



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

GR #2

14-15s-19w Ellis,KS

Start Date: 2013.04.24 @ 04:39:14

End Date: 2013.04.24 @ 11:27:59

Job Ticket #: 52228 DST #: 1

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

Printed: 2013.05.20 @ 10:44:31

TDI, Inc. 14-15s-19w Ellis,KS GR #2 DST # 1 C 2013.04.24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52228 **DST#: 1**
Test Start: 2013.04.24 @ 04:39:14

GENERAL INFORMATION:

Formation: **C**
Deviated: **No** Whipstock: **0.00 ft (KB)**
Time Tool Opened: 07:17:59
Time Test Ended: 11:27:59
Test Type: **Conventional Bottom Hole (Initial)**
Tester: **Jason McLemore**
Unit No: **54**
Interval: **3314.00 ft (KB) To 3350.00 ft (KB) (TVD)**
Reference Elevations: **2023.00 ft (KB)**
2013.00 ft (CF)
Total Depth: **3350.00 ft (KB) (TVD)**
Hole Diameter: **7.88 inches** Hole Condition: **Good**
KB to GR/CF: **10.00 ft**

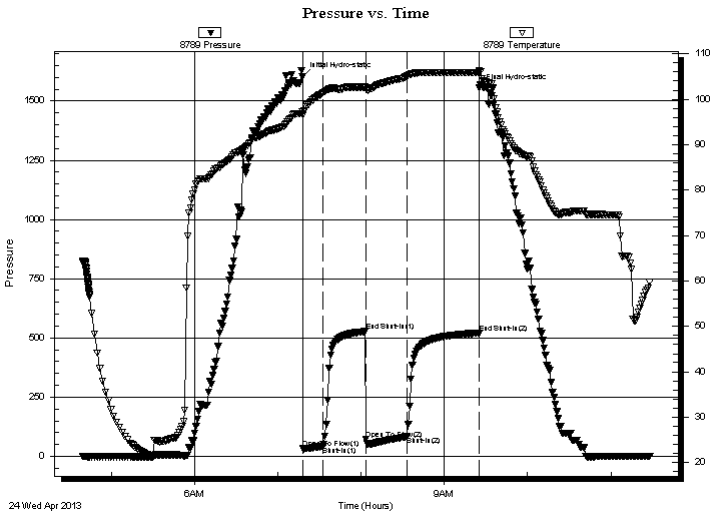
Serial #: 8789

Inside

Press @ Run Depth: **82.81 psig @ 3317.00 ft (KB)** Capacity: **8000.00 psig**
Start Date: **2013.04.24** End Date: **2013.04.24** Last Calib.: **2013.04.24**
Start Time: **04:39:16** End Time: **11:27:59** Time On Btm: **2013.04.24 @ 07:17:44**
Time Off Btm: **2013.04.24 @ 09:25:14**

TEST COMMENT: IFP-Srong, BOB in 2 Min.
ISI-Blow back Built to 1"
FFP-Strong, BOB in 1 Min.
FSI-Blow back Built to 4"

PRESSURE SUMMARY



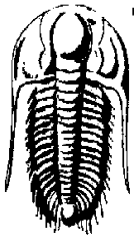
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1604.42	97.17	Initial Hydro-static
1	33.04	96.47	Open To Flow (1)
15	43.21	101.47	Shut-In(1)
46	526.97	102.67	End Shut-In(1)
46	70.43	102.42	Open To Flow (2)
76	82.81	105.09	Shut-In(2)
127	520.05	105.92	End Shut-In(2)
128	1554.73	106.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Free Oil	0.98
120.00	Muddy Frothy Oil-50%G-40%O-10%M	1.68
0.00	2210' Gas In Pipe	0.00

Gas Rates

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



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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52228 **DST#: 1**
Test Start: 2013.04.24 @ 04:39:14

GENERAL INFORMATION:

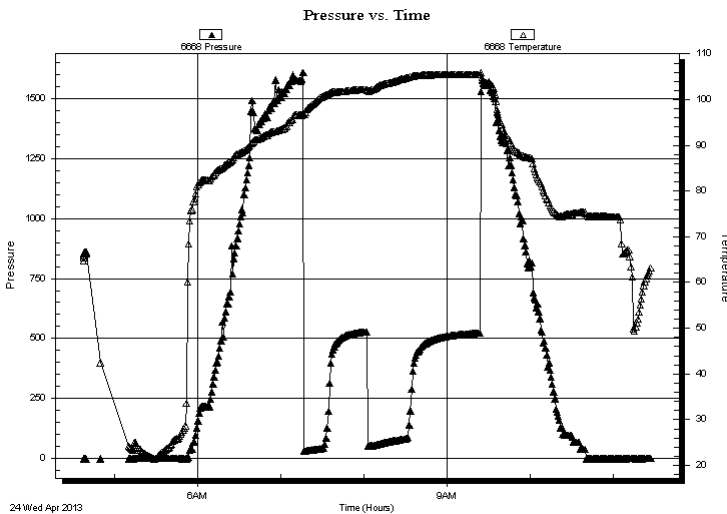
Formation: **C**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 07:17:59
Time Test Ended: 11:27:59
Interval: **3314.00 ft (KB) To 3350.00 ft (KB) (TVD)**
Total Depth: 3350.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Jason McLemore
Unit No: 54
Reference Elevations: 2023.00 ft (KB)
2013.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6668 Outside

Press @ Run Depth: psig @ 3317.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.04.24 End Date: 2013.04.24 Last Calib.: 2013.04.24
Start Time: 04:37:46 End Time: 11:27:05 Time On Btm: Time Off Btm:

TEST COMMENT: IFP-Strong, BOB in 2 Min.
ISI-Blow back Built to 1"
FFP-Strong, BOB in 1 Min.
FSI-Blow back Built to 4"

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Free Oil	0.98
120.00	Muddy Frothy Oil-50%G-40%O-10%M	1.68
0.00	2210' Gas In Pipe	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52228 **DST#: 1**
Test Start: 2013.04.24 @ 04:39:14

Tool Information

Drill Pipe:	Length: 3313.00 ft	Diameter: 3.80 inches	Volume: 46.47 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:	36000.00 lb
			<u>Total Volume: 46.47 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	32000.00 lb
Depth to Top Packer:	3314.00 ft			Final	33000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	57.00 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			3294.00	
Shut In Tool	5.00			3299.00	
Hydraulic tool	5.00			3304.00	
Packer	5.00			3309.00	21.00 Bottom Of Top Packer
Packer	5.00			3314.00	
Stubb	1.00			3315.00	
Perforations	2.00			3317.00	
Recorder	0.00	8789	Inside	3317.00	
Recorder	0.00	6668	Outside	3317.00	
Perforations	30.00			3347.00	
Bullnose	3.00			3350.00	36.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52228 **DST#: 1**
Test Start: 2013.04.24 @ 04:39:14

