



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Tom Funk

**WWWM A #4 4**

**4-13s-32w Logan,KS**

Start Date: 2014.10.24 @ 07:26:15

End Date: 2014.10.24 @ 16:10:30

Job Ticket #: 59174                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.30 @ 16:33:07



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

**4-13s-32w Logan, KS**

**WWWM A #4 4**

Job Ticket: 59174

**DST#: 1**

Test Start: 2014.10.24 @ 07:26:15

## GENERAL INFORMATION:

Formation: **E-F**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 09:41:45  
 Tester: Mike Roberts  
 Time Test Ended: 16:10:30  
 Unit No: 65  
 Interval: **4103.00 ft (KB) To 4139.00 ft (KB) (TVD)**  
 Reference Elevations: 3044.00 ft (KB)  
 Total Depth: 4141.00 ft (KB) (TVD)  
 3034.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 10.00 ft

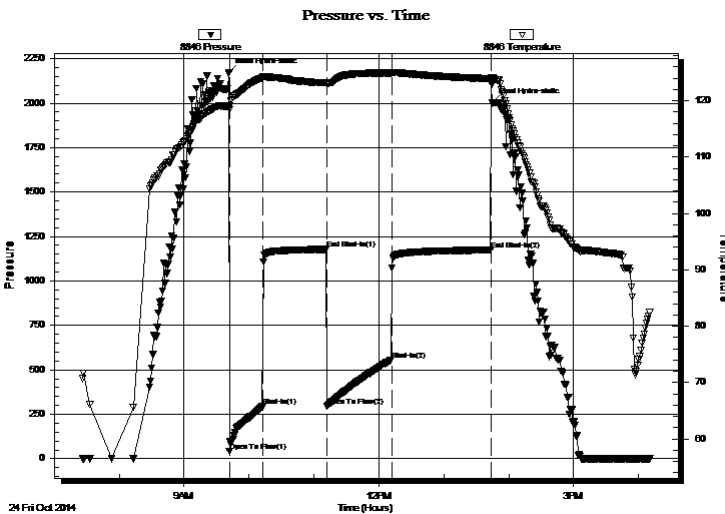
## Serial #: 8846

Inside

Press@RunDepth: 557.43 psig @ 4134.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.24 End Date: 2014.10.24 Last Calib.: 2014.10.24  
 Start Time: 07:26:15 End Time: 16:10:30 Time On Btm: 2014.10.24 @ 09:41:30  
 Time Off Btm: 2014.10.24 @ 13:45:00

TEST COMMENT: IF:BOB in 7 min.  
 IS:No return blow  
 FF:BOB in 10 min.  
 FS:No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2173.14	119.03	Initial Hydro-static
1	42.32	118.36	Open To Flow (1)
31	292.81	124.04	Shut-In(1)
90	1178.36	123.16	End Shut-In(1)
91	295.72	122.96	Open To Flow (2)
151	557.43	124.90	Shut-In(2)
242	1174.29	123.91	End Shut-In(2)
244	2001.04	124.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
271.00	sw 100% sw	1.33
450.00	mcsw 20% m 80% sw	6.23
180.00	mcsw 50% m 50% sw	2.52
240.00	mud 100% m	3.37

## Gas Rates

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



# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
 Job Ticket: 59174      **DST#: 1**  
 Test Start: 2014.10.24 @ 07:26:15

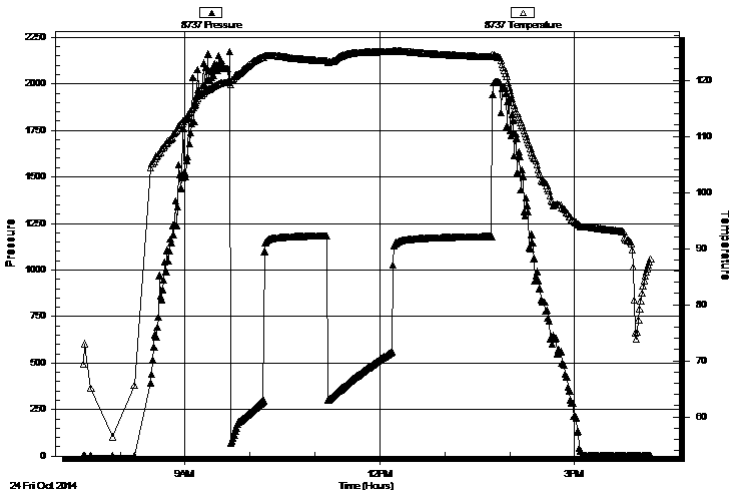
## GENERAL INFORMATION:

Formation: **E-F**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 09:41:45  
 Tester: Mike Roberts  
 Time Test Ended: 16:10:30  
 Unit No: 65  
**Interval: 4103.00 ft (KB) To 4139.00 ft (KB) (TVD)**  
 Reference Elevations: 3044.00 ft (KB)  
 Total Depth: 4141.00 ft (KB) (TVD)  
 3034.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 KB to GR/CF: 10.00 ft

**Serial #: 8737 Outside**  
 Press@RunDepth: psig @ 4134.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.24 End Date: 2014.10.24 Last Calib.: 1899.12.30  
 Start Time: 07:26:15 End Time: 16:10:45 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF:BOB in 7 min.  
 IS:No return blow  
 FF:BOB in 10 min.  
 FS:No return blow

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
271.00	sw 100% sw	1.33
450.00	mcs w 20% m 80% sw	6.23
180.00	mcs w 50% m 50% sw	2.52
240.00	mud 100% m	3.37

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59174

**DST#: 1**

ATTN: Tom Funk

Test Start: 2014.10.24 @ 07:26:15

## Tool Information

Drill Pipe:	Length: 3824.00 ft	Diameter: 3.80 inches	Volume: 53.64 bbl	Tool Weight: 1500.00 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: 280.00 ft	Diameter: 2.25 inches	Volume: 1.38 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 55.02 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4103.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	57.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4083.00	
Shut In Tool	5.00			4088.00	
Hydraulic tool	5.00			4093.00	
Packer	5.00			4098.00	21.00 Bottom Of Top Packer
Packer	5.00			4103.00	
Stubb	1.00			4104.00	
Perforations	30.00			4134.00	
Recorder	0.00	8846	Inside	4134.00	
Recorder	0.00	8737	Outside	4134.00	
Bullnose	5.00			4139.00	36.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>57.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
Job Ticket: 59174      **DST#: 1**  
Test Start: 2014.10.24 @ 07:26:15

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 18000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.54 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 6000.00 ppm		
Filter Cake: 2.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
271.00	sw 100% sw	1.333
450.00	mcsw 20%m 80%sw	6.230
180.00	mcsw 50%m 50%sw	2.525
240.00	mud 100%m	3.367

Total Length: 1141.00 ft      Total Volume: 2215.269 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: RW= .30 @ 88.5\*= 18,000 ppm

