



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Bittel #1

6-13s-20w Ellis, KS

Start Date: 2012.04.19 @ 04:10:27

End Date: 2012.04.19 @ 09:48:27

Job Ticket #: 47714 DST #: 1

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

Printed: 2012.04.23 @ 14:22:56

TDI, Inc.
6-13s-20w Ellis, KS
Bittel #1
DST # 1
KC "K-L"
2012.04.19



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI, Inc.
 1310 Bison Rd
 Hays KS 67601
 ATTN: Herb Deines

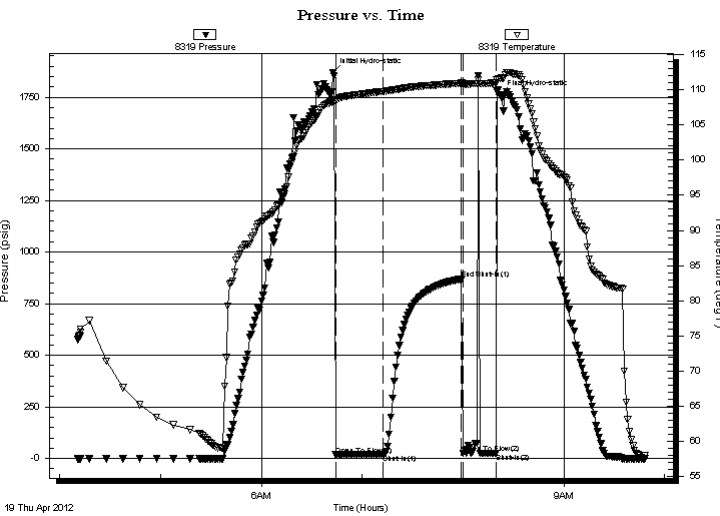
6-13s-20w Ellis, KS
Bittel #1
 Job Ticket: 47714 **DST#: 1**
 Test Start: 2012.04.19 @ 04:10:27

GENERAL INFORMATION:

Formation: **KC "K-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:43:57
 Time Test Ended: 09:48:27
Interval: 3644.00 ft (KB) To 3690.00 ft (KB) (TVD)
 Total Depth: 3690.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2164.00 ft (KB)
 2154.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8319 Inside
 Press @ RunDepth: 19.75 psig @ 3651.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.04.19 End Date: 2012.04.19 Last Calib.: 2012.04.19
 Start Time: 04:10:32 End Time: 09:48:26 Time On Btm: 2012.04.19 @ 06:42:27
 Time Off Btm: 2012.04.19 @ 08:21:57

TEST COMMENT: IF-1/4" blow died to very weak surface blow
 IS- No blow
 FF- No blow flush tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1870.36	108.33	Initial Hydro-static
2	17.41	108.27	Open To Flow (1)
30	19.75	109.75	Shut-In(1)
76	869.26	110.91	End Shut-In(1)
78	24.07	110.74	Open To Flow (2)
97	24.90	110.96	Shut-In(2)
100	1761.45	111.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud	0.21

Gas Rates

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



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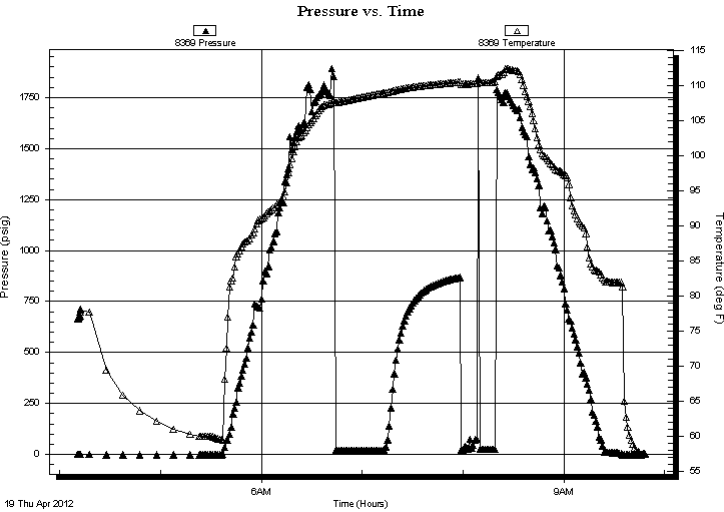
6-13s-20w Ellis, KS
Bittel #1
Job Ticket: 47714 **DST#: 1**
Test Start: 2012.04.19 @ 04:10:27

GENERAL INFORMATION:

Formation: KC "K-L"		Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock: ft (KB)		Tester: Brett Dickinson
Time Tool Opened: 06:43:57		Unit No: 59
Time Test Ended: 09:48:27		
Interval: 3644.00 ft (KB) To 3690.00 ft (KB) (TVD)		Reference Elevations: 2164.00 ft (KB)
Total Depth: 3690.00 ft (KB) (TVD)		2154.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 10.00 ft

Serial #: 8369	Outside			Capacity: 8000.00 psig
Press @ Run Depth: psig @ 3651.00 ft (KB)				Last Calib.: 2012.04.19
Start Date: 2012.04.19	End Date: 2012.04.19			Time On Btm:
Start Time: 04:10:33	End Time: 09:47:57			Time Off Btm:

TEST COMMENT: IF-1/4" blow died to very weak surface blow
IS- No blow
FF- No blow flush tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud	0.21

Gas Rates

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



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DRILL STEM TEST REPORT

TDI, Inc.
 1310 Bison Rd
 Hays KS 67601
 ATTN: Herb Deines

6-13s-20w Ellis, KS
Bittel #1
 Job Ticket: 47714 **DST#: 1**
 Test Start: 2012.04.19 @ 04:10:27

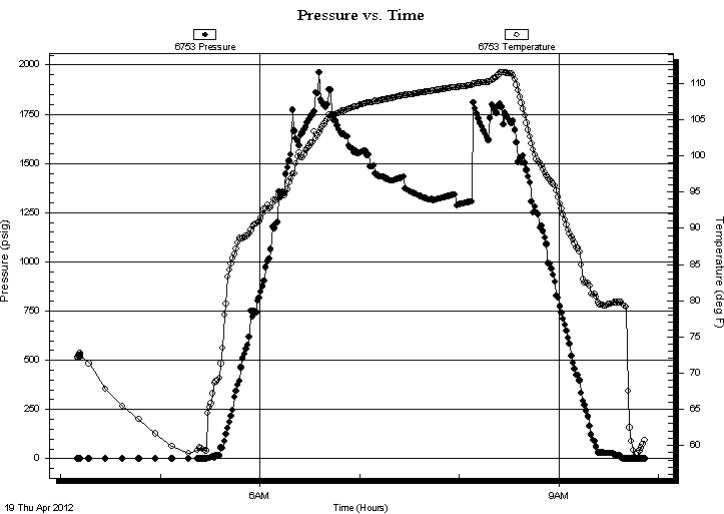
GENERAL INFORMATION:

Formation: **KC "K-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:43:57
 Time Test Ended: 09:48:27
Interval: 3644.00 ft (KB) To 3690.00 ft (KB) (TVD)
 Total Depth: 3690.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Straddle (Initial)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2164.00 ft (KB)
 2154.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6753 Below (Straddle)
 Press @ Run Depth: psig @ 3695.00 ft (KB)
 Start Date: 2012.04.19 End Date: 2012.04.19 Capacity: 8000.00 psig
 Start Time: 04:10:15 End Time: 09:52:09 Last Calib.: 2012.04.19
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF-1/4" blow died to very weak surface blow
 IS- No blow
 FF- No blow flush tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI, Inc.
1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

6-13s-20w Ellis, KS
Bittel #1
Job Ticket: 47714 **DST#: 1**
Test Start: 2012.04.19 @ 04:10:27

Tool Information

Drill Pipe:	Length: 3648.00 ft	Diameter: 3.80 inches	Volume: 51.17 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 51.17 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3644.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	3690.00 ft				
Interval between Packers:	46.00 ft				
Tool Length:	292.00 ft				
Number of Packers:	3	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3625.00	
Shut In Tool	5.00			3630.00	
Hydraulic tool	5.00			3635.00	
Packer	4.00			3639.00	20.00 Bottom Of Top Packer
Packer	5.00			3644.00	
Stubb	1.00			3645.00	
Perforations	5.00			3650.00	
change Over Sub	1.00			3651.00	
Recorder	0.00	8369	Outside	3651.00	
Recorder	0.00	8319	Inside	3651.00	
Blank Spacing	32.00			3683.00	
change Over Sub	1.00			3684.00	
Perforations	2.00			3686.00	
Blank Off Sub	4.00			3690.00	46.00 Tool Interval
Packer	4.00			3694.00	
Stubb	1.00			3695.00	
Recorder	0.00	6753	Below	3695.00	
perforations	1.00			3696.00	
Change Over Sub	1.00			3697.00	
Blank Spacing	219.00			3916.00	226.00 Bottom Packers & Anchor

Total Tool Length: 292.00



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FLUID SUMMARY

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1310 Bison Rd
Hays KS 67601
ATTN: Herb Deines

