



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.13 @ 15:45:00

End Date: 2013.05.13 @ 22:55:30

Job Ticket #: 50672                      DST #: 1

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

Printed: 2013.05.24 @ 08:45:01



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50672

**DST#: 1**

Test Start: 2013.05.13 @ 15:45:00

## GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:08:30

Time Test Ended: 22:55:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Kreuzer Jr.

Unit No: 61

**Interval: 3638.00 ft (KB) To 3690.00 ft (KB) (TVD)**

Reference Elevations: 3147.00 ft (KB)

Total Depth: 3690.00 ft (KB) (TVD)

3137.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8791**

**Inside**

Press @ Run Depth: 19.58 psig @ 3639.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.13

End Date:

2013.05.13

Last Calib.: 2013.05.13

Start Time: 15:45:01

End Time:

22:55:30

Time On Btm: 2013.05.13 @ 17:53:00

Time Off Btm: 2013.05.13 @ 21:28:00

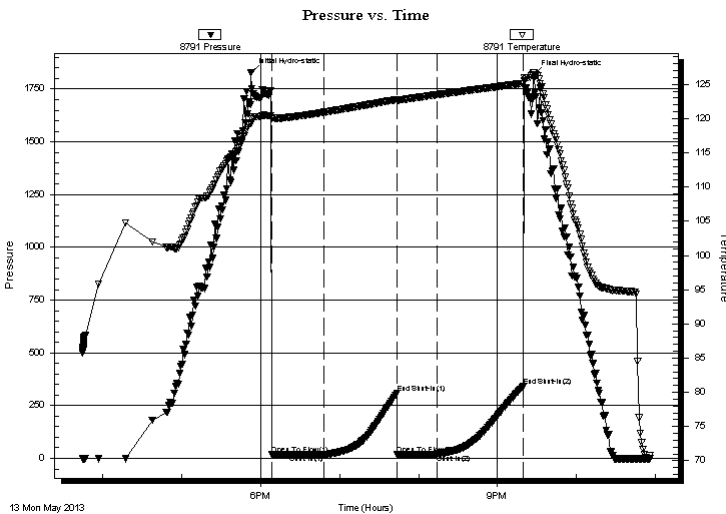
**TEST COMMENT:** IF: Weak blow, Died in 7 mins.

IS: No blow back

FF: No blow

FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.88	119.34	Initial Hydro-static
16	17.09	119.95	Open To Flow (1)
56	16.76	120.92	Shut-In(1)
111	309.47	122.76	End Shut-In(1)
111	17.60	122.67	Open To Flow (2)
141	19.58	123.47	Shut-In(2)
207	340.23	125.12	End Shut-In(2)
215	1819.83	126.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	vsocm-25%o75%m	0.02

## Gas Rates

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



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 ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50672

**DST#: 1**

Test Start: 2013.05.13 @ 15:45:00

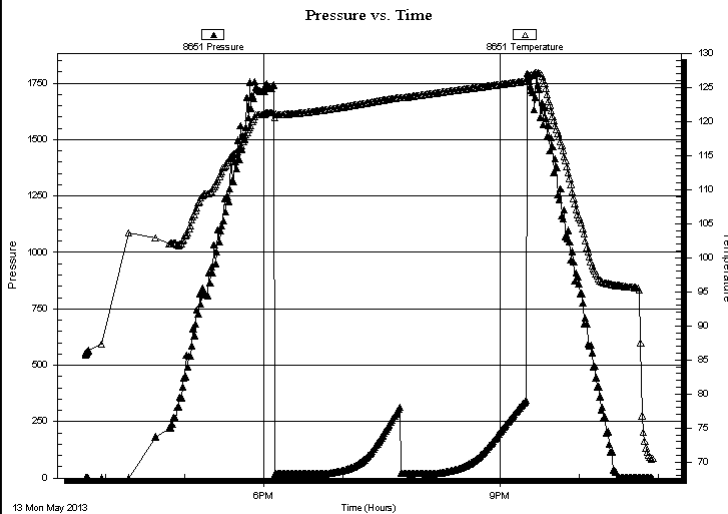
### GENERAL INFORMATION:

Formation: **Foraker**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:08:30  
 Time Test Ended: 22:55:30  
 Interval: **3638.00 ft (KB) To 3690.00 ft (KB) (TVD)**  
 Total Depth: 3690.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Chuck Kreutzer Jr.  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8651 Outside**

Press @ Run Depth:	psig @	3639.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.05.13	End Date:	2013.05.13	Last Calib.:	2013.05.13
Start Time:	15:45:01	End Time:	22:55:30	Time On Btm:	
			Time Off Btm:		

**TEST COMMENT:** IF: Weak blow , Died in 7 mins.  
 IS: No blow back  
 FF: No blow  
 FS: No blow back



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	vsocm-25%o75%m	0.02

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50672      **DST#: 1**  
Test Start: 2013.05.13 @ 15:45:00

**Tool Information**

Drill Pipe:	Length: 3109.00 ft	Diameter: 3.80 inches	Volume: 43.61 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 46.23 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3638.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	80.00 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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<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
Shut In Tool	5.00			3615.00	
Hydraulic tool	5.00			3620.00	
Jars	5.00			3625.00	
Safety Joint	3.00			3628.00	
Packer	5.00			3633.00	28.00      Bottom Of Top Packer
Packer	5.00			3638.00	
Stubb	1.00			3639.00	
Recorder	0.00	8791	Inside	3639.00	
Recorder	0.00	8651	Outside	3639.00	
Perforations	2.00			3641.00	
change Over Sub	1.00			3642.00	
Drill Pipe	31.00			3673.00	
Change Over Sub	1.00			3674.00	
Perforations	13.00			3687.00	
Bullnose	3.00			3690.00	52.00      Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50672      **DST#: 1**  
Test Start: 2013.05.13 @ 15:45:00

## 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: 70.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.58 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 600.00 ppm			
Filter Cake: 2.00 inches			

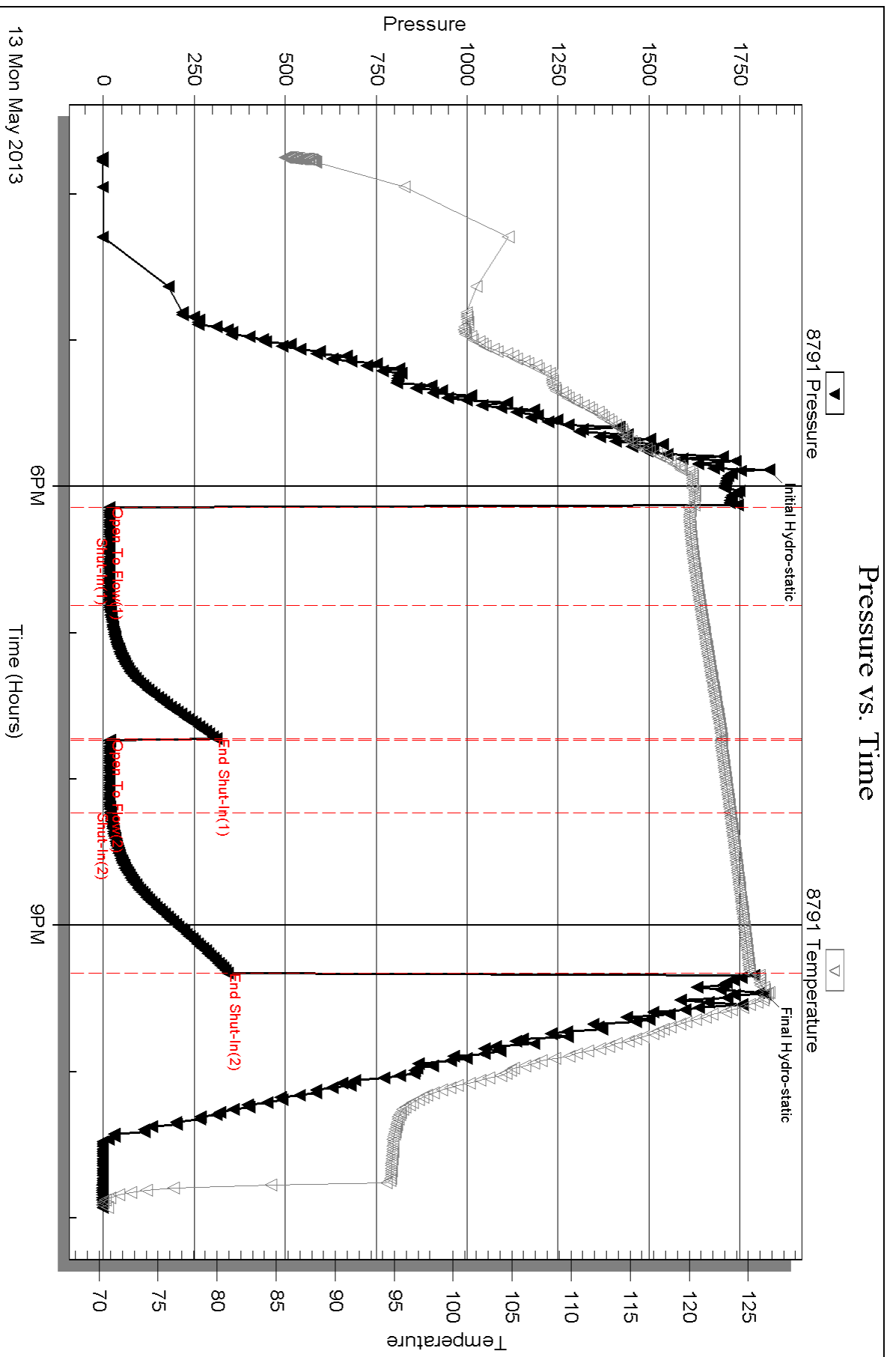
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	vsocm-25%o75%m	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

# Pressure vs. Time

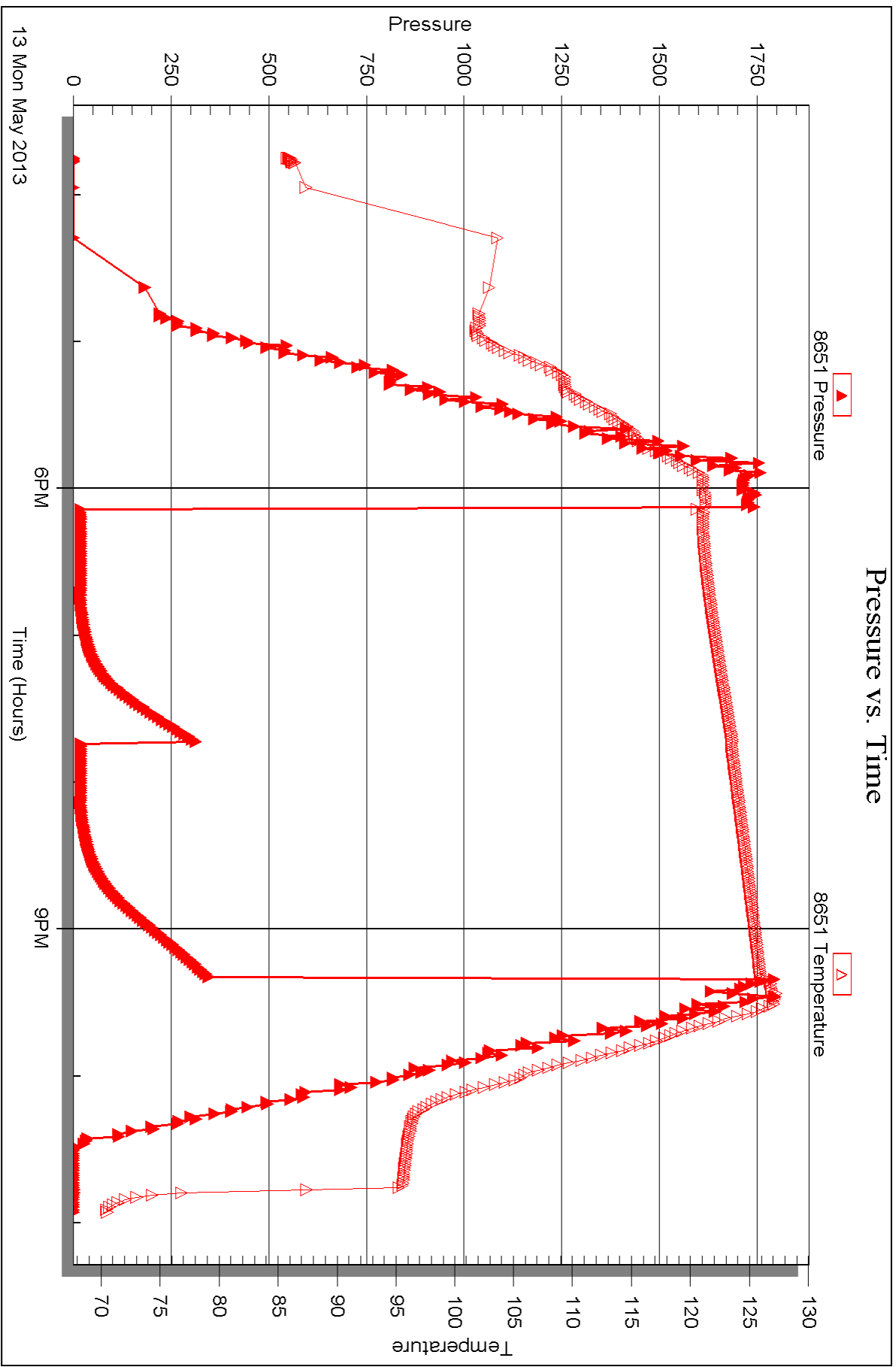


Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 50672

Printed: 2013.05.24 @ 08:45:04



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.14 @ 22:50:00

End Date: 2013.05.15 @ 05:32:30

Job Ticket #: 50673                      DST #: 2

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

Printed: 2013.05.24 @ 08:44:18

Murfin Drilling  
4-1s-37w Cheyenne,KS  
Patti G #1-4  
DST # 2  
Oread  
2013.05.14





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**

**Patti G #1-4**

Job Ticket: 50673

**DST#: 2**

Test Start: 2013.05.14 @ 22:50:00

## GENERAL INFORMATION:

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:49:30  
 Time Test Ended: 05:32:30  
 Interval: **3978.00 ft (KB) To 4040.00 ft (KB) (TVD)**  
 Total Depth: 4040.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

