



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Tom Denning

### **Dinges Family #1**

### **8-15s-19w Ellis,KS**

Start Date: 2012.09.07 @ 14:50:24

End Date: 2012.09.07 @ 21:16:18

Job Ticket #: 48679                      DST #: 1

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

Printed: 2012.09.13 @ 14:45:25

TDI Inc  
8-15s-19w Ellis,KS  
Dinges Family #1  
DST # 1  
LKC "C"  
2012.09.07



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

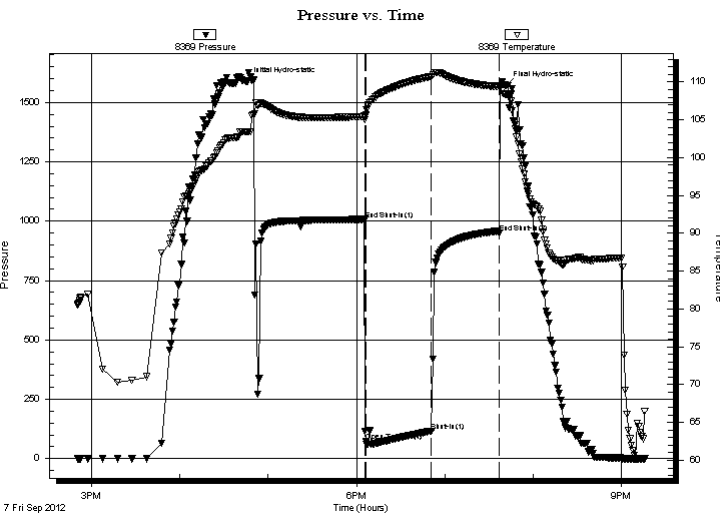
**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 48679 **DST#: 1**  
Test Start: 2012.09.07 @ 14:50:24

## GENERAL INFORMATION:

Formation: **LKC "C"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 18:06:19  
Time Test Ended: 21:16:18  
Interval: **3355.00 ft (KB) To 3377.00 ft (KB) (TVD)**  
Total Depth: 3377.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Ray Schwager  
Unit No: 42  
Reference Elevations: 2037.00 ft (KB)  
2027.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8369 Inside**  
Press @ Run Depth: 116.52 psig @ 3356.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2012.09.07 End Date: 2012.09.07 Last Calib.: 2012.09.07  
Start Time: 14:50:24 End Time: 21:16:18 Time On Btm: 2012.09.07 @ 16:45:19  
Time Off Btm: 2012.09.07 @ 19:41:48

**TEST COMMENT:** 30-IFP-w k to a fr bl 1/2" to 4 1/4" bl  
45-ISIP-no bl  
45-FFP-strg bl in 2 min  
45-FSIP-strg bl bk in 7 min



## PRESSURE SUMMARY

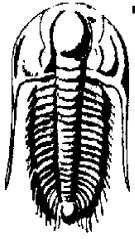
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1589.48	103.45	Initial Hydro-static
80	1007.58	105.48	End Shut-In(1)
81	72.71	105.61	Open To Flow (1)
126	116.52	110.74	Shut-In(1)
172	949.13	109.34	End Shut-In(2)
177	1571.73	108.34	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	870'GIP	0.00
5.00	O&GCM 10-%G10&O80%M	0.07
62.00	GMO 50%G20%M30%O	0.87
62.00	GMO 40%G10%M50%O	0.87
124.00	CO	1.74
5.00	Water	0.07

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison Rd  
 Hays KS 67601-9696  
 ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
 Job Ticket: 48679 **DST#: 1**  
 Test Start: 2012.09.07 @ 14:50:24

### GENERAL INFORMATION:

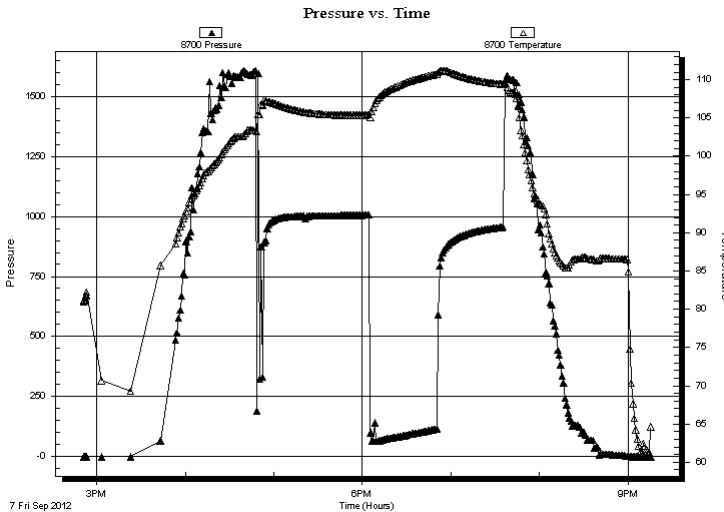
Formation: **LKC "C"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 18:06:19 Tester: Ray Schwager  
 Time Test Ended: 21:16:18 Unit No: 42  
 Interval: **3355.00 ft (KB) To 3377.00 ft (KB) (TVD)** Reference Elevations: 2037.00 ft (KB)  
 Total Depth: 3377.00 ft (KB) (TVD) 2027.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

### Serial #: 8700 Outside

Press @ Run Depth: psig @ 3356.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2012.09.07	End Date: 2012.09.07
Start Time: 14:51:03	End Time: 21:15:27
	Last Calib.: 2012.09.07
	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30-IFP-w k to a fr bl 1/2" to 4 1/4" bl  
 45-ISIP-no bl  
 45-FFP-strg bl in 2 min  
 45-FSIP-strg bl bk in 7 min

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
0.00	870'GIP	0.00
5.00	O&GCM 10-%G10&O80%M	0.07
62.00	GMO 50%G20%M30%O	0.87
62.00	GMO 40%G10%M50%O	0.87
124.00	CO	1.74
5.00	Water	0.07

### 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 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 48679      **DST#: 1**  
Test Start: 2012.09.07 @ 14:50:24

**Tool Information**

Drill Pipe:	Length: 3359.00 ft	Diameter: 3.80 inches	Volume: 47.12 bbl	Tool Weight: 2200.00 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: 70000.00 lb
			<u>Total Volume: 47.12 bbl</u>	Tool Chased 12.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3355.00 ft			Final 30000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	43.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3335.00	
Shut In Tool	5.00			3340.00	
Hydraulic tool	5.00			3345.00	
Packer	5.00			3350.00	21.00      Bottom Of Top Packer
Packer	5.00			3355.00	
Stubb	1.00			3356.00	
Recorder	0.00	8369	Inside	3356.00	
Recorder	0.00	8700	Outside	3356.00	
Perforations	18.00			3374.00	
Bullnose	3.00			3377.00	22.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>43.00</b>				



**TRILOBITE  
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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 48679      **DST#: 1**  
Test Start: 2012.09.07 @ 14:50:24