Mud and Cushion Information

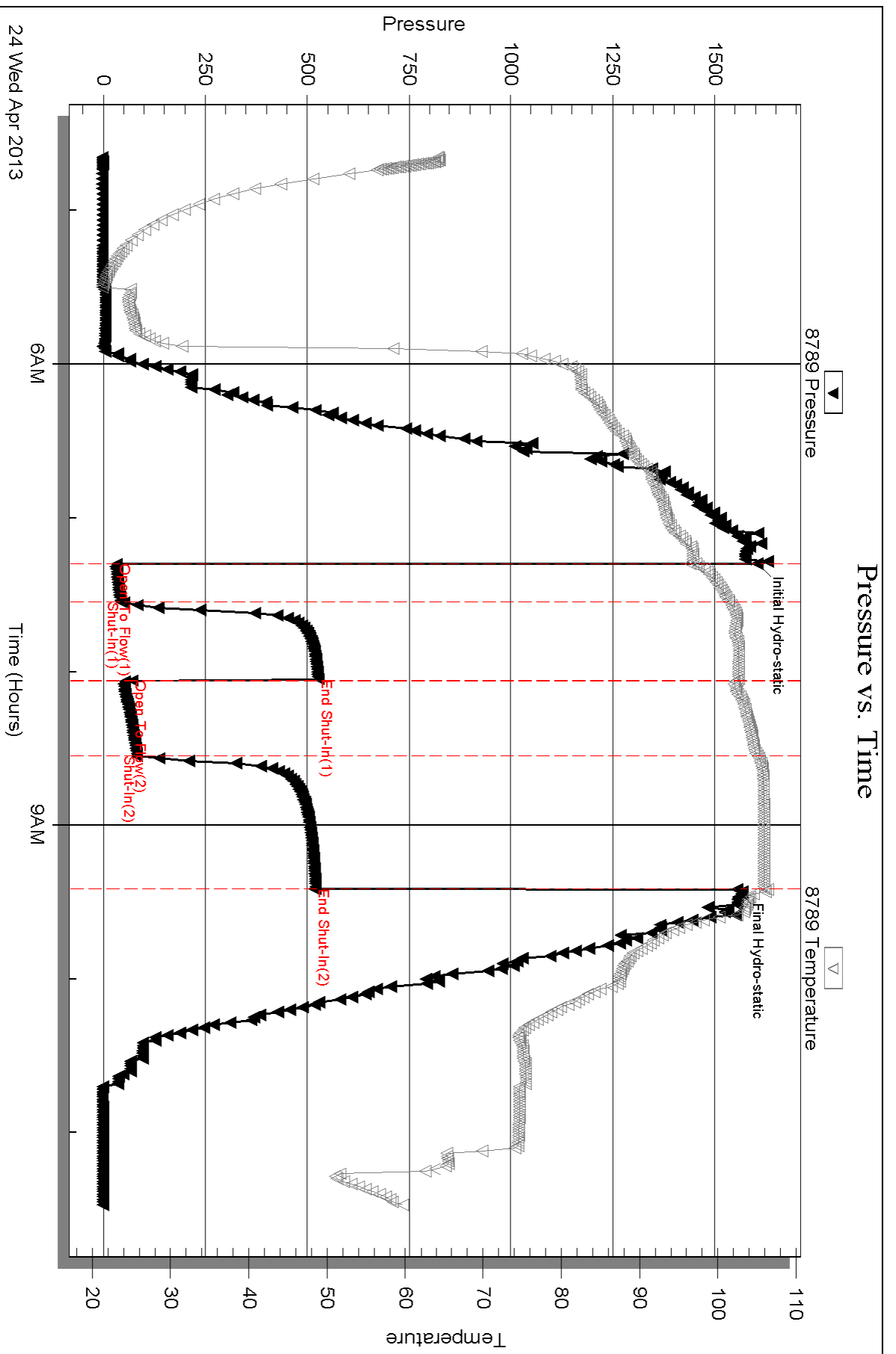
Mud Type: Gel Chem	Cushion Type:	Oil API: 39 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.38 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 4400.00 ppm		
Filter Cake: inches		

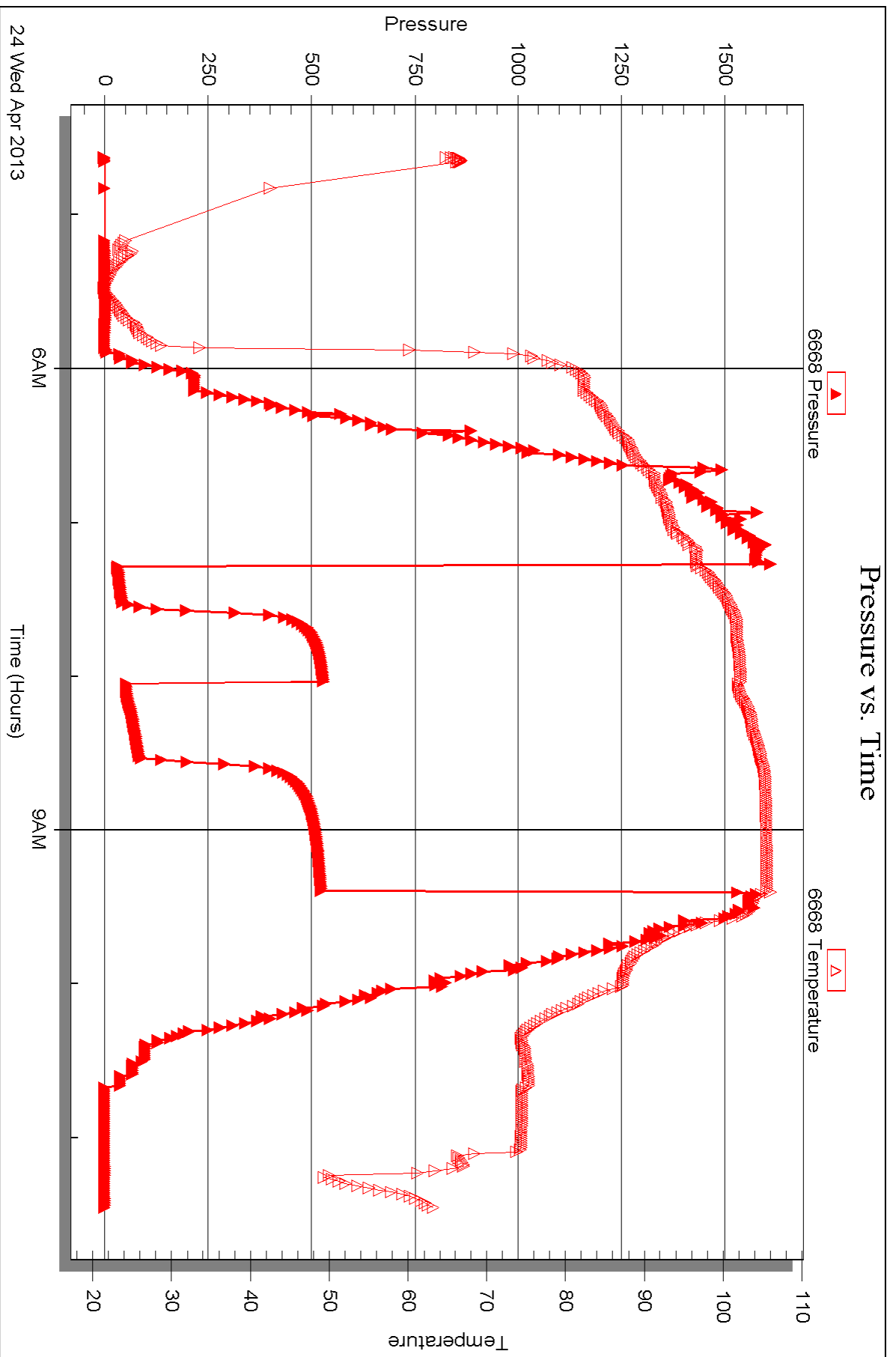
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	Free Oil	0.982
120.00	Muddy Frothy Oil-50%G-40%O-10%M	1.683
0.00	2210' Gas In Pipe	0.000