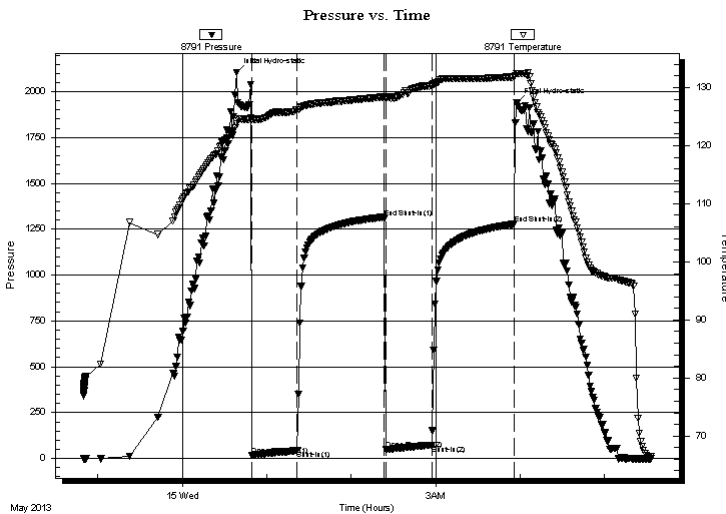
## Serial #: 8791

Inside

Press@RunDepth: 72.41 psig @ 3979.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.14 End Date: 2013.05.15 Last Calib.: 2013.05.15  
 Start Time: 22:50:01 End Time: 05:32:30 Time On Btm: 2013.05.15 @ 00:38:30  
 Time Off Btm: 2013.05.15 @ 03:57:30

TEST COMMENT: IF: Weak surface blow over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: No blow over 30 mins.  
 FS: No blow back over 60 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2105.25	123.79	Initial Hydro-static
11	17.82	124.46	Open To Flow (1)
43	44.06	126.14	Shut-In(1)
105	1309.99	128.42	End Shut-In(1)
106	47.73	128.12	Open To Flow (2)
139	72.41	130.40	Shut-In(2)
197	1278.21	131.86	End Shut-In(2)
199	1938.38	132.37	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
100.00	mud-100%	0.49

## Gas Rates

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

\* Recovery from multiple tests



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# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50673

**DST#: 2**

Test Start: 2013.05.14 @ 22:50:00

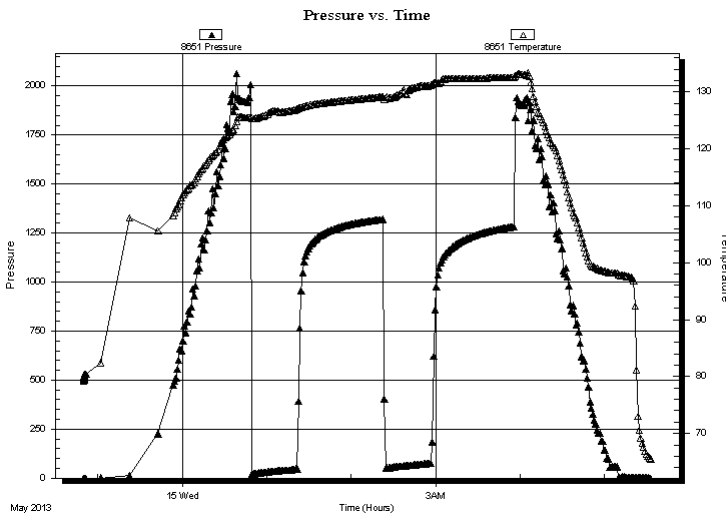
**GENERAL INFORMATION:**

Formation: <b>Oread</b>		Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock:	ft (KB)	Tester: Chuck Kreutzer Jr.
Time Tool Opened: 00:49:30		Unit No: 61
Time Test Ended: 05:32:30		
<b>Interval: 3978.00 ft (KB) To 4040.00 ft (KB) (TVD)</b>		Reference Elevations: 3147.00 ft (KB)
Total Depth: 4040.00 ft (KB) (TVD)		3137.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF: 10.00 ft

**Serial #: 8651 Outside**

Press@RunDepth:	psig @ 3979.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2013.05.14	End Date:	2013.05.15
Start Time:	22:50:01	End Time:	05:32:30
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: IF: Weak surface blow over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: No blow over 30 mins.  
 FS: No blow back over 60 mins.



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
100.00	mud-100%	0.49

**Gas Rates**

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50673      **DST#: 2**  
Test Start: 2013.05.14 @ 22:50:00

**Tool Information**

Drill Pipe:	Length: 3426.00 ft	Diameter: 3.80 inches	Volume: 48.06 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 50.68 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	3978.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	90.00 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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Shut In Tool	5.00			3955.00	
Hydraulic tool	5.00			3960.00	
Jars	5.00			3965.00	
Safety Joint	3.00			3968.00	
Packer	5.00			3973.00	28.00      Bottom Of Top Packer
Packer	5.00			3978.00	
Stubb	1.00			3979.00	
Recorder	0.00	8791	Inside	3979.00	
Recorder	0.00	8651	Outside	3979.00	
Perforations	2.00			3981.00	
change Over Sub	1.00			3982.00	
Drill Pipe	31.00			4013.00	
Change Over Sub	1.00			4014.00	
Perforations	23.00			4037.00	
Bullnose	3.00			4040.00	62.00      Bottom Packers & Anchor

**Total Tool Length: 90.00**



**TRILOBITE  
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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50673      **DST#: 2**  
Test Start: 2013.05.14 @ 22:50:00

## 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: 64.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.37 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 700.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
100.00	mud-100%	0.492

Total Length: 100.00 ft      Total Volume: 0.492 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

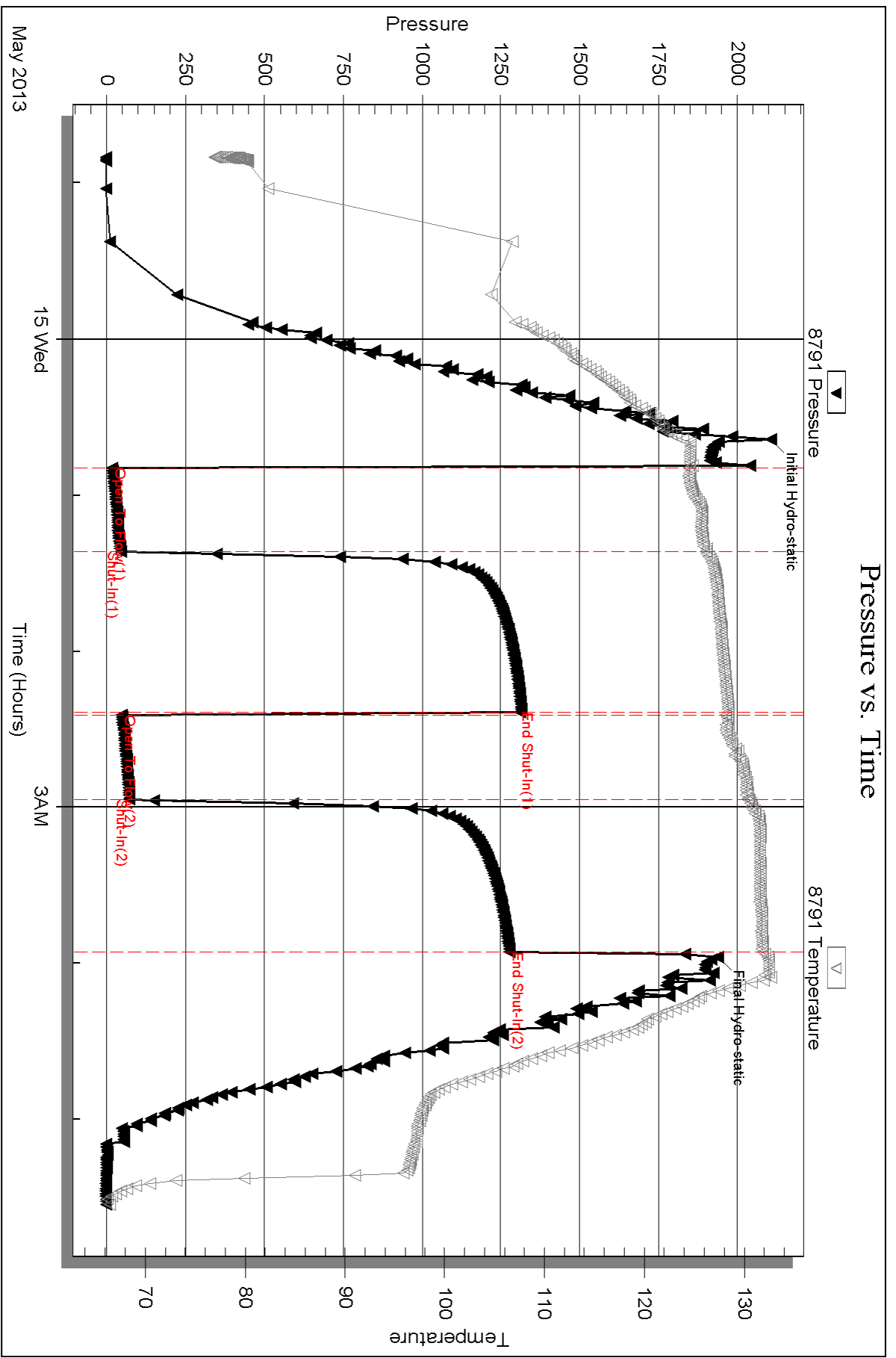
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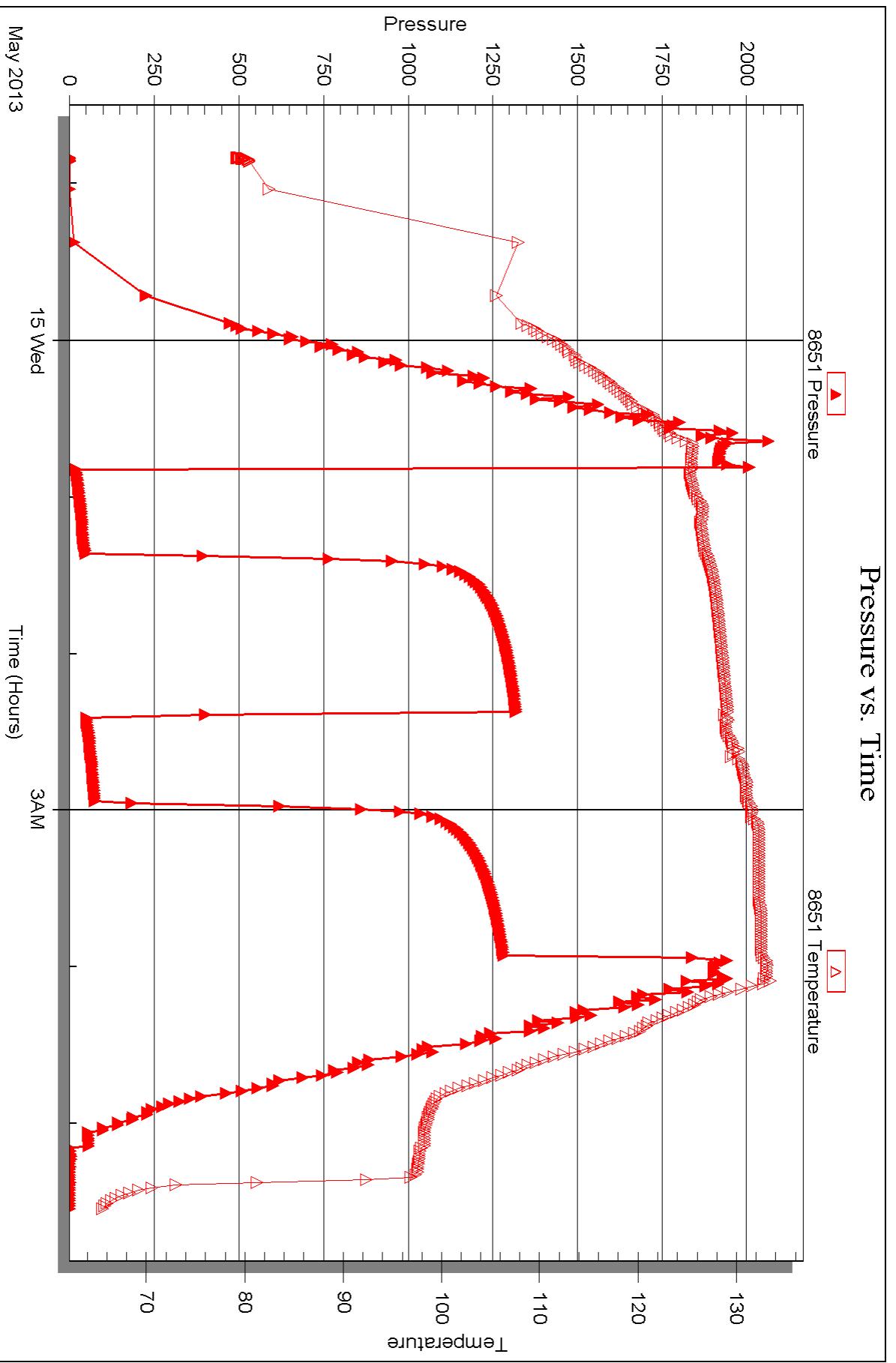
Inside

Murfin Drilling

Patti G#1-4

DST Test Number: 2







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.15 @ 16:00:00

End Date: 2013.05.15 @ 23:08:30

Job Ticket #: 50674                      DST #: 3

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

Printed: 2013.05.24 @ 08:43:37



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**

**Patti G #1-4**

Job Ticket: 50674

**DST#: 3**

Test Start: 2013.05.15 @ 16:00:00

## GENERAL INFORMATION:

Formation: **LKC-A**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:08:30  
 Time Test Ended: 23:08:30  
 Interval: **4112.00 ft (KB) To 4132.00 ft (KB) (TVD)**  
 Total Depth: 4132.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

