



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water  
STE 300  
Wichita KS 67202

ATTN: Wes Hansen

### **Theron #1-10**

#### **10-1S-37W Cheyenne KS**

Start Date: 2014.03.16 @ 22:54:00

End Date: 2014.03.17 @ 07:25:39

Job Ticket #: 56863                      DST #: 1

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

Printed: 2014.03.25 @ 14:41:47



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56863

**DST#: 1**

Test Start: 2014.03.16 @ 22:54:00

## GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:37:30

Time Test Ended: 07:25:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 58

**Interval: 3932.00 ft (KB) To 3990.00 ft (KB) (TVD)**

Reference Elevations: 3111.00 ft (KB)

Total Depth: 3990.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

**Serial #: 6752 Inside**

Press@RunDepth: 57.18 psig @ 3933.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.16

End Date:

2014.03.17

Last Calib.:

2014.03.17

Start Time: 22:54:01

End Time:

07:25:40

Time On Btm:

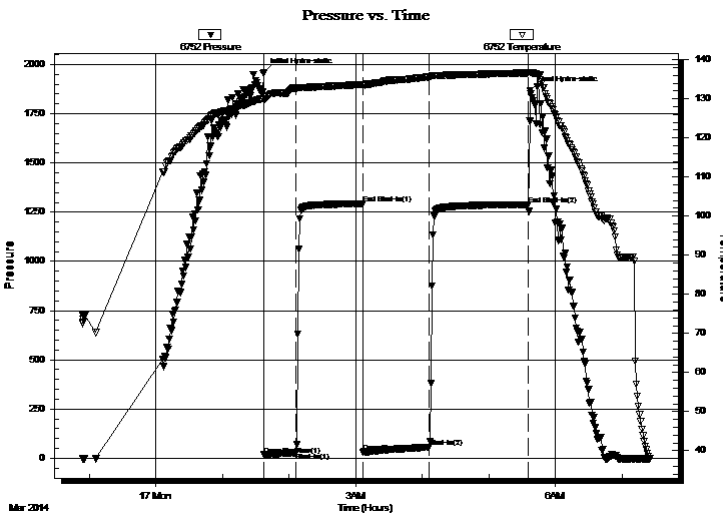
2014.03.17 @ 01:37:10

Time Off Btm:

2014.03.17 @ 05:37:20

**TEST COMMENT:** 30 IF - Surface blow built to 2 1/2"  
60 ISI - No return  
60 FF - Surface blow started @ 15 mins built to 2"  
90 FSI - No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1960.40	130.08	Initial Hydro-static
1	16.99	129.81	Open To Flow (1)
30	29.21	132.76	Shut-In(1)
90	1293.12	133.66	End Shut-In(1)
90	31.75	133.36	Open To Flow (2)
150	57.18	135.60	Shut-In(2)
239	1289.22	136.63	End Shut-In(2)
241	1868.34	136.75	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
95.00	Mud 100%M	1.33

## Gas Rates

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



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**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56863

**DST#: 1**

Test Start: 2014.03.16 @ 22:54:00

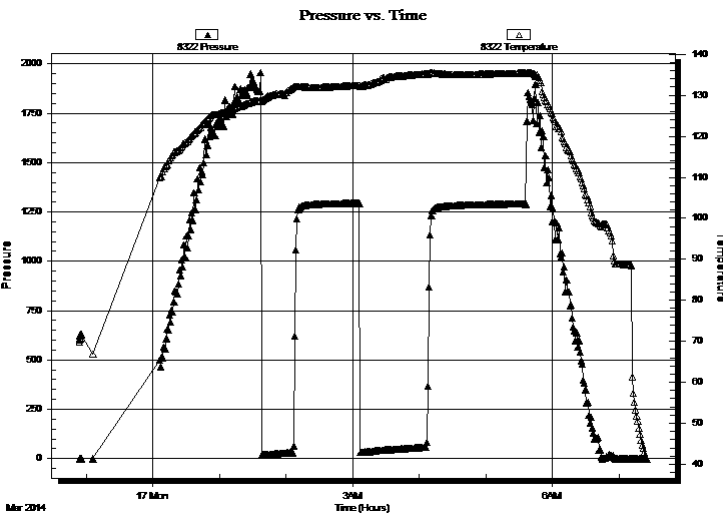
**GENERAL INFORMATION:**

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 01:37:30  
 Tester: Ryan Nichols  
 Time Test Ended: 07:25:39  
 Unit No: 58  
**Interval: 3932.00 ft (KB) To 3990.00 ft (KB) (TVD)**  
 Reference Elevations: 3111.00 ft (KB)  
 Total Depth: 3990.00 ft (KB) (TVD)  
 3098.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 13.00 ft

**Serial #: 8322 Outside**

Press@RunDepth: psig @ 3933.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.03.16 End Date: 2014.03.17 Last Calib.: 2014.03.17  
 Start Time: 22:54:01 End Time: 07:25:40 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 IF - Surface blow built to 2 1/2"  
 60 ISI - No return  
 60 FF - Surface blow started @ 15 mins built to 2"  
 90 FSI - No return



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
95.00	Mud 100%M	1.33

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56863

**DST#: 1**

Test Start: 2014.03.16 @ 22:54:00

## Tool Information

Drill Pipe:	Length: 3925.00 ft	Diameter: 3.80 inches	Volume: 55.06 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 55.06 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3932.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	85.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3906.00	
Shut In Tool	5.00			3911.00	
Hydraulic tool	5.00			3916.00	
Jars	5.00			3921.00	
Safety Joint	2.00			3923.00	
Packer	5.00			3928.00	27.00 Bottom Of Top Packer
Packer	4.00			3932.00	
Stubb	1.00			3933.00	
Recorder	0.00	6752	Inside	3933.00	
Recorder	0.00	8322	Outside	3933.00	
Perforations	21.00			3954.00	
Change Over Sub	1.00			3955.00	
Drill Pipe	31.00			3986.00	
Change Over Sub	1.00			3987.00	
Bullnose	3.00			3990.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 85.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56863

**DST#: 1**

Test Start: 2014.03.16 @ 22:54:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 74.00 sec/qt

Water Loss: 7.17 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
95.00	Mud 100%M	1.333

Total Length: 95.00 ft      Total Volume: 1.333 bbl

Num Fluid Samples: 0

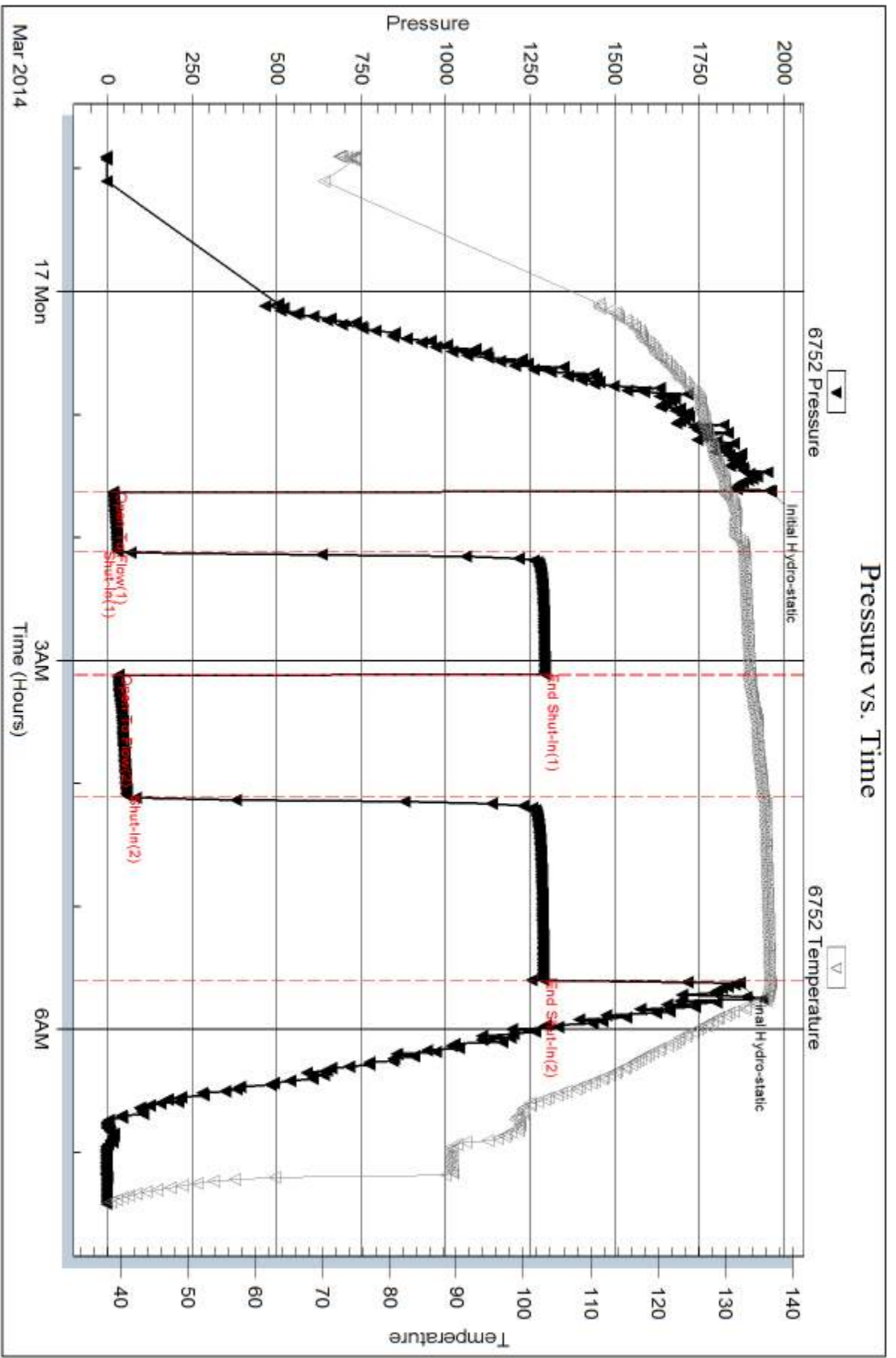
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