## Mud and Cushion Information

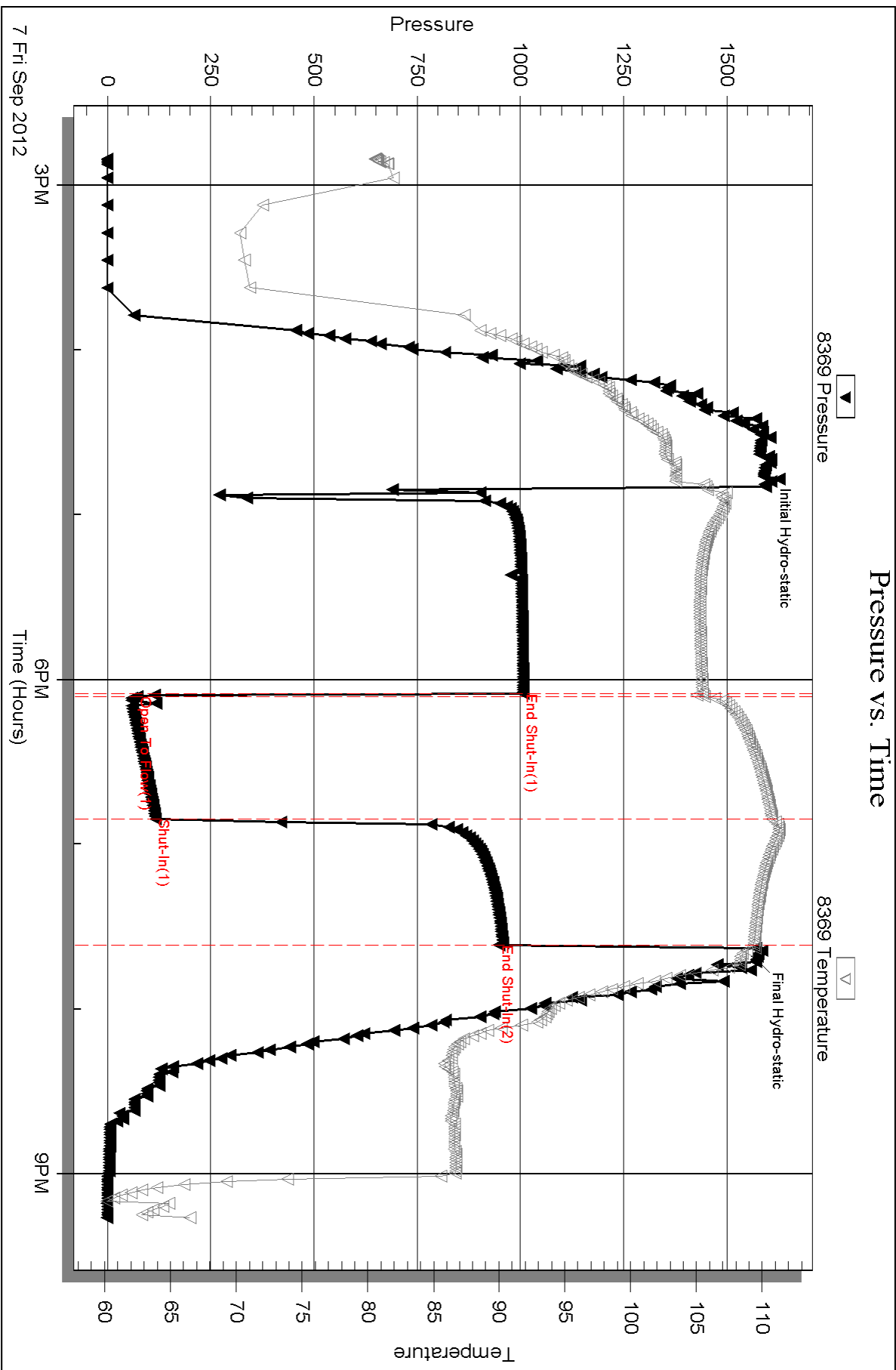
Mud Type: Gel Chem	Cushion Type:	Oil API: 37 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 47.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.57 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 4200.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	870'GIP	0.000
5.00	O&GCM 10-%G10&O80%M	0.070
62.00	GMO 50%G20%M30%O	0.870
62.00	GMO 40%G10%M50%O	0.870
124.00	CO	1.739
5.00	Water	0.070

Total Length: 258.00 ft      Total Volume: 3.619 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

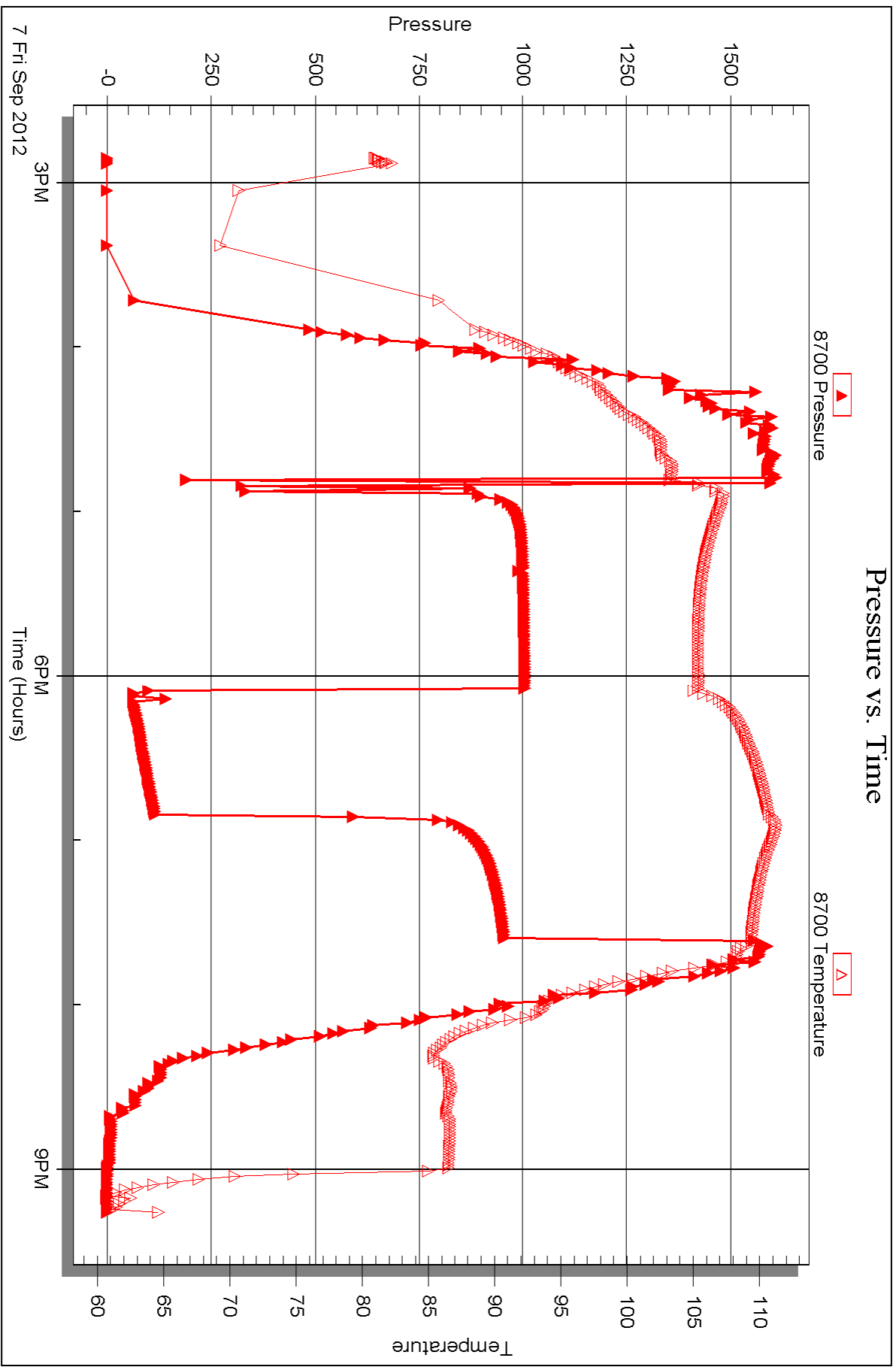


Serial #: 8700

Outside TDI Inc

Dinges Family #1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Tom Denning

### **Dinges Family #1**

### **8-15s-19w Ellis,KS**

Start Date: 2012.09.08 @ 04:30:00

End Date: 2012.09.08 @ 09:19:30

Job Ticket #: 49468                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.09.13 @ 14:48:29





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison Rd  
 Hays KS 67601-9696  
 ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
 Job Ticket: 49468 **DST#: 2**  
 Test Start: 2012.09.08 @ 04:30:00

## GENERAL INFORMATION:

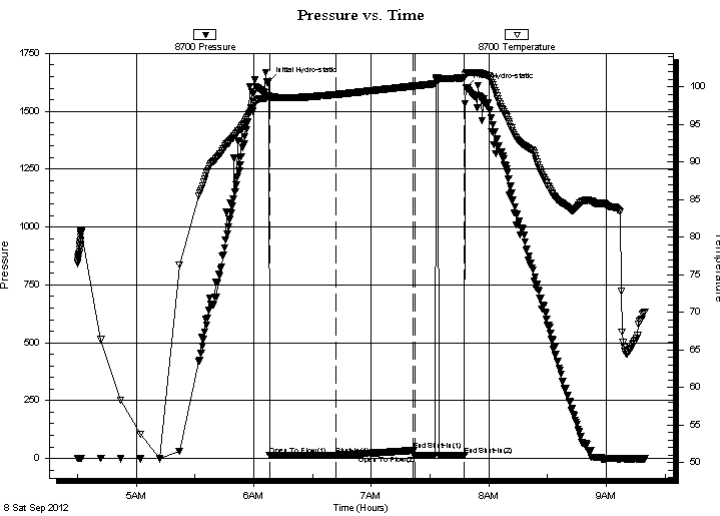
Formation: **LKC - "D-top of "G"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 06:08:00 Tester: Cody Bloedorn  
 Time Test Ended: 09:19:30 Unit No: 42  
 Interval: **3377.00 ft (KB) To 3414.00 ft (KB) (TVD)** Reference Elevations: 2037.00 ft (KB)  
 Total Depth: 3414.00 ft (KB) (TVD) 2027.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