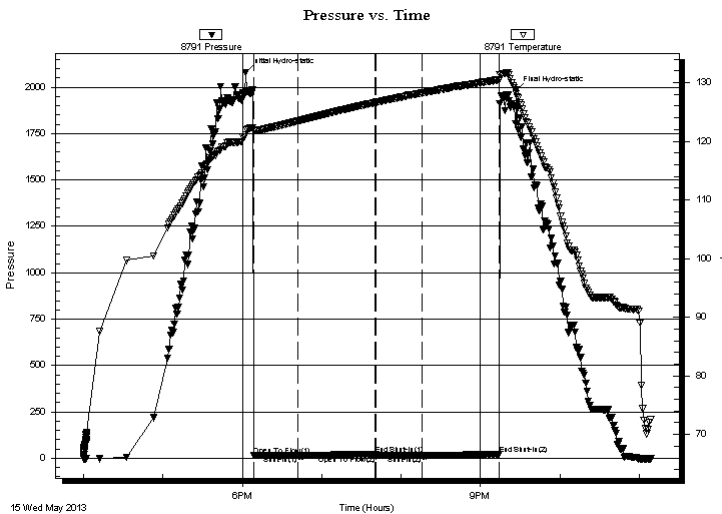
## Serial #: 8791

Inside

Press @ Run Depth: 15.23 psig @ 4113.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.15 End Date: 2013.05.15 Last Calib.: 2013.05.15  
 Start Time: 16:00:01 End Time: 23:08:30 Time On Btm: 2013.05.15 @ 18:02:30  
 Time Off Btm: 2013.05.15 @ 21:27:00

TEST COMMENT: IF: Weak blow, Dead in 10 mins.  
 IS: No blow back  
 FF: No blow  
 FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2079.70	121.11	Initial Hydro-static
6	14.61	121.69	Open To Flow (1)
40	14.74	123.45	Shut-In(1)
98	23.25	126.58	End Shut-In(1)
99	14.42	126.63	Open To Flow (2)
133	15.23	128.20	Shut-In(2)
192	21.12	130.42	End Shut-In(2)
205	1981.39	128.13	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud-100%m	0.00

## Gas Rates

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

\* Recovery from multiple tests





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**TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50674

**DST#: 3**

Test Start: 2013.05.15 @ 16:00:00

## GENERAL INFORMATION:

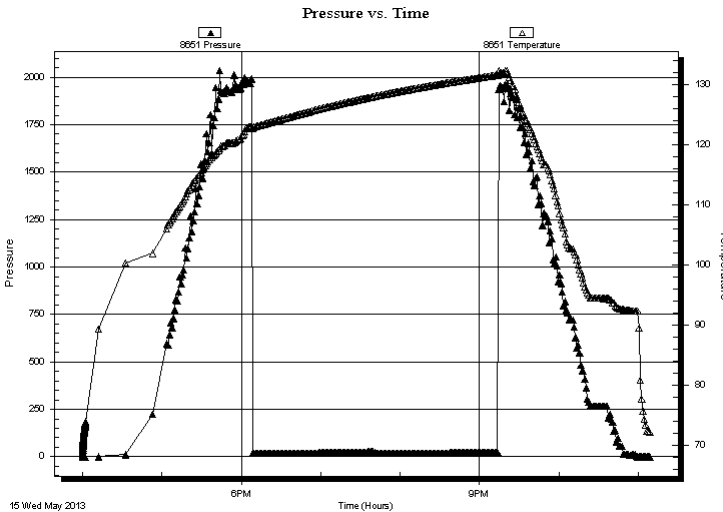
Formation: **LKC-A**  
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 18:08:30 Tester: Chuck Kreutzer Jr.  
Time Test Ended: 23:08:30 Unit No: 61  
**Interval: 4112.00 ft (KB) To 4132.00 ft (KB) (TVD)** Reference Elevations: 3147.00 ft (KB)  
Total Depth: 4132.00 ft (KB) (TVD) 3137.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

## Serial #: 8651 Outside

Press @ Run Depth: psig @ 4113.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2013.05.15 End Date: 2013.05.15 Last Calib.: 2013.05.15  
Start Time: 16:00:01 End Time: 23:08:30 Time On Btm:  
Time Off Btm:

TEST COMMENT: IF: Weak blow , Dead in 10 mins.  
IS: No blow back  
FF: No blow  
FS: No blow back

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud-100%m	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50674      **DST#: 3**  
Test Start: 2013.05.15 @ 16:00:00

**Tool Information**

Drill Pipe:	Length: 3583.00 ft	Diameter: 3.80 inches	Volume: 50.26 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 52.88 bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	72000.00 lb
Depth to Top Packer:	4112.00 ft			Final	72000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	48.00 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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Shut In Tool	5.00			4089.00	
Hydraulic tool	5.00			4094.00	
Jars	5.00			4099.00	
Safety Joint	3.00			4102.00	
Packer	5.00			4107.00	28.00      Bottom Of Top Packer
Packer	5.00			4112.00	
Stubb	1.00			4113.00	
Recorder	0.00	8791	Inside	4113.00	
Recorder	0.00	8651	Outside	4113.00	
Perforations	16.00			4129.00	
Bullnose	3.00			4132.00	20.00      Bottom Packers & Anchor

**Total Tool Length: 48.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50674      **DST#: 3**  
Test Start: 2013.05.15 @ 16:00:00

**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:	ppm
Viscosity: 64.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 700.00 ppm			
Filter Cake: 2.00 inches			

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
1.00	mud-100%m	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 8791

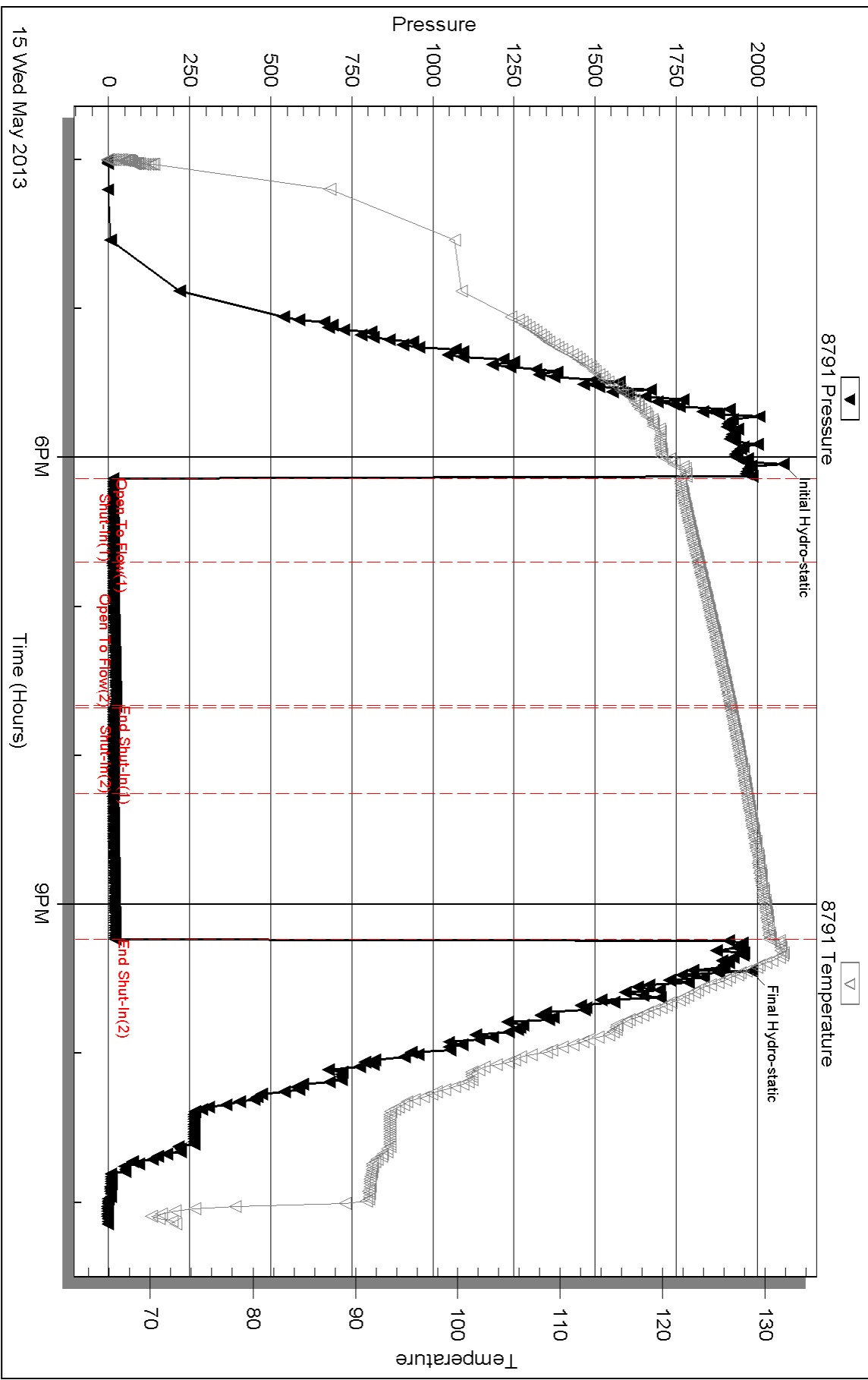
Inside

Murfin Drilling

Patti G#1-4

DST Test Number: 3

# Pressure vs. Time



Triobite Testing, Inc

Ref. No: 50674

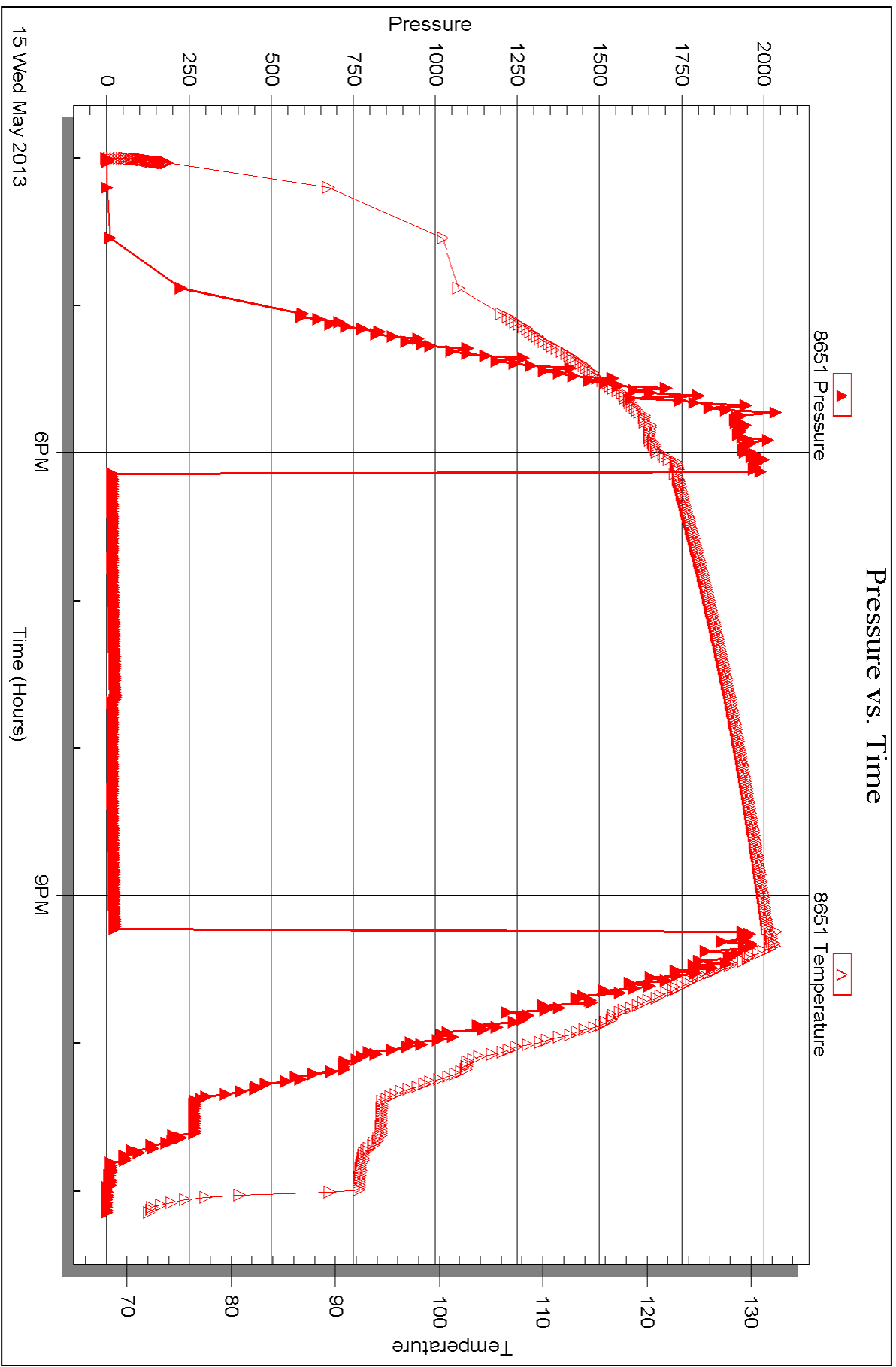
Printed: 2013.05.24 @ 08:43:39

Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.16 @ 08:10:00

End Date: 2013.05.16 @ 15:53:30

Job Ticket #: 50675                      DST #: 4

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

Printed: 2013.05.24 @ 08:42:58

Murfin Drilling  
4-1s-37w Cheyenne,KS  
Patti G #1-4  
DST # 4  
LKC-D  
2013.05.16



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**

**Patti G #1-4**

Job Ticket: 50675

**DST#: 4**

Test Start: 2013.05.16 @ 08:10:00

## GENERAL INFORMATION:

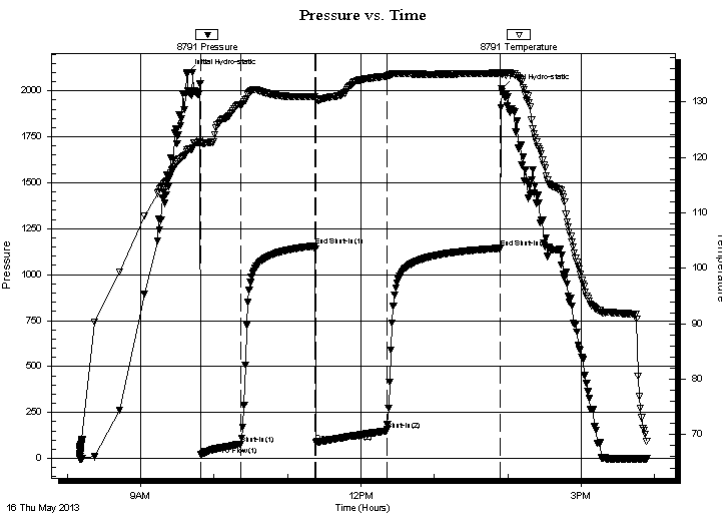
Formation: **LKC-D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:49:00  
 Time Test Ended: 15:53:30  
 Interval: **4130.00 ft (KB) To 4180.00 ft (KB) (TVD)**  
 Total Depth: 4180.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