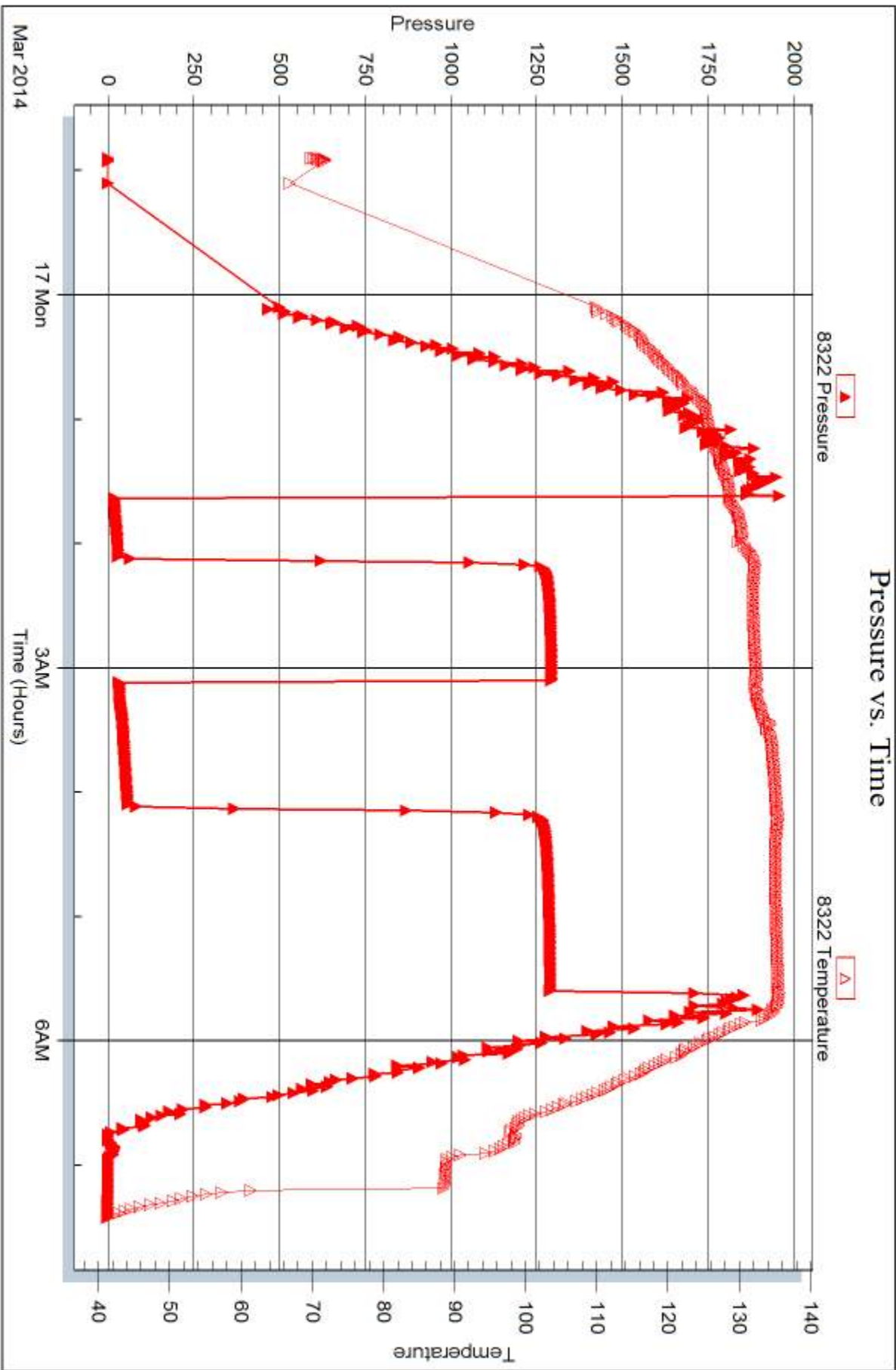


Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water  
STE 300  
Wichita KS 67202

ATTN: Wes Hansen

### **Theron #1-10**

#### **10-1S-37W Cheyenne KS**

Start Date: 2014.03.18 @ 04:36:00

End Date: 2014.03.18 @ 13:17:49

Job Ticket #: 56770                      DST #: 2

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

Printed: 2014.03.25 @ 14:41:22





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56770

**DST#: 2**

Test Start: 2014.03.18 @ 04:36:00

## GENERAL INFORMATION:

Formation: **LKC "A&D"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:16:00  
 Time Test Ended: 13:17:49  
 Interval: **4026.00 ft (KB) To 4130.00 ft (KB) (TVD)**  
 Total Depth: 4130.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Robert Zodrow  
 Unit No: 58  
 Reference Elevations: 3111.00 ft (KB)  
 3098.00 ft (CF)  
 KB to GR/CF: 13.00 ft

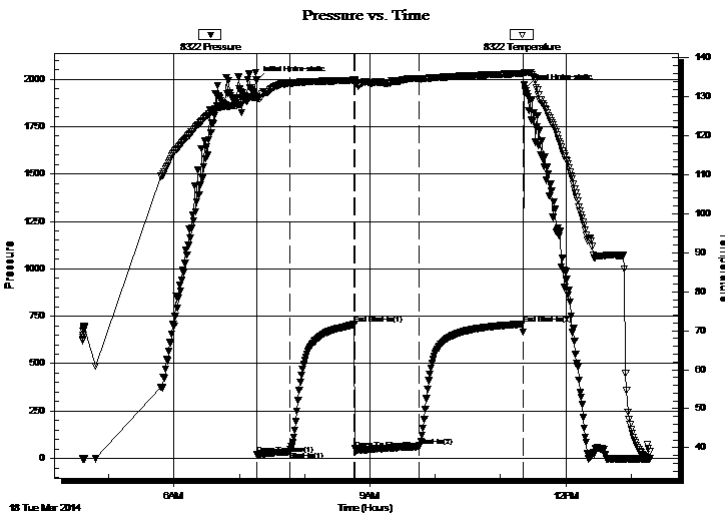
## Serial #: 8322

**Outside**

Press@RunDepth: 66.20 psig @ 4027.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.03.18 End Date: 2014.03.18 Last Calib.: 2014.03.18  
 Start Time: 04:36:01 End Time: 13:17:49 Time On Btm: 2014.03.18 @ 07:15:40  
 Time Off Btm: 2014.03.18 @ 11:22:30

TEST COMMENT: 30-IF-Blow Built To 6"  
 60-ISI-No Return  
 60-FF-Blow Built To 5 1/2"  
 90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1994.85	130.00	Initial Hydro-static
1	20.34	129.58	Open To Flow (1)
31	35.49	133.52	Shut-In(1)
90	707.14	134.29	End Shut-In(1)
91	50.70	134.11	Open To Flow (2)
150	66.20	134.65	Shut-In(2)
245	708.57	136.01	End Shut-In(2)
247	1951.46	136.29	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
74.00	ocm 50%o 50%m	1.04
51.00	go 45%g 55%o	0.72

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**10-1S-37W Cheyenne KS**

**Theron #1-10**

Job Ticket: 56770

**DST#: 2**

Test Start: 2014.03.18 @ 04:36:00

## GENERAL INFORMATION:

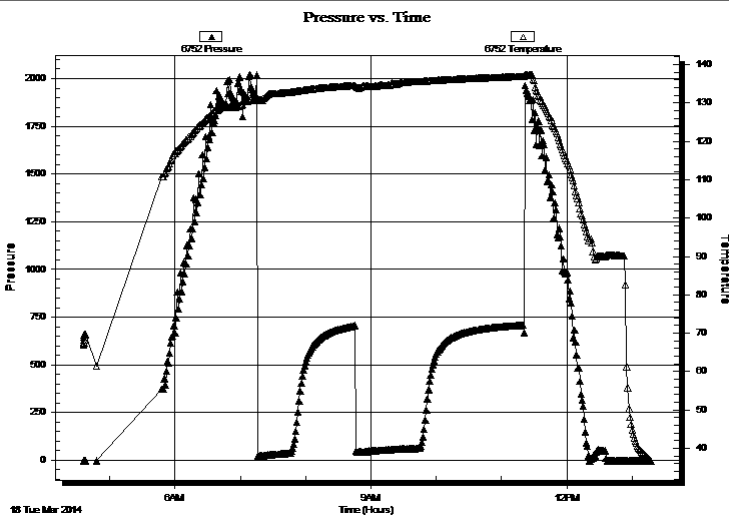
Formation:	<b>LKC "A&amp;D"</b>		
Deviated:	No	Whipstock:	ft (KB)
Time Tool Opened:	07:16:00		
Time Test Ended:	13:17:49		
<b>Interval:</b>	<b>4026.00 ft (KB) To</b>	<b>4130.00 ft (KB) (TVD)</b>	
Total Depth:	4130.00 ft (KB) (TVD)		
Hole Diameter:	7.88 inches	Hole Condition:	Fair
		Reference Elevations:	3111.00 ft (KB)
			3098.00 ft (CF)
		KB to GR/CF:	13.00 ft
		Test Type:	Conventional Bottom Hole (Reset)
		Tester:	Robert Zodrow
		Unit No:	58

## Serial #: 6752

Inside

Press@RunDepth:	psig @	4027.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2014.03.18	End Date:	2014.03.18	Last Calib.:
Start Time:	04:36:01	End Time:	13:17:49	Time On Btm:
				Time Off Btm:

TEST COMMENT: 30-IF-Blow Built To 6"  
60-ISI-No Return  
60-FF-Blow Built To 5 1/2"  
90-FSI-No Return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
74.00	ocm 50%o 50%m	1.04
51.00	go 45%g 55%o	0.72

\* 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 Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56770

**DST#: 2**

Test Start: 2014.03.18 @ 04:36:00

## Tool Information

Drill Pipe:	Length: 4018.00 ft	Diameter: 3.80 inches	Volume: 56.36 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 56.36 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4026.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	104.00 ft			
Tool Length:	131.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4000.00	
Shut In Tool	5.00			4005.00	
Hydraulic tool	5.00			4010.00	
Jars	5.00			4015.00	
Safety Joint	2.00			4017.00	
Packer	5.00			4022.00	27.00 Bottom Of Top Packer
Packer	4.00			4026.00	
Stubb	1.00			4027.00	
Recorder	0.00	6752	Inside	4027.00	
Recorder	0.00	8322	Outside	4027.00	
Perforations	36.00			4063.00	
Change Over Sub	1.00			4064.00	
Drill Pipe	62.00			4126.00	
Change Over Sub	1.00			4127.00	
Bullnose	3.00			4130.00	104.00 Bottom Packers & Anchor

