



DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays, KS 67601

ATTN: Tom Dennind

Tholen #13

22-14s-16w Ellis,KS

Start Date: 2012.10.31 @ 09:05:26

End Date: 2012.10.31 @ 15:52:26

Job Ticket #: 50804 DST #: 1

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

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays, KS 67601
 ATTN: Tom Dennind

22-14s-16w Ellis, KS
Tholen #13
 Job Ticket: 50804 **DST#: 1**
 Test Start: 2012.10.31 @ 09:05:26

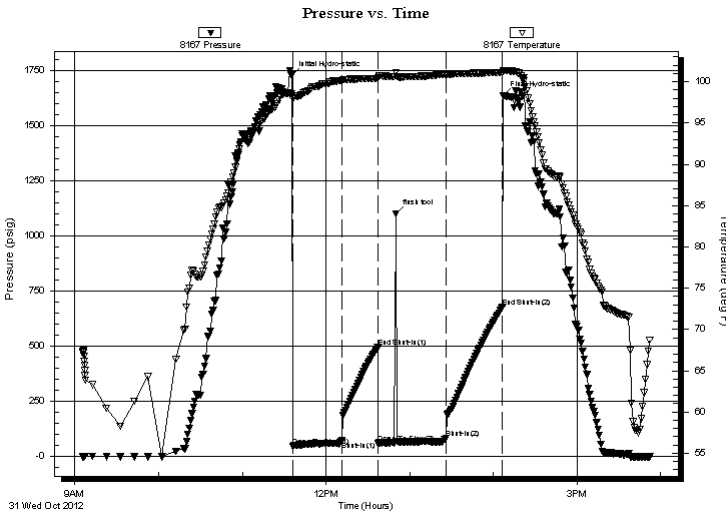
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:35:56
 Time Test Ended: 15:52:26
 Interval: **3320.00 ft (KB) To 3397.00 ft (KB) (TVD)**
 Total Depth: 3500.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Paul Simpson
 Unit No: 150
 Reference Elevations: 1872.00 ft (KB)
 1864.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8167 Inside
 Press @ Run Depth: 85.08 psig @ 3387.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.31 End Date: 2012.10.31 Last Calib.: 2012.10.31
 Start Time: 09:05:31 End Time: 15:52:25 Time On Btm: 2012.10.31 @ 11:35:26
 Time Off Btm: 2012.10.31 @ 14:06:56

TEST COMMENT: tool slid 3' w hen opening IF 30- weak surging blow built to 2.5"
 ISI 30
 FF- 45 no blow , flushed tool, w eak surface blow building to 1/8"
 FSI 45

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1728.14	98.53	Initial Hydro-static
1	48.75	97.92	Open To Flow (1)
36	71.97	100.18	Shut-In(1)
62	494.48	100.41	End Shut-In(1)
62	62.59	100.47	Open To Flow (2)
75	1098.76	101.13	flush tool
111	85.08	100.90	Shut-In(2)
151	678.08	101.11	End Shut-In(2)
152	1633.92	101.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	HOCM 25% O 75 % M	0.28
25.00	SOCM 5% O 95 %M	0.35

Gas Rates

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



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1310 Bison Rd
Hays, KS 67601

22-14s-16w Ellis,KS

Tholen #13

Job Ticket: 50804 **DST#: 1**

ATTN: Tom Dennind

Test Start: 2012.10.31 @ 09:05:26

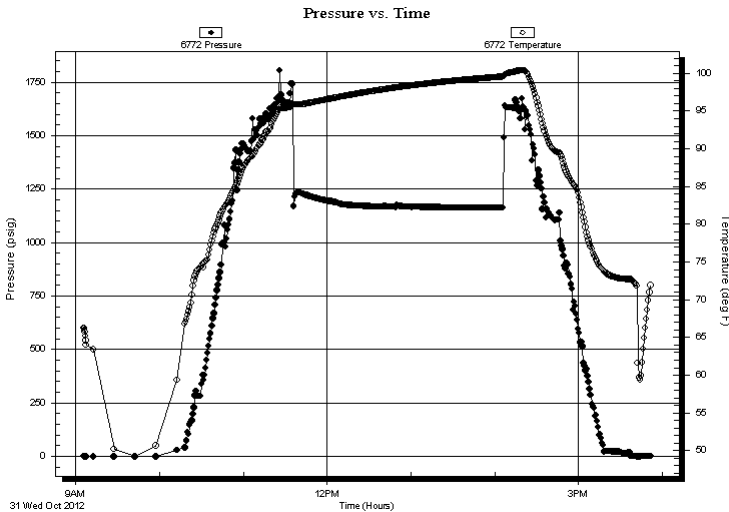
GENERAL INFORMATION:

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 Total Depth: 3500.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Paul SImpson
 Unit No: 150
 Reference Elevations: 1872.00 ft (KB)
 1864.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6772 Below (Straddle)

Press @ RunDepth: psig @ 3400.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.10.31 End Date: 2012.10.31 Last Calib.: 1899.12.30
 Start Time: 09:05:30 End Time: 15:51:54 Time On Btm:
 Time Off Btm:

TEST COMMENT: tool slid 3' w hen opening IF 30- weak surging blow built to 2.5"
 ISI 30
 FF- 45 no blow , flushed tool, w eak surface blow building to 1/8"
 FSI 45



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	HOCM 25% O 75 % M	0.28
25.00	SOCM 5% O 95 %M	0.35

Gas Rates

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



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TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Tom Dennind

22-14s-16w Ellis,KS
Tholen #13
Job Ticket: 50804 **DST#: 1**
Test Start: 2012.10.31 @ 09:05:26

Tool Information

Drill Pipe:	Length: 3331.00 ft	Diameter: 3.80 inches	Volume: 46.73 bbl	Tool Weight:	3500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 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:	34000.00 lb
			<u>Total Volume: 46.73 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3320.00 ft			Final	34000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	179.00 ft				
Tool Length:	200.00 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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Change Over Sub	1.00			3300.00	
Shut In Tool	5.00			3305.00	
Hydraulic tool	5.00			3310.00	
Packer	5.00			3315.00	21.00 Bottom Of Top Packer
Packer	5.00			3320.00	
Stubb	1.00			3321.00	
Perforations	2.00			3323.00	
Change Over Sub	1.00			3324.00	
Blank Spacing	62.00			3386.00	
Change Over Sub	1.00			3387.00	
Recorder	0.00	8167	Inside	3387.00	
Recorder	0.00	6669	Outside	3387.00	
Perforations	5.00			3392.00	
Blank Off Sub	1.00			3393.00	
Blank Spacing	3.00			3396.00	179.00 Tool Interval
Packer	2.00			3398.00	
Stubb	1.00			3399.00	
Change Over Sub	1.00			3400.00	
Recorder	0.00	6772	Below	3400.00	
Blank Spacing	94.00			3494.00	
Change Over Sub	1.00			3495.00	
Bullnose	4.00			3499.00	1000199.00 Bottom Packers & Anchor

Total Tool Length: 200.00



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FLUID SUMMARY

TDI Inc **22-14s-16w Ellis,KS**
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 Hays, KS 67601 Job Ticket: 50804 **DST#: 1**
 ATTN: Tom Dennind Test Start: 2012.10.31 @ 09:05:26

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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.38 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: inches			