Serial #: 8846

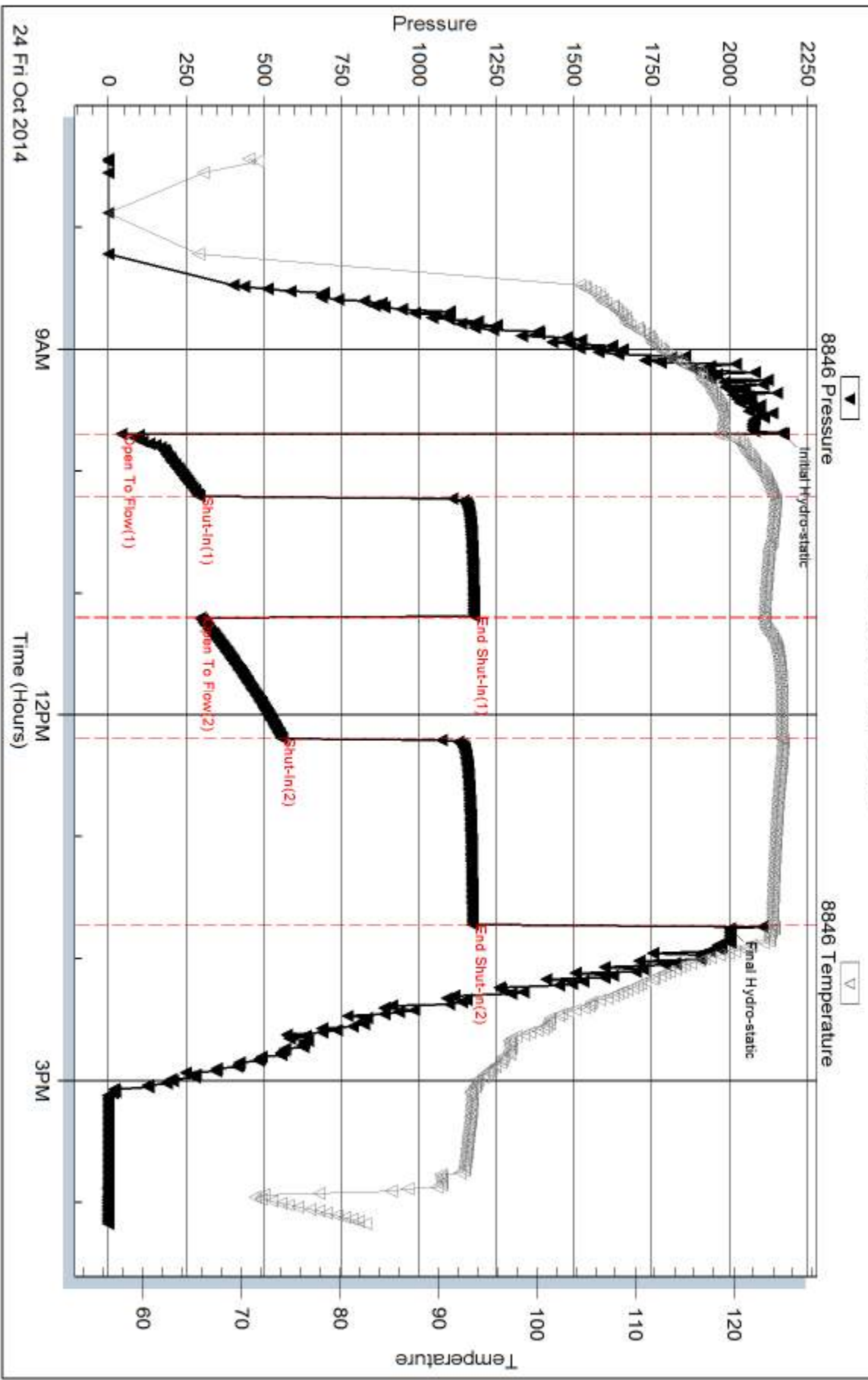
Inside

Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 1

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 59174

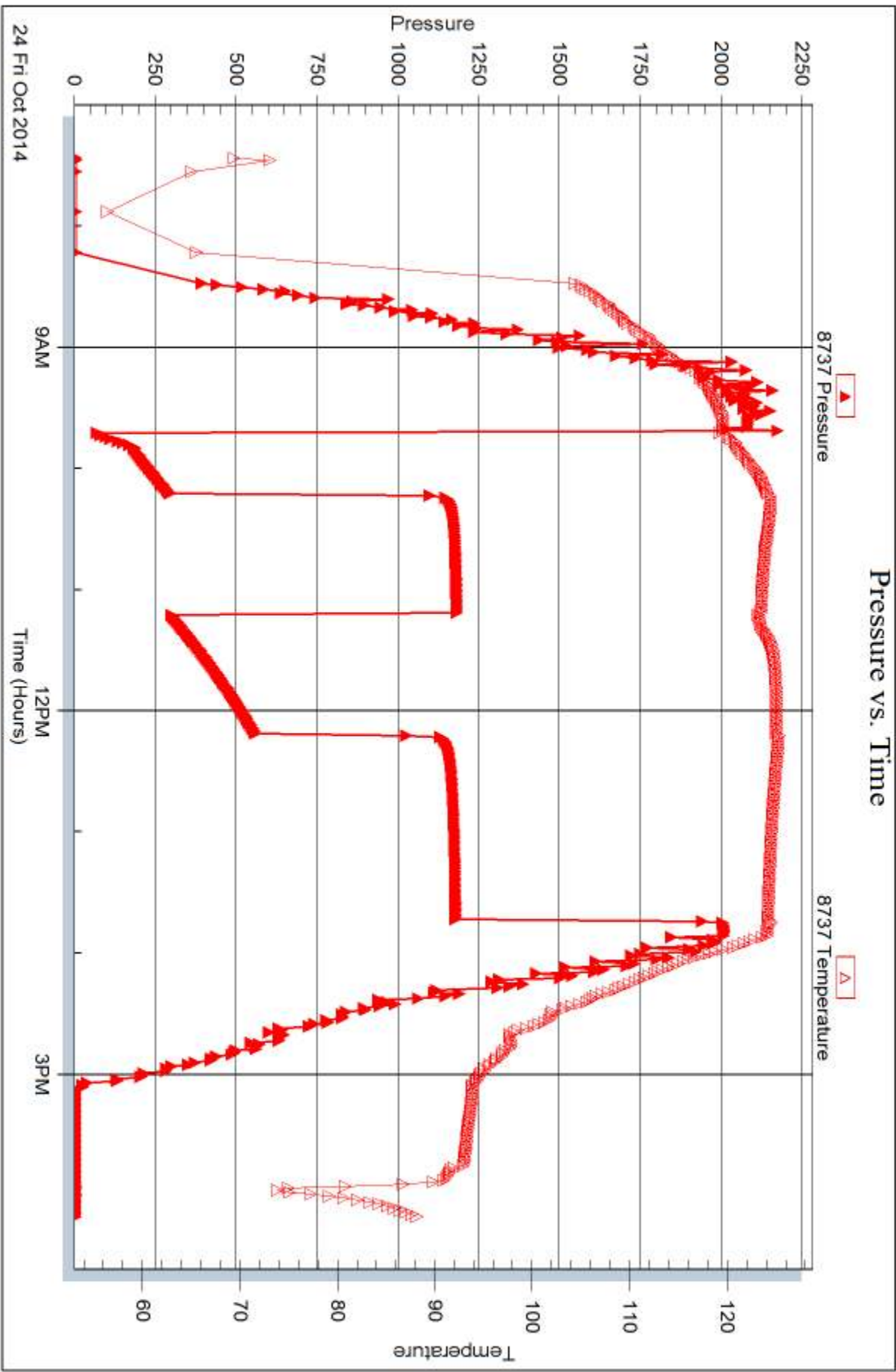
Printed: 2014, 10:30 @ 16:33:09

Serial #: 8737

Outside Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59174

Printed: 2014, 10:30 @ 16:33:09



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Tom Funk

**WWWM A #4 4**

**4-13s-32w Logan,KS**

Start Date: 2014.10.25 @ 09:30:15

End Date: 2014.10.25 @ 17:27:45

Job Ticket #: 59201                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.30 @ 16:32:42





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Tom Funk

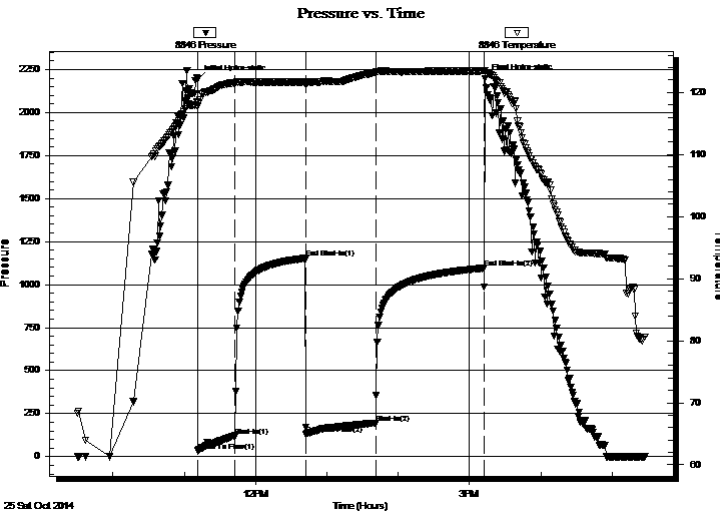
**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
 Job Ticket: 59201 **DST#: 2**  
 Test Start: 2014.10.25 @ 09:30:15

## GENERAL INFORMATION:

Formation: **H-I**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:11:15  
 Time Test Ended: 17:27:45  
 Interval: **4181.00 ft (KB) To 4242.00 ft (KB) (TVD)**  
 Total Depth: 4242.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 65  
 Reference Elevations: 3044.00 ft (KB)  
 3034.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8846 Inside**  
 Press@RunDepth: 196.12 psig @ 4237.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.25 End Date: 2014.10.25 Last Calib.: 2014.10.25  
 Start Time: 09:30:15 End Time: 17:27:45 Time On Btm: 2014.10.25 @ 11:11:00  
 Time Off Btm: 2014.10.25 @ 15:13:15

TEST COMMENT: IF: Built to 4" blow  
 IS: No return blow  
 FF: Built to 8" blow  
 FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2193.94	118.53	Initial Hydro-static
1	34.06	117.69	Open To Flow (1)
32	121.73	121.39	Shut-In(1)
91	1152.58	121.66	End Shut-In(1)
91	131.41	121.18	Open To Flow (2)
150	196.12	123.24	Shut-In(2)
241	1095.09	123.48	End Shut-In(2)
243	2195.38	123.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	w cm 20%w 80%m	708.17
340.00	mud 100%m	1497.13

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.Inc.

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59201

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.10.25 @ 09:30:15

## Tool Information

Drill Pipe:	Length: 3894.00 ft	Diameter: 3.80 inches	Volume: 54.62 bbl	Tool Weight:	1500.00 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: 280.00 ft	Diameter: 90.00 inches	Volume: 2203.19 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume: 2257.81 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	80000.00 lb
Depth to Top Packer:	4181.00 ft			Final	81000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	61.00 ft				
Tool Length:	82.00 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			4161.00	
Shut In Tool	5.00			4166.00	
Hydraulic tool	5.00			4171.00	
Packer	5.00			4176.00	21.00 Bottom Of Top Packer
Packer	5.00			4181.00	
Stubb	1.00			4182.00	
Perforations	1.00			4183.00	
Change Over Sub	1.00			4184.00	
Drill Pipe	32.00			4216.00	
Change Over Sub	1.00			4217.00	
Perforations	20.00			4237.00	
Recorder	0.00	8846	Inside	4237.00	
Recorder	0.00	8737	Outside	4237.00	
Bullnose	5.00			4242.00	61.00 Bottom Packers & Anchor

**Total Tool Length: 82.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co.Inc.

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59201

**DST#: 2**

ATTN: Tom Funk

Test Start: 2014.10.25 @ 09:30:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	w cm 20%w 80%m	708.169
340.00	mud 100%m	1497.127

Total Length: 430.00 ft Total Volume: 2205.296 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .31@ 88.6\*= 19,000 ppm