**Total Tool Length: 131.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56770

**DST#: 2**

Test Start: 2014.03.18 @ 04:36:00

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 72.00 sec/qt

Water Loss: 7.58 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

24 deg API

Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
74.00	ocm 50%o 50%m	1.038
51.00	go 45%g 55%o	0.715

Total Length: 125.00 ft      Total Volume: 1.753 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

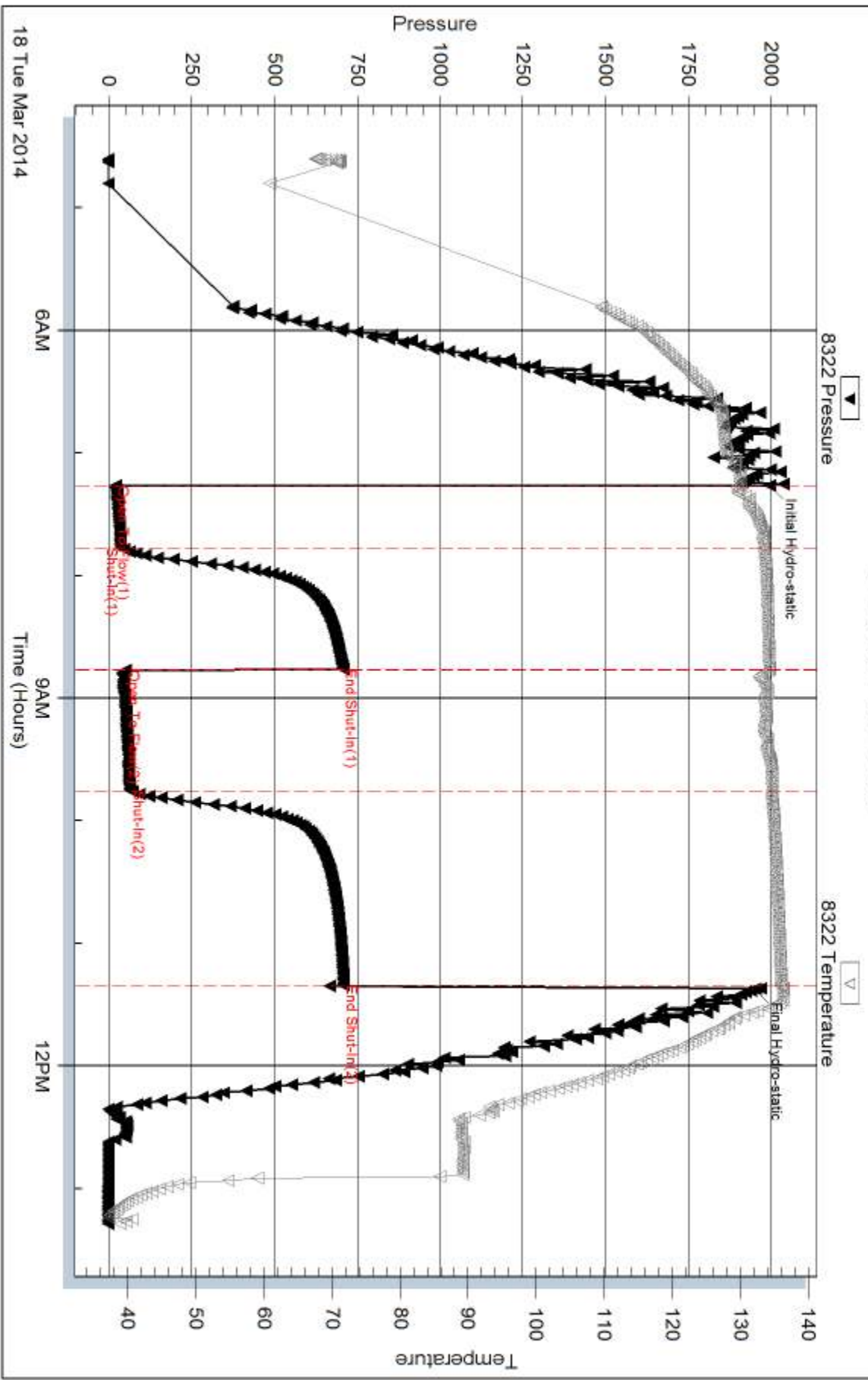
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



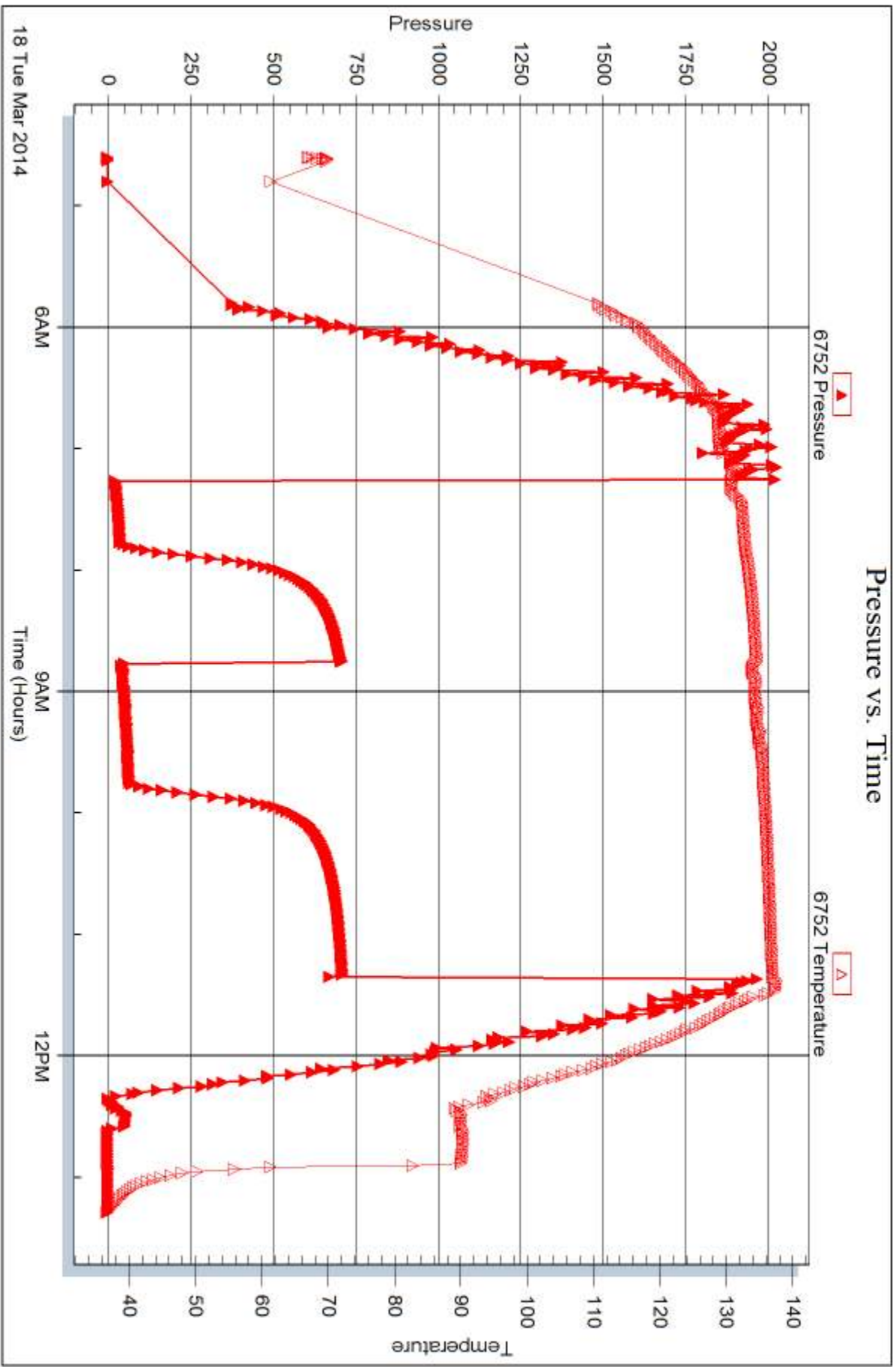
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 56770

Printed: 2014.03.25 @ 14:41:25



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water  
STE 300  
Wichita KS 67202

ATTN: Wes Hansen

### **Theron #1-10**

#### **10-1S-37W Cheyenne KS**

Start Date: 2014.03.19 @ 03:02:00

End Date: 2014.03.19 @ 11:57:00

Job Ticket #: 56771                      DST #: 3

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

Printed: 2014.03.25 @ 14:41:00



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56771

**DST#: 3**

Test Start: 2014.03.19 @ 03:02:00

## GENERAL INFORMATION:

Formation: **LKC "G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 05:11:10  
 Time Test Ended: 11:57:00  
 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: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Robert Zodrow  
 Unit No: 58  
 Reference Elevations: 3111.00 ft (KB)  
 3098.00 ft (CF)  
 KB to GR/CF: 13.00 ft

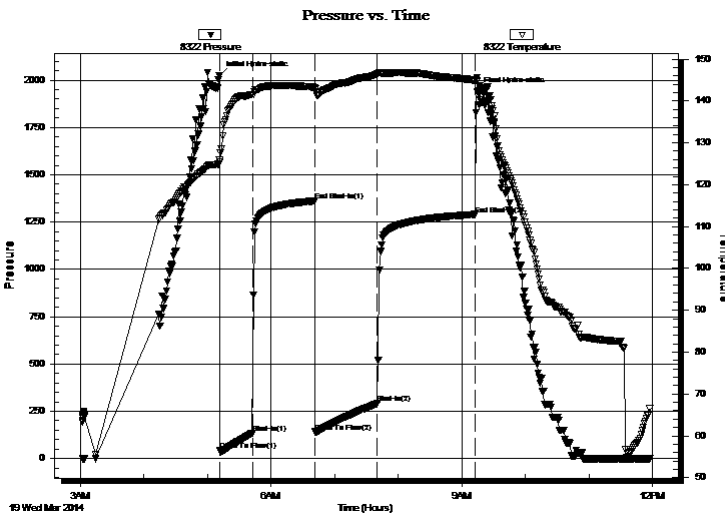
## Serial #: 8322

**Outside**

Press@RunDepth: 291.14 psig @ 4131.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.03.19 End Date: 2014.03.19 Last Calib.: 2014.03.19  
 Start Time: 03:02:01 End Time: 11:57:00 Time On Btm: 2014.03.19 @ 05:11:00  
 Time Off Btm: 2014.03.19 @ 09:14:09