## Serial #: 8791

Inside

Press @ Run Depth: 155.66 psig @ 4131.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.16 End Date: 2013.05.16 Last Calib.: 2013.05.16  
 Start Time: 08:10:01 End Time: 15:53:30 Time On Btm: 2013.05.16 @ 09:38:00  
 Time Off Btm: 2013.05.16 @ 13:55:00

**TEST COMMENT:** IF: Fair blow, Built to 5 in. over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: Fair blow, Built to B.O.B in 25 mins.  
 FSI: Blow back after 5 mins. Built to 5 in. over 60 mins. Died to 2 in. over 90 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2096.36	121.30	Initial Hydro-static
11	19.63	122.67	Open To Flow (1)
44	78.94	129.46	Shut-In(1)
104	1155.69	130.98	End Shut-In(1)
105	86.31	130.48	Open To Flow (2)
163	155.66	134.58	Shut-In(2)
256	1143.51	135.21	End Shut-In(2)
257	2012.26	135.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
95.00	gocm-10%g30%o60%m	0.47
95.00	gmco-10%g25%m65%o	0.47
95.00	go-40%g60%o	0.47
45.00	go-10%g90%o	0.22
0.00	475ft gas in pipe	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Murfin Drilling  
 250 N. Water Ste. 300  
 Wichita KS 67202  
 ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50675 **DST#: 4**

Test Start: 2013.05.16 @ 08:10:00

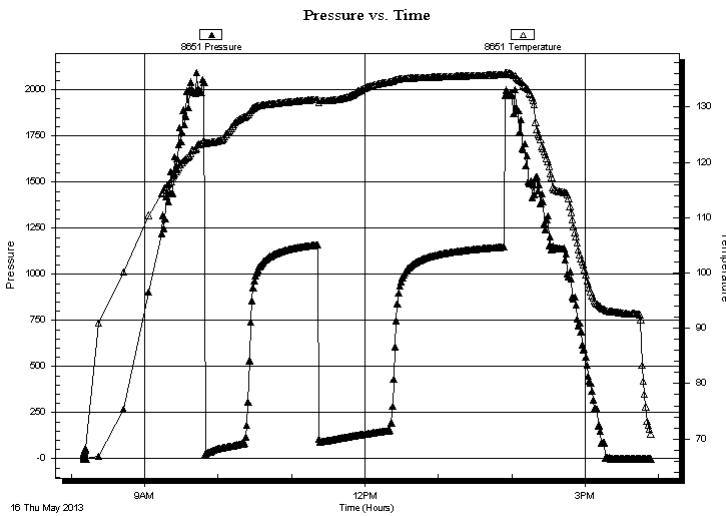
**GENERAL INFORMATION:**

Formation: **LKC-D**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 09:49:00  
 Tester: Chuck Kreuzer Jr.  
 Time Test Ended: 15:53:30  
 Unit No: 61  
**Interval: 4130.00 ft (KB) To 4180.00 ft (KB) (TVD)**  
 Reference Elevations: 3147.00 ft (KB)  
 Total Depth: 4180.00 ft (KB) (TVD)  
 3137.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 10.00 ft

**Serial #: 8651 Outside**

Press @ Run Depth: psig @ 4131.00 ft (KB)  
 Capacity: 8000.00 psig  
 Start Date: 2013.05.16  
 End Date: 2013.05.16  
 Last Calib.: 2013.05.16  
 Start Time: 08:10:01  
 End Time: 15:53:30  
 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF: Fair blow, Built to 5 in. over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: Fair blow, Built to B.O.B in 25 mins.  
 FSI: Blow back after 5 mins. Built to 5 in. over 60 mins. Died to 2 in. over 90 mins.



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
95.00	gocm-10%g30%o60%m	0.47
95.00	gmco-10%g25%m65%o	0.47
95.00	go-40%g60%o	0.47
45.00	go-10%g90%o	0.22
0.00	475ft gas in pipe	0.00

\* Recovery from multiple tests

**Gas Rates**

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50675      **DST#: 4**  
Test Start: 2013.05.16 @ 08:10:00

**Tool Information**

Drill Pipe:	Length: 3584.00 ft	Diameter: 3.80 inches	Volume: 50.27 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 52.89 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4130.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 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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Shut In Tool	5.00			4107.00	
Hydraulic tool	5.00			4112.00	
Jars	5.00			4117.00	
Safety Joint	3.00			4120.00	
Packer	5.00			4125.00	28.00      Bottom Of Top Packer
Packer	5.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	8791	Inside	4131.00	
Recorder	0.00	8651	Outside	4131.00	
Perforations	1.00			4132.00	
change Over Sub	1.00			4133.00	
Drill Pipe	31.00			4164.00	
Change Over Sub	1.00			4165.00	
Perforations	12.00			4177.00	
Bullnose	3.00			4180.00	50.00      Bottom Packers & Anchor

**Total Tool Length: 78.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50675      **DST#: 4**  
Test Start: 2013.05.16 @ 08:10:00

## 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: 5.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
95.00	gocm-10%g30%o60%m	0.467
95.00	gmco-10%g25%m65%o	0.467
95.00	go-40%g60%o	0.467
45.00	go-10%g90%o	0.221
0.00	475ft gas in pipe	0.000

Total Length: 330.00 ft      Total Volume: 1.622 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

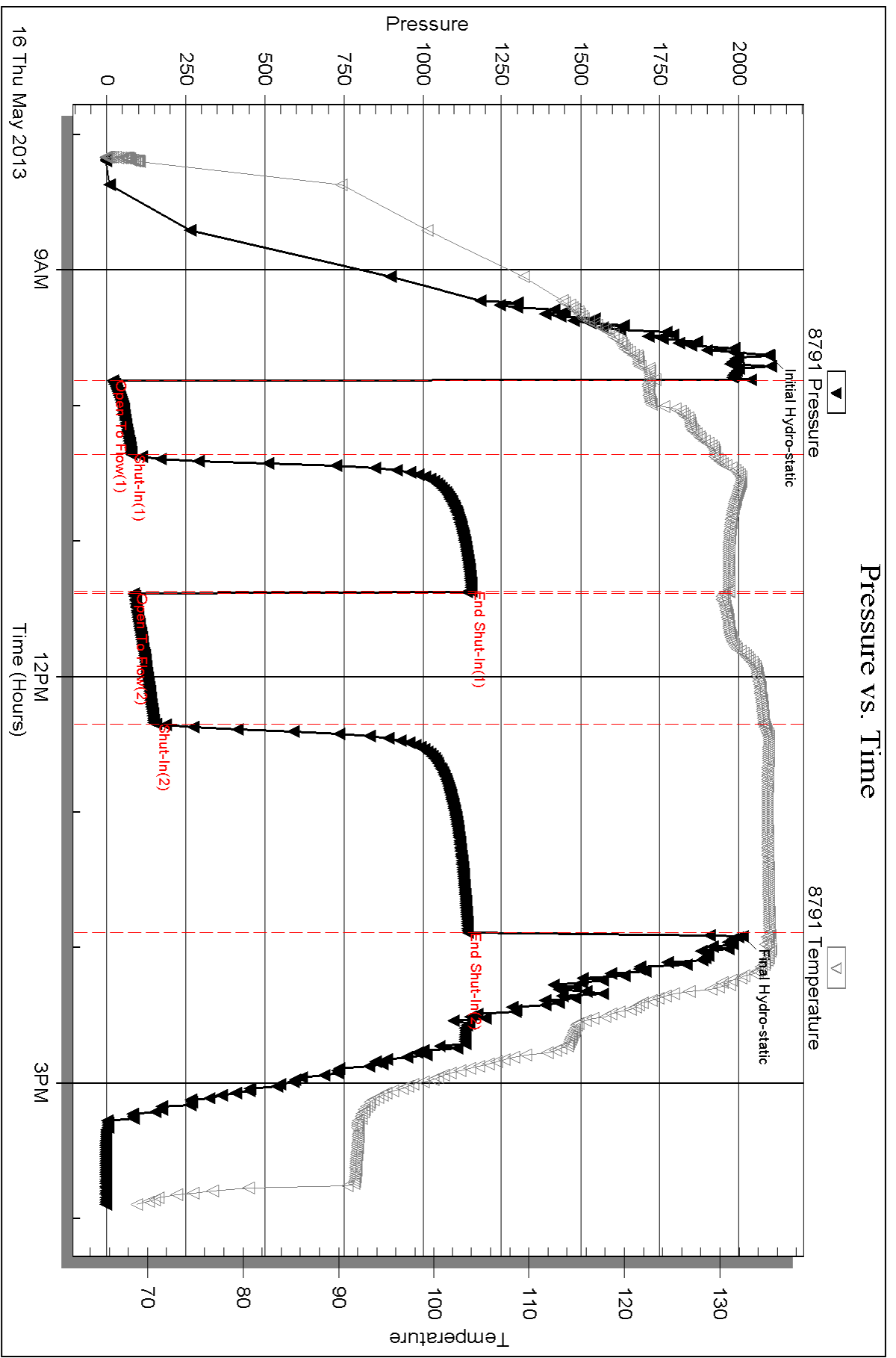
Serial #: 8791

Inside

Murfin Drilling

Patti G#1-4

DST Test Number: 4

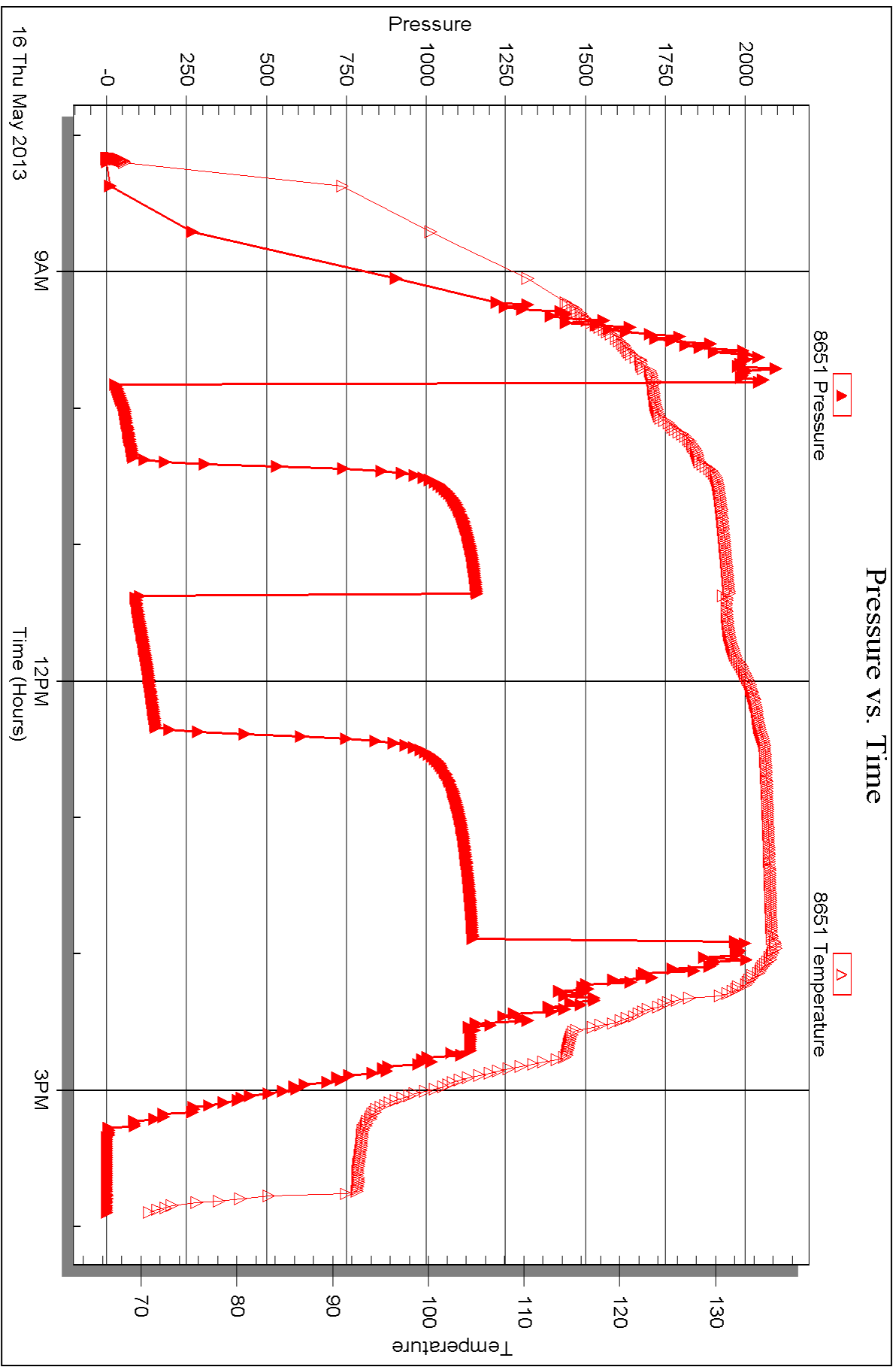


Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.17 @ 02:30:00

End Date: 2013.05.17 @ 10:38:00

Job Ticket #: 51126                      DST #: 5

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

Printed: 2013.05.24 @ 08:42:06



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
 250 N. Water Ste. 300  
 Wichita KS 67202  
 ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**

**Patti G #1-4**

Job Ticket: 51126

**DST#: 5**

Test Start: 2013.05.17 @ 02:30:00

## GENERAL INFORMATION:

Formation: **LKC-G**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 05:00:30  
 Time Test Ended: 10:38:00  
 Interval: **4192.00 ft (KB) To 4240.00 ft (KB) (TVD)**  
 Total Depth: 4240.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