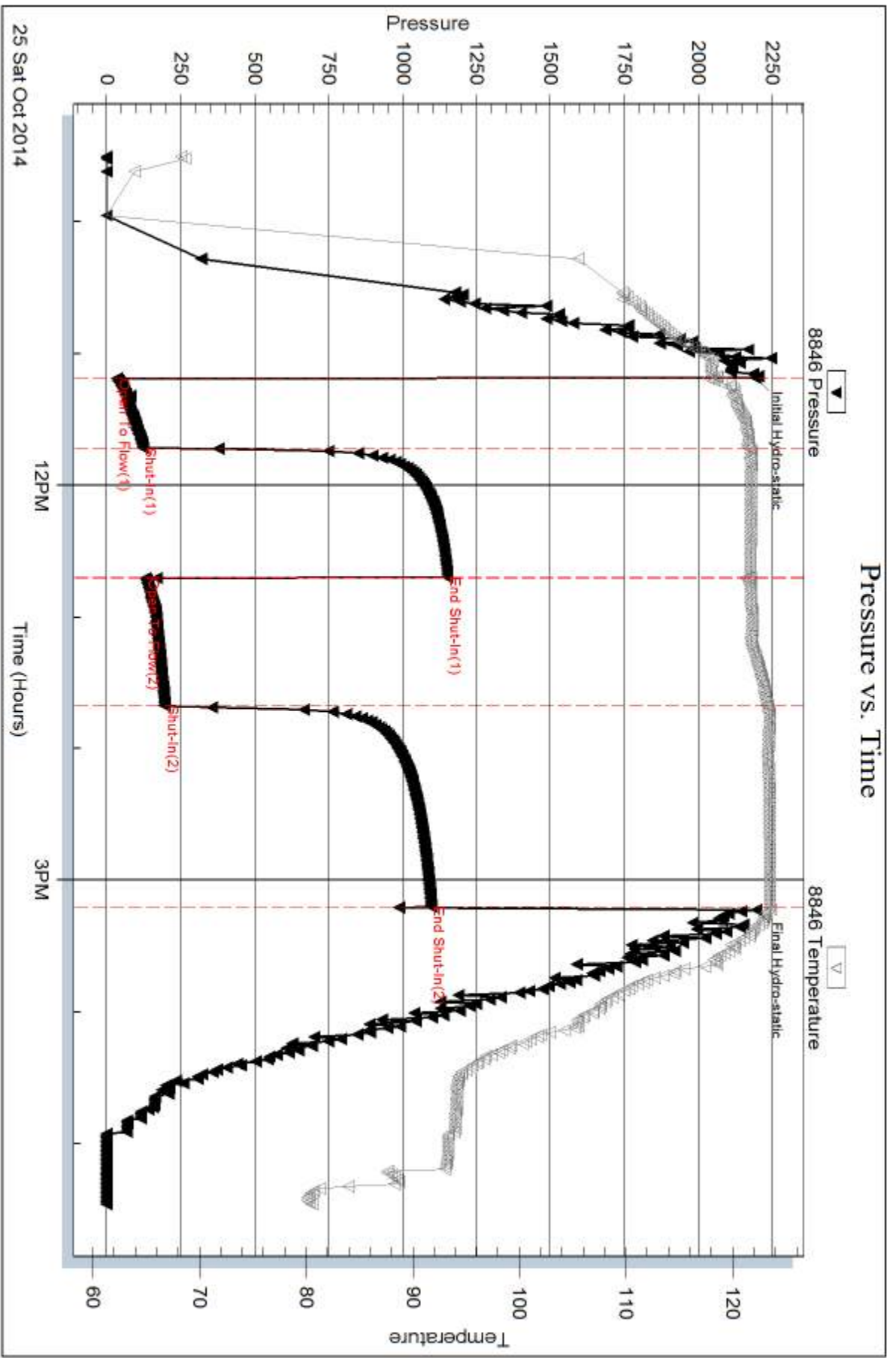
Serial #: 8846

Inside

Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 59201

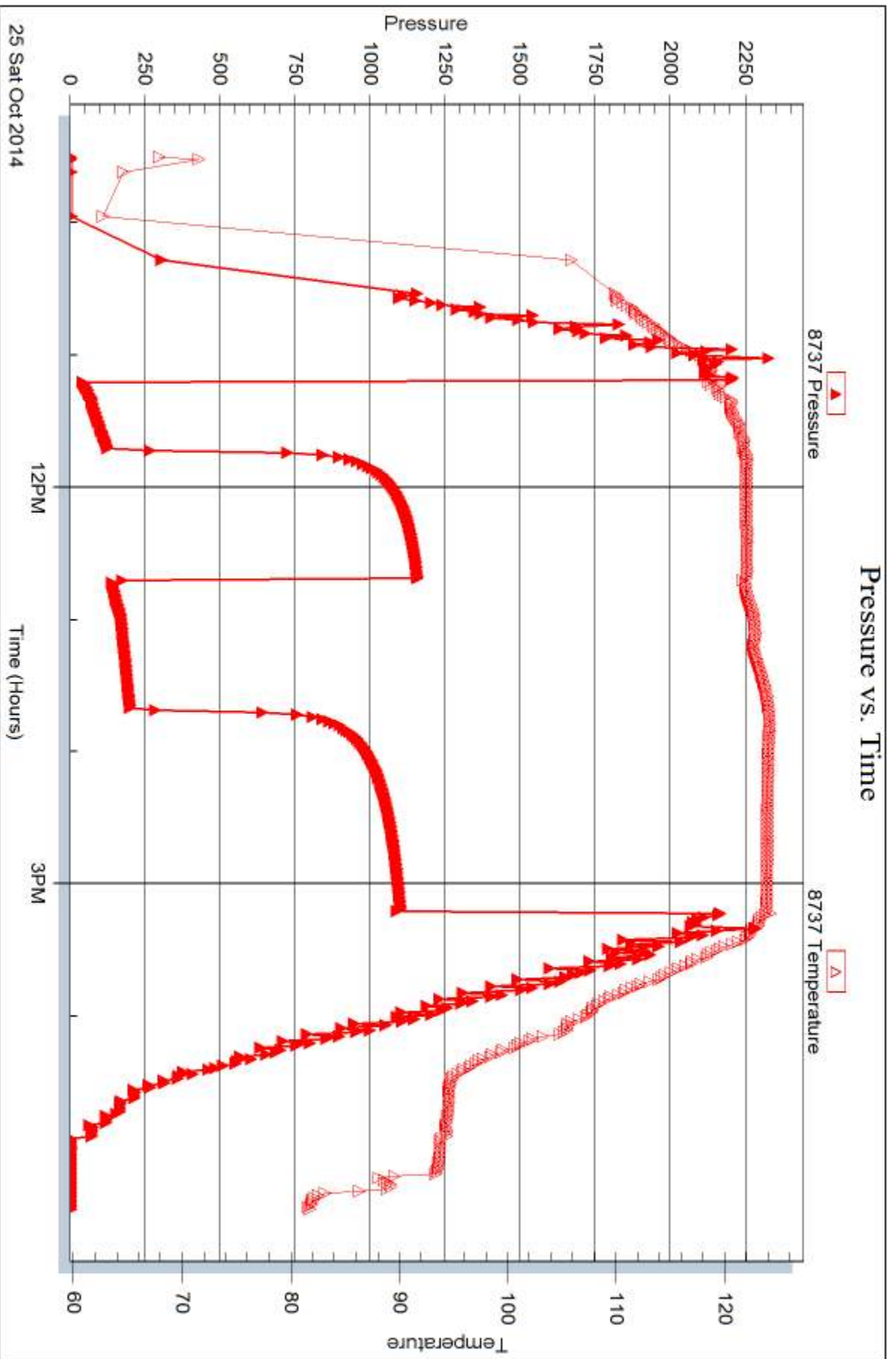
Printed: 2014, 10:30 @ 16:32:43

Serial #: 8737

Outside Murfin Drilling Co. Inc.

WMMMA #4 4

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 59201

Printed: 2014, 10:30 @ 16:32:43



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Tom Funk

### **WWWM A #4 4**

### **4-13s-32w Logan,KS**

Start Date: 2014.10.26 @ 17:10:15

End Date: 2014.10.27 @ 01:26:15

Job Ticket #: 59202                      DST #: 3

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.30 @ 16:25:23

Murfin Drilling Co.Inc.

4-13s-32w Logan,KS

WWWM A #4 4

DST # 3

Altamont A-B-C

2014.10.26



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
 Job Ticket: 59202 **DST#: 3**  
 Test Start: 2014.10.26 @ 17:10:15

## GENERAL INFORMATION:

Formation: **Altamont A-B-C**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:38:00  
 Time Test Ended: 01:26:15  
 Interval: **4380.00 ft (KB) To 4460.00 ft (KB) (TVD)**  
 Total Depth: 4460.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 65  
 Reference Elevations: 3044.00 ft (KB)  
 3034.00 ft (CF)  
 KB to GR/CF: 10.00 ft

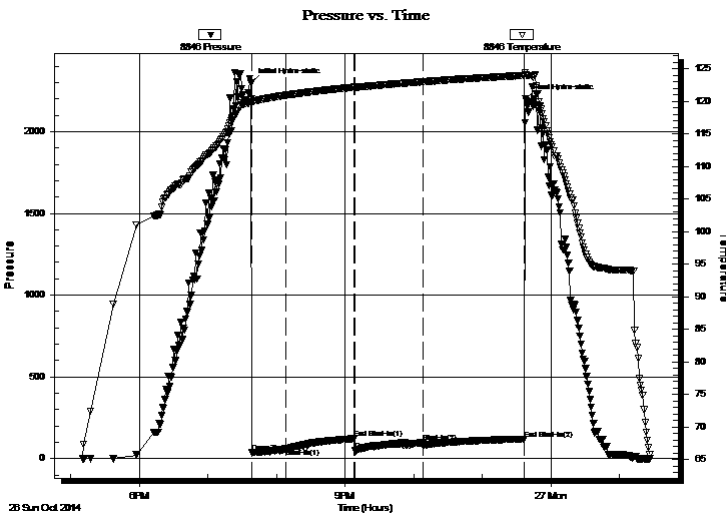
## Serial #: 8846

Inside

Press@RunDepth: 97.97 psig @ 4455.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.26 End Date: 2014.10.27 Last Calib.: 2014.10.27  
 Start Time: 17:10:15 End Time: 01:26:15 Time On Btm: 2014.10.26 @ 19:37:45  
 Time Off Btm: 2014.10.26 @ 23:38:00

TEST COMMENT: IF: Built to 1/8" blow  
 IS: No return blow  
 FF: No blow  
 FS: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2296.71	120.34	Initial Hydro-static
1	37.48	119.74	Open To Flow (1)
31	62.80	120.96	Shut-In(1)
90	122.22	122.19	End Shut-In(1)
91	50.42	122.17	Open To Flow (2)
150	97.97	123.03	Shut-In(2)
239	121.12	124.00	End Shut-In(2)
241	2201.43	124.14	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.02