TEST COMMENT: 30-IF-Bob In 8 Min  
 60-ISI-Bob In 47 Min  
 60-FF-Bob In 11 Min  
 90-FSI-Bob In 55 Min

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2026.07	125.82	Initial Hydro-static
1	41.49	125.32	Open To Flow (1)
31	132.62	141.53	Shut-In(1)
90	1361.96	143.26	End Shut-In(1)
91	141.07	142.82	Open To Flow (2)
149	291.14	146.41	Shut-In(2)
242	1290.71	144.88	End Shut-In(2)
244	1939.30	144.67	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
188.00	ow cm 25%o 27%w 48%m	2.64
564.00	clean oil 40%g 60%o	7.91
0.00	GIP 752'	0.00

\* Recovery from multiple tests

## Gas Rates

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





# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56771

**DST#: 3**

Test Start: 2014.03.19 @ 03:02:00

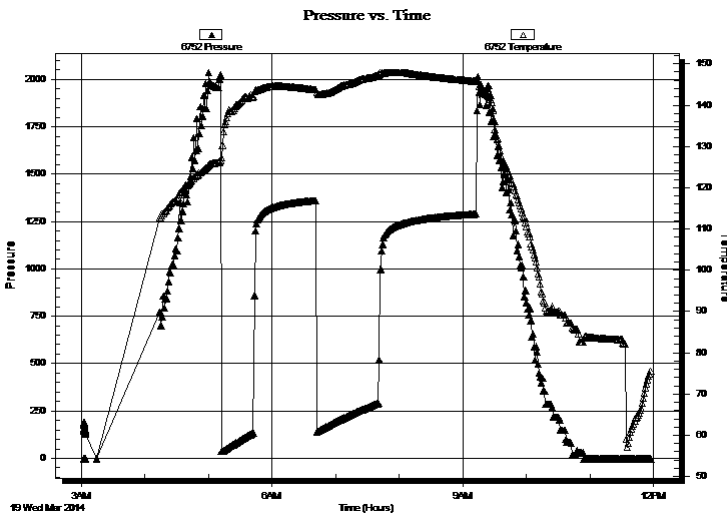
## GENERAL INFORMATION:

Formation: <b>LKC "G"</b>			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 05:11:10		Tester: Robert Zodrow	
Time Test Ended: 11:57:00		Unit No: 58	
<b>Interval: 4130.00 ft (KB) To 4180.00 ft (KB) (TVD)</b>		Reference Elevations: 3111.00 ft (KB)	
Total Depth: 4180.00 ft (KB) (TVD)		3098.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 13.00 ft	

**Serial #: 6752** Inside

Press@RunDepth: psig @ 4131.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.03.19	End Date: 2014.03.19
Start Time: 03:02:01	End Time: 11:57:00
	Last Calib.: 2014.03.19
	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30-IF-Bob In 8 Min  
60-ISI-Bob In 47 Min  
60-FF-Bob In 11 Min  
90-FSI-Bob In 55 Min



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
188.00	ow cm 25%o 27%w 48%m	2.64
564.00	clean oil 40%g 60%o	7.91
0.00	GIP 752'	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 Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56771

**DST#: 3**

Test Start: 2014.03.19 @ 03:02:00

## Tool Information

Drill Pipe:	Length: 4113.00 ft	Diameter: 3.80 inches	Volume: 57.69 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
		Total Volume: 57.69 bbl		Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4130.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	77.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4104.00	
Shut In Tool	5.00			4109.00	
Hydraulic tool	5.00			4114.00	
Jars	5.00			4119.00	
Safety Joint	2.00			4121.00	
Packer	5.00			4126.00	27.00 Bottom Of Top Packer
Packer	4.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	6752	Inside	4131.00	
Recorder	0.00	8322	Outside	4131.00	
Perforations	13.00			4144.00	
Change Over Sub	1.00			4145.00	
Drill Pipe	31.00			4176.00	
Change Over Sub	1.00			4177.00	
Bullnose	3.00			4180.00	50.00 Bottom Packers & Anchor

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56771

**DST#: 3**

Test Start: 2014.03.19 @ 03:02:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 74.00 sec/qt  
Water Loss: 7.17 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 600.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 28 deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
188.00	ow cm 25%o 27%w 48%m	2.637
564.00	clean oil 40%g 60%o	7.911
0.00	GIP 752'	0.000

Total Length: 752.00 ft Total Volume: 10.548 bbl

Num Fluid Samples: 0

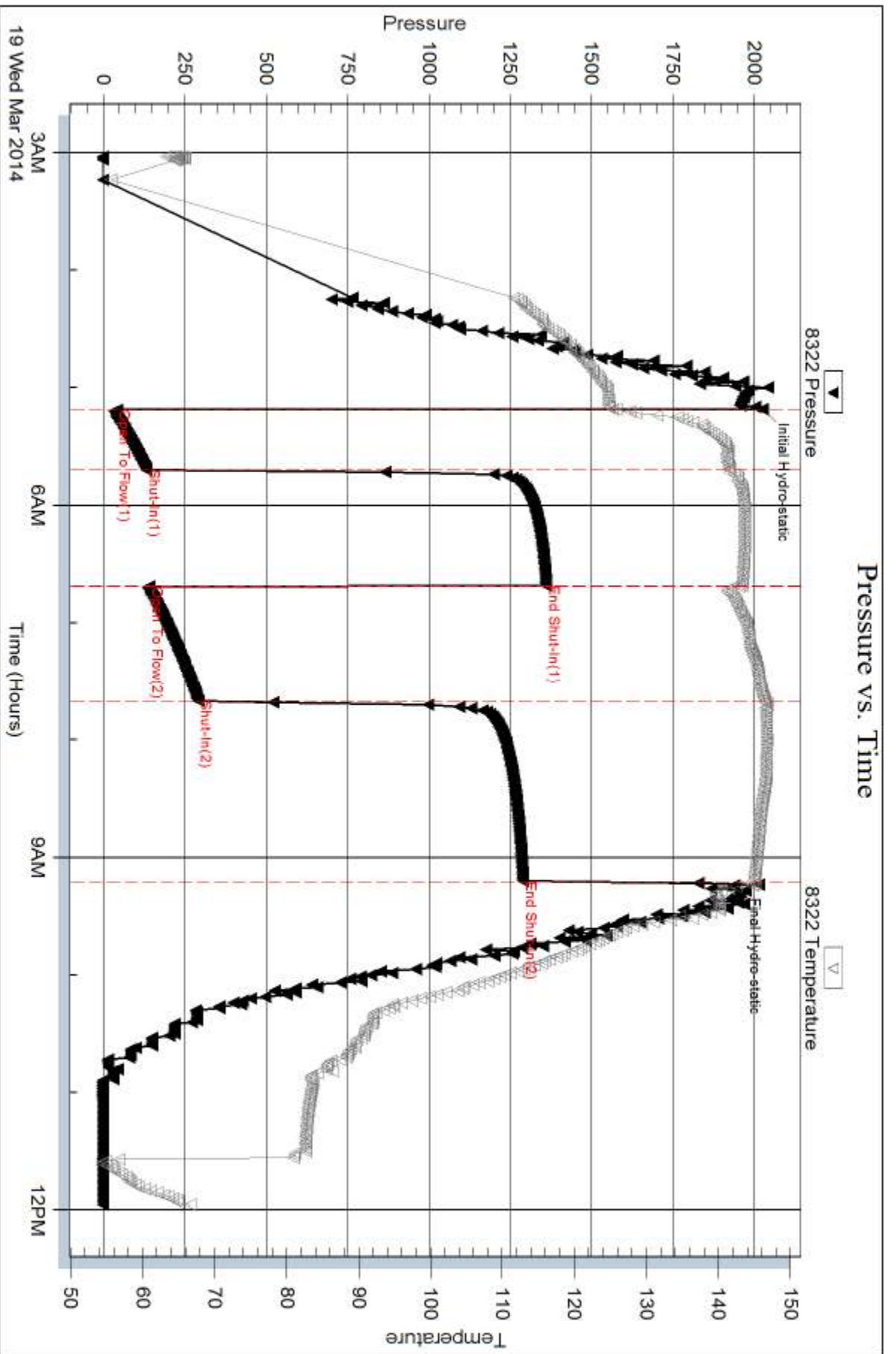
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