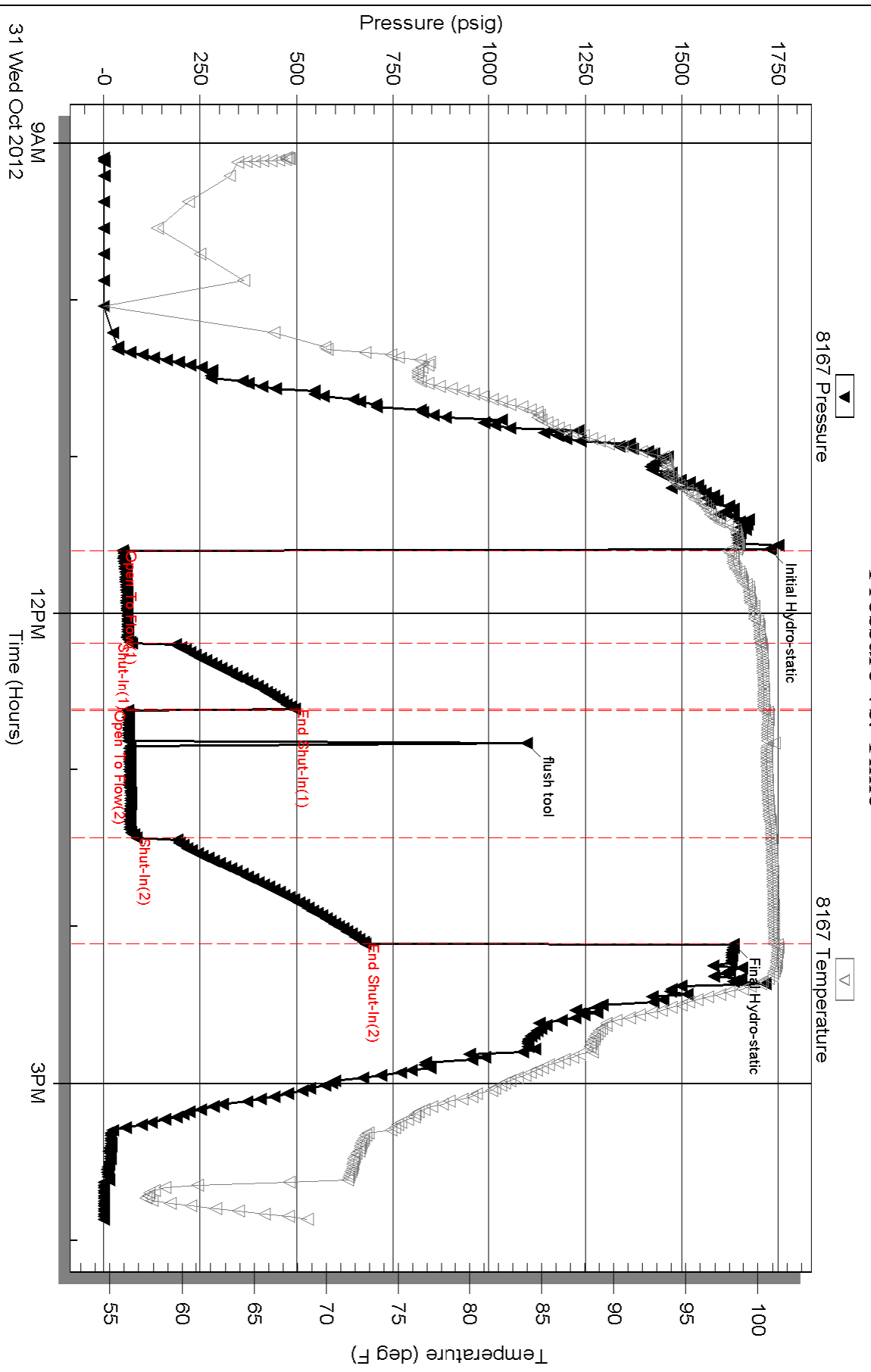
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	HOCM 25% O 75 % M	0.281
25.00	SOCM 5% O 95 %M	0.351

Total Length: 45.00 ft Total Volume: 0.632 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