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

4-13s-32w Logan,KS

WWWM A #4 4

Job Ticket: 59202

DST#: 3

Test Start: 2014.10.26 @ 17:10:15

## GENERAL INFORMATION:

Formation: **Altamont A-B-C**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 19:38:00  
 Time Test Ended: 01:26:15  
 Interval: **4380.00 ft (KB) To 4460.00 ft (KB) (TVD)**  
 Total Depth: 4460.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 65  
 Reference Elevations: 3044.00 ft (KB)  
 3034.00 ft (CF)  
 KB to GR/CF: 10.00 ft

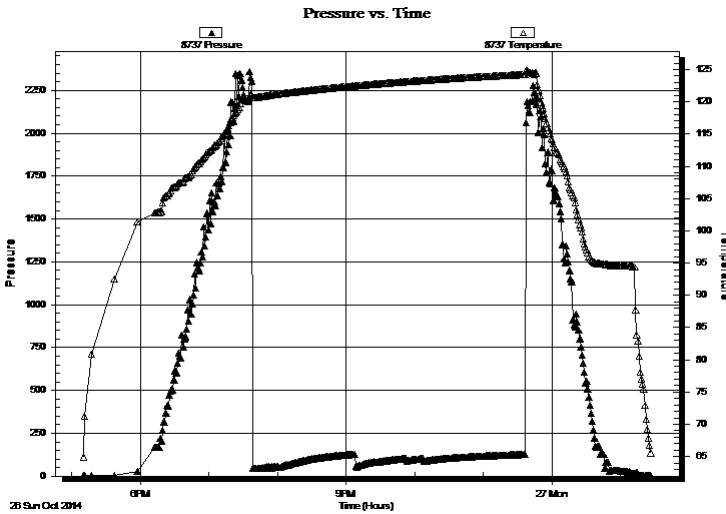
## Serial #: 8737

Outside

Press@RunDepth: psig @ 4455.00 ft (KB)  
 Capacity: 8000.00 psig  
 Start Date: 2014.10.26 End Date: 2014.10.27 Last Calib.: 2014.10.27  
 Start Time: 17:10:15 End Time: 01:26:15 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF: Built to 1/8" blow  
 IS: No return blow  
 FF: No blow  
 FS: No return blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
Job Ticket: 59202      **DST#: 3**  
Test Start: 2014.10.26 @ 17:10:15

**Tool Information**

Drill Pipe:	Length: 4124.00 ft	Diameter: 3.80 inches	Volume: 57.85 bbl	Tool Weight: 1500.00 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: 271.00 ft	Diameter: 2.25 inches	Volume: 1.33 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	36.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4380.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	101.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4360.00	
Shut In Tool	5.00			4365.00	
Hydraulic tool	5.00			4370.00	
Packer	5.00			4375.00	21.00      Bottom Of Top Packer
Packer	5.00			4380.00	
Stubb	1.00			4381.00	
Perforations	9.00			4390.00	
Change Over Sub	1.00			4391.00	
Drill Pipe	63.00			4454.00	
Change Over Sub	1.00			4455.00	
Recorder	0.00	8846	Inside	4455.00	
Recorder	0.00	8737	Outside	4455.00	
Bullnose	5.00			4460.00	80.00      Bottom Packers & Anchor

**Total Tool Length: 101.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
Job Ticket: 59202      **DST#: 3**  
Test Start: 2014.10.26 @ 17:10:15

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.96 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 4700.00 ppm			
Filter Cake: 2.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.025

Total Length: 5.00 ft      Total Volume: 39.343 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

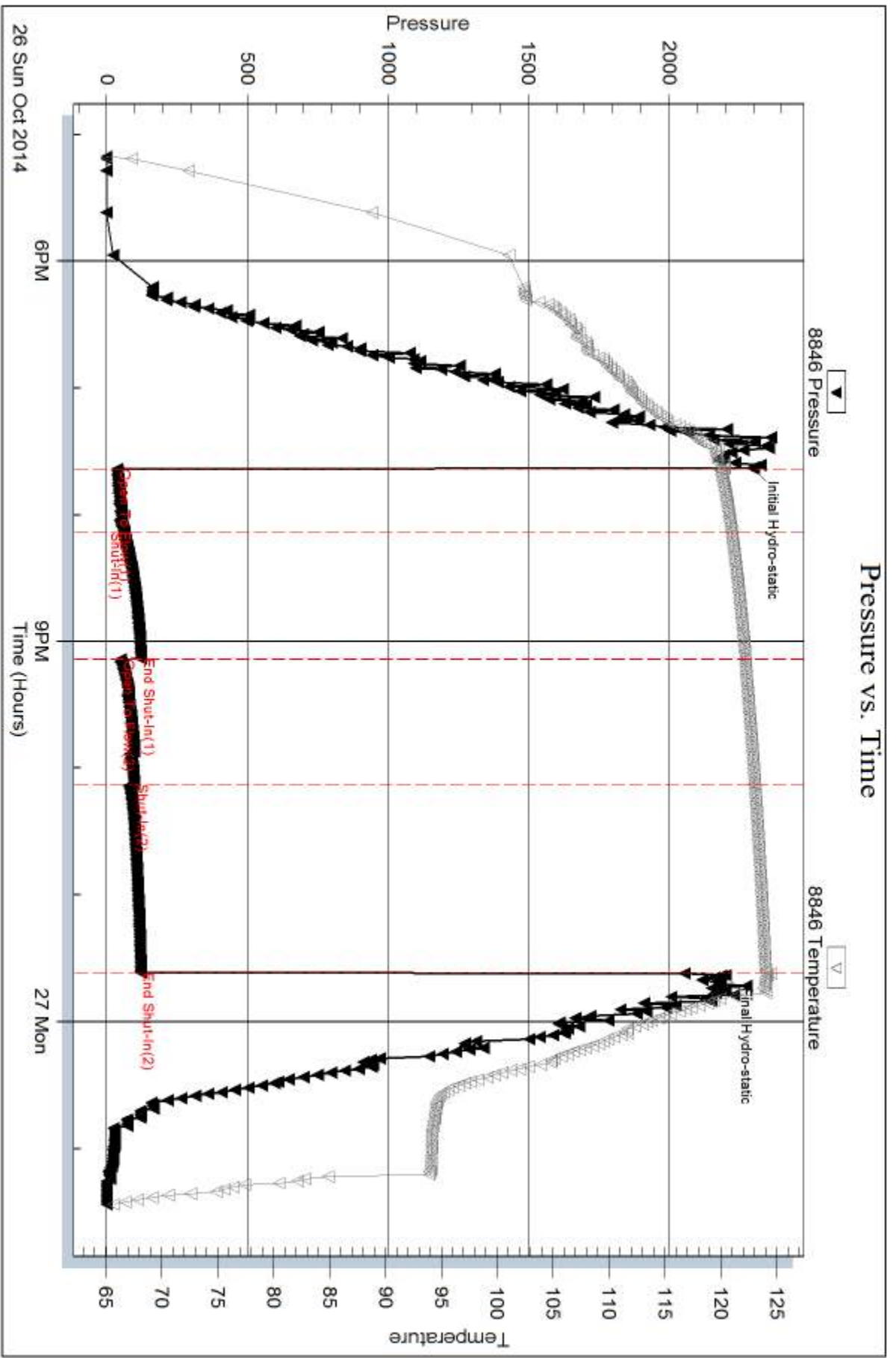
Serial #: 8846

Inside

Murfin Drilling Co. Inc.