## Serial #: 8700

Outside

Press @ Run Depth: 14.74 psig @ 3378.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.09.08 End Date: 2012.09.08 Last Calib.: 2012.09.08  
 Start Time: 04:30:05 End Time: 09:19:29 Time On Btm: 2012.09.08 @ 06:07:30  
 Time Off Btm: 2012.09.08 @ 07:48:30

TEST COMMENT: 30 - IF- 1/4" Blow and Dying  
 45 - IS- No blow back.  
 20 - FF- Waited 10 Min, no blow, Flushed tool, surged and died, w aited 10 Min. Pulled tool



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1628.63	98.87	Initial Hydro-static
1	12.55	98.55	Open To Flow (1)
35	14.74	98.99	Shut-In(1)
74	35.15	100.11	End Shut-In(1)
75	13.41	100.13	Open To Flow (2)
100	14.10	101.21	End Shut-In(2)
101	1600.40	101.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - Oil Scum, 100%M	0.07

\* Recovery from multiple tests

## Gas Rates

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



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1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

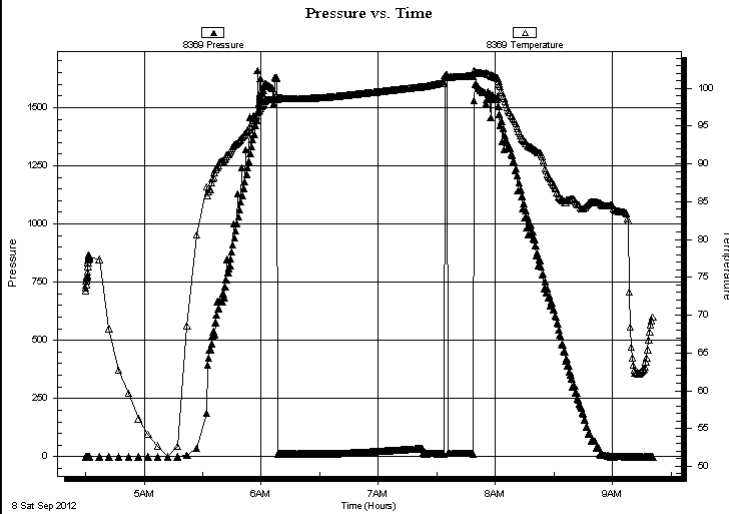
**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 49468 **DST#: 2**  
Test Start: 2012.09.08 @ 04:30:00

## GENERAL INFORMATION:

Formation: **LKC - "D-top of "G"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 06:08:00  
Time Test Ended: 09:19:30  
Interval: **3377.00 ft (KB) To 3414.00 ft (KB) (TVD)**  
Total Depth: 3414.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2037.00 ft (KB)  
2027.00 ft (CF)  
KB to GR/CF: 10.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Cody Bloedorn  
Unit No: 42

**Serial #: 8369** **Inside**  
Press @ Run Depth: psig @ 3378.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2012.09.08 End Date: 2012.09.08 Last Calib.: 2012.09.08  
Start Time: 04:30:05 End Time: 09:20:29 Time On Btm:  
Time Off Btm:

**TEST COMMENT:** 30 - IF- 1/4" Blow and Dying  
45 - IS- No blow back.  
20 - FF- Waited 10 Min, no blow, Flushed tool, surged and died, w aited 10 Min. Pulled tool



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - Oil Scum, 100%M	0.07

\* Recovery from multiple tests

## Gas Rates

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



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TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 49468 **DST#: 2**  
Test Start: 2012.09.08 @ 04:30:00

**Tool Information**

Drill Pipe:	Length: 3361.00 ft	Diameter: 3.80 inches	Volume: 47.15 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	34000.00 lb
			<u>Total Volume: 47.15 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	30000.00 lb
Depth to Top Packer:	3377.00 ft			Final	30000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	37.00 ft				
Tool Length:	58.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3357.00	
Shut In Tool	5.00			3362.00	
Hydraulic tool	5.00			3367.00	
Packer	5.00			3372.00	21.00 Bottom Of Top Packer
Packer	5.00			3377.00	
Stubb	1.00			3378.00	
Recorder	0.00	8369	Inside	3378.00	
Recorder	0.00	8700	Outside	3378.00	
Perforations	33.00			3411.00	
Bullnose	3.00			3414.00	37.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>58.00</b>				



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 49468      **DST#: 2**  
Test Start: 2012.09.08 @ 04:30:00

**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: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.57 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4200.00 ppm			
Filter Cake: 1.00 inches			

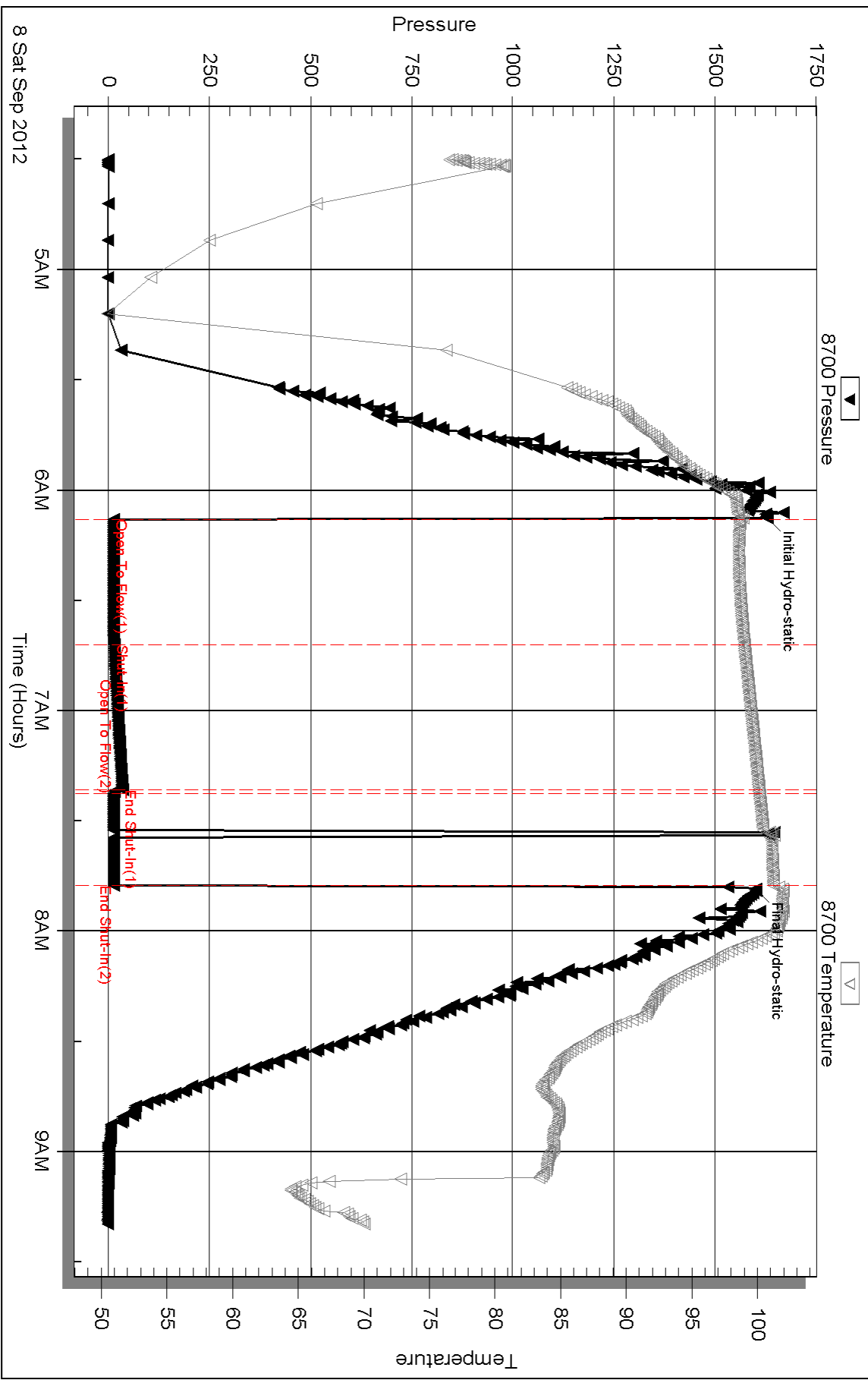
**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud - Oil Scum, 100%M	0.070