Total Length: 190.00 ft Total Volume: 2.665 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

GR #2

14-15s-19w Ellis,KS

Start Date: 2013.04.24 @ 17:59:17

End Date: 2013.04.25 @ 00:13:32

Job Ticket #: 52229 DST #: 2

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

Printed: 2013.05.20 @ 10:43:32

TDI, Inc.
14-15s-19w Ellis,KS
GR #2
DST # 2
D-F
2013.04.24



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52229 **DST#: 2**
Test Start: 2013.04.24 @ 17:59:17

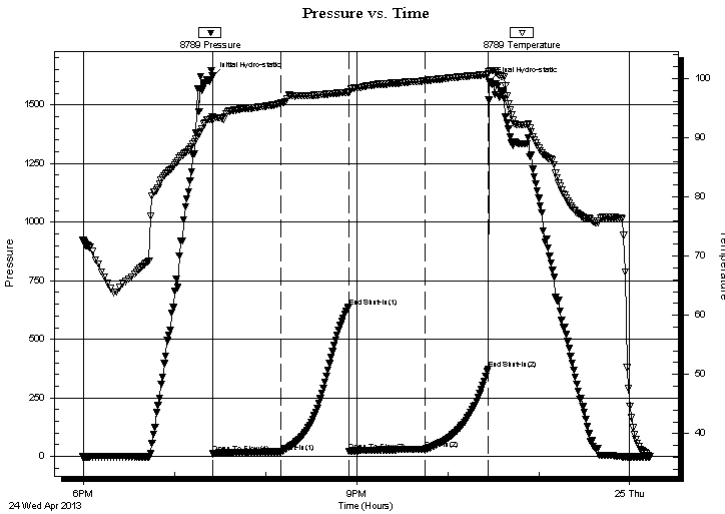
GENERAL INFORMATION:

Formation: **D-F**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 19:25:02
Time Test Ended: 00:13:32
Interval: **3348.00 ft (KB) To 3384.00 ft (KB) (TVD)**
Total Depth: 3384.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Jason McLemore
Unit No: 54
Reference Elevations: 2023.00 ft (KB)
2013.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8789 Inside
Press @ Run Depth: 31.78 psig @ 3351.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.04.24 End Date: 2013.04.25 Last Calib.: 2013.04.25
Start Time: 17:59:19 End Time: 00:13:32 Time On Btm: 2013.04.24 @ 19:24:47
Time Off Btm: 2013.04.24 @ 22:27:32

TEST COMMENT: IFP-Weak Blow , Built to 5"
ISI-Dead
FFP-Good Blow ,Built to 8"
FSI-Dead

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1621.97	93.49	Initial Hydro-static
1	12.39	92.95	Open To Flow (1)
46	20.01	95.83	Shut-In(1)
90	637.18	97.68	End Shut-In(1)
91	22.13	97.67	Open To Flow (2)
141	31.78	99.63	Shut-In(2)
182	372.19	100.72	End Shut-In(2)
183	1598.08	101.22	Final Hydro-static

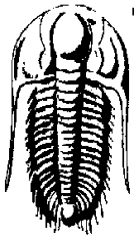
Recovery

Length (ft)	Description	Volume (bbl)
55.00	HOCWM-50%O-5%W-45%M	0.77

* Recovery from multiple tests

Gas Rates

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



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1310 Bison Road
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14-15s-19w Ellis,KS
GR #2
Job Ticket: 52229 **DST#: 2**
Test Start: 2013.04.24 @ 17:59:17

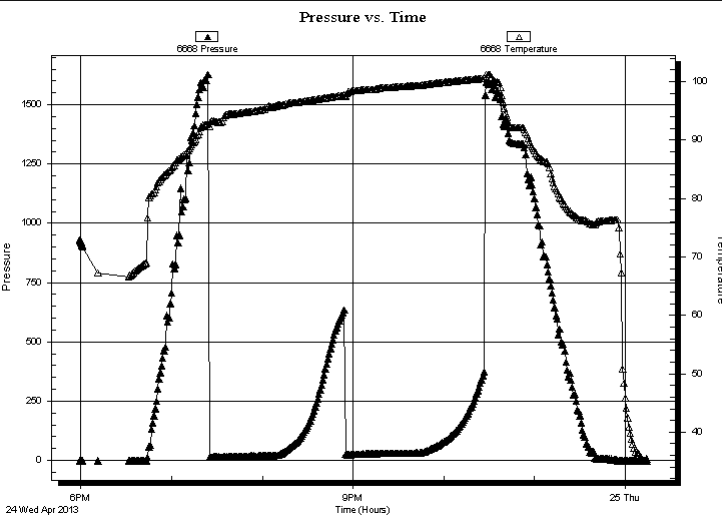
GENERAL INFORMATION:

Formation: D-F	Deviated: No Whipstock: 0.00 ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 19:25:02	Time Test Ended: 00:13:32	Tester: Jason McLemore
Interval: 3348.00 ft (KB) To 3384.00 ft (KB) (TVD)		Unit No: 54
Total Depth: 3384.00 ft (KB) (TVD)		Reference Elevations: 2023.00 ft (KB)
Hole Diameter: 7.88 inches	Hole Condition: Good	2013.00 ft (CF)
		KB to GR/CF: 10.00 ft

Serial #: 6668 Outside

Press @ Run Depth: psig @ 3351.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.04.24 End Date: 2013.04.25	Last Calib.: 2013.04.25
Start Time: 17:59:11 End Time: 00:14:10	Time On Btm:
	Time Off Btm:

TEST COMMENT: IFP-Weak Blow , Built to 5"
ISI-Dead
FFP-Good Blow ,Built to 8"
FSI-Dead



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
55.00	HOCWM-50%O-5%W-45%M	0.77

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52229 **DST#: 2**
Test Start: 2013.04.24 @ 17:59:17