6-13s-20w Ellis, KS
Bittel #1
Job Ticket: 47714 **DST#: 1**
Test Start: 2012.04.19 @ 04:10:27

Mud and Cushion Information

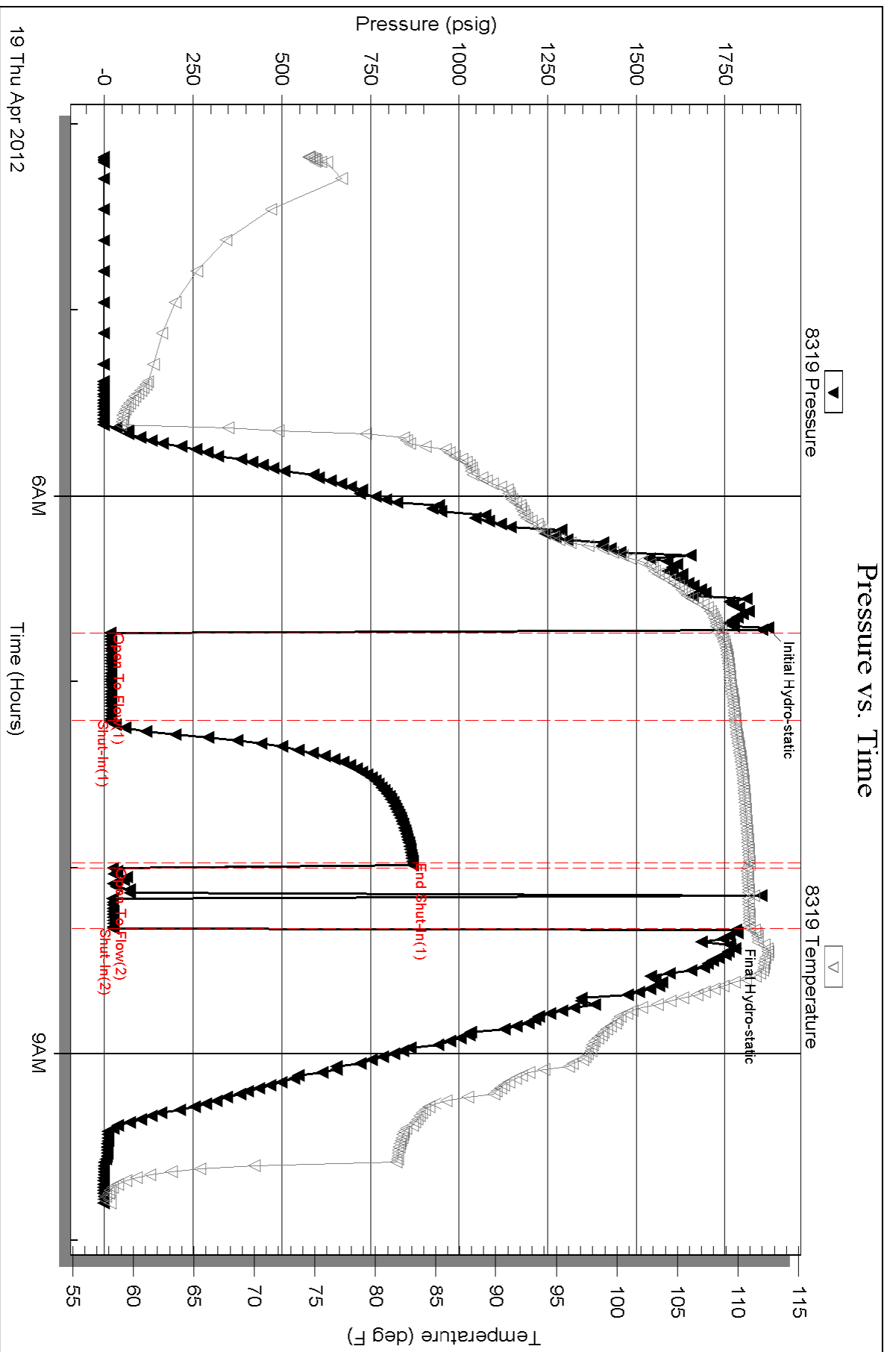
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1500.00 ppm			
Filter Cake: inches			