Total Length: 5.00 ft      Total Volume: 0.070 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time



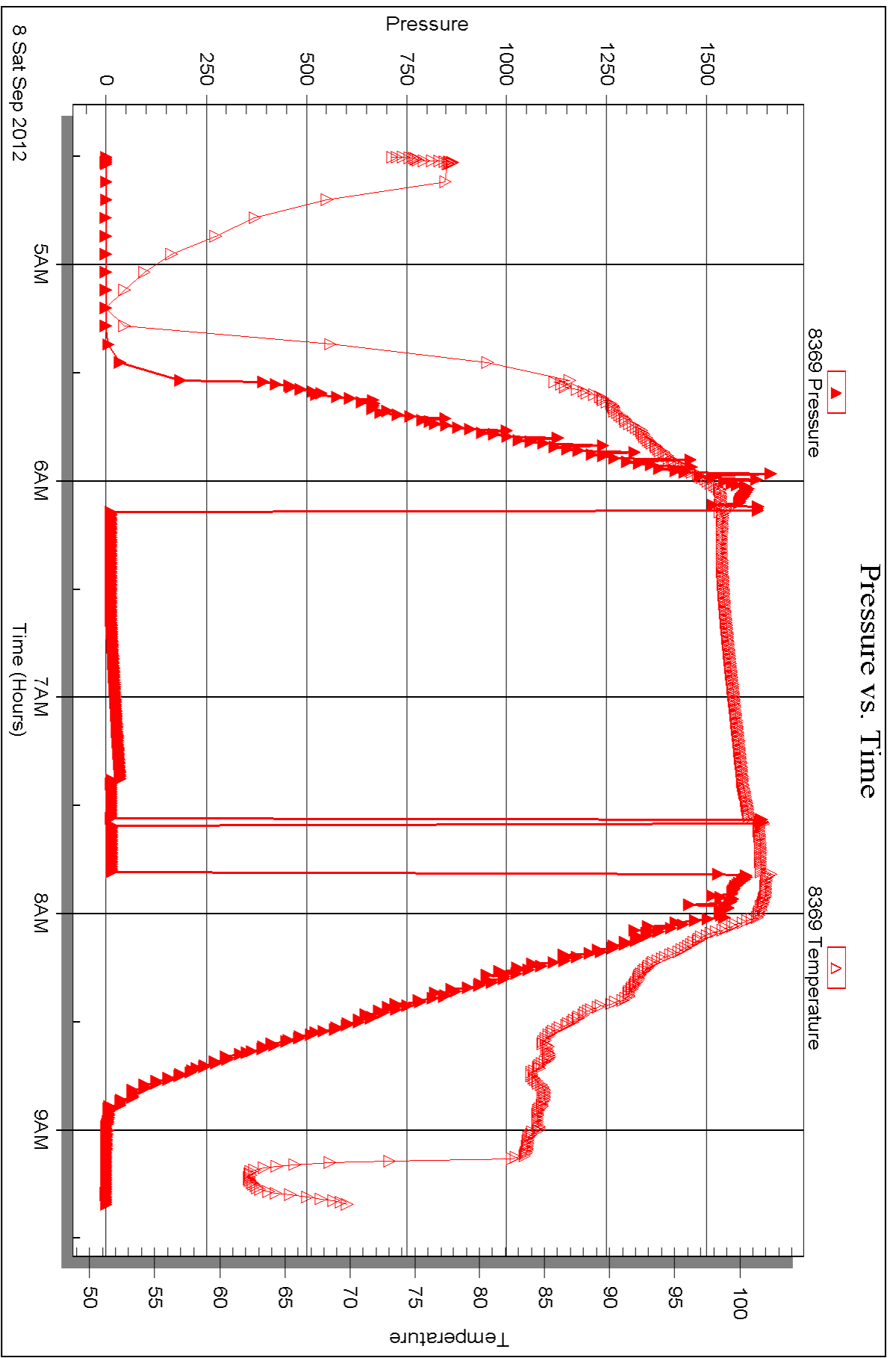
Serial #: 8369

Inside

TDI Inc

Dinges Family #1

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Tom Denning

### **Dinges Family #1**

### **8-15s-19w Ellis,KS**

Start Date: 2012.09.08 @ 21:00:00

End Date: 2012.09.09 @ 02:59:30

Job Ticket #: 49469                      DST #: 3

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

Printed: 2012.09.13 @ 14:30:08

TDI Inc  
8-15s-19w Ellis,KS  
Dinges Family #1  
DST # 3  
H,I,J  
2012.09.08



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison Rd  
 Hays KS 67601-9696  
 ATTN: Tom Denning

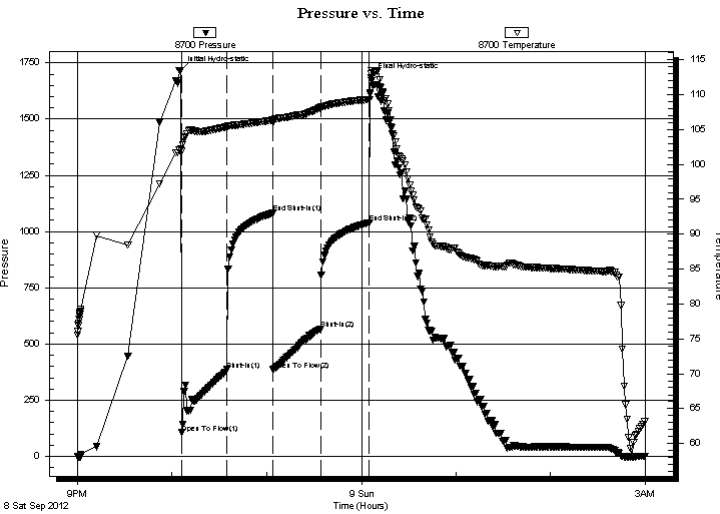
**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
 Job Ticket: 49469 **DST#: 3**  
 Test Start: 2012.09.08 @ 21:00:00

## GENERAL INFORMATION:

Formation: **H,I,J**  
 Deviated: **No** Whipstock: **ft (KB)** Test Type: **Conventional Bottom Hole (Reset)**  
 Time Tool Opened: **22:06:00** Tester: **Cody Bloedorn**  
 Time Test Ended: **02:59:30** Unit No: **42**  
**Interval: 3428.00 ft (KB) To 3540.00 ft (KB) (TVD)** Reference Elevations: **2037.00 ft (KB)**  
 Total Depth: **3540.00 ft (KB) (TVD)** **2027.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **10.00 ft**

**Serial #: 8700** **Outside**  
 Press @ Run Depth: **567.39 psig @ 3527.00 ft (KB)** Capacity: **8000.00 psig**  
 Start Date: **2012.09.08** End Date: **2012.09.09** Last Calib.: **2012.09.09**  
 Start Time: **21:00:05** End Time: **02:59:29** Time On Btm: **2012.09.08 @ 22:05:30**  
 Time Off Btm: **2012.09.09 @ 00:06:00**

TEST COMMENT: 30 - IF- B.O.B. in 2 Min.  
 30 - IS- No blow back.  
 30 - FF- B.O.B. in 3 Min.  
 30 - FS- No blow back.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1716.38	102.19	Initial Hydro-static
1	105.15	101.92	Open To Flow (1)
29	385.20	105.37	Shut-In(1)
58	1081.52	106.35	End Shut-In(1)
59	385.71	106.07	Open To Flow (2)
89	567.39	108.10	Shut-In(2)
120	1039.66	109.31	End Shut-In(2)
121	1685.09	112.96	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	Mud, 100%M	2.61
682.00	MW, 5%M, 95%W	9.57
124.00	Mud, 100%M	1.74

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 49469 **DST#: 3**  
Test Start: 2012.09.08 @ 21:00:00