Tool Information

Drill Pipe:	Length: 3342.00 ft	Diameter: 3.80 inches	Volume: 46.88 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:	35000.00 lb
			<u>Total Volume: 46.88 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	32000.00 lb
Depth to Top Packer:	3348.00 ft			Final	33000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	57.00 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			3328.00	
Shut In Tool	5.00			3333.00	
Hydraulic tool	5.00			3338.00	
Packer	5.00			3343.00	21.00 Bottom Of Top Packer
Packer	5.00			3348.00	
Stubb	1.00			3349.00	
Perforations	2.00			3351.00	
Recorder	0.00	8789	Inside	3351.00	
Recorder	0.00	6668	Outside	3351.00	
Perforations	30.00			3381.00	
Bullnose	3.00			3384.00	36.00 Bottom Packers & Anchor

Total Tool Length: 57.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52229 **DST#: 2**
Test Start: 2013.04.24 @ 17:59:17

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.38 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4400.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	HOCWM-50%O-5%W-45%M	0.772

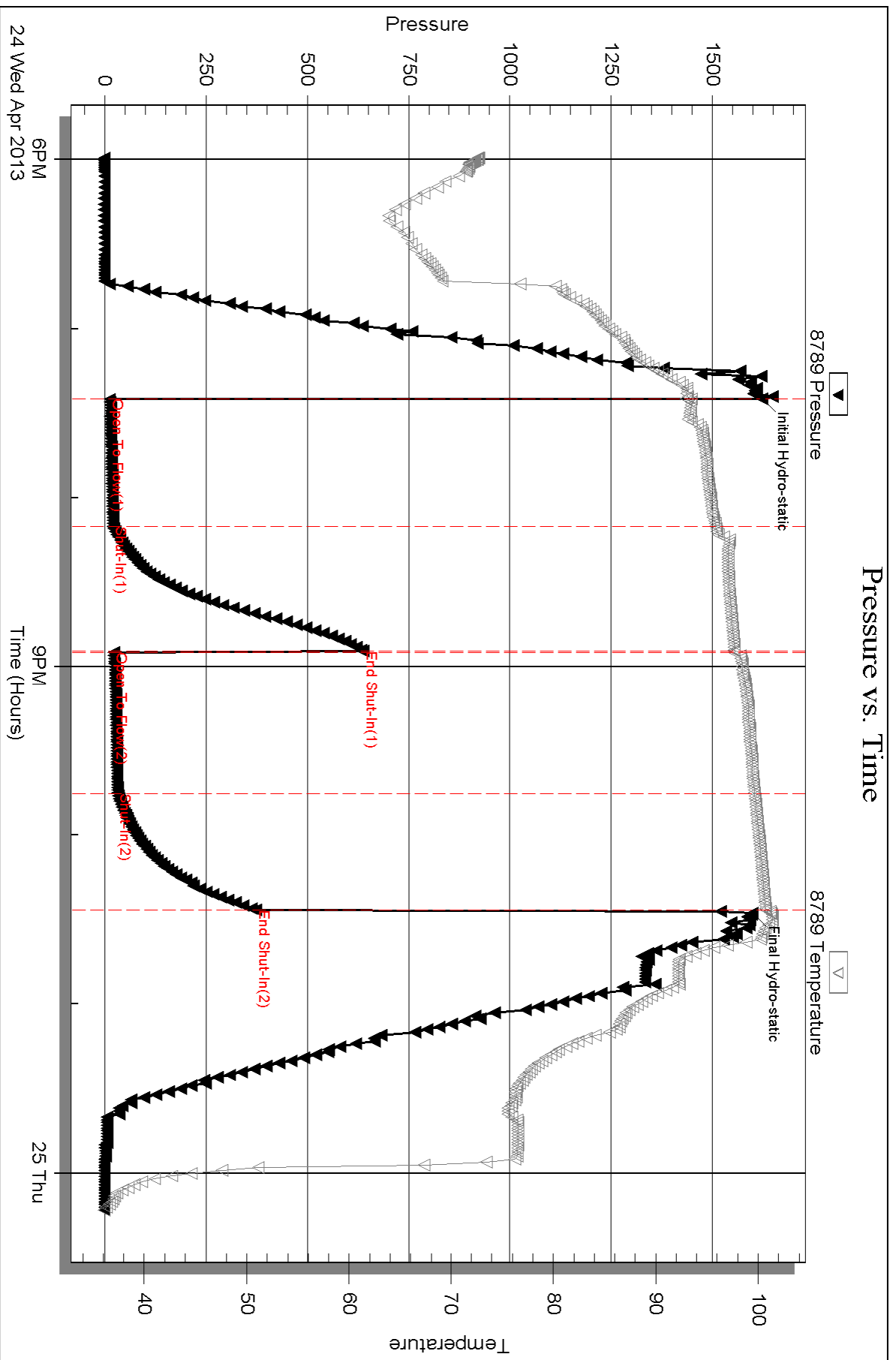
Total Length: 55.00 ft Total Volume: 0.772 bbl

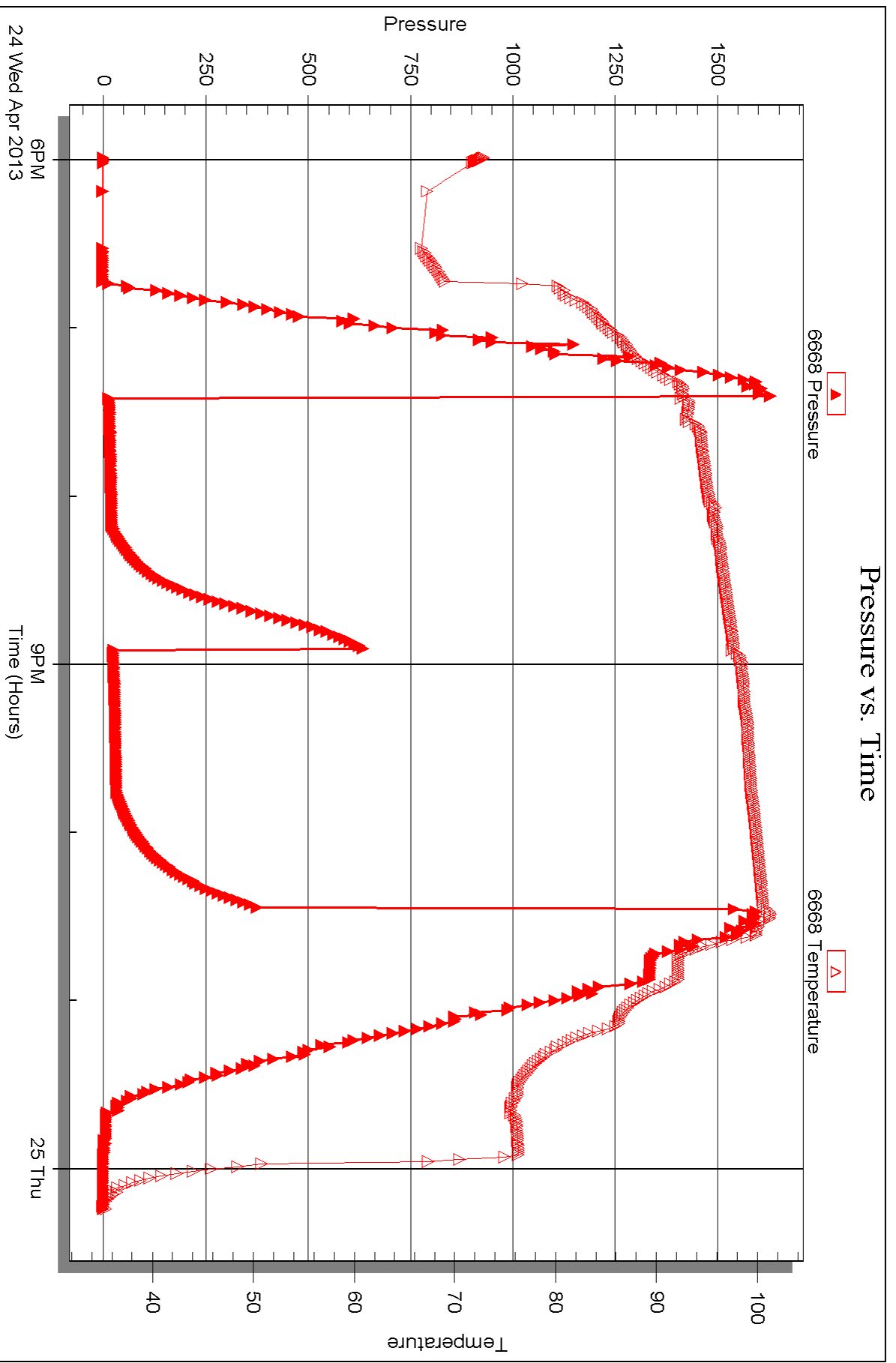
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