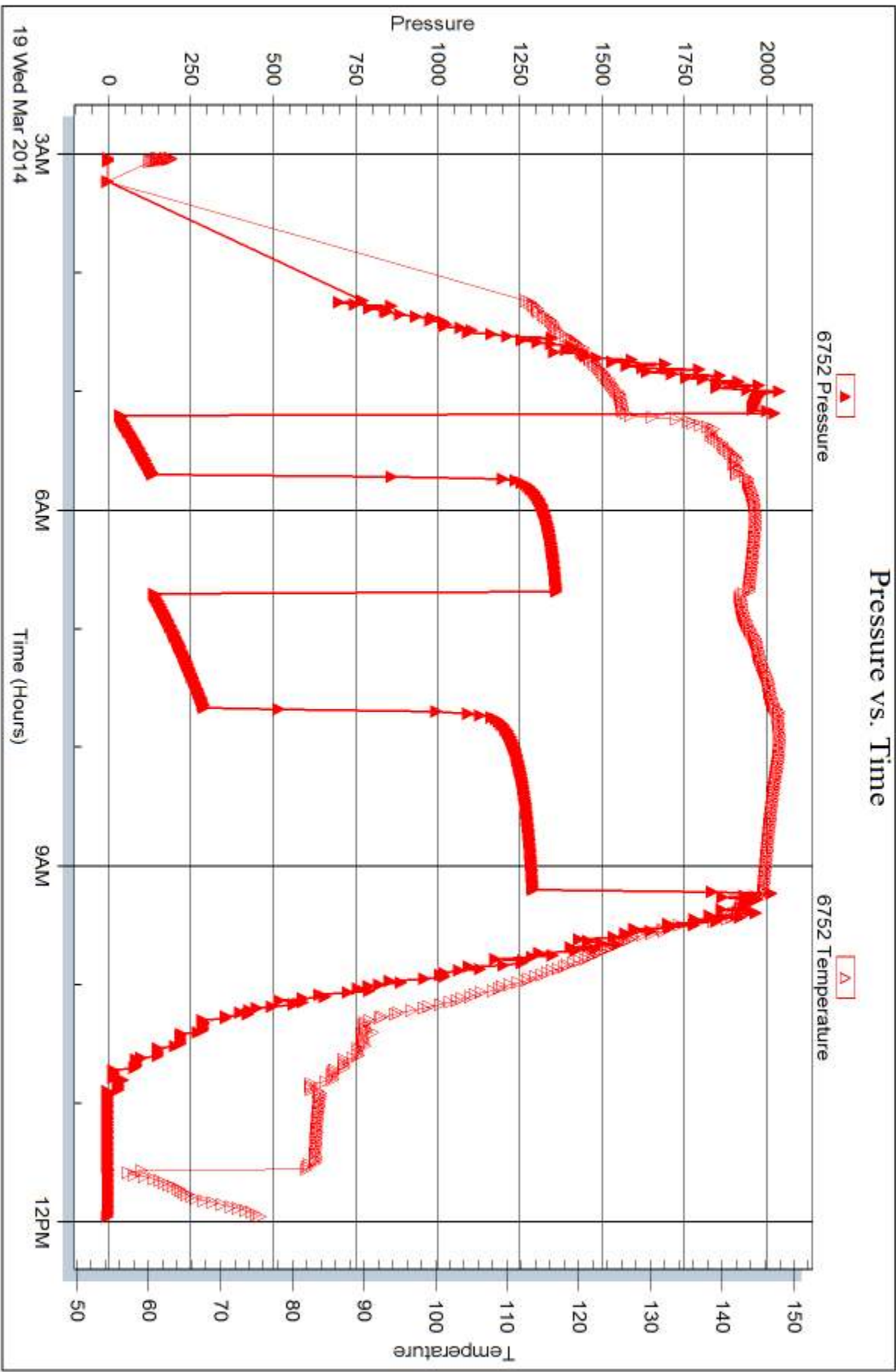
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 56771

Printed: 2014.03.25 @ 14:41:03



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water  
STE 300  
Wichita KS 67202

ATTN: Wes Hansen

### **Theron #1-10**

#### **10-1S-37W Cheyenne KS**

Start Date: 2014.03.20 @ 03:50:01

End Date: 2014.03.20 @ 12:14:20

Job Ticket #: 56772                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.03.25 @ 14:40:36



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56772

**DST#: 4**

Test Start: 2014.03.20 @ 03:50:01

## GENERAL INFORMATION:

Formation: **LKC "H--J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:10:50

Time Test Ended: 12:14:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

**Interval: 4180.00 ft (KB) To 4280.00 ft (KB) (TVD)**

Reference Elevations: 3111.00 ft (KB)

Total Depth: 4280.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

**Serial #: 8322 Outside**

Press@RunDepth: 25.99 psig @ 4181.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.20

End Date:

2014.03.20

Last Calib.:

2014.03.20

Start Time:

03:50:01

End Time:

12:14:20

Time On Btm:

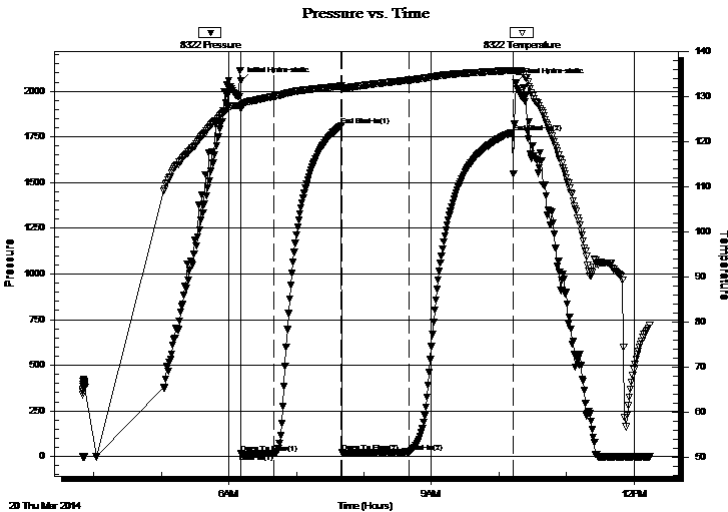
2014.03.20 @ 06:10:40

Time Off Btm:

2014.03.20 @ 10:15:00

**TEST COMMENT:** 30-IF- Blow Built To 3"  
60-ISI- No Return  
60-FF- Blow Built To 2"  
90-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2054.76	127.98	Initial Hydro-static
1	16.74	127.23	Open To Flow (1)
30	17.03	130.01	Shut-In(1)
90	1812.27	132.30	End Shut-In(1)
90	23.96	131.87	Open To Flow (2)
150	25.99	133.61	Shut-In(2)
242	1773.78	135.77	End Shut-In(2)
245	2045.30	135.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	clean oil 95%o 5%g	0.14
30.00	ocm 70%m 30%o	0.42

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56772

**DST#: 4**

Test Start: 2014.03.20 @ 03:50:01

## GENERAL INFORMATION:

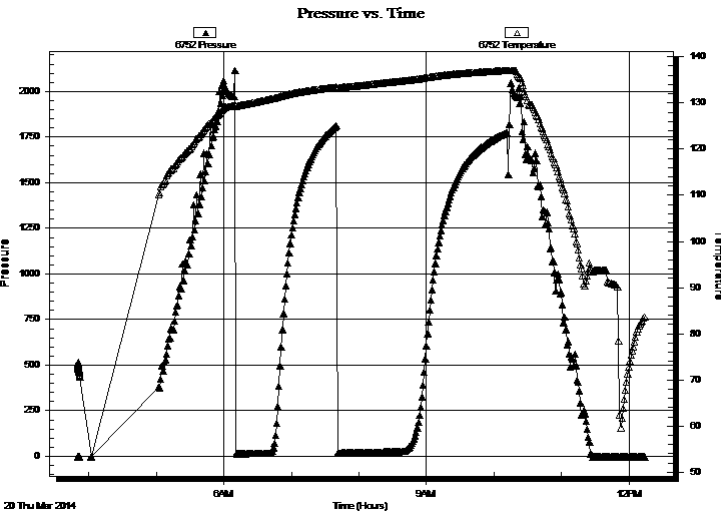
Formation: <b>LKC "H--J"</b>			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 06:10:50		Tester: Robert Zodrow	
Time Test Ended: 12:14:20		Unit No: 58	
<b>Interval: 4180.00 ft (KB) To 4280.00 ft (KB) (TVD)</b>		Reference Elevations: 3111.00 ft (KB)	
Total Depth: 4280.00 ft (KB) (TVD)		3098.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 13.00 ft	

## Serial #: 6752

Inside

Press@RunDepth: psig @ 4181.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.03.20	End Date: 2014.03.20
Start Time: 03:50:01	End Time: 12:14:20
	Last Calib.: 2014.03.20
	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30-IF- Blow Built To 3"  
60-ISI- No Return  
60-FF- Blow Built To 2"  
90-FSI-No Return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	clean oil 95%o 5%g	0.14
30.00	ocm 70%m 30%o	0.42

\* 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 Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56772

**DST#: 4**

Test Start: 2014.03.20 @ 03:50:01

## Tool Information

Drill Pipe:	Length: 4177.00 ft	Diameter: 3.80 inches	Volume: 58.59 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	58000.00 lb
			<u>Total Volume: 58.59 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	4180.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	100.00 ft				
Tool Length:	127.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4154.00	
Shut In Tool	5.00			4159.00	
Hydraulic tool	5.00			4164.00	
Jars	5.00			4169.00	
Safety Joint	2.00			4171.00	
Packer	5.00			4176.00	27.00 Bottom Of Top Packer
Packer	4.00			4180.00	
Stubb	1.00			4181.00	
Recorder	0.00	6752	Inside	4181.00	
Recorder	0.00	8322	Outside	4181.00	
Perforations	32.00			4213.00	
Change Over Sub	1.00			4214.00	
Drill Pipe	62.00			4276.00	
Change Over Sub	1.00			4277.00	
Bullnose	3.00			4280.00	100.00 Bottom Packers & Anchor

**Total Tool Length: 127.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56772

**DST#: 4**

Test Start: 2014.03.20 @ 03:50:01

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 50.00 sec/qt

Water Loss: 6.79 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

26 deg API

Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	clean oil 95%o 5%g	0.140
30.00	ocm 70%m 30%o	0.421