**GENERAL INFORMATION:**

Formation: **H,I,J**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 22:06:00 Tester: Cody Bloedorn  
 Time Test Ended: 02:59:30 Unit No: 42  
 Interval: **3428.00 ft (KB) To 3540.00 ft (KB) (TVD)**  
 Reference Elevations: 2037.00 ft (KB)  
 Total Depth: 3540.00 ft (KB) (TVD) 2027.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

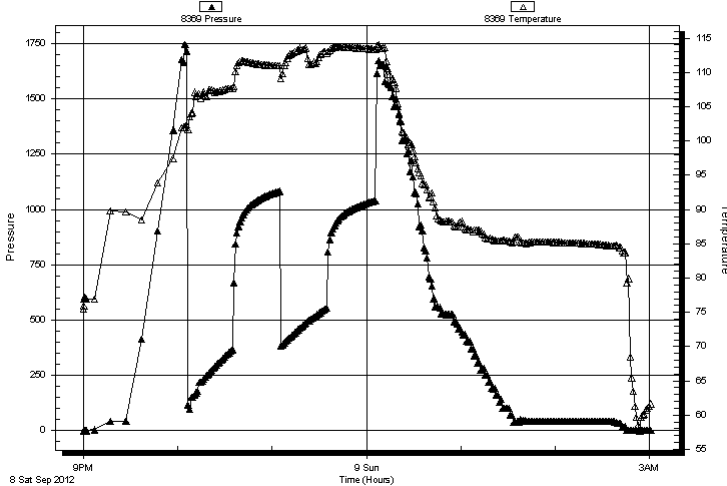
**Serial #: 8369**

**Inside**

Press@RunDepth:	psig @ 3527.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2012.09.08	End Date:	2012.09.09
Start Time:	21:00:05	End Time:	03:00:59
		Last Calib.:	2012.09.09
		Time On Btm:	
		Time Off Btm:	

**TEST COMMENT:** 30 - IF- B.O.B. in 2 Min.  
 30 - IS- No blow back.  
 30 - FF- B.O.B. in 3 Min.  
 30 - FS- No blow back.

Pressure vs. Time



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
186.00	Mud, 100%M	2.61
682.00	MV, 5%M, 95%W	9.57
124.00	Mud, 100%M	1.74

\* 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 Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 49469      **DST#: 3**  
Test Start: 2012.09.08 @ 21:00:00

**Tool Information**

Drill Pipe:	Length: 3425.00 ft	Diameter: 3.80 inches	Volume: 48.04 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 48.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3428.00 ft			Final 33000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	112.00 ft			
Tool Length:	133.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			3408.00	
Shut In Tool	5.00			3413.00	
Hydraulic tool	5.00			3418.00	
Packer	5.00			3423.00	21.00      Bottom Of Top Packer
Packer	5.00			3428.00	
Stubb	1.00			3429.00	
Perforations	3.00			3432.00	
Change Over Sub	1.00			3433.00	
Drill Pipe	93.00			3526.00	
Change Over Sub	1.00			3527.00	
Recorder	0.00	8369	Inside	3527.00	
Recorder	0.00	8700	Outside	3527.00	
Perforations	10.00			3537.00	
Bullnose	3.00			3540.00	112.00      Bottom Packers & Anchor

**Total Tool Length: 133.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 49469      **DST#: 3**  
Test Start: 2012.09.08 @ 21:00:00

### 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:	60000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4200.00 ppm			
Filter Cake: inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	Mud, 100%M	2.609
682.00	MW, 5%M, 95%W	9.567
124.00	Mud, 100%M	1.739

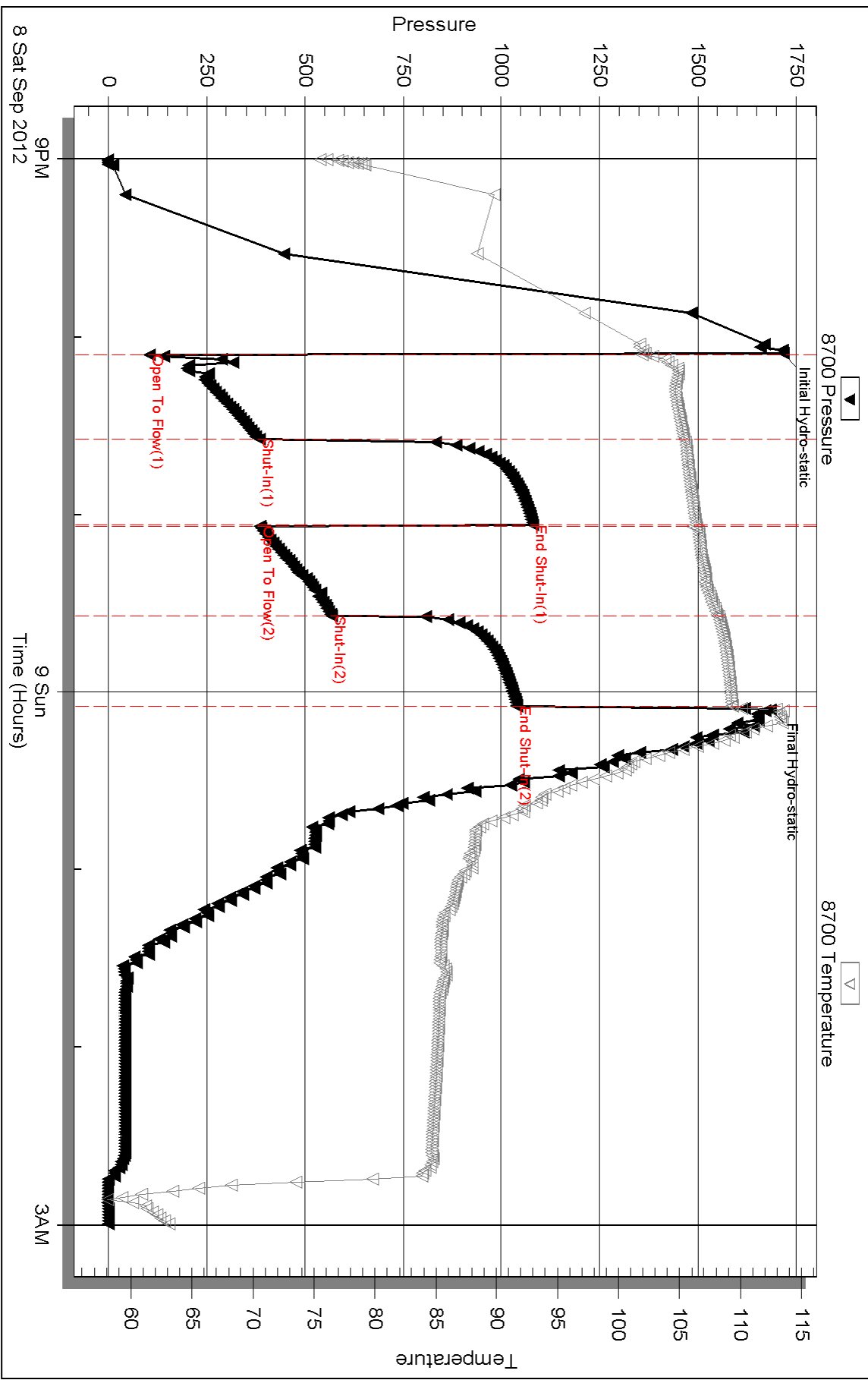
Total Length: 992.00 ft      Total Volume: 13.915 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: .15 @ 60 Degrees = 60,000 Chlorides