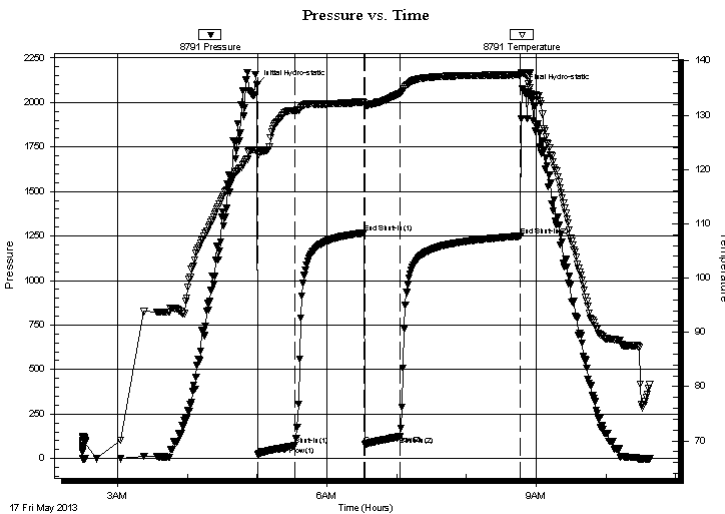
## Serial #: 8791

Inside

Press @ Run Depth: 122.25 psig @ 4193.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.17 End Date: 2013.05.17 Last Calib.: 2013.05.17  
 Start Time: 02:30:01 End Time: 10:38:00 Time On Btm: 2013.05.17 @ 05:00:00  
 Time Off Btm: 2013.05.17 @ 08:48:00

**TEST COMMENT:** IF: Fair blow, Built to B.O.B in 10 mins.  
 IS: Blow back after 1 min. Surface over 60 mins.  
 FF: Fair blow, B.O.B in 7 mins.  
 FS: Blow back. Weak surface died in 60 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2099.28	123.52	Initial Hydro-static
1	19.97	122.88	Open To Flow (1)
32	72.96	130.85	Shut-In(1)
92	1267.12	132.35	End Shut-In(1)
93	79.53	131.95	Open To Flow (2)
123	122.25	133.98	Shut-In(2)
227	1249.42	137.43	End Shut-In(2)
228	2077.69	137.79	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	475 ft. gas in pipe	0.00
95.00	gocm-25%g25%o50%m	0.47
95.00	gmco-40%g10%m50%o	0.47
105.00	go-30%g70%o	0.52

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

4-1s-37w Cheyenne,KS

**Patti G #1-4**

Job Ticket: 51126 **DST#: 5**

Test Start: 2013.05.17 @ 02:30:00

## GENERAL INFORMATION:

Formation:	<b>LKC-G</b>		
Deviated:	No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened:	05:00:30		Tester: Chuck Kreutzer Jr.
Time Test Ended:	10:38:00		Unit No: 61
Interval:	<b>4192.00 ft (KB) To 4240.00 ft (KB) (TVD)</b>		Reference Elevations: 3147.00 ft (KB)
Total Depth:	4240.00 ft (KB) (TVD)		3137.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition: Good	KB to GR/CF: 10.00 ft

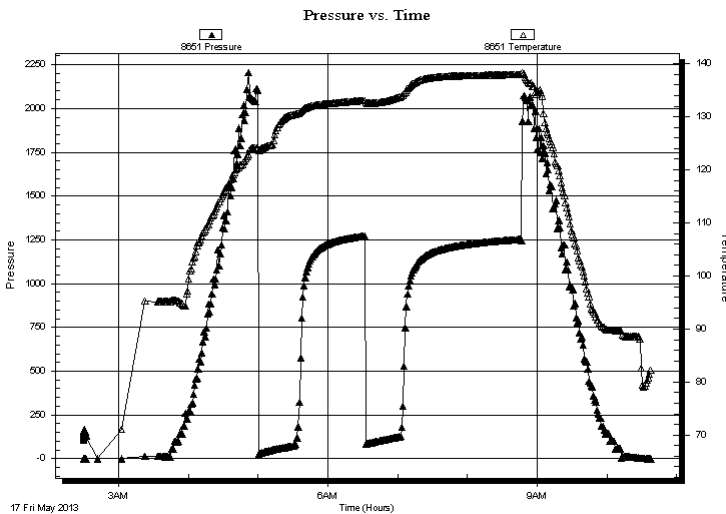
**Serial #: 8651**

**Outside**

Press@RunDepth:	psig @ 4193.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2013.05.17	End Date:	2013.05.17
Start Time:	02:30:01	End Time:	10:38:00
		Last Calib.:	2013.05.17
		Time On Btm:	
		Time Off Btm:	

**TEST COMMENT:** IF: Fair blow , Built to B.O.B in 10 mins.  
IS: Blow back after 1 min. Surface over 60 mins.  
FF: Fair blow , B.O.B in 7 mins.  
FS: Blow back. Weak surface died in 60 mins.

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	475 ft. gas in pipe	0.00
95.00	gocm-25%g25%o50%m	0.47
95.00	gmco-40%g10%m50%o	0.47
105.00	go-30%g70%o	0.52

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 51126      **DST#: 5**  
Test Start: 2013.05.17 @ 02:30:00

**Tool Information**

Drill Pipe:	Length: 3643.00 ft	Diameter: 3.80 inches	Volume: 51.10 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 53.72 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4192.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	76.00 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>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			4169.00	
Hydraulic tool	5.00			4174.00	
Jars	5.00			4179.00	
Safety Joint	3.00			4182.00	
Packer	5.00			4187.00	28.00      Bottom Of Top Packer
Packer	5.00			4192.00	
Stubb	1.00			4193.00	
Recorder	0.00	8791	Inside	4193.00	
Recorder	0.00	8651	Outside	4193.00	
Perforations	1.00			4194.00	
change Over Sub	1.00			4195.00	
Drill Pipe	31.00			4226.00	
Change Over Sub	1.00			4227.00	
Perforations	10.00			4237.00	
Bullnose	3.00			4240.00	48.00      Bottom Packers & Anchor

**Total Tool Length: 76.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 51126      **DST#: 5**  
Test Start: 2013.05.17 @ 02:30:00

## 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: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	475 ft. gas in pipe	0.000
95.00	gocm-25%g25%o50%m	0.467
95.00	gmco-40%g10%m50%o	0.467
105.00	go-30%g70%o	0.516

Total Length: 295.00 ft      Total Volume: 1.450 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

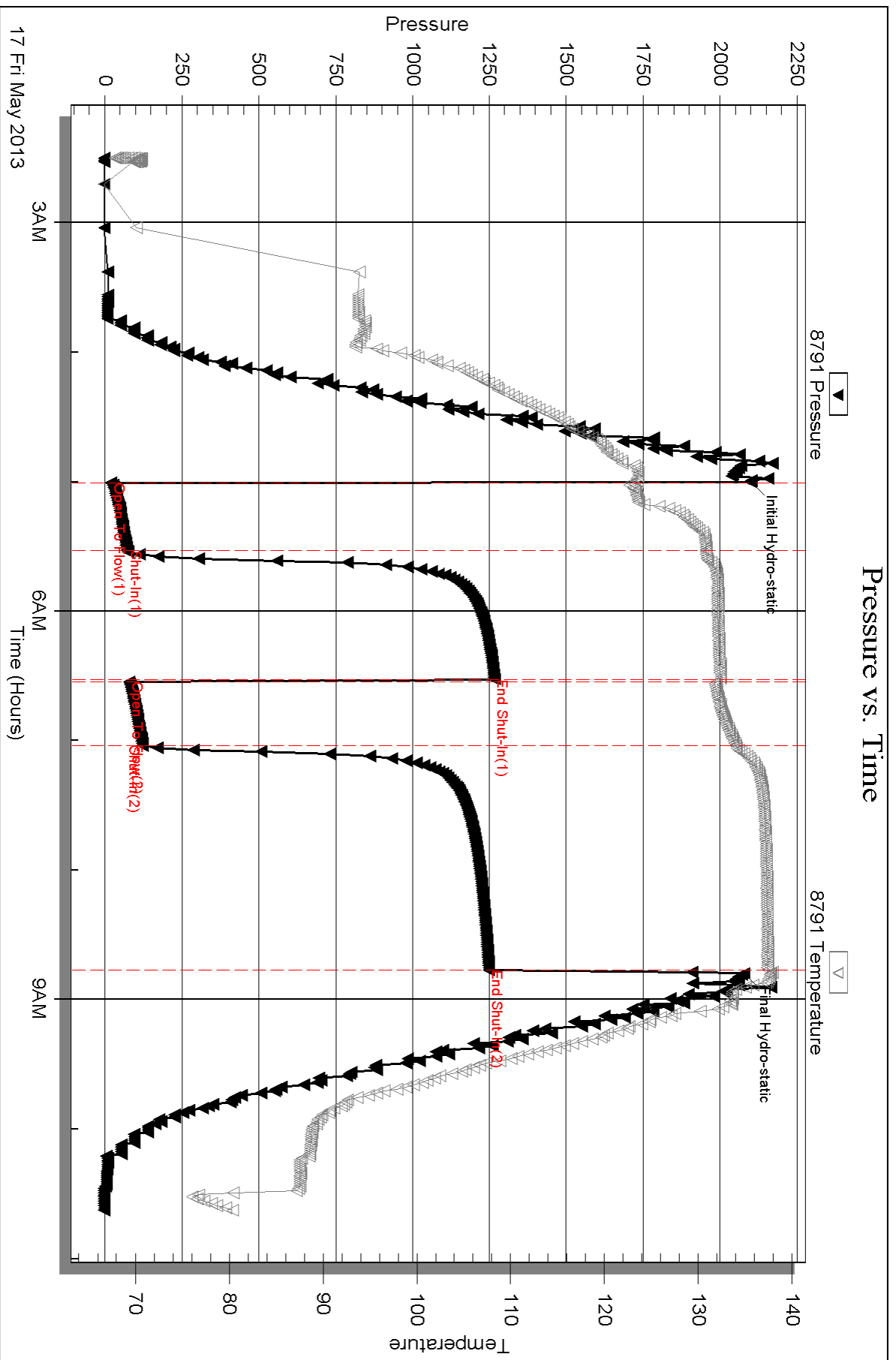
Serial #: 8791

Inside

Murfin Drilling

Patti G#1-4

DST Test Number: 5

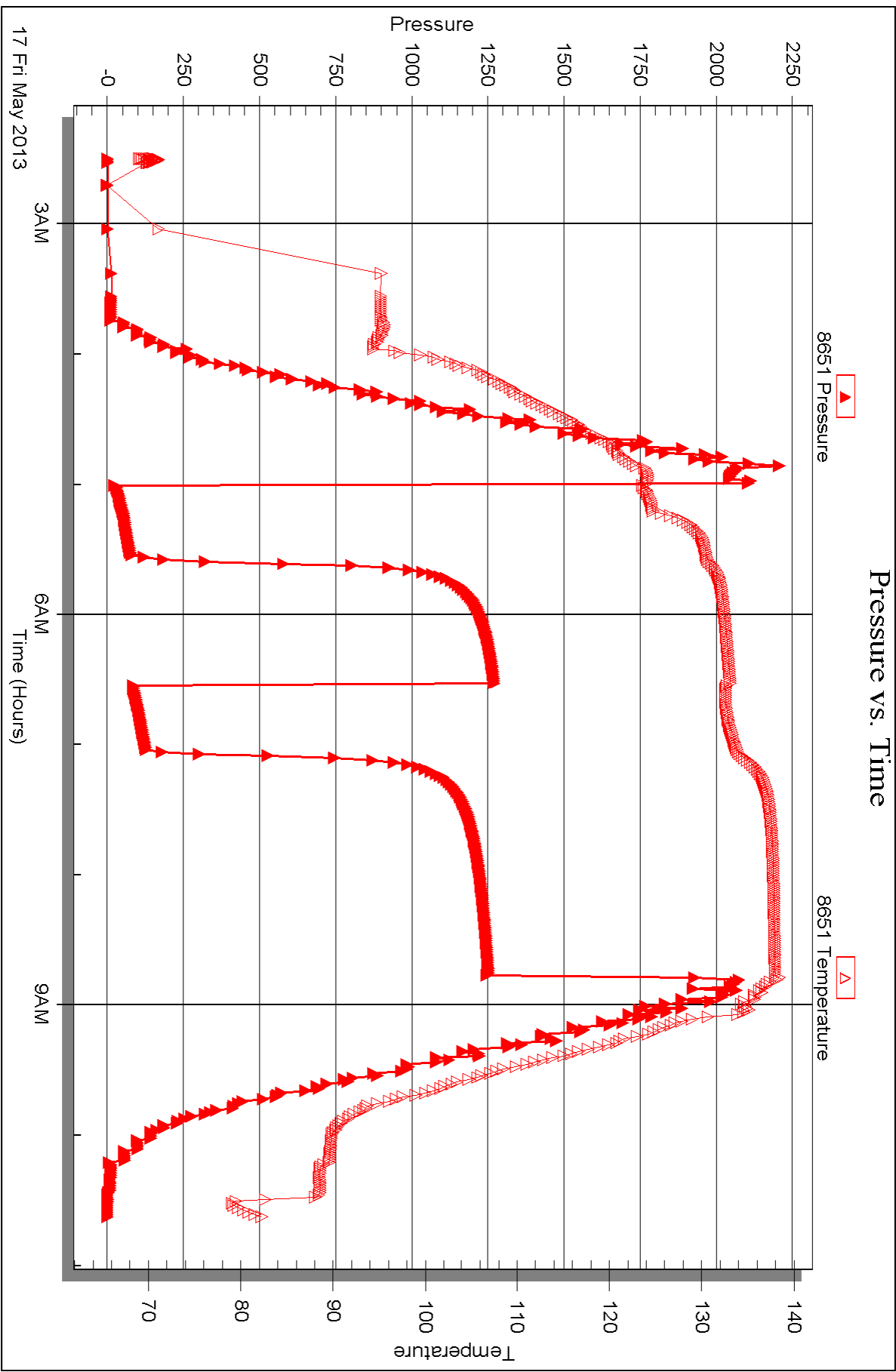


Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.17 @ 21:11:00

End Date: 2013.05.18 @ 06:00:30

Job Ticket #: 50745                      DST #: 6

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

Printed: 2013.05.24 @ 08:41:18



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**

**Patti G #1-4**

Job Ticket: 50745

**DST#: 6**

Test Start: 2013.05.17 @ 21:11:00

## GENERAL INFORMATION:

Formation: **LKC " H - J "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:02:30  
 Time Test Ended: 06:00:30  
 Interval: **4237.00 ft (KB) To 4330.00 ft (KB) (TVD)**  
 Total Depth: 4330.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