Total Length: 40.00 ft Total Volume: 0.561 bbl

Num Fluid Samples: 0

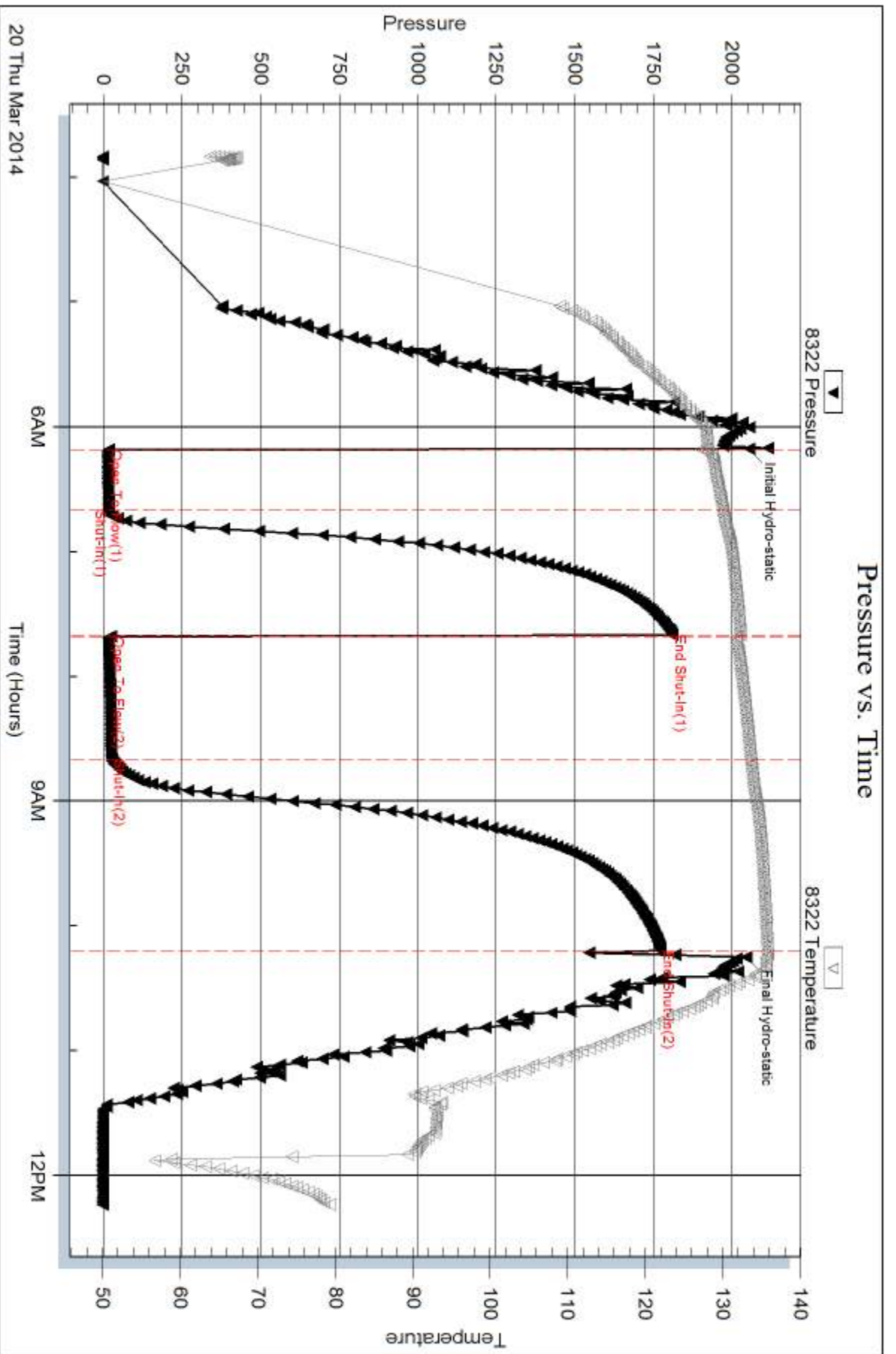
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



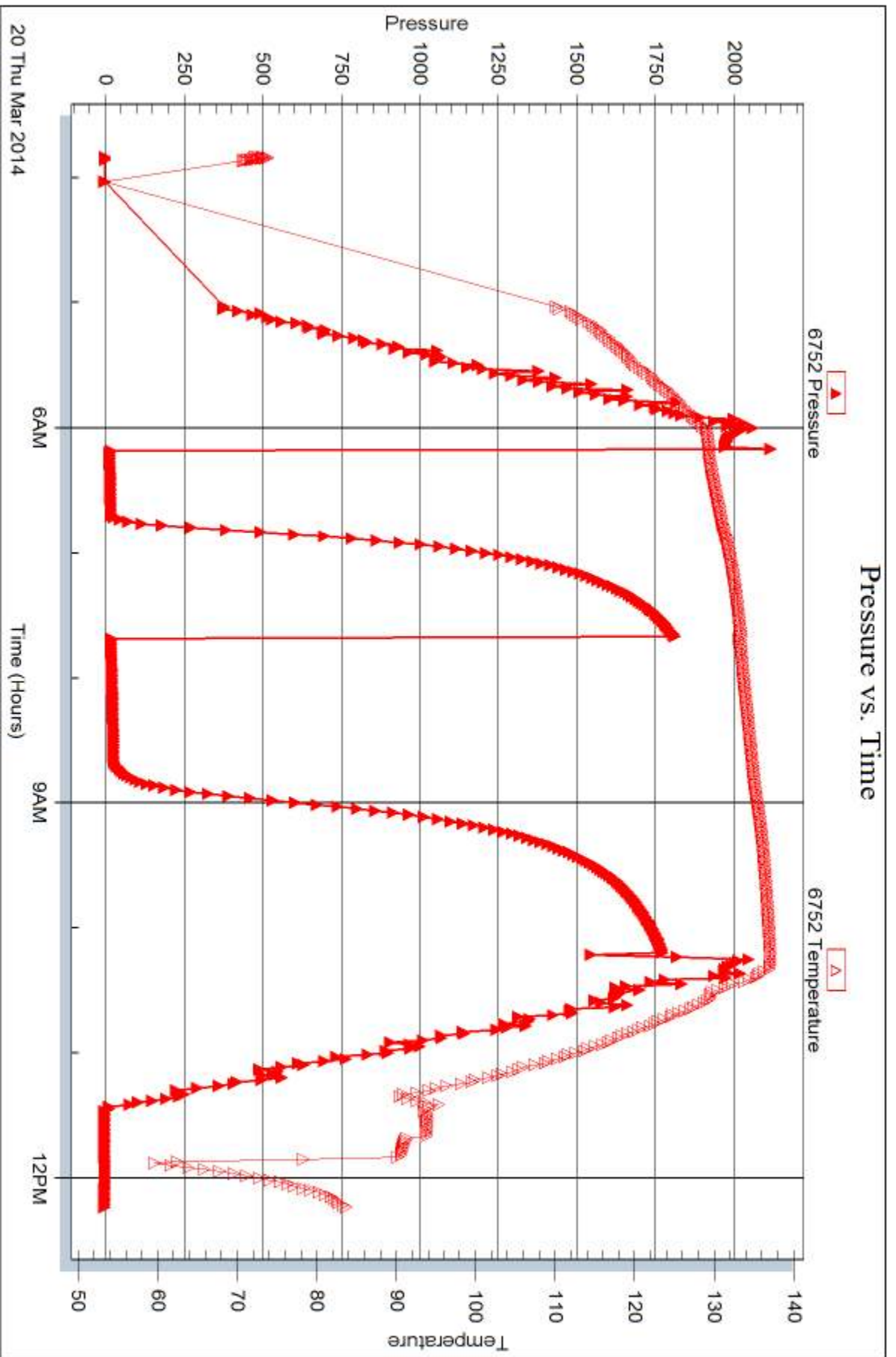
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 4



Tribble Testing, Inc

Ref. No: 56772

Printed: 2014.03.25 @ 14:40:38



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc.**

250 N. Water  
STE 300  
Wichita KS 67202

ATTN: Wes Hansen

### **Theron #1-10**

#### **10-1S-37W Cheyenne KS**

Start Date: 2014.03.21 @ 18:00:00

End Date: 2014.03.22 @ 04:14:19

Job Ticket #: 56773                      DST #: 5

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

Printed: 2014.03.25 @ 14:40:06



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56773

**DST#: 5**

Test Start: 2014.03.21 @ 18:00:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:21:40  
 Time Test Ended: 04:14:19  
 Interval: **4426.00 ft (KB) To 4470.00 ft (KB) (TVD)**  
 Total Depth: 4470.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Robert Zodrow  
 Unit No: 58  
 Reference Elevations: 3111.00 ft (KB)  
 3098.00 ft (CF)  
 KB to GR/CF: 13.00 ft

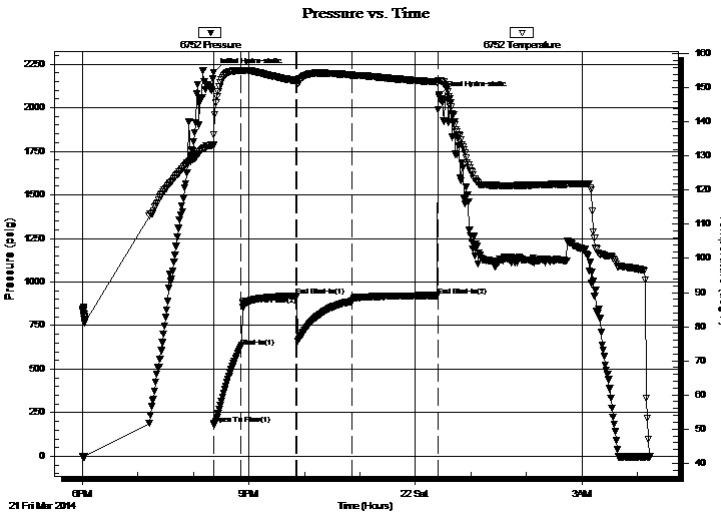
## Serial #: 6752

Inside

Press@RunDepth: 888.12 psig @ 4427.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.03.21 End Date: 2014.03.22 Last Calib.: 2014.03.22  
 Start Time: 18:00:01 End Time: 04:14:19 Time On Btm: 2014.03.21 @ 20:21:30  
 Time Off Btm: 2014.03.22 @ 00:25:30

TEST COMMENT: 30-IF-Bob In 1 Min  
 60-ISI- Bob In 15 Mins  
 60-FF- Bob In 2 Mins  
 90-FSI- Bob In 16 Min Gas To Surface In 30 Mins

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.14	133.37	Initial Hydro-static
1	184.30	133.03	Open To Flow (1)
30	624.79	155.05	Shut-In(1)
90	920.84	152.04	End Shut-In(1)
90	920.85	152.03	Open To Flow (2)
150	888.12	153.72	Shut-In(2)
243	921.69	151.72	End Shut-In(2)
244	2071.90	152.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
94.00	ocm 3%g 27%o 70%m	1.32
2350.00	clean oil 25%g 75%o	32.96
0.00	Gas To Surface 30 Mins. Into FSI	0.00

\* Recovery from multiple tests

## Gas Rates

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



# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56773

**DST#: 5**

Test Start: 2014.03.21 @ 18:00:00

## GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:21:40

Time Test Ended: 04:14:19

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 58

**Interval: 4426.00 ft (KB) To 4470.00 ft (KB) (TVD)**

Reference Elevations: 3111.00 ft (KB)

Total Depth: 4470.00 ft (KB) (TVD)

3098.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

**Serial #: 8322 Outside**

Press@RunDepth: psig @ 4427.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.21

End Date:

2014.03.22

Last Calib.:

2014.03.22

Start Time: 18:00:01

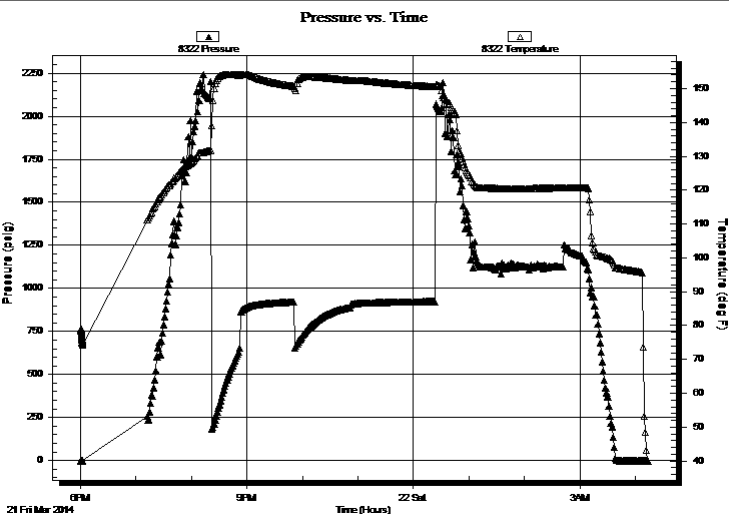
End Time:

04:13:49

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IF- Bob In 1 Min  
60-ISI- Bob In 15 Mins  
60-FF- Bob In 2 Mins  
90-FSI- Bob In 16 Min Gas To Surface In 30 Mins



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
94.00	ocm 3%g 27%o 70%m	1.32
2350.00	clean oil 25%g 75%o	32.96
0.00	Gas To Surface 30 Mins. Into FSI	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 Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56773

**DST#: 5**

Test Start: 2014.03.21 @ 18:00:00

## Tool Information

Drill Pipe:	Length: 4428.00 ft	Diameter: 3.80 inches	Volume: 62.11 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 62.11 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4426.00 ft			Final	62000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	71.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4400.00	
Shut In Tool	5.00			4405.00	
Hydraulic tool	5.00			4410.00	
Jars	5.00			4415.00	
Safety Joint	2.00			4417.00	
Packer	5.00			4422.00	27.00 Bottom Of Top Packer
Packer	4.00			4426.00	
Stubb	1.00			4427.00	
Recorder	0.00	6752	Inside	4427.00	
Recorder	0.00	8322	Outside	4427.00	
Perforations	7.00			4434.00	
Change Over Sub	1.00			4435.00	
Drill Pipe	31.00			4466.00	
Change Over Sub	1.00			4467.00	
Bullnose	3.00			4470.00	44.00 Bottom Packers & Anchor

**Total Tool Length: 71.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc.

**10-1S-37W Cheyenne KS**

250 N. Water  
STE 300  
Wichita KS 67202  
ATTN: Wes Hansen

**Theron #1-10**

Job Ticket: 56773

**DST#: 5**

Test Start: 2014.03.21 @ 18:00:00

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 69.00 sec/qt

Water Loss: 6.39 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

26 deg API

Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
94.00	ocm 3%g 27%o 70%m	1.319
2350.00	clean oil 25%g 75%o	32.964
0.00	Gas To Surface 30 Mins. Into FSI	0.000

Total Length: 2444.00 ft      Total Volume: 34.283 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

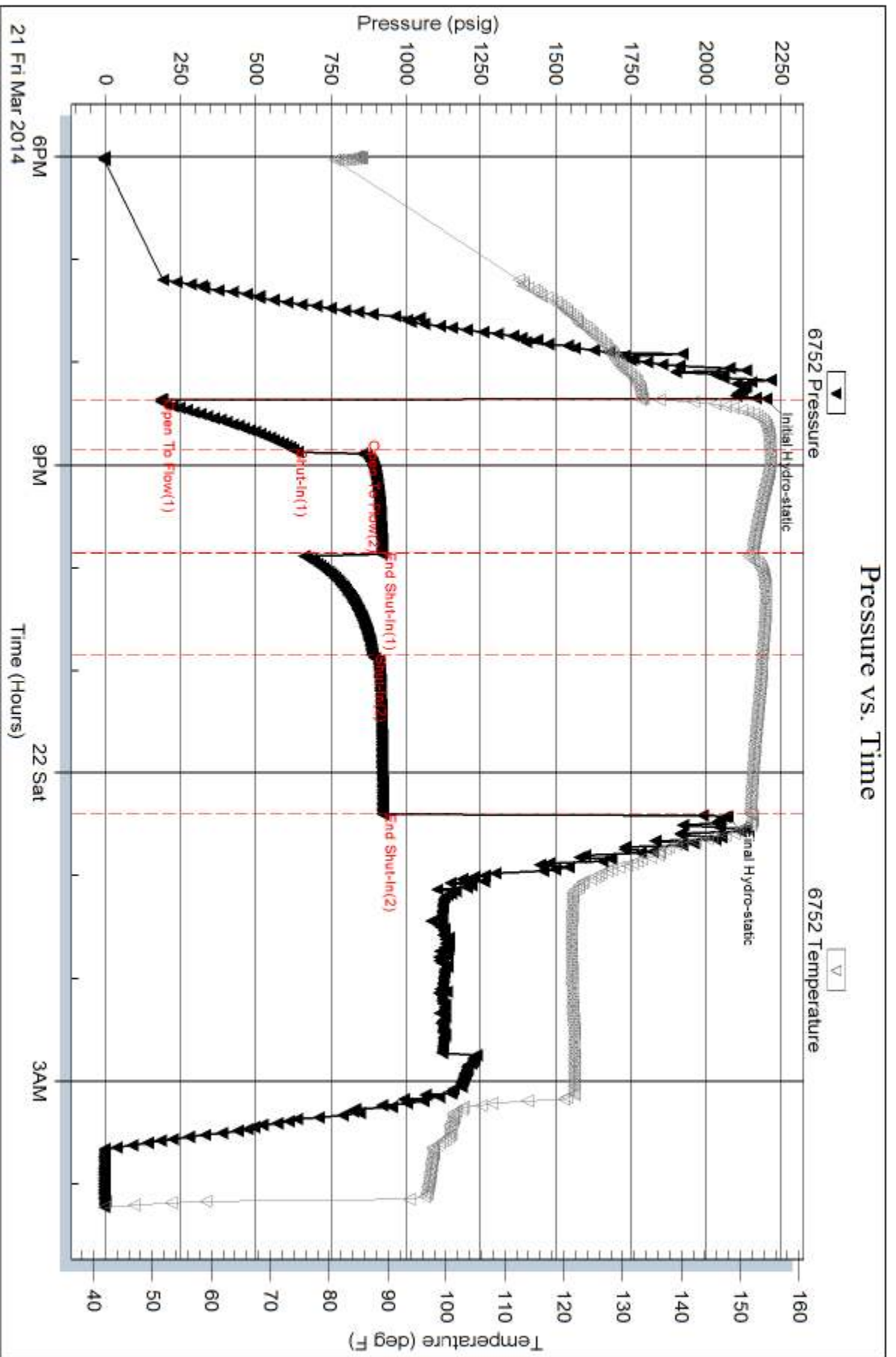
Serial #: 6752

Inside

Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 56773

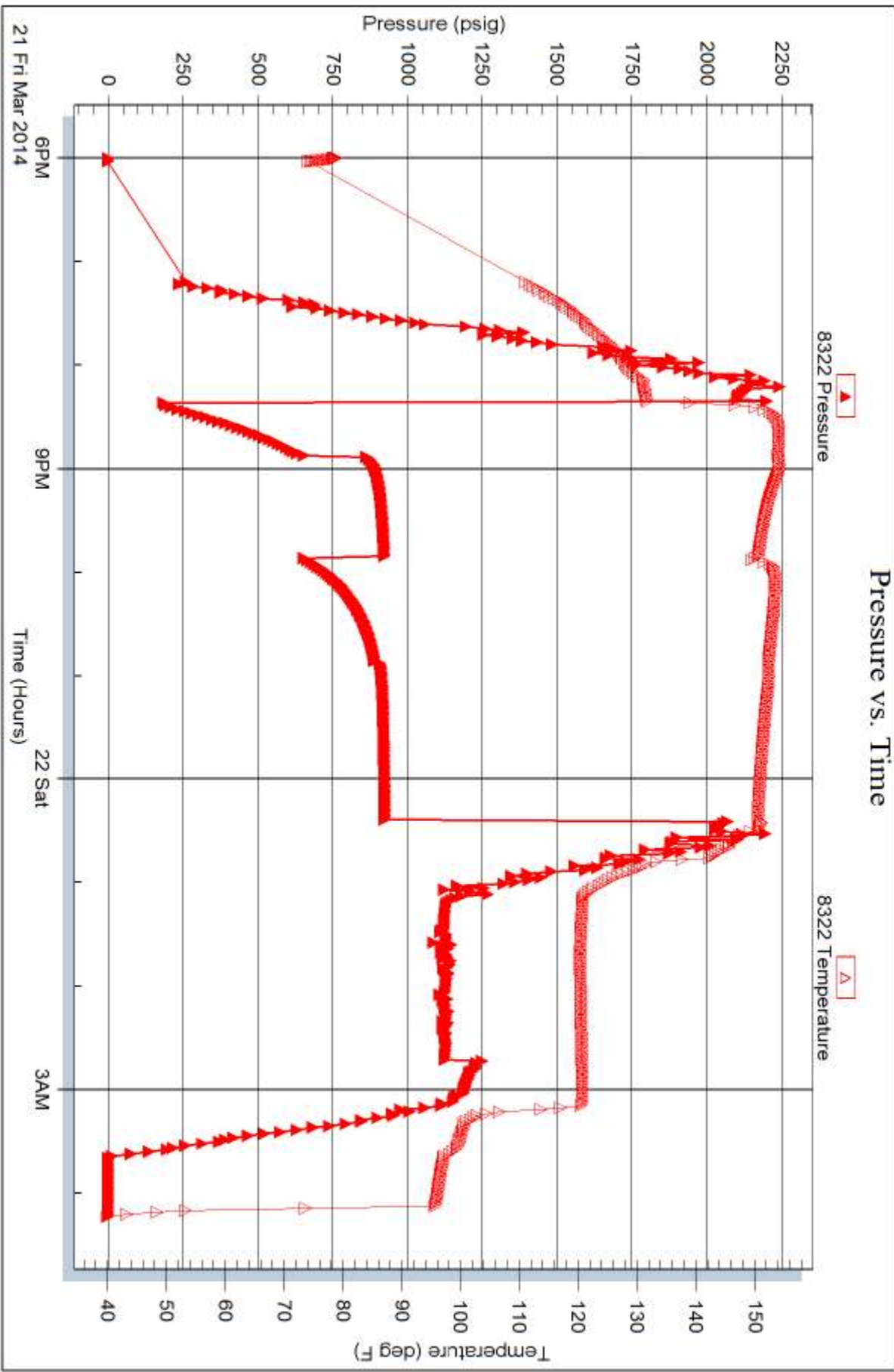
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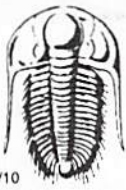
Serial #: 8322

Outside Murfin Drilling Company Inc.