### Pressure vs. Time



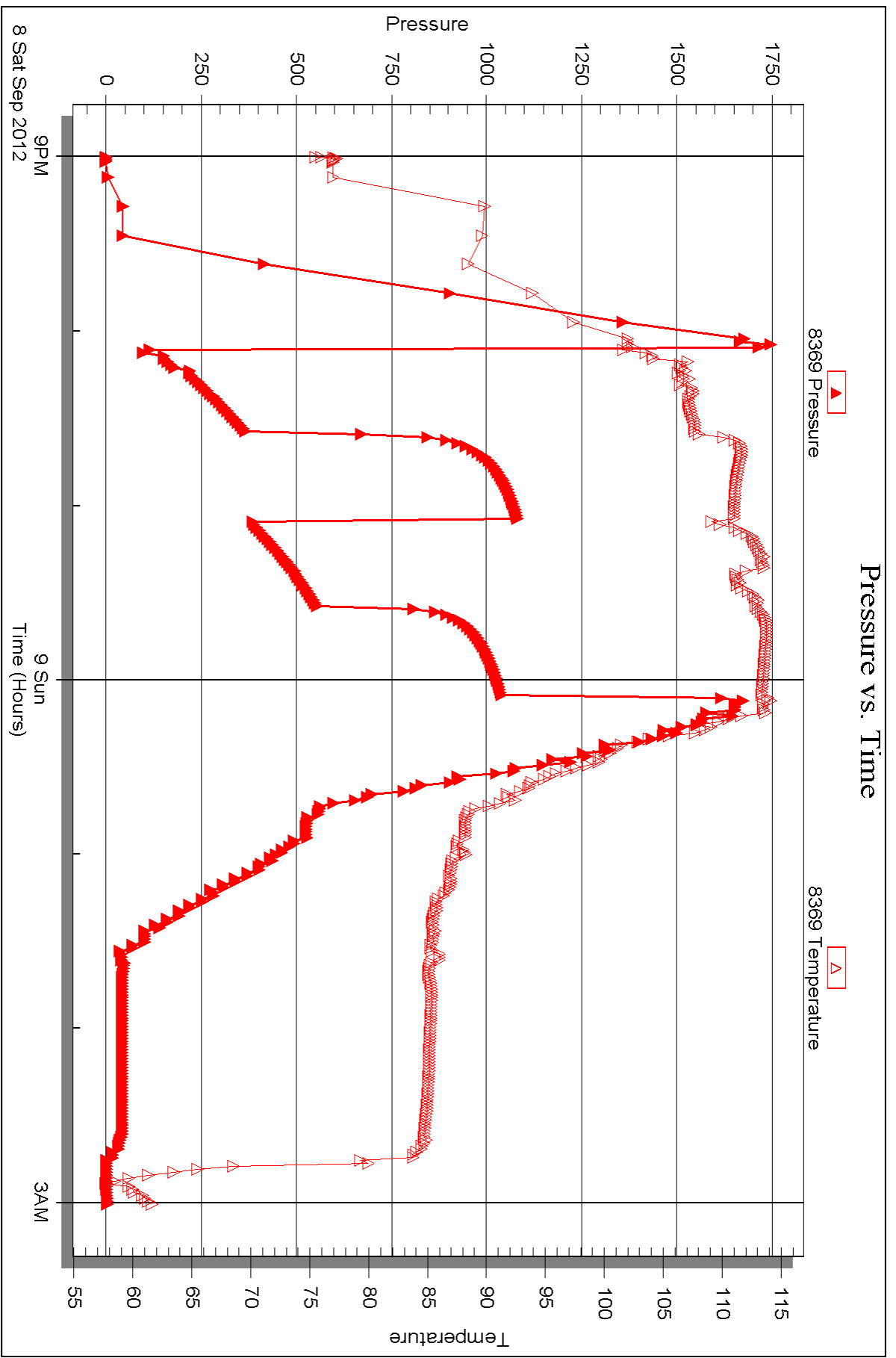
Serial #: 8369

Inside

TDI Inc

Dinges Family #1

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Tom Denning

### **Dinges Family #1**

### **8-15s-19w Ellis,KS**

Start Date: 2012.09.09 @ 17:20:00

End Date: 2012.09.09 @ 22:08:30

Job Ticket #: 49470                      DST #: 4

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

Printed: 2012.09.13 @ 14:27:54

TDI Inc  
8-15s-19w Ellis,KS  
Dinges Family #1  
DST # 4  
CG Sand  
2012.09.09



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison Rd  
 Hays KS 67601-9696  
 ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
 Job Ticket: 49470 **DST#: 4**  
 Test Start: 2012.09.09 @ 17:20:00

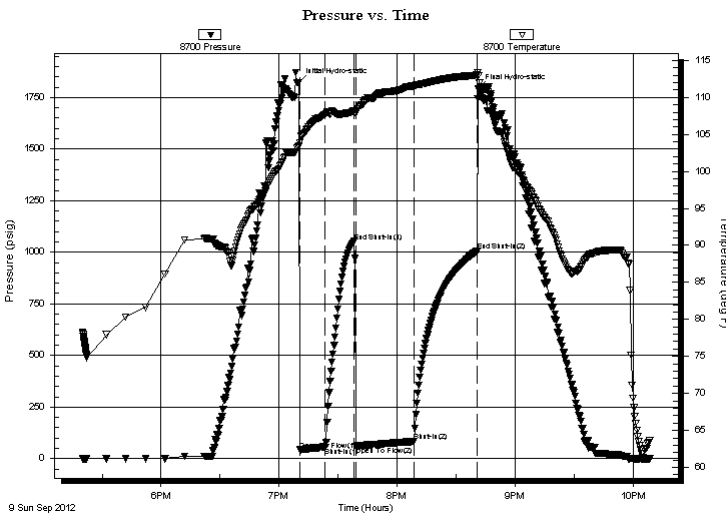
## GENERAL INFORMATION:

Formation: **CG Sand**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:10:30  
 Time Test Ended: 22:08:30  
 Interval: **3658.00 ft (KB) To 3704.00 ft (KB) (TVD)**  
 Total Depth: 3704.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cody Bloedorn  
 Unit No: 42  
 Reference Elevations: 2037.00 ft (KB)  
 2027.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8700 Outside**  
 Press @ Run Depth: 83.03 psig @ 3695.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.09.09 End Date: 2012.09.09 Last Calib.: 2012.09.09  
 Start Time: 17:20:05 End Time: 22:08:29 Time On Btm: 2012.09.09 @ 19:10:00  
 Time Off Btm: 2012.09.09 @ 20:41:30

**TEST COMMENT:** 15 - IF- 5" blow  
 15 - IS- No blow back.  
 30 - FF- 3" Blow  
 30 - FS- Noblow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1822.48	103.40	Initial Hydro-static
1	42.24	103.89	Open To Flow (1)
14	56.17	107.69	Shut-In(1)
28	1052.45	108.09	End Shut-In(1)
29	60.99	107.82	Open To Flow (2)
59	83.03	111.56	Shut-In(2)
91	1004.70	112.99	End Shut-In(2)
92	1793.71	112.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
92.00	Mud - Oil Scum, 100%M	1.29

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 49470 **DST#: 4**  
Test Start: 2012.09.09 @ 17:20:00

### GENERAL INFORMATION:

Formation: **CG Sand**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:10:30  
Time Test Ended: 22:08:30  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Cody Bloedorn  
Unit No: 42  
Interval: **3658.00 ft (KB) To 3704.00 ft (KB) (TVD)**  
Reference Elevations: 2037.00 ft (KB)  
2027.00 ft (CF)  
Total Depth: 3704.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
KB to GR/CF: 10.00 ft

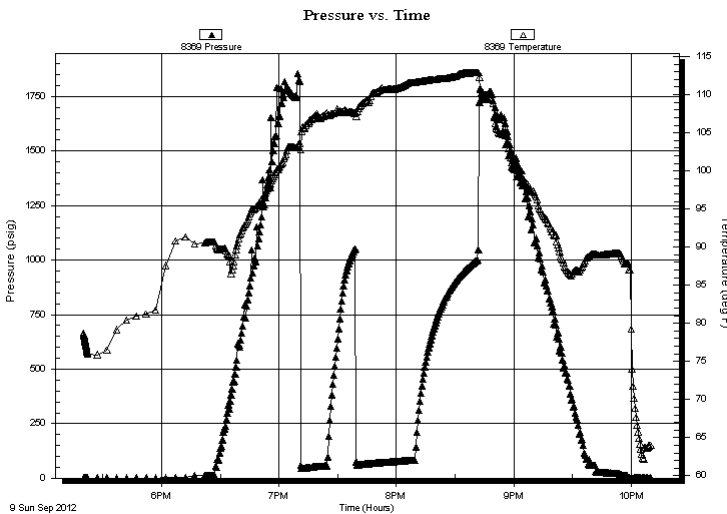
### Serial #: 8369

Inside

Press @ Run Depth:	psig @	3695.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2012.09.09	End Date:	2012.09.09	Last Calib.:	2012.09.09
Start Time:	17:20:05	End Time:	22:09:59	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 15 - IF- 5" blow  
15 - IS- No blow back.  
30 - FF- 3" Blow  
30 - FS- Noblow back