WVWMA #4 4

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 59202

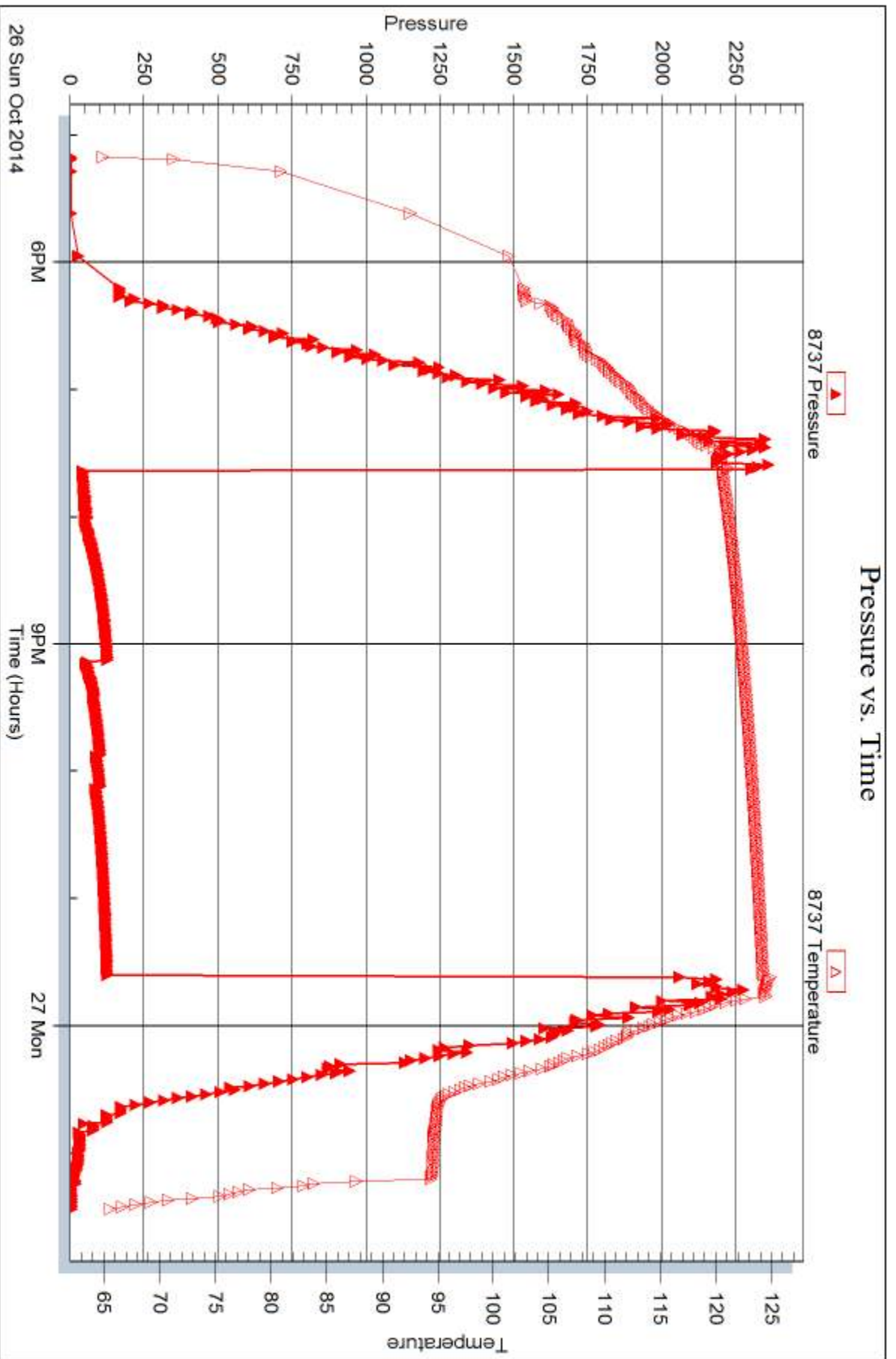
Printed: 2014, 10:30 @ 16:25:24

Serial #: 8737

Outside Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 59202

Printed: 2014, 10:30 @ 16:25:24



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Tom Funk

**WWWM A #4 4**

**4-13s-32w Logan,KS**

Start Date: 2014.10.27 @ 13:09:15

End Date: 2014.10.27 @ 22:08:30

Job Ticket #: 59203                      DST #: 4

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.30 @ 16:24:58



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Tom Funk

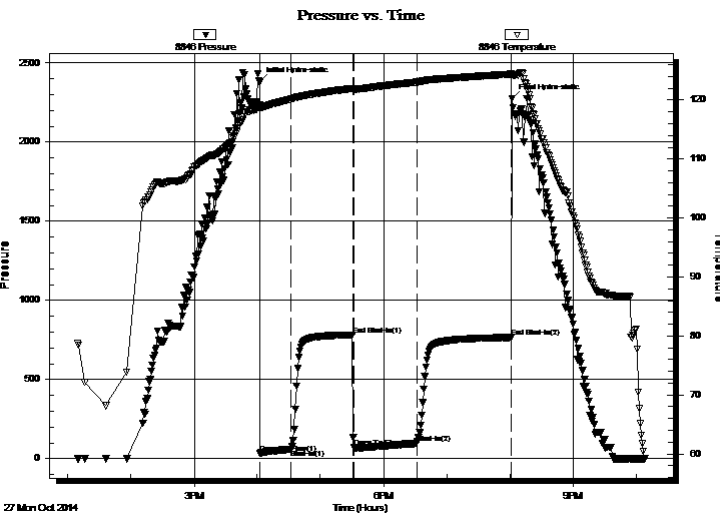
**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
 Job Ticket: 59203 **DST#: 4**  
 Test Start: 2014.10.27 @ 13:09:15

## GENERAL INFORMATION:

Formation: **Pawnee - Ft. Scott**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:02:15  
 Time Test Ended: 22:08:30  
 Interval: **4464.00 ft (KB) To 4540.00 ft (KB) (TVD)**  
 Total Depth: 4540.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 65  
 Reference Elevations: 3044.00 ft (KB)  
 3034.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8846 Inside**  
 Press@RunDepth: 96.68 psig @ 4535.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.27 End Date: 2014.10.27 Last Calib.: 2014.10.27  
 Start Time: 13:09:15 End Time: 22:08:30 Time On Btm: 2014.10.27 @ 16:02:00  
 Time Off Btm: 2014.10.27 @ 20:02:15

TEST COMMENT: IF: Built to 3/4" blow  
 IS: No return blow  
 FF: No blow  
 FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2380.44	119.11	Initial Hydro-static
1	35.50	118.49	Open To Flow (1)
31	60.38	120.14	Shut-In(1)
89	783.09	121.97	End Shut-In(1)
90	71.32	121.81	Open To Flow (2)
150	96.68	123.03	Shut-In(2)
239	766.63	124.38	End Shut-In(2)
241	2275.70	124.32	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	w cm 30%w 70%m	0.44

\* Recovery from multiple tests

## Gas Rates

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59203

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.10.27 @ 13:09:15

### GENERAL INFORMATION:

Formation: **Pawnee - Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:02:15

Time Test Ended: 22:08:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4464.00 ft (KB) To 4540.00 ft (KB) (TVD)**

Total Depth: 4540.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3044.00 ft (KB)

3034.00 ft (CF)

KB to GR/CF: 10.00 ft

**Serial #: 8737**

**Outside**

Press@RunDepth: psig @ 4535.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.27

End Date:

2014.10.27

Last Calib.:

2014.10.27

Start Time: 13:09:15

End Time:

22:08:30

Time On Btm:

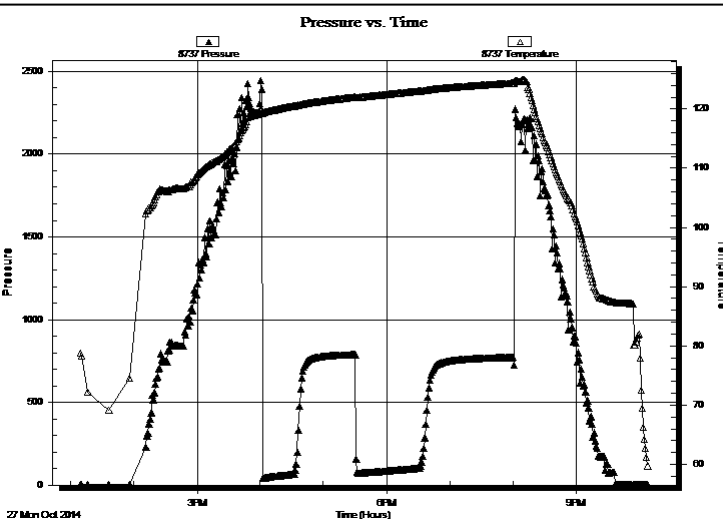
Time Off Btm:

TEST COMMENT: IF: Built to 3/4" blow

IS: No return blow

FF: No blow

FS: No return blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
90.00	w cm 30%w 70%m	0.44

### Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59203

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.10.27 @ 13:09:15

## Tool Information

Drill Pipe:	Length: 4177.00 ft	Diameter: 3.80 inches	Volume: 58.59 bbl	Tool Weight: 1500.00 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: 271.00 ft	Diameter: 2.25 inches	Volume: 1.33 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.92 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4464.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	97.00 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			4444.00	
Shut In Tool	5.00			4449.00	
Hydraulic tool	5.00			4454.00	
Packer	5.00			4459.00	21.00 Bottom Of Top Packer
Packer	5.00			4464.00	
Stubb	1.00			4465.00	
Perforations	4.00			4469.00	
Change Over Sub	1.00			4470.00	
Drill Pipe	64.00			4534.00	
Change Over Sub	1.00			4535.00	
Recorder	0.00	8846	Inside	4535.00	
Recorder	0.00	8737	Outside	4535.00	
Bullnose	5.00			4540.00	76.00 Bottom Packers & Anchor

**Total Tool Length: 97.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co.Inc.

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59203

**DST#: 4**

ATTN: Tom Funk

Test Start: 2014.10.27 @ 13:09:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

21000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	w cm 30%w 70%m	0.443

Total Length: 90.00 ft      Total Volume: 708.169 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .337 @ 78.2\*=21,000 ppm

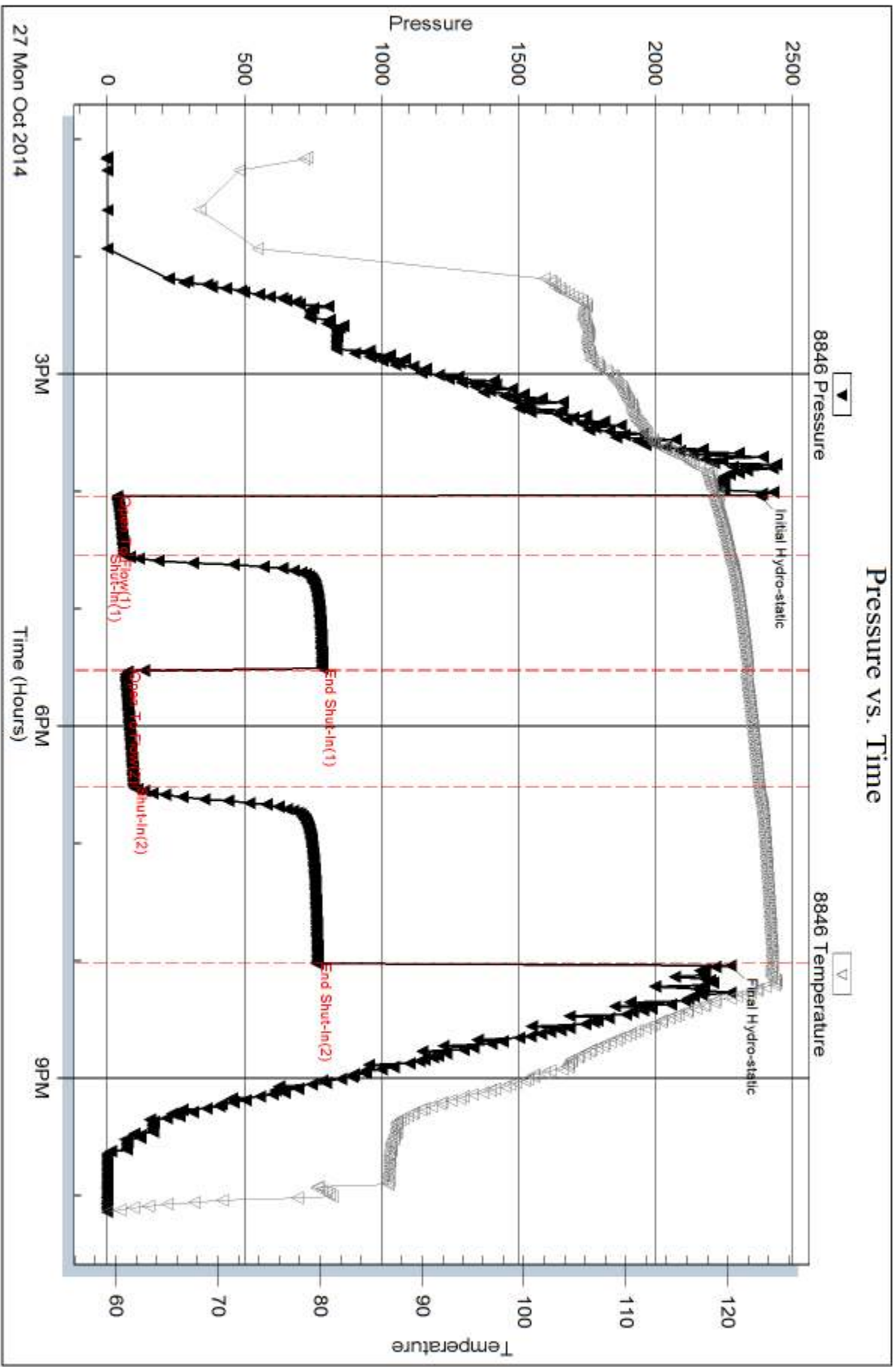
Serial #: 8846

Inside

Murfin Drilling Co. Inc.