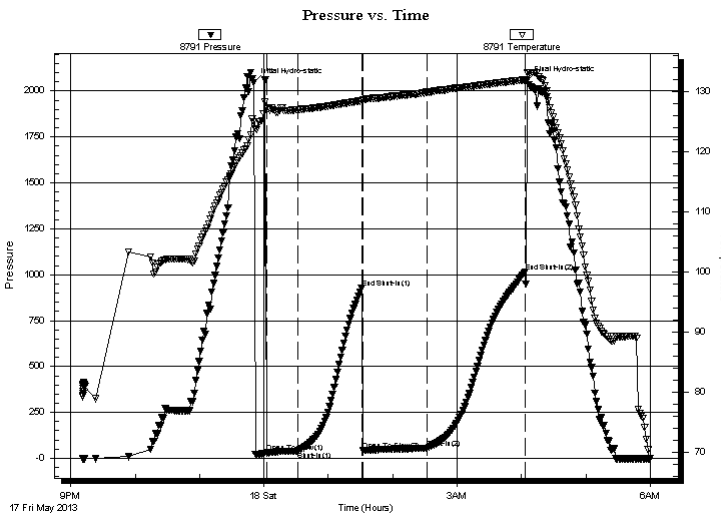
## Serial #: 8791

Inside

Press @ Run Depth: 55.81 psig @ 4238.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.17 End Date: 2013.05.18 Last Calib.: 2013.05.18  
 Start Time: 21:11:01 End Time: 06:00:30 Time On Btm: 2013.05.17 @ 23:50:30  
 Time Off Btm: 2013.05.18 @ 04:05:30

TEST COMMENT: 30 IF - 1/4" blow built to 1"  
 60 ISI - No return  
 60 FF - Surface blow built to 3"  
 90 FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2045.48	125.10	Initial Hydro-static
12	30.38	127.36	Open To Flow (1)
41	41.14	127.06	Shut-In(1)
101	925.88	128.53	End Shut-In(1)
102	42.24	128.68	Open To Flow (2)
162	55.81	129.90	Shut-In(2)
253	1016.25	132.01	End Shut-In(2)
255	2056.79	133.17	Final Hydro-static

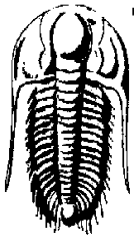
## Recovery

Length (ft)	Description	Volume (bbl)
91.00	GOCM - 20%G - 30%o - 50%M	0.45
1.00	OCM - 10%o - 90%M	0.00

\* Recovery from multiple tests

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Murfin Drilling  
 250 N. Water Ste. 300  
 Wichita KS 67202  
 ATTN: Jeff Christian

**4-1s-37w Cheyenne, KS**  
**Patti G #1-4**  
 Job Ticket: 50745      **DST#: 6**  
 Test Start: 2013.05.17 @ 21:11:00

### GENERAL INFORMATION:

Formation: **LKC "H - J"**  
 Deviated: **No** Whipstock: **ft (KB)**      Test Type: **Conventional Bottom Hole (Reset)**  
 Time Tool Opened: **00:02:30**      Tester: **Ryan Nichols**  
 Time Test Ended: **06:00:30**      Unit No: **61**  
**Interval: 4237.00 ft (KB) To 4330.00 ft (KB) (TVD)**      Reference Elevations: **3147.00 ft (KB)**  
 Total Depth: **4330.00 ft (KB) (TVD)**      **3137.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Good**      KB to GR/CF: **10.00 ft**

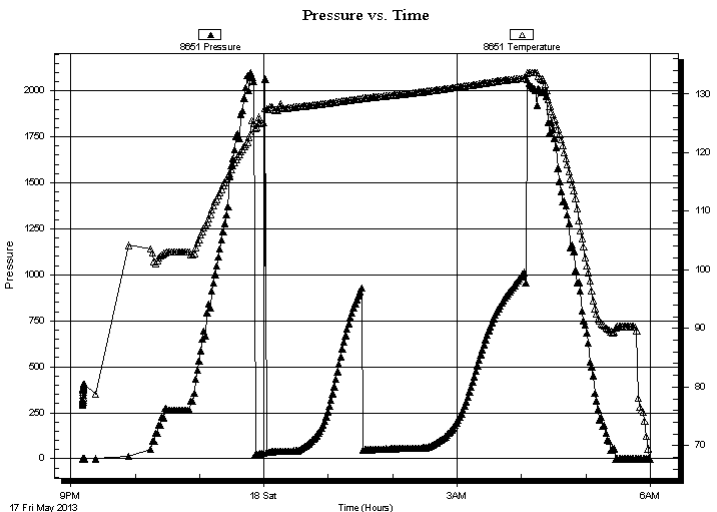
### Serial #: 8651

**Outside**

Press @ Run Depth:	psig @	4238.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.05.17	End Date:	2013.05.18	Last Calib.:	2013.05.18
Start Time:	21:11:01	End Time:	06:00:30	Time On Btm:	
			Time Off Btm:		

TEST COMMENT: 30 IF - 1/4" blow built to 1"  
 60 ISI - No return  
 60 FF - Surface blow built to 3"  
 90 FSI - No return

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
91.00	GOCM - 20%G - 30%o - 50%M	0.45
1.00	OCM - 10%o - 90%M	0.00

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50745      **DST#: 6**  
Test Start: 2013.05.17 @ 21:11:00

**Tool Information**

Drill Pipe:	Length: 3710.00 ft	Diameter: 3.80 inches	Volume: 52.04 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 54.66 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4237.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	93.00 ft			
Tool Length:	121.00 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>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			4214.00	
Hydraulic tool	5.00			4219.00	
Jars	5.00			4224.00	
Safety Joint	3.00			4227.00	
Packer	5.00			4232.00	28.00      Bottom Of Top Packer
Packer	5.00			4237.00	
Stubb	1.00			4238.00	
Recorder	0.00	8791	Inside	4238.00	
Recorder	0.00	8651	Outside	4238.00	
Perforations	25.00			4263.00	
change Over Sub	1.00			4264.00	
Drill Pipe	62.00			4326.00	
Change Over Sub	1.00			4327.00	
Bullnose	3.00			4330.00	93.00      Bottom Packers & Anchor

**Total Tool Length: 121.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50745      **DST#: 6**  
Test Start: 2013.05.17 @ 21:11:00

## 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: 70.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
91.00	GOCM - 20%G - 30%o - 50%M	0.448
1.00	OCM - 10%o - 90%M	0.005

Total Length: 92.00 ft      Total Volume: 0.453 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



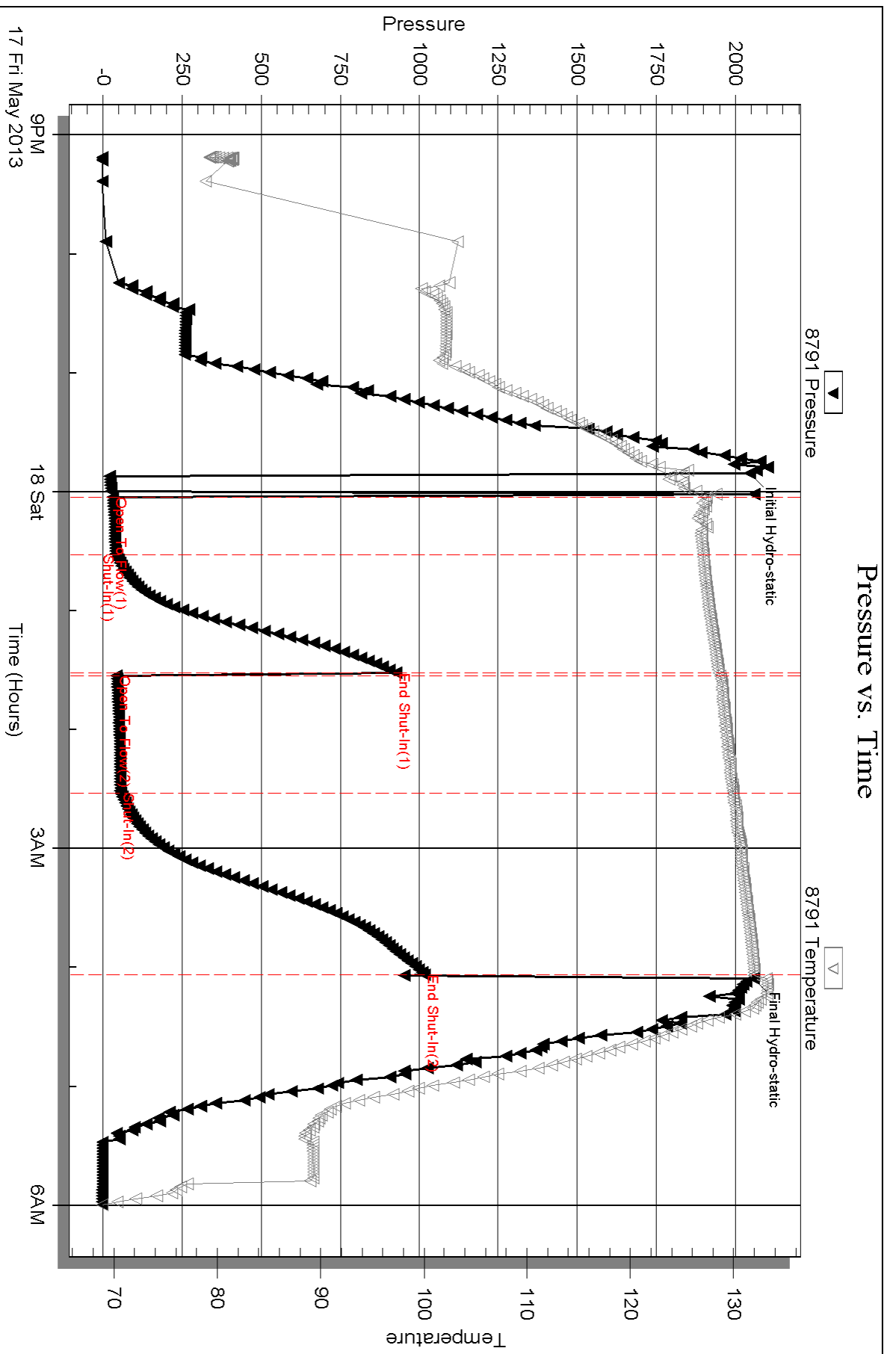
Serial #: 8791

Inside

Murfin Drilling

Patti G#1-4

DST Test Number: 6

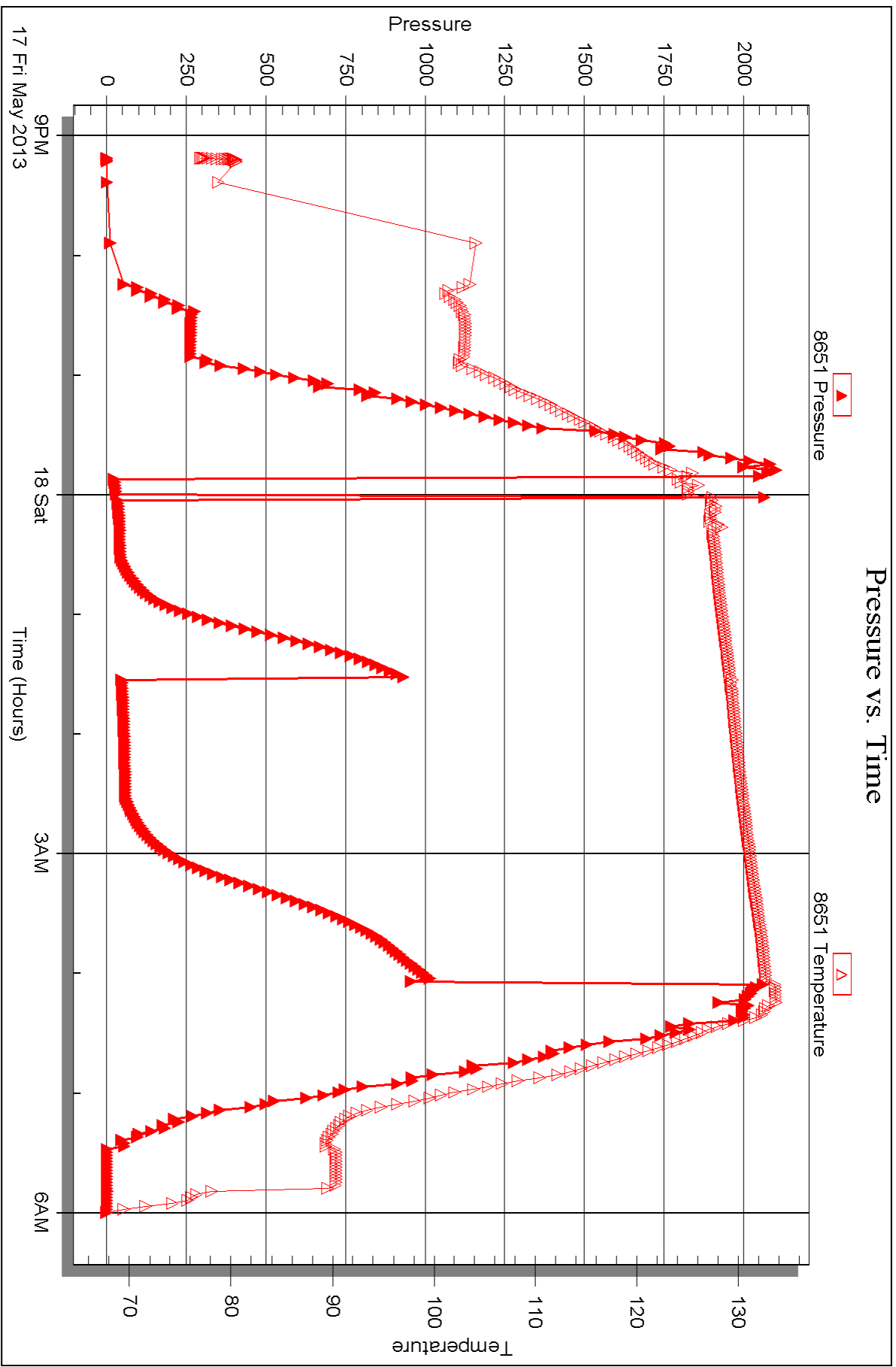


Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 50745

Printed: 2013.05.24 @ 08:41:21



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Jeff Christian

**Patti G #1-4**

**4-1s-37w Cheyenne,KS**

Start Date: 2013.05.18 @ 22:50:00

End Date: 2013.05.19 @ 08:04:00

Job Ticket #: 50746                      DST #: 7

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

Printed: 2013.05.24 @ 08:40:03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
 250 N. Water Ste. 300  
 Wichita KS 67202  
 ATTN: Jeff Christian

