3503.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	39.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Recorder	0.00	8365	Fluid	3469.00	
Blank Spacing	5.00			3474.00	
Shut In Tool	5.00			3479.00	
Sampler	2.00			3481.00	
Hydraulic tool	5.00			3486.00	
Jars	5.00			3491.00	
Safety Joint	2.00			3493.00	
Packer	5.00			3498.00	34.00 Bottom Of Top Packer
Packer	5.00			3503.00	
Stubb	1.00			3504.00	
Perforations	1.00			3505.00	
Change Over Sub	1.00			3506.00	
Recorder	0.00	6669	Inside	3506.00	
Recorder	0.00	8734	Outside	3506.00	
Blank Spacing	31.00			3537.00	
Change Over Sub	1.00			3538.00	
Perforations	1.00			3539.00	
Bullnose	3.00			3542.00	39.00 Bottom Packers & Anchor

Total Tool Length: 73.00



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FLUID SUMMARY

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Patrick #1-12

Job Ticket: 46422

DST#: 3

ATTN: Tom Fertal

Test Start: 2012.02.10 @ 10:21:17

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.89 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	GMCO 10%G, 30%O, 60%M	1.683
1865.00	REVERSED OUT OIL	26.161
15.00	FREE OIL	0.210

Total Length: 2000.00 ft Total Volume: 28.054 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

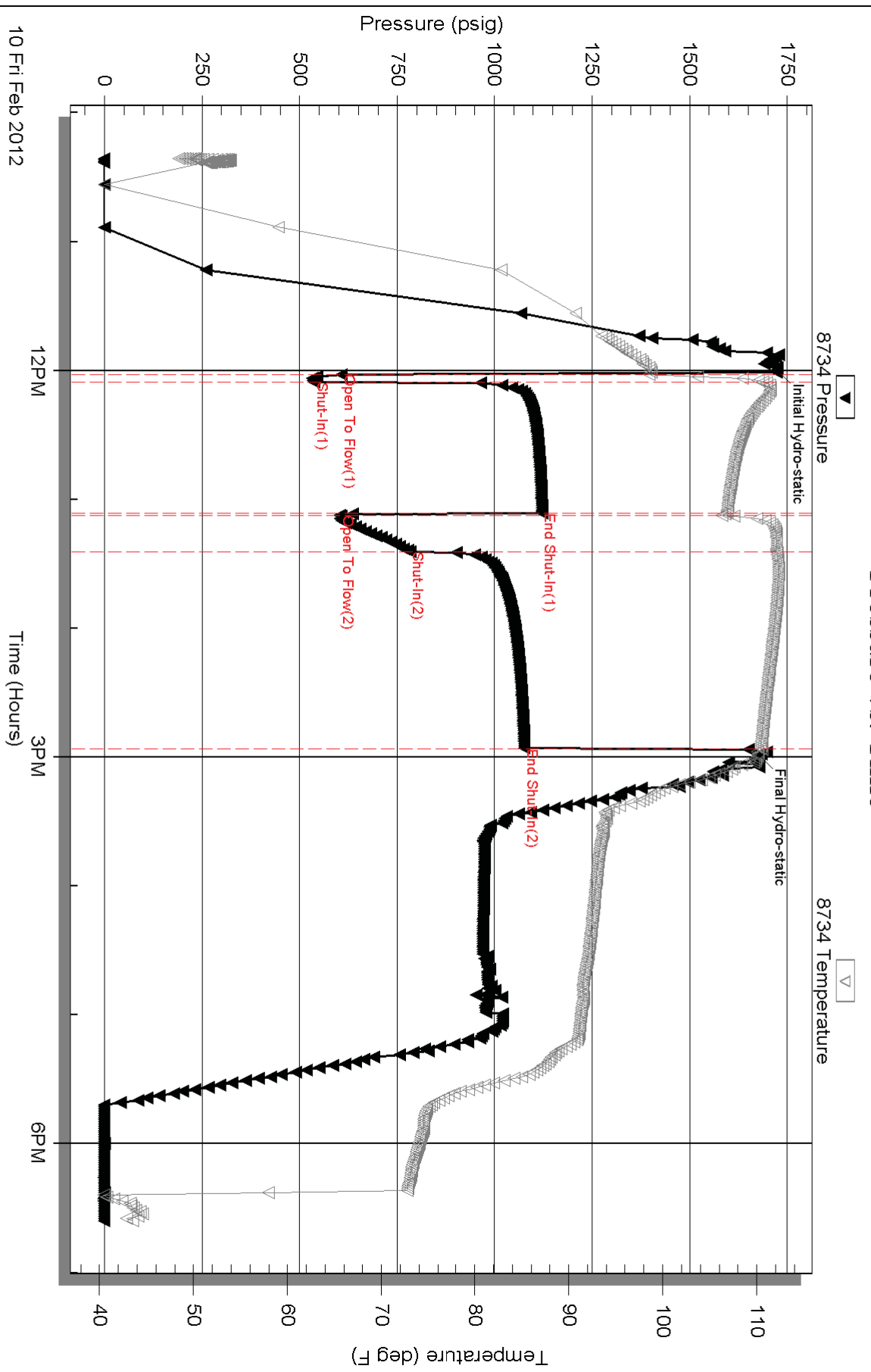
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