WVWMA #4 4

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 59203

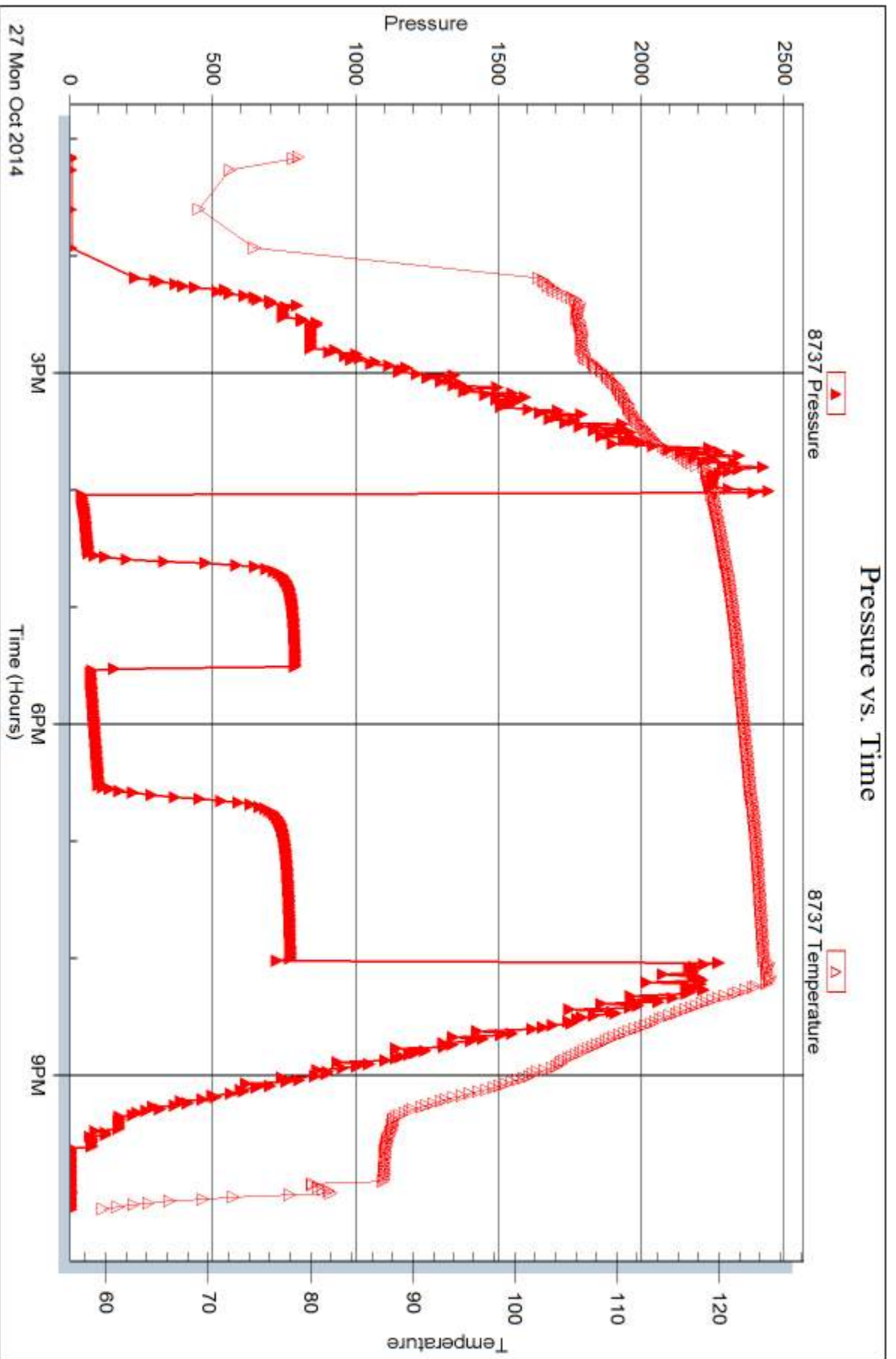
Printed: 2014, 10:30 @ 16:24:59

Serial #: 8737

Outside Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 59203

Printed: 2014, 10:30 @ 16:24:59



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita KS 67202

ATTN: Tom Funk

**WWWM A #4 4**

**4-13s-32w Logan,KS**

Start Date: 2014.10.28 @ 09:10:15

End Date: 2014.10.28 @ 17:31:30

Job Ticket #: 59204                      DST #: 5

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.30 @ 16:24:12



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Tom Funk

**4-13s-32w Logan, KS**

**WWWM A #4 4**

Job Ticket: 59204

**DST#: 5**

Test Start: 2014.10.28 @ 09:10:15

## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:37:00  
 Time Test Ended: 17:31:30  
 Interval: **4565.00 ft (KB) To 4620.00 ft (KB) (TVD)**  
 Total Depth: 4620.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts/ Justin  
 Unit No: 65  
 Reference Elevations: 3044.00 ft (KB)  
 3034.00 ft (CF)  
 KB to GR/CF: 10.00 ft

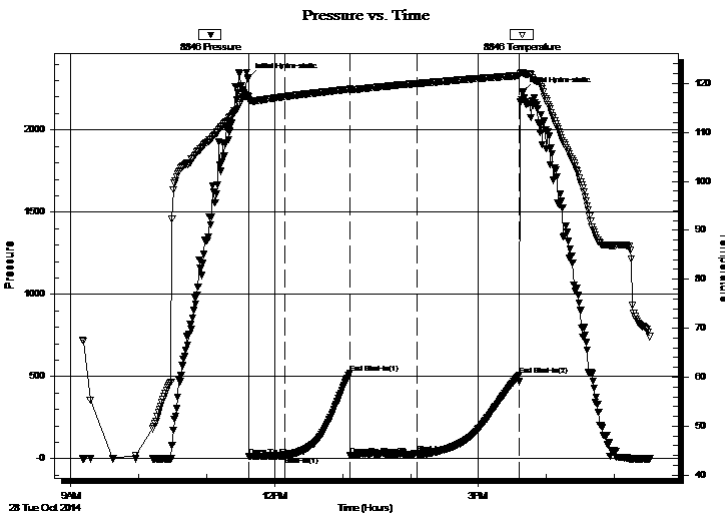
## Serial #: 8846

Inside

Press@RunDepth: 33.92 psig @ 4615.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.28 End Date: 2014.10.28 Last Calib.: 2014.10.28  
 Start Time: 09:10:15 End Time: 17:31:30 Time On Btm: 2014.10.28 @ 11:36:45  
 Time Off Btm: 2014.10.28 @ 15:39:00

TEST COMMENT: 30: Weak surface blow died in 15 mins.  
 60: No Return  
 60: No blow  
 90: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2320.44	117.33	Initial Hydro-static
1	15.29	116.58	Open To Flow (1)
32	18.07	117.25	Shut-In(1)
90	520.40	118.78	End Shut-In(1)
90	19.11	118.64	Open To Flow (2)
149	33.92	119.94	Shut-In(2)
240	510.45	121.57	End Shut-In(2)
243	2234.89	122.22	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud w ith oil spots	0.02

\* Recovery from multiple tests

## Gas Rates

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



# DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Tom Funk

**4-13s-32w Logan, KS**  
**WWWM A #4 4**  
 Job Ticket: 59204 **DST#: 5**  
 Test Start: 2014.10.28 @ 09:10:15

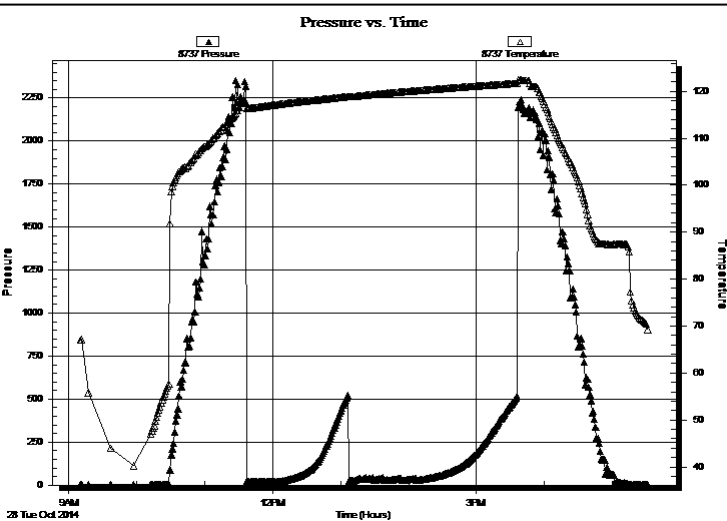
## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 11:37:00 Tester: Mike Roberts/ Justin  
 Time Test Ended: 17:31:30 Unit No: 65  
 Interval: **4565.00 ft (KB) To 4620.00 ft (KB) (TVD)** Reference Elevations: 3044.00 ft (KB)  
 Total Depth: 4620.00 ft (KB) (TVD) 3034.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

## Serial #: 8737 Outside

Press@RunDepth: psig @ 4615.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.28 End Date: 2014.10.28 Last Calib.: 2014.10.28  
 Start Time: 09:10:15 End Time: 17:31:45 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30: Weak surface blow died in 15 mins.  
 60: No Return  
 60: No blow  
 90: No return blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud w ith oil spots	0.02

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co. Inc.