Theron #1-10

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56863

4/10

Well Name & No. Theron #1-10 Test No. 1 Date 3/16/14  
 Company Murfin Drilling Company Inc Elevation 3111 KB 3098 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #25  
 Location: Sec. 10 Twp. 15 Rge. 37W Co. Dundy State NE

Interval Tested 3932 - 3990 Zone Tested Oread  
 Anchor Length 58' Drill Pipe Run 3925' Mud Wt. 9.2  
 Top Packer Depth 3927 Drill Collars Run 0' Vis 74  
 Bottom Packer Depth 3932 Wt. Pipe Run 0' WL 7.2  
 Total Depth 3990 Chlorides 600 ppm System LCM 6  
 Blow Description IF - Surface blow built to 2 1/2"  
ISI - No return  
FF - Surface blow started @ 15 mins built to 2"  
FSI - No return

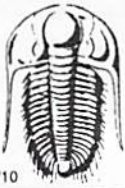
Rec	Feet of	%gas	%oil	%water	%mud
<u>95</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 95' BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1960</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>22:00</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:54</u>
(C) First Final Flow <u>29</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>01:36</u>
(D) Initial Shut-In <u>1293</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>05:36</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>07:25</u>
(F) Second Final Flow <u>57</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT</u> 207.70	Comments _____
(G) Final Shut-In <u>1289</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>1868</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1682.70</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1682.70</u>	

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

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. 56770

Well Name & No. Theron #1-10 Test No. 2 Date 3-18-2014  
 Company Murfin Drilling Inc. Elevation 3111 KB 3098 GL  
 Address 250 N Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #25  
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4026 - 4130 Zone Tested LKC "A & D"  
 Anchor Length 104 Drill Pipe Run 4018 Mud Wt. 9.4  
 Top Packer Depth 4022 Drill Collars Run 0 Vis 72  
 Bottom Packer Depth ~~4022~~ 4026 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4130 Chlorides 700 ppm System LCM 4  
 Blow Description IF - Blow Built to 6"  
ISL - NO RETURN  
FF - Blow Built to 5 1/2"  
FSL - NO RETURN

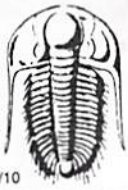
Rec	Feet of	%gas	%oil	%water	%mud
<u>51</u>	<u>90</u>	<u>45</u>	<u>55</u>		
<u>74</u>	<u>0cm</u>		<u>50</u>	<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total \_\_\_\_\_ BHT 136 Gravity 24 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1994  Test 1250 T-On Location 4:00 AM 3-18  
 (B) First Initial Flow 20  Jars 250 T-Started 4:36 AM 3-18  
 (C) First Final Flow 35  Safety Joint 75 T-Open 7:16 AM 3-18  
 (D) Initial Shut-In 707  Circ Sub \_\_\_\_\_ T-Pulled 11:16 AM 3-18  
 (E) Second Initial Flow 51  Hourly Standby \_\_\_\_\_ T-Out 1:00 pm 3-18  
 (F) Second Final Flow 66  Mileage 134 RT 207.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 709  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1951  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1782.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1782.70

Approved By Wesley Hansen Our Representative Robert Zochow

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56771

Well Name & No. Theron #1-10 Test No. 3 Date 3-19-2014  
 Company Murfin Drilling Inc. Elevation 3111 KB 3098 GL  
 Address 250 N Water STE. 300 Wichita KS, 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #25  
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4130-4180 Zone Tested LKC "J"  
 Anchor Length 50 Drill Pipe Run 4113 Mud Wt. 9.3  
 Top Packer Depth 4126 Drill Collars Run 0 Vis 63  
 Bottom Packer Depth 4130 Wt. Pipe Run 0 WL 6.0  
 Total Depth 4180 Chlorides 600 ppm System LCM 4.0  
 Blow Description IF-Bob In 8 min  
ISI-Bob In 47 min  
FF-Bob In 11 min  
FSI-Bob In 55 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>0</u>	<u>Feet of HIP 752'</u>				
<u>564</u>	<u>Feet of clean oil</u>	<u>40</u>	<u>60</u>		
<u>188</u>	<u>Feet of DWCM</u>	<u>25</u>	<u>27</u>	<u>48</u>	
<u>    </u>	<u>Feet of</u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>    </u>	<u>Feet of</u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>

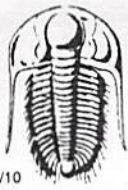
Rec Total 752 BHT 145 Gravity 28 API RW      @      °F Chlorides      ppm

(A) Initial Hydrostatic 2026  Test 1250 T-On Location 2:30 AM 3-19  
 (B) First Initial Flow 41  Jars 250 T-Started 3:02 AM 3-19  
 (C) First Final Flow 133  Safety Joint 75 T-Open 5:11 AM 3-19  
 (D) Initial Shut-In 1362  Circ Sub      T-Pulled 9:11 AM 3-19  
 (E) Second Initial Flow 141  Hourly Standby      T-Out 11:45 AM 3-19  
 (F) Second Final Flow 291  Mileage 134 RT 207.70 Comments       
 (G) Final Shut-In 1291  Sampler       
 (H) Final Hydrostatic 1939  Straddle       Ruined Shale Packer       
 Shale Packer       Ruined Packer       
 Extra Packer       Extra Copies       
 Extra Recorder      Sub Total 0  
 Day Standby      Total 1782.70  
 Accessibility      MP/DST Disc't     

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1782.70

Approved By Wesley Hansen Our Representative Robert Zohar

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56772

Well Name & No. Itheron # 1-10 Test No. 4 Date 3-20-2014  
 Company Murkin Drilling Inc. Elevation 3111 KB 3098 GL  
 Address 250 N Water STE. 300 Wichita KS, 67202  
 Co. Rep / Geo. Wes Hansen Rig Murkin #25  
 Location: Sec. 10 Twp. 1 S Rge. 37W Co. Cheyenne State KS

Interval Tested 4180-4280 Zone Tested LKC "H-J"  
 Anchor Length 100 Drill Pipe Run 4177 Mud Wt. 9.1  
 Top Packer Depth 4176 Drill Collars Run 0 Vis 50  
 Bottom Packer Depth 4180 Wt. Pipe Run 0 WL 6.8  
 Total Depth 4280 Chlorides 600 ppm System LCM 6.0  
 Blow Description IF - Blow Built to 3"  
ISI - NO RETURN  
PF - Blow Built to 2"  
FSI - NO RETURN

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>clean oil</u>	<u>5</u>	<u>95</u>		
<u>30</u>	<u>OCM</u>		<u>30</u>	<u>70</u>	

Rec Total 40 BHT 135 Gravity 26 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2055  Test 1250 T-On Location 3:15 Am 3-20  
 (B) First Initial Flow 16  Jars 250 T-Started 3:50 Am 3-20  
 (C) First Final Flow 17  Safety Joint 75 T-Open 6:10 Am  
 (D) Initial Shut-In 1812  Circ Sub \_\_\_\_\_ T-Pulled 10:10 Am  
 (E) Second Initial Flow 24  Hourly Standby \_\_\_\_\_ T-Out 12:00 3-20  
 (F) Second Final Flow 26  Mileage 134 RT 207.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1774  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2045  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Sub Total 1782.70 MP/DST Disc't \_\_\_\_\_

Approved By Wesley Hansen Our Representative Robert Zedler

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56773

Well Name & No. Theron #1-10 Test No. 5 Date 3-21-2014  
 Company MURFIN Drilling Inc Elevation 3111 KB 3098 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Wes Hansen Rig MURFIN #25  
 Location: Sec. 10 Twp. 1 S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4426 - 4470 Zone Tested Pawnee  
 Anchor Length 44 Drill Pipe Run 4428 Mud Wt. 9.3  
 Top Packer Depth 4422 Drill Collars Run 0 Vis 69  
 Bottom Packer Depth 4426 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4470 Chlorides 600 ppm System LCM 5.0

Blow Description IF - Bob In 1 min  
ISF - Bob In 15 mins  
FF - Bob In 2 mins  
FST - Bob In 16 mins gas to surface in 30 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2350</u>	<u>clean oil</u>	<u>25</u>	<u>75</u>		
<u>94</u>	<u>OCM</u>	<u>3</u>	<u>27</u>		<u>70</u>
	<u>gas to surface 30mins into</u>				
	<u>FST</u>				

Rec Total 2444 BHT 151 Gravity 36 API RW @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2200</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>5:30 pm 3-21</u>
(B) First Initial Flow <u>184</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:00 pm 3-21</u>
(C) First Final Flow <u>625</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:21 pm 3-21</u>
(D) Initial Shut-In <u>921</u>	<input checked="" type="checkbox"/> Circ Sub <u>used</u> <u>50</u>	T-Pulled <u>12:21 Am 3-22</u>
(E) Second Initial Flow <u>921</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>4:15 Am 3-22</u>
(F) Second Final Flow <u>888</u>	<input checked="" type="checkbox"/> Mileage <u>134 RT</u> <u>207.70</u>	Comments <u>Reversed Fluid</u>
(G) Final Shut-In <u>921</u>	<input type="checkbox"/> Sampler	<u>OUT</u>
(H) Final Hydrostatic <u>2071</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>183.33</u>
	<input checked="" type="checkbox"/> Day Standby <u>1d 5.5h</u>	Total <u>2016.03</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Sub Total 1832.70

Approved By Wesley Hansen Our Representative Robert Zechow

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