GR #2

14-15s-19w Ellis,KS

Start Date: 2013.04.26 @ 05:53:13

End Date: 2013.04.26 @ 13:34:58

Job Ticket #: 52230 DST #: 3

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

Printed: 2013.05.20 @ 10:42:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52230 **DST#: 3**
Test Start: 2013.04.26 @ 05:53:13

GENERAL INFORMATION:

Formation: **I**
 Deviated: No Whipstock: 0.00 ft (KB)
 Time Tool Opened: 08:17:43
 Time Test Ended: 13:34:58
Interval: 3460.00 ft (KB) To 3475.00 ft (KB) (TVD)
 Total Depth: 3751.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Reset)
 Tester: Jason McLemore
 Unit No: 54
 Reference Elevations: 2023.00 ft (KB)
 2013.00 ft (CF)
 KB to GR/CF: 10.00 ft

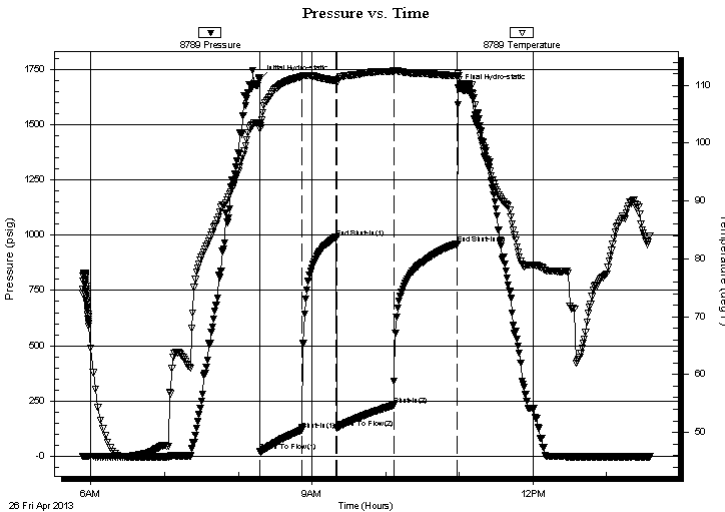
Serial #: 8789

Inside

Press @ Run Depth: 231.63 psig @ 3471.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.04.26 End Date: 2013.04.26 Last Calib.: 2013.04.26
 Start Time: 05:53:15 End Time: 13:34:58 Time On Btm: 2013.04.26 @ 08:17:13
 Time Off Btm: 2013.04.26 @ 10:59:13

TEST COMMENT: IFP-Good Blow , BOB in 25 Min.
 ISI-Surface Blow back for 10 Min.
 FFP-Fair Blow , Built to 8-1/4"
 FSI-Dead

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1704.95	103.46	Initial Hydro-static
1	23.10	102.48	Open To Flow (1)
35	119.89	111.49	Shut-In(1)
63	989.50	110.80	End Shut-In(1)
63	128.67	110.32	Open To Flow (2)
110	231.63	112.45	Shut-In(2)
162	962.23	111.61	End Shut-In(2)
162	1664.38	111.65	Final Hydro-static

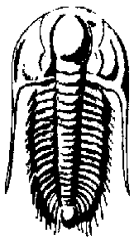
Recovery

Length (ft)	Description	Volume (bbl)
450.00	Muddy Water-95%W-5%M	6.31

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

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

14-15s-19w Ellis, KS
GR #2
Job Ticket: 52230 **DST#: 3**
Test Start: 2013.04.26 @ 05:53:13

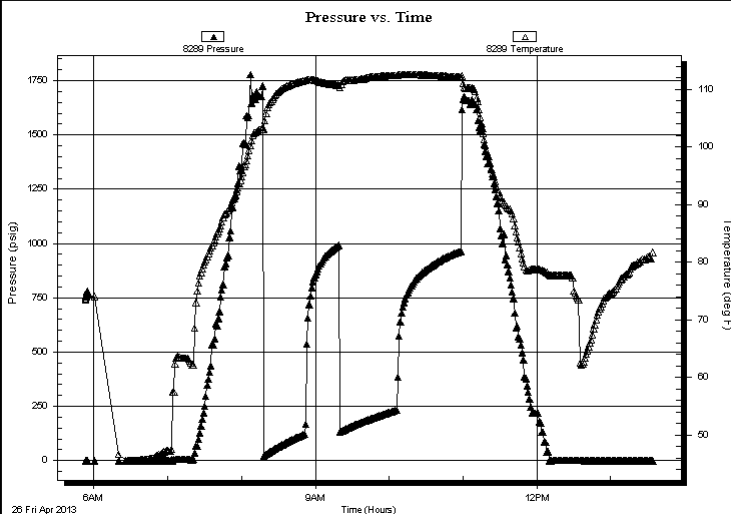
GENERAL INFORMATION:

Formation: **I**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 08:17:43
Time Test Ended: 13:34:58
Interval: **3460.00 ft (KB) To 3475.00 ft (KB) (TVD)**
Total Depth: 3751.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 2023.00 ft (KB)
2013.00 ft (CF)
KB to GR/CF: 10.00 ft
Test Type: Conventional Straddle (Reset)
Tester: Jason McLemore
Unit No: 54

Serial #: 8289 Outside

Press @ Run Depth: psig @ 3471.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.04.26 End Date: 2013.04.26 Last Calib.: 1899.12.30
Start Time: 05:53:15 End Time: 13:34:43 Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Good Blow , BOB in 25 Min.
ISI-Surface Blow back for 10 Min.
FFP-Fair Blow , Built to 8-1/4"
FSI-Dead