**4-13s-32w Logan, KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59204

**DST#: 5**

ATTN: Tom Funk

Test Start: 2014.10.28 @ 09:10:15

## Tool Information

Drill Pipe:	Length: 4279.00 ft	Diameter: 3.80 inches	Volume: 60.02 bbl	Tool Weight: 1500.00 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: 271.00 ft	Diameter: 2.25 inches	Volume: 1.33 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 61.35 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4565.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	76.00 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			4545.00	
Shut In Tool	5.00			4550.00	
Hydraulic tool	5.00			4555.00	
Packer	5.00			4560.00	21.00 Bottom Of Top Packer
Packer	5.00			4565.00	
Stubb	1.00			4566.00	
Perforations	16.00			4582.00	
Change Over Sub	1.00			4583.00	
Drill Pipe	31.00			4614.00	
Change Over Sub	1.00			4615.00	
Recorder	0.00	8846	Inside	4615.00	
Recorder	0.00	8737	Outside	4615.00	
Bullnose	5.00			4620.00	55.00 Bottom Packers & Anchor

**Total Tool Length: 76.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co.Inc.

**4-13s-32w Logan,KS**

250 N Water STE 300  
Wichita KS 67202

**WWWM A #4 4**

Job Ticket: 59204

**DST#: 5**

ATTN: Tom Funk

Test Start: 2014.10.28 @ 09:10:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	mud w ith oil spots	0.025

Total Length: 5.00 ft      Total Volume: 39.343 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

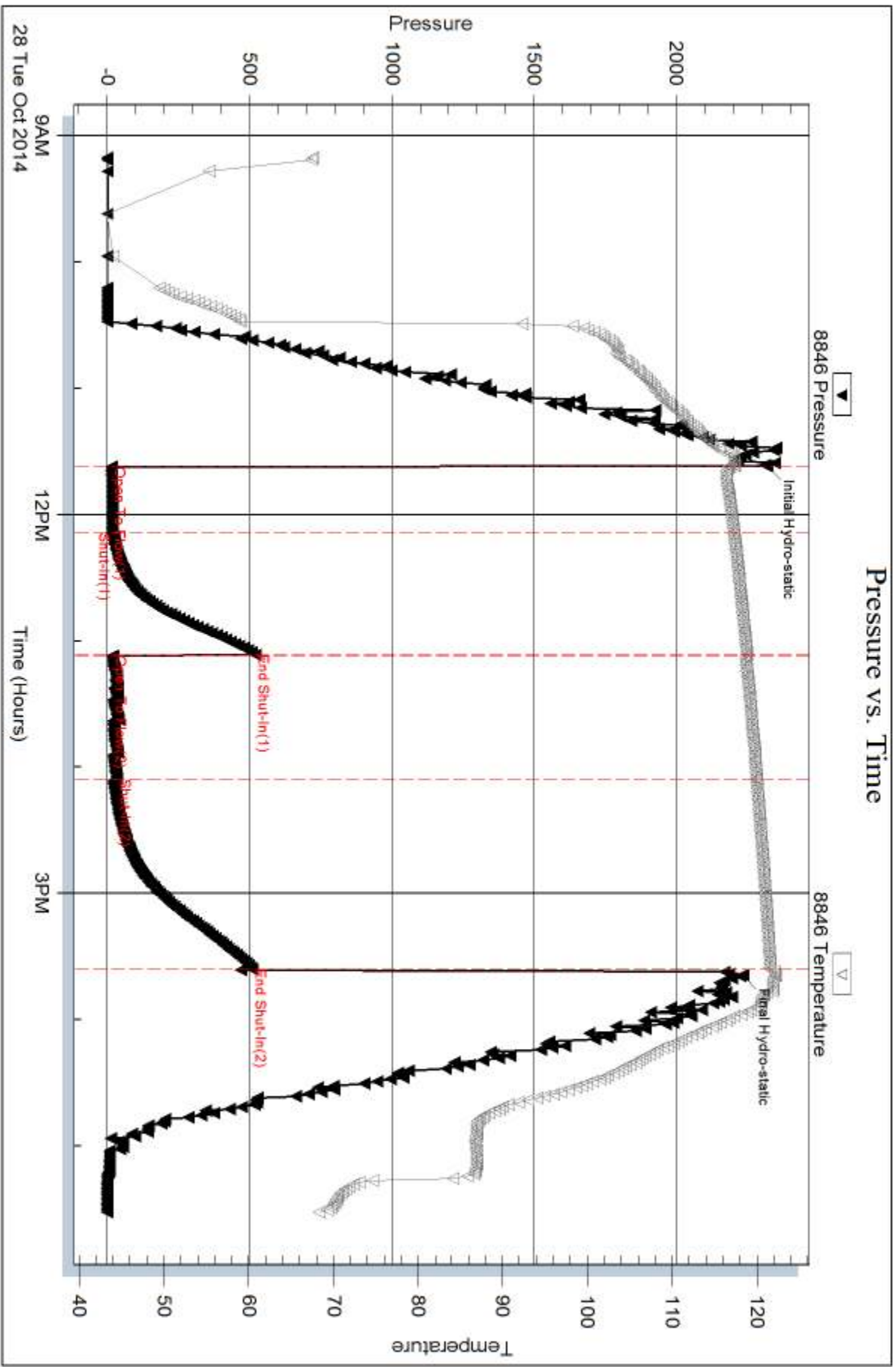
Serial #: 8846

Inside

Murfin Drilling Co. Inc.

WMMMM #4 4

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 59204

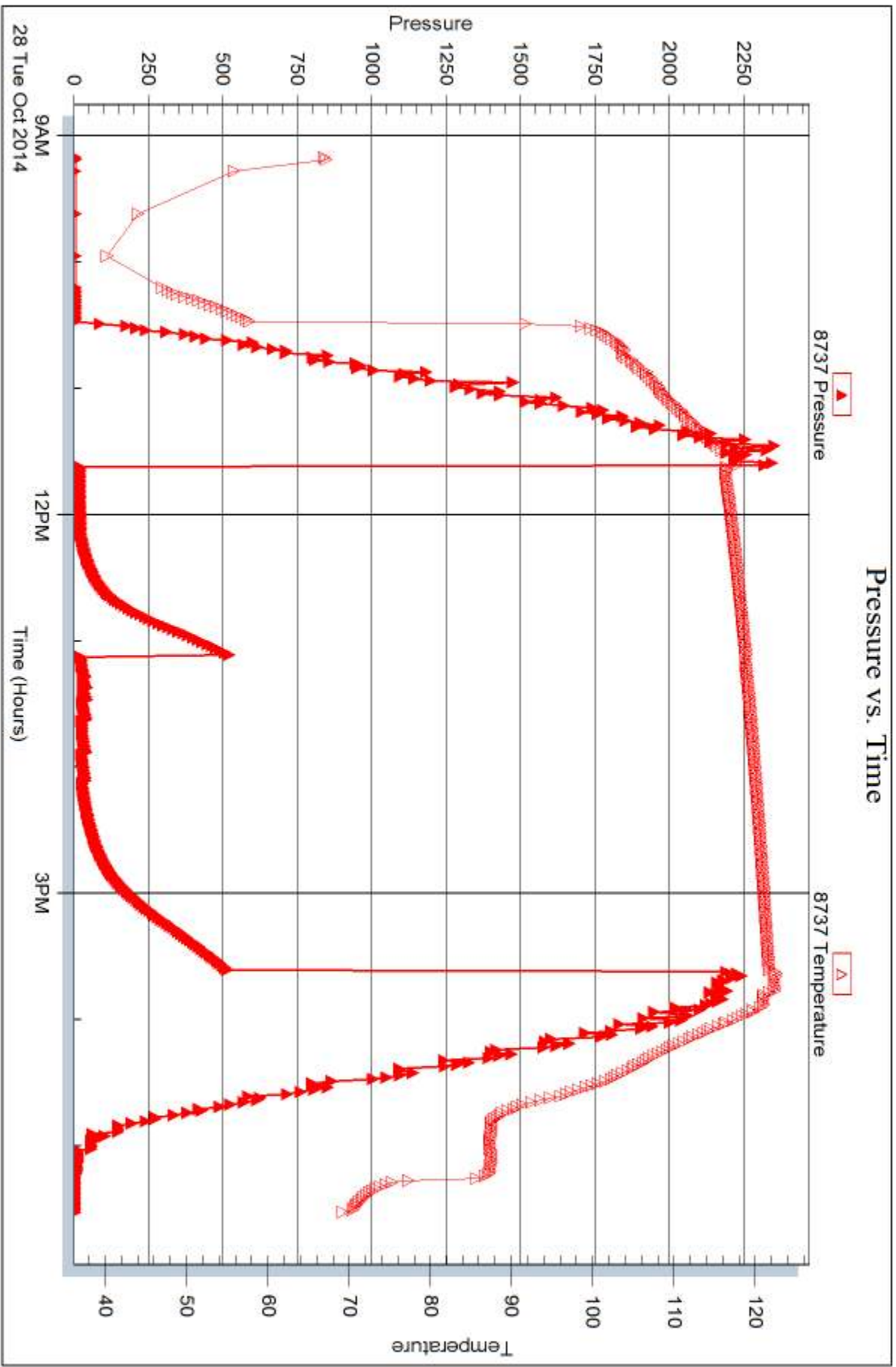
Printed: 2014, 10:30 @ 16:24:13

Serial #: 8737

Outside Murfin Drilling Co. Inc.