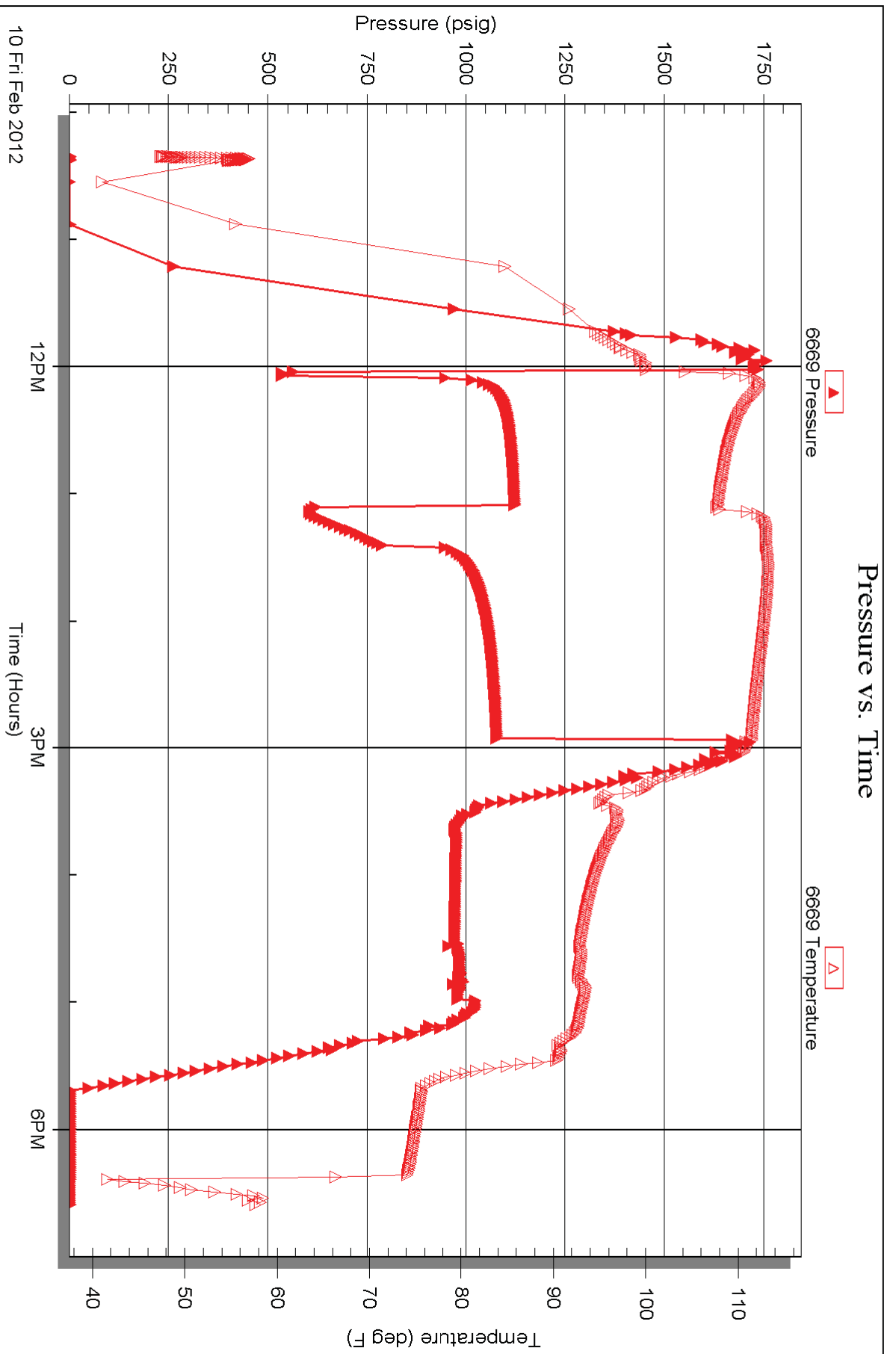
Serial #: 6669

Inside

Samuel Gary Jr. and Associates, Inc.

Patrick#1-12

DST Test Number: 3



Serial #: 8365

Fluid

Samuel Gary Jr. and Associates, Inc.

Patrick #1-12

DST Test Number: 3