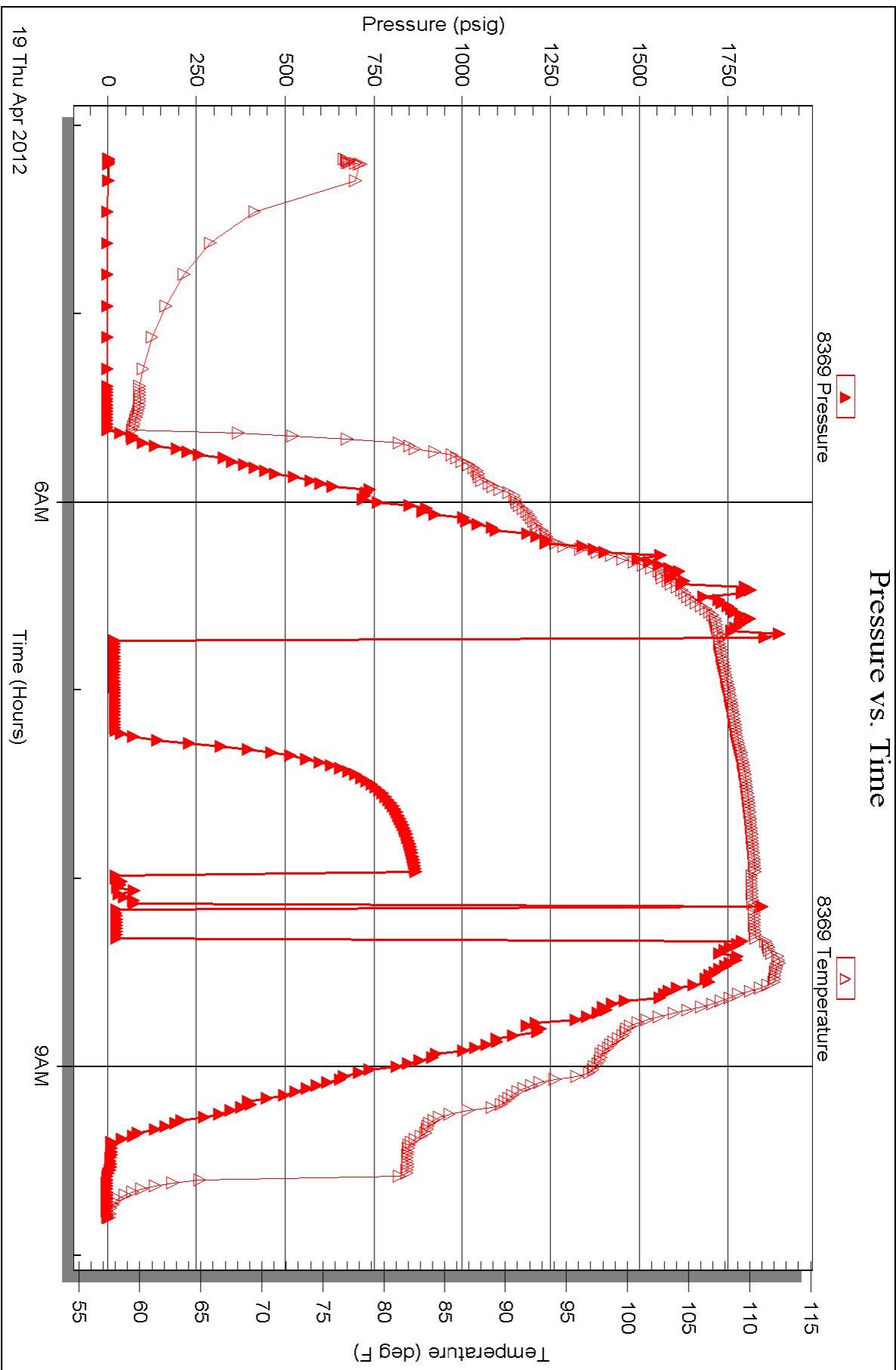
Recovery Information

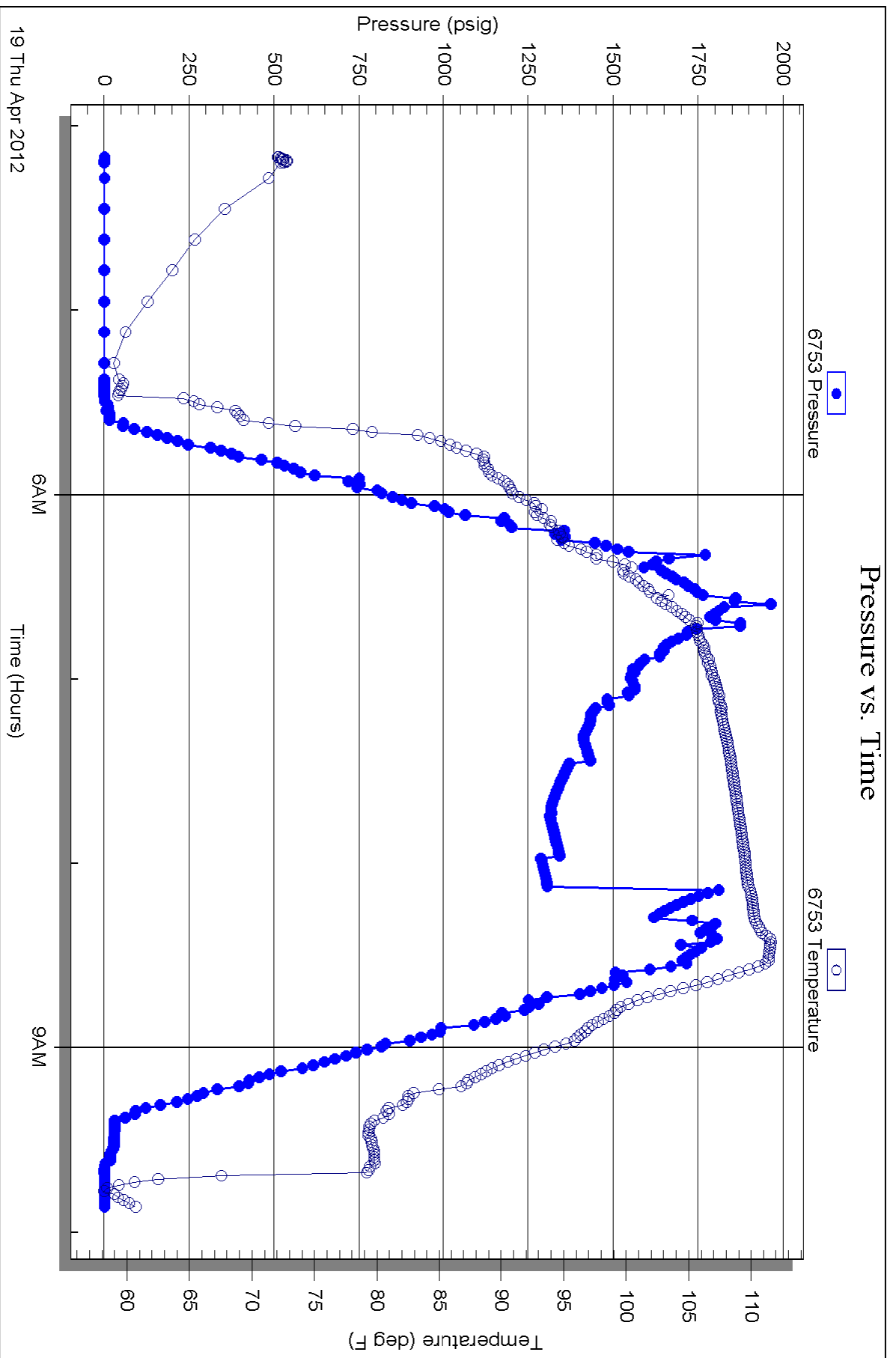
Recovery Table

Length ft	Description	Volume bbl
15.00	Mud	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:









TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
APR 19 2012

Test Ticket

NO. 47714

BY: _____

Well Name & No. Bittel #1 Test No. 1 Date 4/19/12
 Company TOI, Inc. Elevation 2164 KB 2158 GL
 Address 1310 Bison Rd Hays KS 67601
 Co. Rep / Geo. _____ Rig Seawind #2
 Location: Sec. 6 Twp. 13g Rge. 20w Co. Ellis State KS

Interval Tested 3644 - 3690 Zone Tested KC" K; L"
 Anchor Length 46 Drill Pipe Run 3648 Mud Wt. 9.2
 Top Packer Depth 3639, 3644 Drill Collars Run _____ Vis 52
 Bottom Packer Depth 3690 Wt. Pipe Run _____ WL 6.8
 Total Depth 3912 Chlorides 1,300 ppm System LCM 2
 Blow Description IF - 1/4 in blow
ISI - No blow
FF - No blow - flush too!
FSI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud</u>				
____	____				
____	____				
____	____				
____	____				

Rec Total 15 BHT 111 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,870 Test 1150 T-On Location 3:15
 (B) First Initial Flow 17 Jars _____ T-Started 4:10
 (C) First Final Flow 20 Safety Joint _____ T-Open 6:42
 (D) Initial Shut-In 869 Circ Sub _____ T-Pulled 8:17
 (E) Second Initial Flow 24 Hourly Standby _____ T-Out 9:50
 (F) Second Final Flow _____ Mileage 20x2 62 Comments _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic 1,761 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1212
 Final Flow 20 Accessibility _____ MP/DST Disc't _____
 Final Shut-In _____ Sub Total 1212

Approved By _____ Our Representative Bwa Dish
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