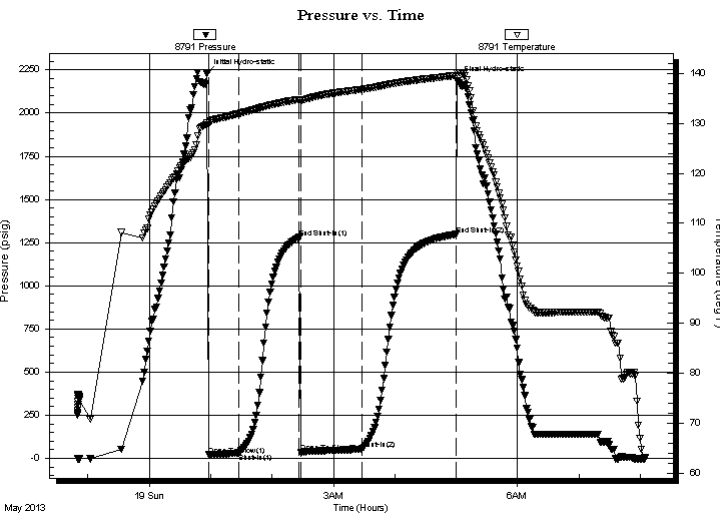
**4-1s-37w Cheyenne, KS**  
**Patti G #1-4**  
 Job Ticket: 50746 **DST#: 7**  
 Test Start: 2013.05.18 @ 22:50:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:58:00  
 Time Test Ended: 08:04:00  
 Interval: **4479.00 ft (KB) To 4522.00 ft (KB) (TVD)**  
 Total Depth: 4522.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 61  
 Reference Elevations: 3147.00 ft (KB)  
 3137.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8791 Inside**  
 Press @ Run Depth: 53.35 psig @ 4480.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.18 End Date: 2013.05.19 Last Calib.: 2013.05.19  
 Start Time: 22:50:01 End Time: 08:04:00 Time On Btm: 2013.05.19 @ 00:56:30  
 Time Off Btm: 2013.05.19 @ 05:01:00

**TEST COMMENT:** 30 IF - Surface blow built to 3 1/2"  
 60 ISI - No return  
 60 FF - Surface blow started @ 2 mins built to 5 1/4"  
 90 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2230.08	130.14	Initial Hydro-static
2	20.40	129.82	Open To Flow (1)
31	30.40	131.96	Shut-In(1)
90	1280.15	134.82	End Shut-In(1)
92	33.45	134.62	Open To Flow (2)
151	53.35	136.84	Shut-In(2)
243	1297.40	139.61	End Shut-In(2)
245	2187.14	140.23	Final Hydro-static

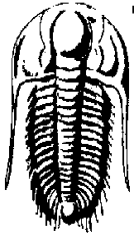
## Recovery

Length (ft)	Description	Volume (bbl)
91.00	GOCM - 5%G - 40%M - 55%o	0.45
4.00	Oil - 100%o	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
 250 N. Water Ste. 300  
 Wichita KS 67202  
 ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**

**Patti G #1-4**

Job Ticket: 50746 **DST#: 7**

Test Start: 2013.05.18 @ 22:50:00

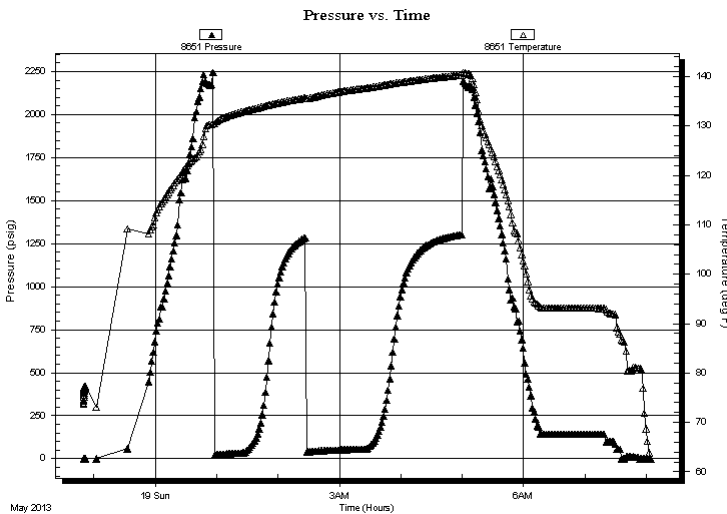
## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 00:58:00 Tester: Ryan Nichols  
 Time Test Ended: 08:04:00 Unit No: 61  
 Interval: **4479.00 ft (KB) To 4522.00 ft (KB) (TVD)** Reference Elevations: 3147.00 ft (KB)  
 Total Depth: 4522.00 ft (KB) (TVD) 3137.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

**Serial #: 8651 Outside**  
 Press @ Run Depth: psig @ 4480.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.18 End Date: 2013.05.19 Last Calib.: 2013.05.19  
 Start Time: 22:50:01 End Time: 08:04:00 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 IF - Surface blow built to 3 1/2"  
 60 ISI - No return  
 60 FF - Surface blow started @ 2 mins built to 5 1/4"  
 90 FSI - No return

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
91.00	GOCM - 5%G - 40%M - 55%o	0.45
4.00	Oil - 100%o	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50746      **DST#: 7**  
Test Start: 2013.05.18 @ 22:50:00

**Tool Information**

Drill Pipe:	Length: 3934.00 ft	Diameter: 3.80 inches	Volume: 55.18 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: 533.00 ft	Diameter: 2.25 inches	Volume: 2.62 bbl	Weight to Pull Loose: 84000.00 lb
			<u>Total Volume: 57.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	4479.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	71.00 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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Shut In Tool	5.00			4456.00	
Hydraulic tool	5.00			4461.00	
Jars	5.00			4466.00	
Safety Joint	3.00			4469.00	
Packer	5.00			4474.00	28.00      Bottom Of Top Packer
Packer	5.00			4479.00	
Stubb	1.00			4480.00	
Recorder	0.00	8791	Inside	4480.00	
Recorder	0.00	8651	Outside	4480.00	
Perforations	6.00			4486.00	
change Over Sub	1.00			4487.00	
Drill Pipe	31.00			4518.00	
Change Over Sub	1.00			4519.00	
Bullnose	3.00			4522.00	43.00      Bottom Packers & Anchor

**Total Tool Length: 71.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Jeff Christian

**4-1s-37w Cheyenne,KS**  
**Patti G #1-4**  
Job Ticket: 50746      **DST#: 7**  
Test Start: 2013.05.18 @ 22:50:00

## Mud and Cushion Information

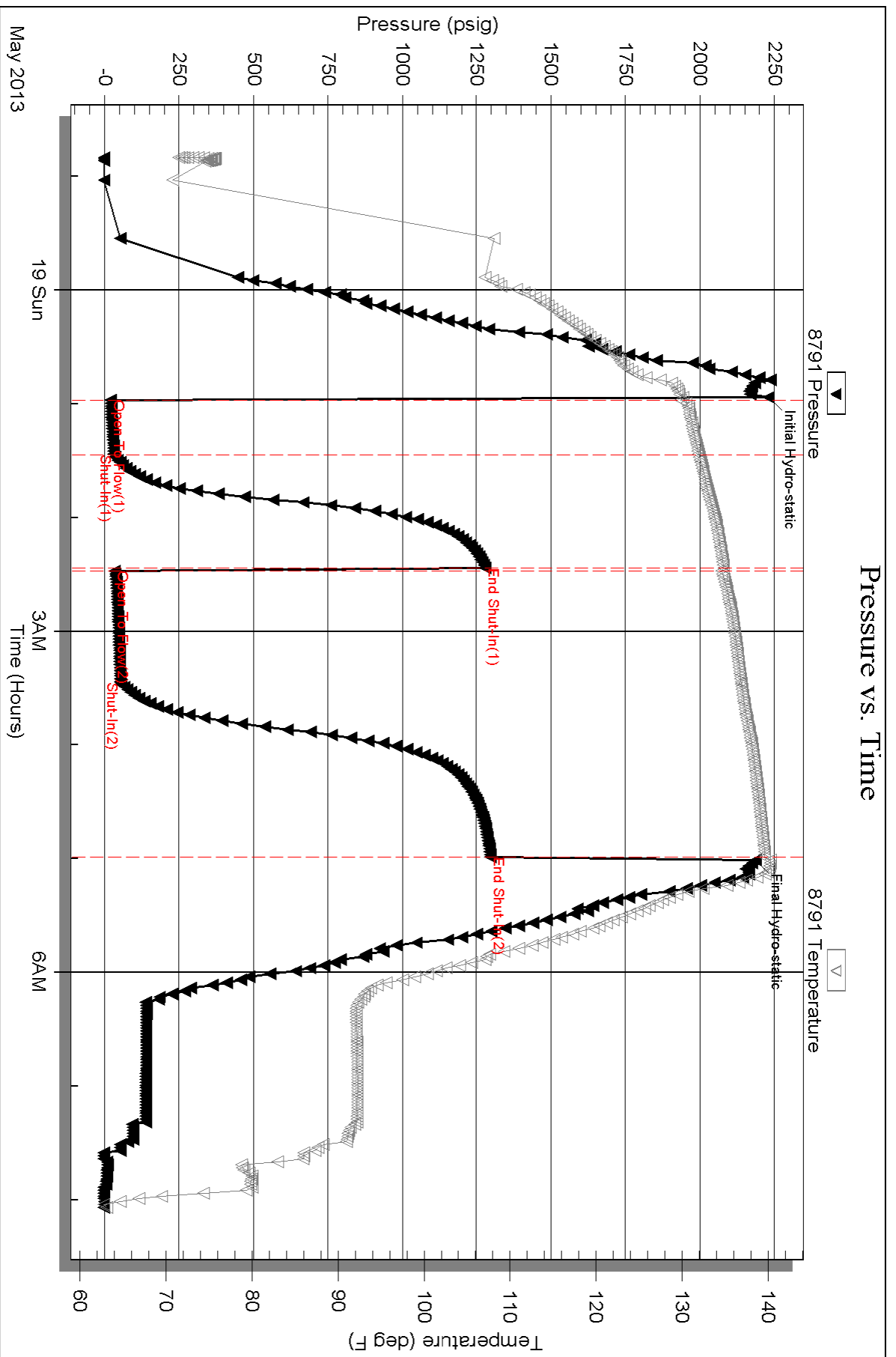
Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 75.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 600.00 ppm		
Filter Cake: 2.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
91.00	GOCM - 5%G - 40%M - 55%o	0.448
4.00	Oil - 100%o	0.020

Total Length: 95.00 ft      Total Volume: 0.468 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: Oil API = 36 @ 70 DEG F = 35 COR 60 DEG F



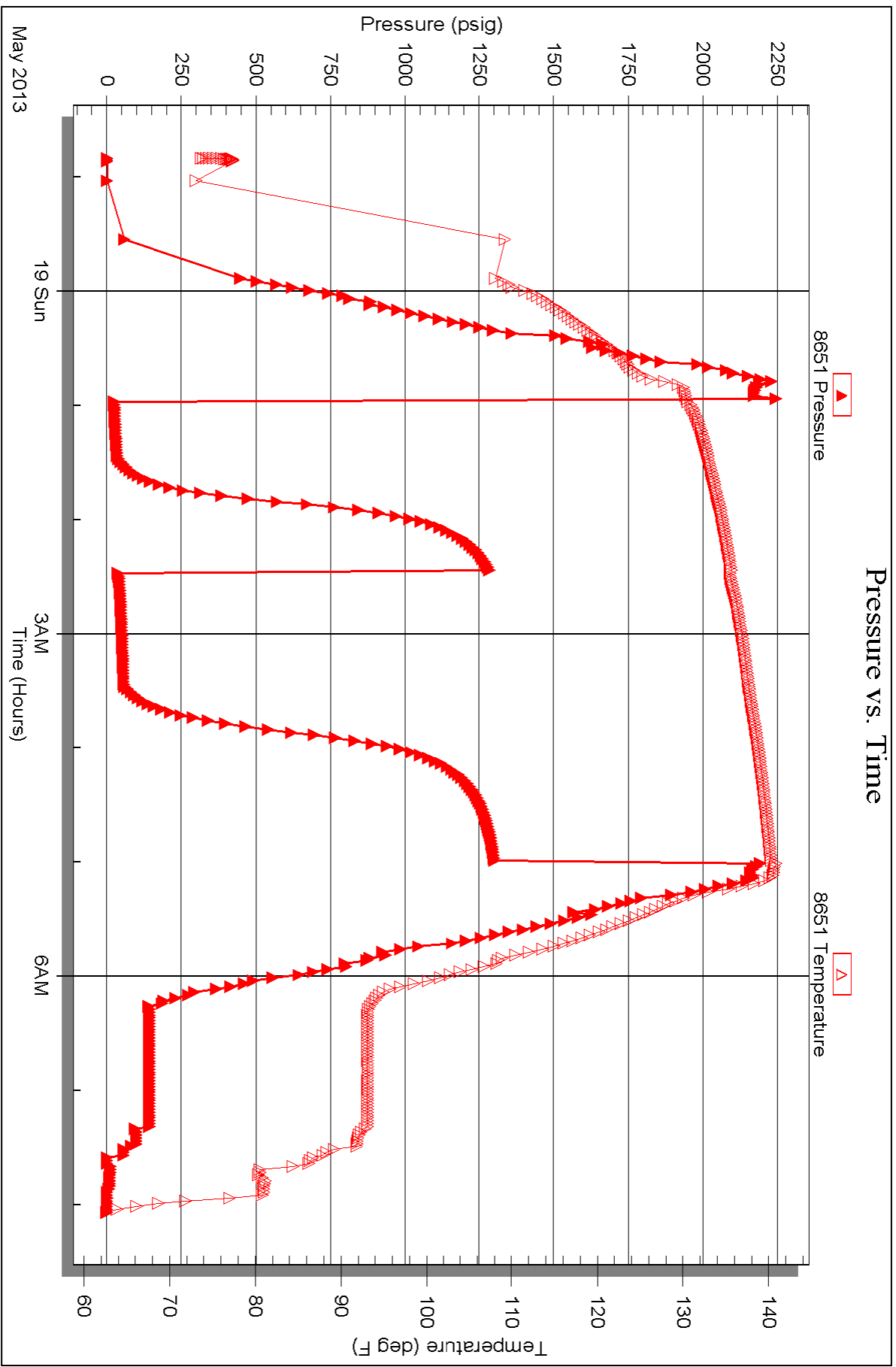


Serial #: 8651

Outside Murfin Drilling

Patti G#1-4

DST Test Number: 7





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50672

Well Name & No. Patti G #1-4 Test No. 1 Date 5-13-2013  
 Company Murfin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water Ste. 300 Wichita Ks. 67202  
 Co. Rep / Geo. JEFF Christian Rig Murfin # 14  
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State Ks

Interval Tested 3638 3690 Zone Tested Foraker  
 Anchor Length 52 Drill Pipe Run 3109 Mud Wt. 9.0  
 Top Packer Depth 3633 Drill Collars Run 533 Vis 70  
 Bottom Packer Depth 3638 Wt. Pipe Run -0- WL 5.6  
 Total Depth 3690 Chlorides 600 ppm System LCM 4#

Blow Description IF: Weak surface blow, died in 7 mins.