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
92.00	Mud - Oil Scum, 100%M	1.29

\* 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 Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis, KS**  
**Dinges Family #1**  
Job Ticket: 49470      **DST#: 4**  
Test Start: 2012.09.09 @ 17:20:00

**Tool Information**

Drill Pipe:	Length: 3644.00 ft	Diameter: 3.80 inches	Volume: 51.12 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: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 34000.00 lb
			<u>Total Volume: 51.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3658.00 ft			Final 30000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	75.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			3630.00	
Shut In Tool	5.00			3635.00	
Hydraulic tool	5.00			3640.00	
Jars	5.00			3645.00	
Safety Joint	3.00			3648.00	
Packer	5.00			3653.00	29.00      Bottom Of Top Packer
Packer	5.00			3658.00	
Stubb	1.00			3659.00	
Perforations	3.00			3662.00	
Change Over Sub	1.00			3663.00	
Drill Pipe	31.00			3694.00	
Change Over Sub	1.00			3695.00	
Recorder	0.00	8369	Inside	3695.00	
Recorder	0.00	8700	Outside	3695.00	
Perforations	6.00			3701.00	
Bullnose	3.00			3704.00	46.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>75.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Tom Denning

**8-15s-19w Ellis,KS**  
**Dinges Family #1**  
Job Ticket: 49470      **DST#: 4**  
Test Start: 2012.09.09 @ 17:20:00

## Mud and Cushion Information

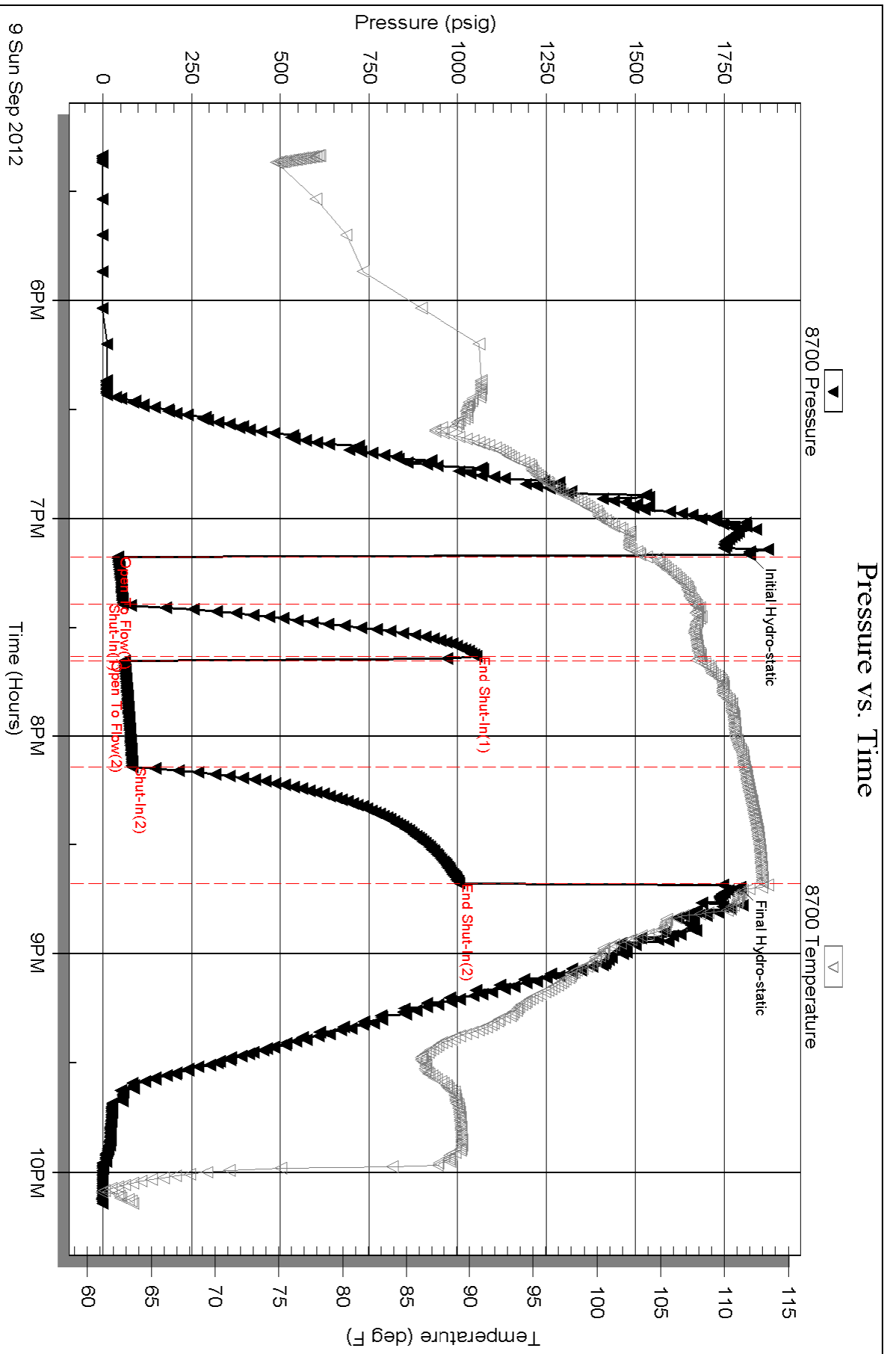
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4200.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
92.00	Mud - Oil Scum, 100%M	1.291

Total Length: 92.00 ft      Total Volume: 1.291 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