WWMMMA #4 4

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 59204

Printed: 2014, 10:30 @ 16:24:13



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59175

4/10

Well Name & No. WWW M "A" 4-4 Test No. 1 Date 10-24-14  
 Company Martin Drilling Co Inc Elevation 3044 KB 3034 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Tom Funk Rig Martin 4  
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4103-4199 Zone Tested E-F  
 Anchor Length 36 Drill Pipe Run ~~400~~ 3824 Mud Wt. 9.0  
 Top Packer Depth 4100 Drill Collars Run ~~300~~ 271 Vis 59  
 Bottom Packer Depth 4105 Wt. Pipe Run Ø WL 7.6  
 Total Depth 4141 Chlorides 6000 ppm System LCM 6

Blow Description IF: BOB IN 7 Min  
IS: No Return Blow  
FF: BOB IN 10 Min  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>240</u>	<u>MUD</u>			<u>100</u>	
<u>180</u>	<u>MCSW</u>		<u>50</u>	<u>50</u>	
<u>450</u>	<u>MCSW</u>		<u>80</u>	<u>20</u>	
<u>271</u>	<u>SW</u>		<u>100</u>		

Rec Total 1141 BHT 124 Gravity 1.30 API RW 1.30 @ 88.5° F Chlorides 18000 ppm  
 (A) Initial Hydrostatic 2173  Test 1250<sup>00</sup> T-On Location 05:20  
 (B) First Initial Flow 42  Jars T-Started 07:26  
 (C) First Final Flow 292  Safety Joint NL T-Open 09:42  
 (D) Initial Shut-In 1178  Circ Sub T-Pulled 13:42  
 (E) Second Initial Flow 295  Hourly Standby T-Out 16:10  
 (F) Second Final Flow 557  Mileage 76 RT = 117.80/- Comments \_\_\_\_\_  
 (G) Final Shut-In 1174  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2001  Straddle \_\_\_\_\_

Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1367.80  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1367.80

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

Approved By [Signature] 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. 59201

4/10

Well Name & No. <u>WWWM "A" 4-4</u>	Test No. <u>2</u>	Date <u>10-25-14</u>
Company <u>Mustin Drilling Co Inc.</u>	Elevation <u>3044</u>	KB <u>3034</u> GL
Address <u>250 N. Water STE 300 Wichita KS 67202</u>		
Co. Rep / Geo. <u>Tom Funk</u>	Rig <u>Mustin 4</u>	
Location: Sec. <u>4</u> Twp. <u>13S</u> Rge. <u>32w</u> Co. <u>Logan</u> State <u>KS</u>		

Interval Tested <u>4181-4242</u>	Zone Tested <u>H-I</u>
Anchor Length <u>61</u>	Drill Pipe Run <u>3894</u> Mud Wt. <u>9.3</u>
Top Packer Depth <u>4176</u>	Drill Collars Run <u>271</u> Vis <u>70</u>
Bottom Packer Depth <u>4181</u>	Wt. Pipe Run <u>Ø</u> WL <u>6.8</u>
Total Depth <u>4242</u>	Chlorides <u>6200</u> ppm System LCM <u>8</u>
Blow Description <u>IF: Built to 4"</u>	
<u>IS: No Return Blow</u>	
<u>FF: Built to 8"</u>	
<u>FS: No Return Blow</u>	

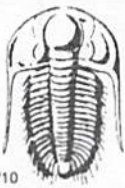
Rec	Feet of	%gas	%oil	%water	%mud
<u>340</u>	<u>MUD</u>			<u>100</u>	
<u>90</u>	<u>NCM</u>		<u>20</u>	<u>80</u>	

Rec Total <u>430</u> BHT <u>124</u>	Gravity <u>—</u> API RW <u>31</u> @ <u>88.4</u> °F Chlorides <u>19,000</u> ppm
(A) Initial Hydrostatic <u>2193</u>	<input checked="" type="checkbox"/> Test <u>1250.00</u> T-On Location <u>09:15</u>
(B) First Initial Flow <u>34</u>	<input type="checkbox"/> Jars T-Started <u>09:30</u>
(C) First Final Flow <u>121</u>	<input type="checkbox"/> Safety Joint T-Open <u>11:11</u>
(D) Initial Shut-In <u>1152</u>	<input checked="" type="checkbox"/> Circ Sub <u>NO</u> T-Pulled <u>15:11</u>
(E) Second Initial Flow <u>131</u>	<input type="checkbox"/> Hourly Standby T-Out <u>17:27</u>
(F) Second Final Flow <u>196</u>	<input checked="" type="checkbox"/> Mileage <u>76 RT = 117.80%</u> Comments
(G) Final Shut-In <u>1096</u>	<input type="checkbox"/> Sampler
(H) Final Hydrostatic <u>2195</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>99</u>	<input type="checkbox"/> Day Standby Total <u>1367.80</u>
	<input type="checkbox"/> Accessibility Sub Total <u>1367.80</u> MP/DST Disc't

Approved By [Signature]

Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged or 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. 59202

4/10

Well Name & No. WWW M "A" 4-4 Test No. 3 Date 10-26-14  
 Company Murfin Drilling Co Inc. Elevation 3044 KB 3034 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Tom Funk Rig Murfin 4  
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4380-4460 Zone Tested Altamont A-B-C  
 Anchor Length 80 Drill Pipe Run 4124 Mud Wt. 9.1  
 Top Packer Depth 4375 Drill Collars Run 271 Vis 60  
 Bottom Packer Depth 4380 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4460 Chlorides 4700 ppm System LCM 7  
 Blow Description IF: Built to 1/8" Blow  
IS: No Return Blow  
FF: No Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</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 5 BHT 125 Gravity — API RW — @ — ° F Chlorides — ppm  
 (A) Initial Hydrostatic 2294  Test 1250.00 T-On Location 16:30  
 (B) First Initial Flow 37  Jars — T-Started 17:10  
 (C) First Final Flow 62  Safety Joint — T-Open 19:35  
 (D) Initial Shut-In 122  Circ Sub NC T-Pulled 23:35  
 (E) Second Initial Flow 50  Hourly Standby — T-Out 01:26  
 (F) Second Final Flow 97  Mileage 76RT = 117.80/- Comments —  
 (G) Final Shut-In 121  Sampler —  
 (H) Final Hydrostatic 2201  Straddle —  Ruined Shale Packer —  
 Shale Packer —  Ruined Packer —  
 Extra Packer —  Extra Copies —  
 Initial Open 30  Extra Recorder — Sub Total 0  
 Initial Shut-In 60  Day Standby — Total 1367.80  
 Final Flow 60  Accessibility — MP/DST Disc't —  
 Final Shut-In 90 Sub Total 1367.80/-

Approved By Tom Funk Our Representative Mike Roberts

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. 59203

Well Name & No. WWNm "A" 4-4 Test No. 4 Date 10-27-14  
 Company Martin Drilling Co Inc. Elevation 3044 KB 3034 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Tom Funk Rig Martin 4  
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4464-4540 Zone Tested Pawnee-Lower Pawnee-Forscott  
 Anchor Length 76 Drill Pipe Run 4177 Mud Wt. 9.1  
 Top Packer Depth 4460 Drill Collars Run 271 Vis 60  
 Bottom Packer Depth 4464 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4540 Chlorides 4700 ppm System LCM 7  
 Blow Description IF: Built to 3/4" blow  
IS: No Return Blow  
FF: NO Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>WCm</u>		<u>30</u>	<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 90 BHT 125 Gravity - API RW 1337 @ 78.2° F Chlorides 21000 ppm  
 (A) Initial Hydrostatic 2380  Test 1250.00 T-On Location 12:50  
 (B) First Initial Flow 35  Jars  T-Started 13:09  
 (C) First Final Flow 60  Safety Joint  T-Open 16:02  
 (D) Initial Shut-In 783  Circ Sub NC T-Pulled 20:02  
 (E) Second Initial Flow 71  Hourly Standby  T-Out 22:08  
 (F) Second Final Flow 96  Mileage 76 RT = \$117.80/- Comments   
 (G) Final Shut-In 766  Sampler   
 (H) Final Hydrostatic 2275  Straddle   Ruined Shale Packer   
 Shale Packer   Ruined Packer   
 Extra Packer   Extra Copies   
 Extra Recorder  Sub Total 0  
 Day Standby  Total 1367.80  
 Accessibility  MP/DST Disc't   
 Sub Total \$367.80/-

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

Approved By [Signature]

Our Representative Mike Robert

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. 59204

Well Name & No. WWW "A" 4-4 Test No. 5 Date 10-28-14  
 Company Murfin Drilling Co Inc. Elevation 3044 KB 3034 GL  
 Address 250 N. Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Tom Funk Rig Murfin #4  
 Location: Sec. 4 Twp. 13S Rge. 32W Co. Logan State KS

Interval Tested 4565 4620 Zone Tested Johnson  
 Anchor Length 55 Drill Pipe Run 4279 Mud Wt. 9.1  
 Top Packer Depth 4561 Drill Collars Run 271 Vis 60  
 Bottom Packer Depth 4565 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4620 Chlorides 4700 ppm System LCM 7

Blow Description 30 weak surface Blow Died in 15 min.  
60 No Return  
60 No Blow  
90 No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud with oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 125 Gravity — API RW — @ — °F Chlorides — ppm  
 (A) Initial Hydrostatic 2320  Test 1250 T-On Location 9:00  
 (B) First Initial Flow 15  Jars T-Started 9:10  
 (C) First Final Flow 18  Safety Joint T-Open 11:35  
 (D) Initial Shut-In 520  Circ Sub N/C T-Pulled 15:35  
 (E) Second Initial Flow 19  Hourly Standby T-Out 17:31  
 (F) Second Final Flow 33  Mileage 76 RT 117.80  
 (G) Final Shut-In 510  Sampler  
 (H) Final Hydrostatic 2234  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 9.0  
 Sub Total 0  
 Total 1367.80  
 MP/DST Disc't 50%/50%  
 Sub Total 1367.80/-

Approved By [Signature] Our Representative Mike Roberts / Justin Harris  
 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.