ISI: No blow Back

FF: No blow

FSI: No blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>vsocm</u>		<u>25</u>		<u>75</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 124 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1829  Test 1150 T-On Location 13:30

(B) First Initial Flow 17  Jars 250 T-Started 15:45

(C) First Final Flow 17  Safety Joint 75 T-Open 18:08

(D) Initial Shut-In 309  Circ Sub \_\_\_\_\_ T-Pulled 21:15

(E) Second Initial Flow 18  Hourly Standby 1/2h 50 T-Out 22:55

(F) Second Final Flow 20  Mileage 68x2 = 136 x 1.55 210.80

(G) Final Shut-In 340  Sampler \_\_\_\_\_

(H) Final Hydrostatic 1820  Straddle \_\_\_\_\_

Shale Packer \_\_\_\_\_

Extra Packer \_\_\_\_\_

Extra Recorder \_\_\_\_\_

Day Standby \_\_\_\_\_

Accessibility \_\_\_\_\_

Initial Open 30 Sub Total 0

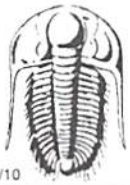
Initial Shut-In 60 Total 1735.80

Final Flow 30 MP/DST Disc't \_\_\_\_\_

Final Shut-In 60 Sub Total 1735.80

Approved By \_\_\_\_\_ Our Representative Chuck King

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. 50673

Well Name & No. Pathi G # 1-4 Test No. 2 Date 5-14-2013  
 Company Murfin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water Ste. 300 Wichita  
 Co. Rep / Geo. Jeff Christian Rig Murfin #14  
 Location: Sec. 4 Twp. 15 Rge. 37w Co. Cheyenne State Ks

Interval Tested 3978 4040 Zone Tested Oread  
 Anchor Length 62 Drill Pipe Run 3426 Mud Wt. 8.9  
 Top Packer Depth 3973 Drill Collars Run 533 Vis 6.8  
 Bottom Packer Depth 3978 Wt. Pipe Run - 0 - WL 5.4  
 Total Depth 4040 Chlorides 700 ppm System LCM 0#

Blow Description IF: Weak blow, surface over 30 mins.  
ISI: No blow back  
FF: No blow  
FSI: No blow back

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

Rec Total 100 BHT 130. Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2105</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>29:53</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>22:50</u>
(C) First Final Flow <u>44</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>00:50</u>
(D) Initial Shut-In <u>1310</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>3:50</u>
(E) Second Initial Flow <u>48</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>5:32</u>
(F) Second Final Flow <u>72</u>	<input checked="" type="checkbox"/> Mileage <u>68x2 = 136x1.55</u> 210.80	Comments _____
(G) Final Shut-In <u>1278</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1938</u>	<input type="checkbox"/> Straddle _____	<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>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Flow <u>30</u>	<input checked="" type="checkbox"/> Day Standby _____	Total <u>1785.80</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1785.80</u>	

Approved By \_\_\_\_\_ Our Representative Chuck Knight

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. 50674

Well Name & No. Patti G #1-4 Test No. 3 Date 5-15-2013  
 Company MurFin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water 300 Wichita KS.  
 Co. Rep / Geo. Jeff Christian Rig MurFin #14  
 Location: Sec. 4 Twp. 15 Rge. 37W Co. cheyenne State KS

Interval Tested 4112 4132 Zone Tested LRC-A  
 Anchor Length 20 Drill Pipe Run 3583 Mud Wt. 8.9  
 Top Packer Depth 4107 Drill Collars Run 533 Vis 64  
 Bottom Packer Depth 4112 Wt. Pipe Run -0- WL 6.4  
 Total Depth 4132 Chlorides 700 ppm System LCM 6#

Blow Description IF: Weak blow, died in 10 mins.  
ISI: No blow back  
FP: No blow

ESI: No blow back

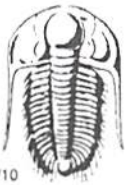
Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1 BHT 128 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic	<u>2080</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>15:00</u>
(B) First Initial Flow	<u>15</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>16:00</u>
(C) First Final Flow	<u>15</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>18:08</u>
(D) Initial Shut-In	<u>23</u>	<input type="checkbox"/> Circ Sub		T-Pulled	<u>21:20</u>
(E) Second Initial Flow	<u>14</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>23:08</u>
(F) Second Final Flow	<u>15</u>	<input checked="" type="checkbox"/> Mileage	<u>68x2=136x1.55</u> 210.80	Comments	
(G) Final Shut-In	<u>21</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>1981</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	
Initial Open	<u>30</u>	<input type="checkbox"/> Shale Packer		<input type="checkbox"/> Ruined Packer	
Initial Shut-In	<u>60</u>	<input type="checkbox"/> Extra Packer		<input type="checkbox"/> Extra Copies	
Final Flow	<u>30</u>	<input type="checkbox"/> Extra Recorder		Sub Total	<u>0</u>
Final Shut-In	<u>60</u>	<input type="checkbox"/> Day Standby		Total	<u>1785.80</u>
		<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1785.80</u>		

Approved By \_\_\_\_\_ Our Representative Chuck Kozup

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50675

Well Name & No. Patti G #1-4 Test No. 4 Date 5-16-13  
 Company Murfin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water 300 Wichita  
 Co. Rep / Geo. Jeff Christian Rig Murfin #14  
 Location: Sec. 4 Twp. 1S Rge. 37W Co. cheyenne State Ks

Interval Tested 4130 4180 Zone Tested LKC-D  
 Anchor Length 50 Drill Pipe Run 3584 Mud Wt. 89.0  
 Top Packer Depth 4125 Drill Collars Run 533 Vis 6 59  
 Bottom Packer Depth 4130 Wt. Pipe Run 0 WL 6.0  
 Total Depth 4180 Chlorides 800 ppm System LCM 6#

Blow Description IF: ~~Weak~~ Fair blow, Built to B.O.B in 25 mins. over 30 mins  
ISI: No blow back

FF: Fair blow, Built to B.O.B in 25 mins.

FSD: Blow back after 5 mins. Built to ~~B.O.B~~ <sup>5 in over 60 mins. Dried to 2 in over 90 mins.</sup>

Rec	Feet of	%gas	%oil	%water	%mud
95	go	10%	90%		
95	go	40%	60%		
95	gmo	10%	65%		25%
95	gocm	10%	30%		60%
0	Feet of <u>475 ft of gas in pipe</u>	%gas	%oil	%water	%mud

Rec Total 330 BHT 135 Gravity 26 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2096</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:45</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>8:10</u>
(C) First Final Flow <u>79</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>9:49</u>
(D) Initial Shut-In <u>1156</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>150</u>
(E) Second Initial Flow <u>86</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1553</u>
(F) Second Final Flow <u>156</u>	<input checked="" type="checkbox"/> Mileage <u>68K2 = 136X1.55</u> 210.80	Comments
(G) Final Shut-In <u>1144</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2012</u>	<input type="checkbox"/> Straddle	

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1785.80</u>
	Sub Total <u>1785.80</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Chuck Kiefer

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51126

Well Name & No. Patti G #1-4 Test No. 5 Date 5-17-2013  
 Company Murfin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water Ste 300 White Rte.  
 Co. Rep / Geo. Jeff Christian Rig Murfin #14  
 Location: Sec. 4 Twp. 15 Rge. 37w Co. Cheyenne State KS

Interval Tested 4192 4240 Zone Tested LKL-G  
 Anchor Length 48 Drill Pipe Run 3643 Mud Wt. 9.0  
 Top Packer Depth 4187 Drill Collars Run 533 Vis 59  
 Bottom Packer Depth 4192 Wt. Pipe Run -0- WL 6.0  
 Total Depth 4240 Chlorides 800 ppm System LCM 6#

Blow Description IF: Fair blow, Built to B.O.B in 10 mins.  
ISI: Blow back after 1 min. Surface over 60 mins.

FF: Fair blow, B.O.B in 7 mins.

FST: Blow back. Weak surface <sup>Dial in</sup> ~~over~~ 60 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>90</u>	<u>30</u>	<u>70</u>		
<u>95</u>	<u>90 gmc</u>	<u>40</u>	<u>50</u>		<u>10</u>
<u>95</u>	<u>90 gmc</u>	<u>25</u>	<u>25</u>		<u>50</u>
<u>0</u>	<u>475 ft gas in P.P.</u>				

Rec Total 295 BHT 132 Gravity 27 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 2099  Test 1250 T-On Location 1:30  
 (B) First Initial Flow 20  Jars 250 T-Started 2:30  
 (C) First Final Flow 73  Safety Joint 75 T-Open 5:00  
 (D) Initial Shut-In 1267  Circ Sub T-Pulled 8:45  
 (E) Second Initial Flow 80  Hourly Standby T-Out 10:38  
 (F) Second Final Flow 122  Mileage 210.80 Comments \_\_\_\_\_  
 (G) Final Shut-In 1249  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2078  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 30  
 Final Shut-In 90  
 Sub Total 1785.80  
 Total 1785.80  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Chris [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50745

4/10

Well Name & No. Patti 'G' #1-4 Test No. 6 Date 5/17/13  
 Company Martin Drilling Co. Elevation 3147 KB 3137 GL  
 Address 250 N. Water STE 300 Wichita, KS  
 Co. Rep / Geo. Jeff Christian Rig Martin #14  
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4237-4330 Zone Tested LKC @ "H-J"  
 Anchor Length 93' Drill Pipe Run 3710' Mud Wt. 9.4  
 Top Packer Depth 4232 Drill Collars Run 533 Vis 70  
 Bottom Packer Depth 4237 Wt. Pipe Run 0' WL 6.0  
 Total Depth 4330 Chlorides 800 ppm System LCM 26  
 Blow Description IF - 1/4" blow built to 1"  
ISI - No return  
FF - Surface blow built to 3"  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1'</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
<u>91'</u>	<u>GOCM</u>	<u>20</u>	<u>30</u>	<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 92' BHT — Gravity 132° API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2045</u>	<input type="checkbox"/> Test 1250	T-On Location <u>20:35</u>
(B) First Initial Flow <u>30</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>21:11</u>
(C) First Final Flow <u>41</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>00:02</u>
(D) Initial Shut-In <u>926</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>04:02</u>
(E) Second Initial Flow <u>42</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>06:00</u>
(F) Second Final Flow <u>56</u>	<input checked="" type="checkbox"/> Mileage <u>130 RT</u> 210.80	Comments _____
(G) Final Shut-In <u>1016</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2057</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Total <u>1785.80</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1785.80</u>	

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50746

4/10

Well Name & No. Martin Drilling Co Test No. 7 Date 5/18/13  
 Company Patti G #1-4 Elevation 3147 KB 3137 GL  
 Address 250 N. Water STE 300 Wichita, KS  
 Co. Rep / Geo. Jeff Christian Rig Martin #14  
 Location: Sec. 4 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4479-4522 Zone Tested Pawnee  
 Anchor Length 43' Drill Pipe Run 3934' Mud Wt. 9.1  
 Top Packer Depth 4474 Drill Collars Run 533' Vis 75  
 Bottom Packer Depth 4479 Wt. Pipe Run 0' WL 6  
 Total Depth 4522 Chlorides 600 ppm System LCM 6

Blow Description IF - Surface blow built to 3 1/2"  
ISI - No return  
FF - Surface blow started @ 2 mins built to 5 1/4"  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>4</u>	<u>oil</u>	<u>5</u>	<u>95</u>		
<u>91</u>	<u>OCM</u>	<u>5</u>	<u>55</u>		<u>40</u>

Rec Total 95' BHT 140° Gravity 35 API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2230</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>22:15</u>
(B) First Initial Flow <u>30</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:50</u>
(C) First Final Flow <u>30</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>00:58</u>
(D) Initial Shut-In <u>1280</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>04:58</u>
(E) Second Initial Flow <u>33</u>	<input type="checkbox"/> Hourly Standby	T-Out
(F) Second Final Flow <u>53</u>	<input checked="" type="checkbox"/> Mileage <u>130 RT</u> 210.80	Comments
(G) Final Shut-In <u>1297</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2187</u>	<input type="checkbox"/> Straddle	<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>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1785.80</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't

Sub Total 1785.80  
 Our Representative [Signature]