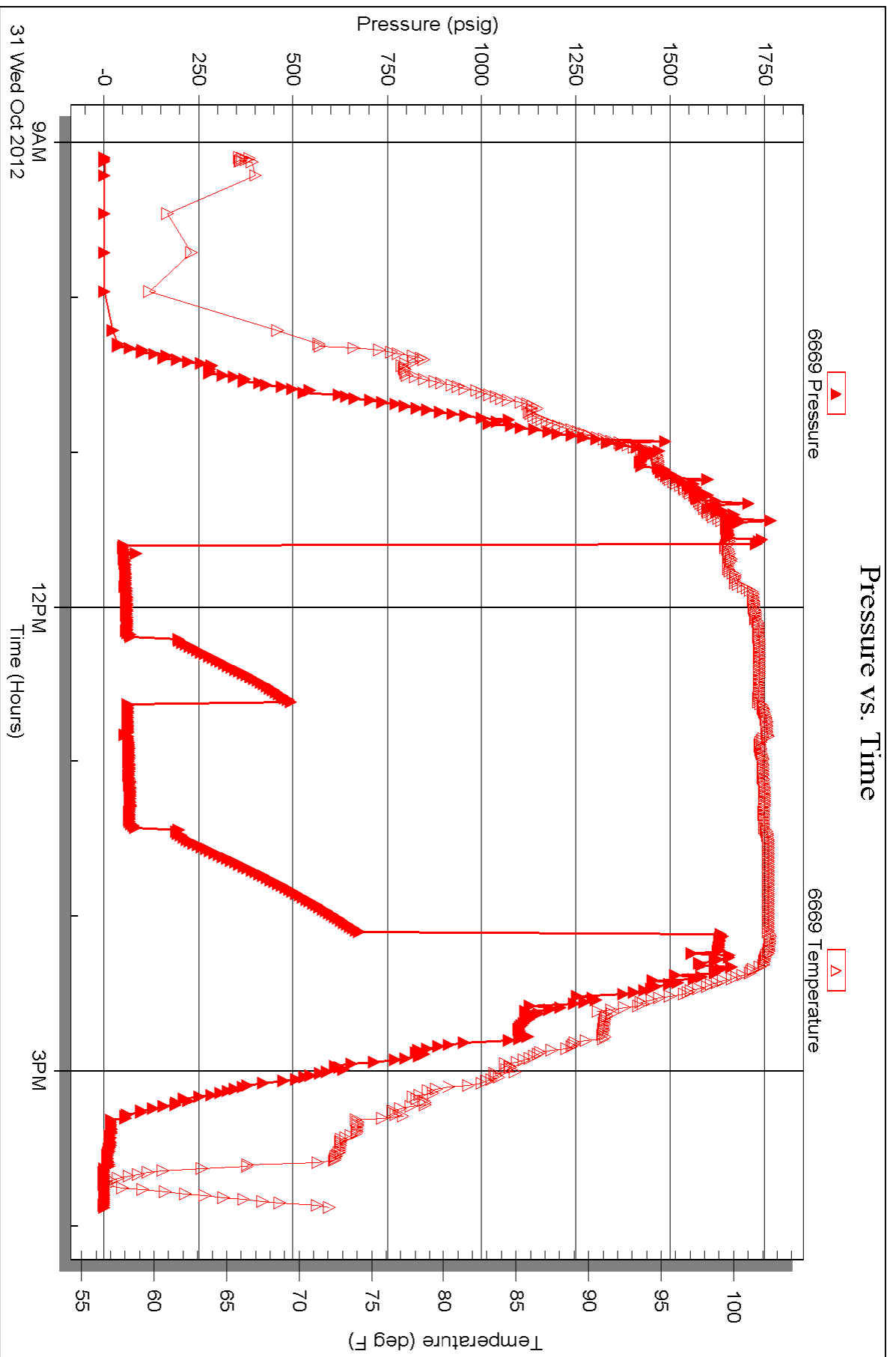


Serial #: 6669

Outside TDI Inc

Tholen #13

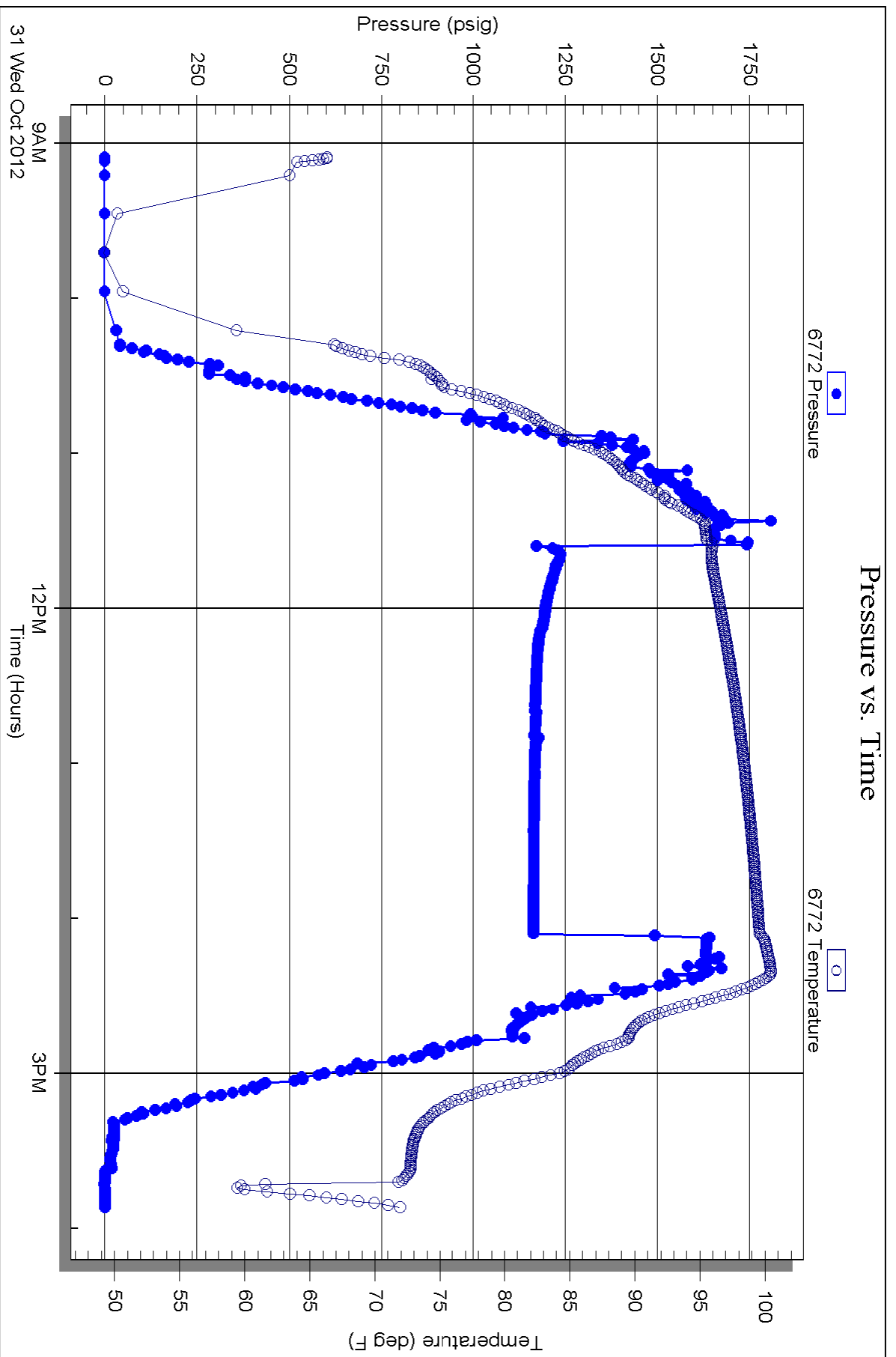
DST Test Number: 1

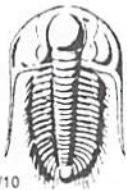


Triobite Testing, Inc

Ref. No: 50804

Printed: 2012.11.02 @ 09:50:34





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50804

4/10

Well Name & No. Tholen #13 Test No. 1 Date 10/31/12
 Company TOI Elevation 1872 KB _____ GL _____
 Address _____
 Co. Rep / Geo. Herb Deines Rig Southward A1
 Location: Sec. 22 Twp. 14S Rge. 16W Co. Ellis State Ky

Interval Tested 3320-3397 Zone Tested Arb. dk
 Anchor Length 77 Drill Pipe Run 3331 Mud Wt. 9.2
 Top Packer Depth 3315-3320 Drill Collars Run - Vis 55
 Bottom Packer Depth 3397 Wt. Pipe Run - WL 8.4
 Total Depth 3500 Chlorides _____ ppm System LCM _____
 Blow Description tool stick 2' when open - weak surging blow built to 2 1/2" DST - no blow
ff - no blow - flushed tool - weak surface blow built to 1 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>HOCM</u>	<u>25</u>		<u>75</u>	
<u>25</u>	<u>50CM</u>	<u>5</u>		<u>95</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 45 BHT 99 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1728 Test 1150 T-On Location 0815
 (B) First Initial Flow 48 Jars _____ T-Started 0905
 (C) First Final Flow 92 Safety Joint _____ T-Open 1136
 (D) Initial Shut-In 494 Circ Sub _____ T-Pulled 1406
 (E) Second Initial Flow 62 Hourly Standby _____ T-Out _____
 (F) Second Final Flow 85 Mileage 32 RT 49.60 Comments _____
 (G) Final Shut-In 678 Sampler _____
 (H) Final Hydrostatic 1634 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1249.20
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1249.20

Approved By _____ Our Representative [Signature]
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