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
450.00	Muddy Water-95%W-5%M	6.31

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

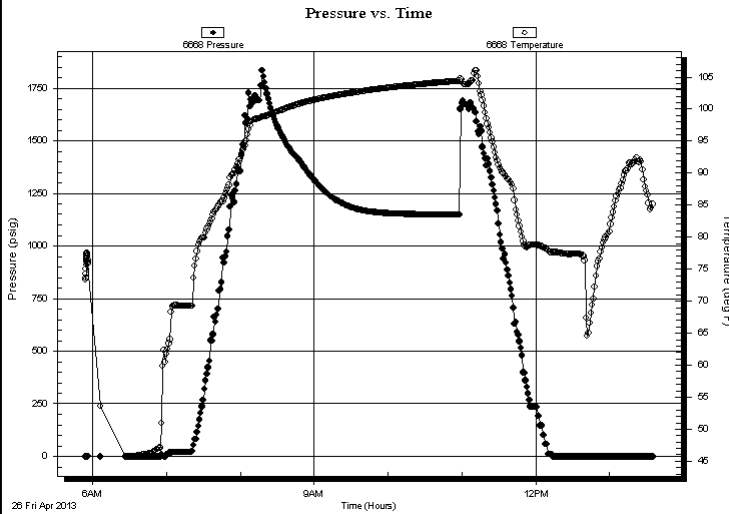
14-15s-19w Ellis,KS
GR #2
 Job Ticket: 52230 **DST#: 3**
 Test Start: 2013.04.26 @ 05:53:13

GENERAL INFORMATION:

Formation: **I**
 Deviated: **No** Whipstock: **0.00 ft (KB)** Test Type: **Conventional Straddle (Reset)**
 Time Tool Opened: **08:17:43** Tester: **Jason McLemore**
 Time Test Ended: **13:34:58** Unit No: **54**
Interval: 3460.00 ft (KB) To 3475.00 ft (KB) (TVD) Reference Elevations: **2023.00 ft (KB)**
 Total Depth: **3751.00 ft (KB) (TVD)** **2013.00 ft (CF)**
 Hole Diameter: **7.88 inches** Hole Condition: **Good** KB to GR/CF: **10.00 ft**

Serial #: 6668 Below (Straddle)
 Press @ Run Depth: **psig @ 3482.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2013.04.26** End Date: **2013.04.26** Last Calib.: **2013.04.26**
 Start Time: **05:54:14** End Time: **13:35:03** Time On Btm:
 Time Off Btm:

TEST COMMENT: IFP-Good Blow, BOB in 25 Min.
 ISI-Surface Blow back for 10 Min.
 FFP-Fair Blow, Built to 8-1/4"
 FSI-Dead



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
450.00	Muddy Water-95%W-5%M	6.31

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

14-15s-19w Ellis,KS
GR #2
Job Ticket: 52230 **DST#: 3**
Test Start: 2013.04.26 @ 05:53:13

Tool Information

Drill Pipe:	Length: 3463.00 ft	Diameter: 3.80 inches	Volume: 48.58 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
		Total Volume: 48.58 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3460.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	3475.00 ft			
Interval between Packers:	15.00 ft			
Tool Length:	298.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Recorder	0.00	6755	Fluid	3439.00	
Change Over Sub	1.00			3440.00	
Shut In Tool	5.00			3445.00	
Hydraulic tool	5.00			3450.00	
Packer	5.00			3455.00	21.00 Bottom Of Top Packer
Packer	5.00			3460.00	
Stubb	1.00			3461.00	
Perforations	10.00			3471.00	
Recorder	0.00	8789	Inside	3471.00	
Recorder	0.00	8289	Outside	3471.00	
Blank Off Sub	1.00			3472.00	
Blank Spacing	3.00			3475.00	15.00 Tool Interval
Packer	1.00			3476.00	
Perforations	5.00			3481.00	
Change Over Sub	1.00			3482.00	
Recorder	0.00	6668	Below	3482.00	
Blank Spacing	251.00			3733.00	
Change Over Sub	1.00			3734.00	
Bullnose	3.00			3737.00	262.00 Bottom Packers & Anchor

Total Tool Length: 298.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI, Inc.

14-15s-19w Ellis,KS

1310 Bison Road
Hays, KS 67601

GR #2

Job Ticket: 52230

DST#: 3

ATTN: Herb Deines

Test Start: 2013.04.26 @ 05:53:13

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:

50000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
450.00	Muddy Water-95%W-5%M	6.312

Total Length: 450.00 ft

Total Volume: 6.312 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

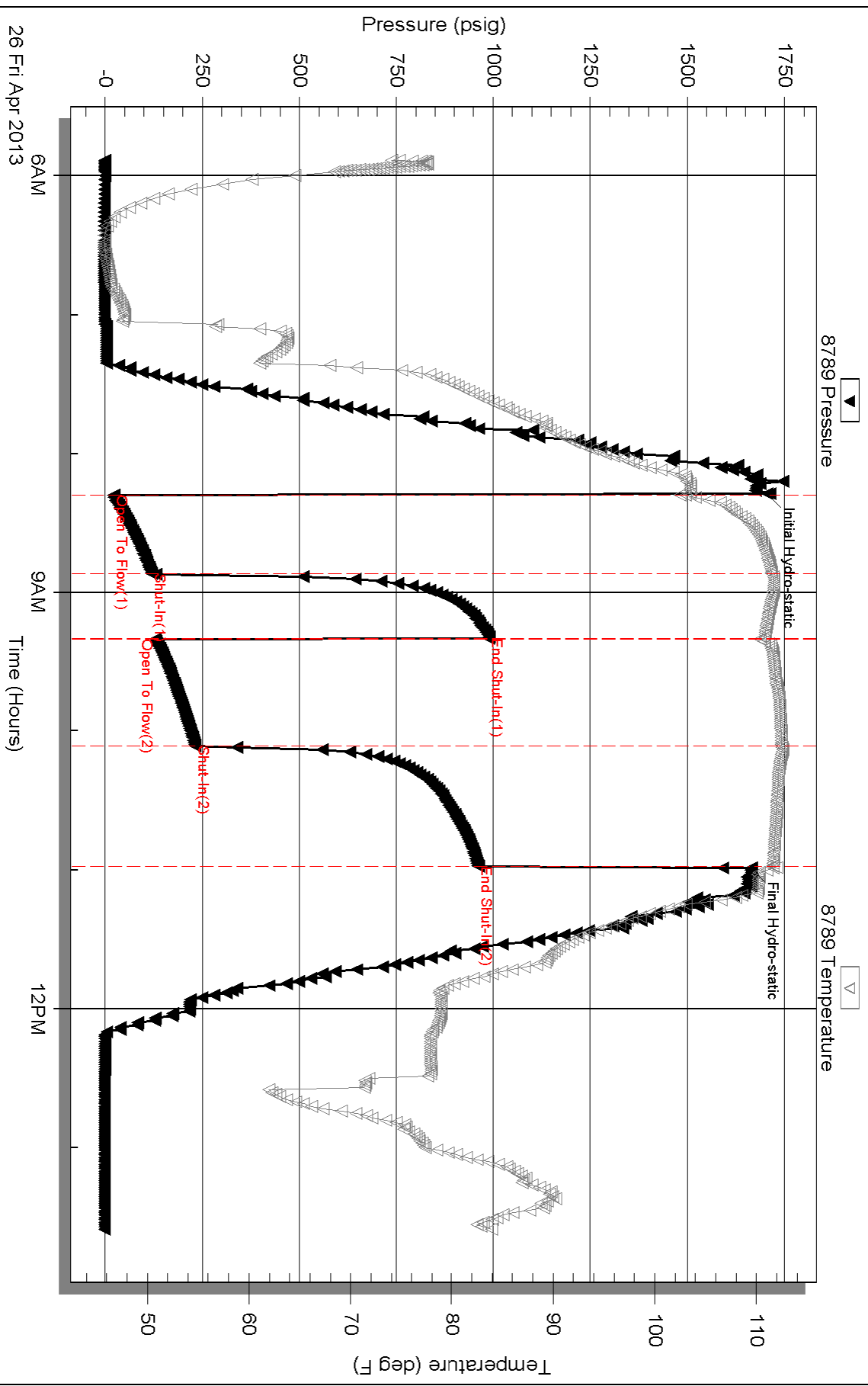
Serial #:

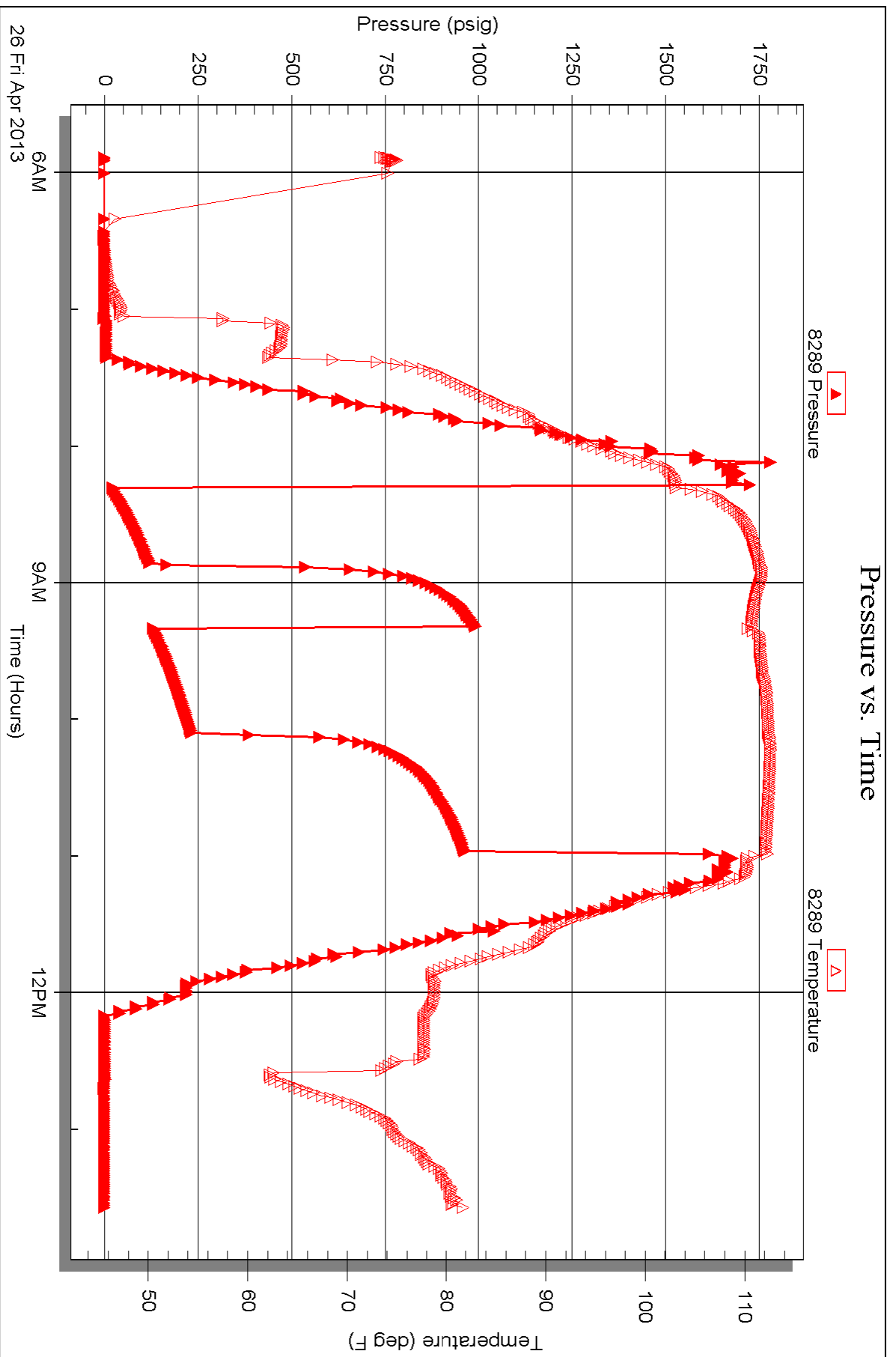
Laboratory Name:

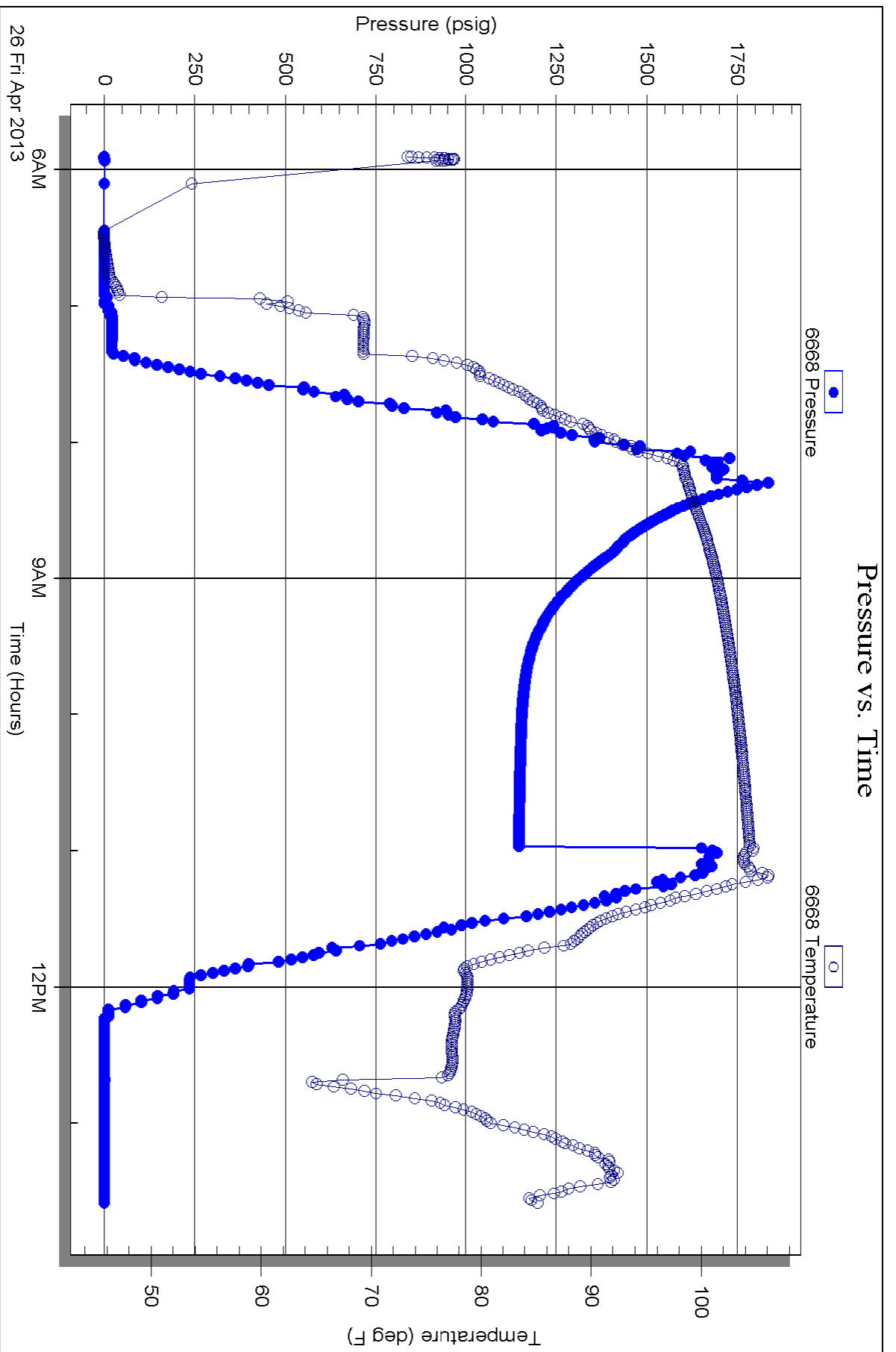
Laboratory Location:

Recovery Comments:

Pressure vs. Time









TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52228

Well Name & No. GR #2 Test No. 1 Date 4-24-13
 Company TDI, Inc. Elevation 2023 KB 2013 GL
 Address 1310 Bison Road, Hays, KS. 67601
 Co. Rep / Geo. Harb Deines Rig Southwind #1
 Location: Sec. 14 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3314-3350 Zone Tested 'C'
 Anchor Length 36 Drill Pipe Run 3313 Mud Wt. 9.1
 Top Packer Depth 3309 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 3314 Wt. Pipe Run 0 WL 7.4
 Total Depth 3350 Chlorides 4400 ppm System LCM 2 #
 Blow Description IFP - Strong, BOB in 2 min
ISI - Blowback Built to 1"
FFP - Strong, BOB in 1 min
FSI - Blowback Built to 4"

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>Free Oil</u>				
<u>120</u>	<u>Muddy Frothy Oil</u>	<u>50</u>	<u>40</u>		<u>10</u>
	<u>2210' Gas In Pipe</u>				

Rec Total 190 BHT _____ Gravity 39 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1604 Test 1150 T-On Location 4:22
 (B) First Initial Flow 33 Jars _____ T-Started 4:37
 (C) First Final Flow 43 Safety Joint _____ T-Open 7:18
 (D) Initial Shut-In 527 Circ Sub _____ T-Pulled 9:18
 (E) Second Initial Flow 70 Hourly Standby _____ T-Out 11:28
 (F) Second Final Flow 83 Mileage 30 rt 46.50 Comments _____
 (G) Final Shut-In 520 Sampler _____
 (H) Final Hydrostatic 1555 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1196.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1196.50

Approved By _____ Our Representative Jason Mc Lemmon *Thank You*

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52229

Well Name & No. GR #2 Test No. 2 Date 4-24-13
 Company T.D.I., Inc. Elevation 2023 KB 2013 GL
 Address 1310 Bison Road, Hays, KS. 67601
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 14 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3348 - 3384 Zone Tested D-F
 Anchor Length 36' Drill Pipe Run 3342 Mud Wt. 9.1
 Top Packer Depth 3343 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 3348 Wt. Pipe Run 0 WL 7.4
 Total Depth 3384 Chlorides 4400 ppm System LCM 2"
 Blow Description IFP - Weak Blow, Built to 5"
ISI - Dead
FFP - Good Blow, Built to 8"
FSI - Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>55</u>	<u>HOCWM</u>	<u>50</u>	<u>5</u>	<u>45</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 55 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1622 Test 1150 T-On Location 17:58
 (B) First Initial Flow 12 Jars _____ T-Started 17:59
 (C) First Final Flow 20 Safety Joint _____ T-Open 19:26
 (D) Initial Shut-In 637 Circ Sub _____ T-Pulled 22:26
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 00:16
 (F) Second Final Flow 32 Mileage 30 + 4 46.50 Comments _____
 (G) Final Shut-In 372 Sampler _____
 (H) Final Hydrostatic 1598 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Sub Total 1196.50

Sub Total 1196.50

Approved By _____ Our Representative Jason McLemon *Thank You*

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52230

Well Name & No. GR #2 Test No. 3 Date 4-26-13
 Company TDI, Inc. Elevation 2023 KB 2013 GL
 Address 1310 Bison Road, Hays, KS 67601
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 14 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3460 - 3475 Zone Tested I
 Anchor Length 15' Drill Pipe Run 3463 Mud Wt. 9.1
 Top Packer Depth 3455 Drill Collars Run 0 Vis 52
 Bottom Packer Depth 3475 Wt. Pipe Run 0 WL 7.2
 Total Depth 3751 Chlorides 4,500 ppm System LCM 2th
 Blow Description IFP - Good Blow, BOB in 25 min.
ISI - Surface Blowback for 10 min
FFA - Fair Blow, Built to 8 1/4"
FSI - Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>450</u>	<u>Muddy Water</u>		<u>95</u>		<u>5</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 450 BHT _____ Gravity _____ API RW .142 @ 70 °F Chlorides 50,000 ppm

(A) Initial Hydrostatic <u>1705</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>5:25</u>
(B) First Initial Flow <u>23</u>	<input type="checkbox"/> Jars _____	T-Started <u>5:49</u>
(C) First Final Flow <u>120</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>8:15</u>
(D) Initial Shut-In <u>990</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>10:45</u>
(E) Second Initial Flow <u>129</u>	<input checked="" type="checkbox"/> Hourly Standby _____	T-Out <u>13:32</u>
(F) Second Final Flow <u>232</u>	<input checked="" type="checkbox"/> Mileage <u>30rt</u> 46.50	Comments _____
(G) Final Shut-In <u>962</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1664</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>175</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby <u>1d 5.25h</u>	Total <u>1971.50</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1796.50</u>	

Approved By _____ Our Representative Jason Mc Lemmon

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Thank You