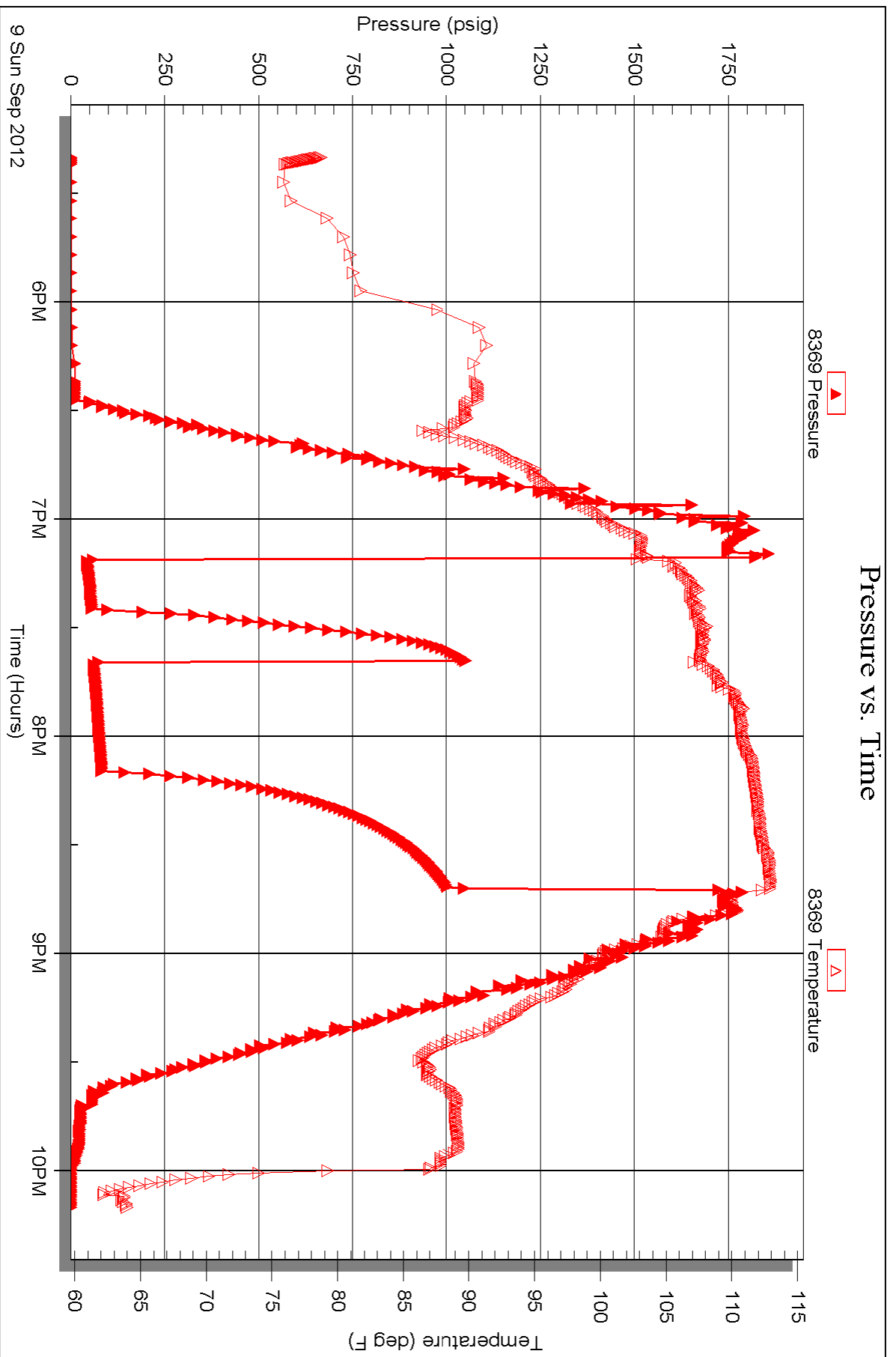
Serial #: 8369

Inside

TDI Inc

Dinges Family #1

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 49470

Printed: 2012.09.13 @ 14:27:59



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48679

Well Name & No. Dinges Family #1 Test No. 1 Date 9-7-12  
 Company TDT Inc Elevation 2037 KB 2027 GL  
 Address 1310 Bison Rd Hays, Ks 67601-9696  
 Co. Rep / Geo. Herb Dienes Rig Southwind rig 1  
 Location: Sec. 8 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3355-3377 Zone Tested LKC "C"  
 Anchor Length 22 Drill Pipe Run 3359 Mud Wt. 8.8  
 Top Packer Depth 3350 Drill Collars Run — Vis 47  
 Bottom Packer Depth 3355 Wt. Pipe Run — WL 7.6  
 Total Depth 3377 Chlorides 4200 ppm System LCM 1#

Blow Description IFF - WEAK TO A FAIR BLOW 1/2" TO 4/4" BLOW  
ISIP - NO BLOW  
FFP - STRONG BLOW IN 2 MIN  
FSIP - STRONG BLOW BACK IN 7 MIN

Rec	Feet of	%gas	%oil	%water	%mud
870	GIP				
5	OT GCM	10	10		80
62	GMO	50	30		20
62	GMO	40	50		10
124	CO				
5	258 WATER BHT				

A) Initial Hydrostatic 1589  
 B) First Initial Flow —  
 C) First Final Flow —  
 D) Initial Shut-In 1007  
 E) Second Initial Flow 72  
 F) Second Final Flow 116  
 G) Final Shut-In 949  
 H) Final Hydrostatic 1571  
 Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45

Gravity 37 API RW — @ — ° F Chlorides — ppm  
 Test 1150  
 Jars  
 Safety Joint  
 Circ Sub  
 Hourly Standby  
 Mileage 36 RT 55.80  
 Sampler  
 Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility  
 Sub Total 1205.80

T-On Location 1255  
 T-Started 1450  
 T-Open 1650  
 T-Pulled 1935  
 T-Out 2116  
 Comments \_\_\_\_\_  
 Sub Total 0  
 Total 1205.80  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative RAY Schwager 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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49468

Well Name & No. Dinges Family #1 Test No. 2 Date 9-8-12  
 Company TDI Inc. Elevation 2037 KB 2027 GL  
 Address 1310 Bison Rd, Hays KS, 67601  
 Co. Rep / Geo. Herb Rig Southwind #1  
 Location: Sec. 8 Twp. 15s Rge. 19w Co. ELLIS State KS

Interval Tested 3377-3414 Zone Tested D-F-Top of G  
 Anchor Length 37' Drill Pipe Run 3361 Mud Wt. 8.8  
 Top Packer Depth 3372 Drill Collars Run - Vis 47  
 Bottom Packer Depth 3377 Wt. Pipe Run - WL 7.6  
 Total Depth 3414 Chlorides 4200 ppm System LCM -

Blow Description IF- 1/4" blow & dying  
ISI- No blow back  
FF- No blow, waited 10 min, flushed tool, surged & died. waited 10 min. pulled.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud-Gil Scum</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 101° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1628  Test 1150 T-On Location 4:05 am  
 (B) First Initial Flow 10  Jars T-Started 4:30 am  
 (C) First Final Flow 14  Safety Joint T-Open 6:09 am  
 (D) Initial Shut-In 35  Circ Sub T-Pulled 7:44 am  
 (E) Second Initial Flow 13  Hourly Standby T-Out 9:20 am  
 (F) Second Final Flow -  Mileage 55.80 Comments \_\_\_\_\_  
 (G) Final Shut-In 14  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1600  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 1205.80  
 Final Flow 20-Pulled  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In - Sub Total 1205.80

Approved By \_\_\_\_\_ Our Representative Cody Beck

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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49469

4/10

Well Name & No. Dinges Family #1 Test No. 3 Date 9-8-12  
 Company TDI, INC. Elevation 2037 KB 2027 GL  
 Address 1310 Bison RD, Hays KS, 67601  
 Co. Rep / Geo. Herb Rig Southwind #1  
 Location: Sec. 8 Twp. 15S Rge. 19W Co. ELLIS State KS

Interval Tested 3428-3540 Zone Tested H, I, J  
 Anchor Length 112' Drill Pipe Run 3425' Mud Wt. 9.2  
 Top Packer Depth 3423 Drill Collars Run — Vis 59  
 Bottom Packer Depth 3428 Wt. Pipe Run — WL 7.2  
 Total Depth 3540 Chlorides 4200 ppm System LCM —  
 Blow Description IF - B.O.B. in 2 Min.  
ISI - No blow back  
FF - B.O.B. in 3 Min.  
FSI - No blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>186</u>	<u>Mud</u>			<u>100</u>	
<u>682</u>	<u>MW</u>		<u>95</u>	<u>5</u>	
<u>124</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 992' BHT 1090 Gravity — API RW .15 @ 60 °F Chlorides 6000 ppm  
 (A) Initial Hydrostatic 1716  Test 1150 T-On Location 7:30pm  
 (B) First Initial Flow 105  Jars T-Started 9:00pm  
 (C) First Final Flow 385  Safety Joint T-Open 10:07pm  
 (D) Initial Shut-In 1081  Circ Sub T-Pulled 12:07am  
 (E) Second Initial Flow 385  Hourly Standby T-Out 3:00am  
 (F) Second Final Flow 567  Mileage 55.80 Comments \_\_\_\_\_  
 (G) Final Shut-In 1039  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1685  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 30  Day Standby \_\_\_\_\_ Total 1205.80  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1205.80

Approved By \_\_\_\_\_ Our Representative Cody Bloodorn

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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 49470

4/10

Well Name & No. Dinges Family #1 Test No. 4 Date 9-9-12  
 Company TDI INC Elevation 2037 KB 2027 GL  
 Address 1310 Bison RD, Hays KS, 67601  
 Co. Rep / Geo. Herb Rig Southwind #1  
 Location: Sec. 8 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3658-3704 Zone Tested C.G. Sand  
 Anchor Length 46' Drill Pipe Run 3644 Mud Wt. 9.1  
 Top Packer Depth 3653 Drill Collars Run — Vis 59  
 Bottom Packer Depth 3658 Wt. Pipe Run — WL 7.8  
 Total Depth 3704 Chlorides 4200 ppm System LCM —  
 Blow Description FF-5" blow  
ISI- No blow back.  
FF-3" blow  
FSI- No blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<del>107</del> 107	Feet of			100	
Rec	Feet of				
Rec	Feet of				
Rec	Feet of				

Rec Total ~~107~~ 107' BHT 1120 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>1822</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2:45 pm</u>
(B) First Initial Flow <u>42</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>5:20 pm</u>
(C) First Final Flow <u>56</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>7:12 pm</u>
(D) Initial Shut-In <u>1052</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>8:42 pm</u>
(E) Second Initial Flow <u>60</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:11 pm</u>
(F) Second Final Flow <u>83</u>	<input checked="" type="checkbox"/> Mileage <u>55.80</u>	Comments
(G) Final Shut-In <u>1004</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1793</u>	<input type="checkbox"/> Straddle	

Initial Open 15  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 30

Sub Total 1530.80

Approved By \_\_\_\_\_ Our Representative Cody Blank

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.