



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.15 @ 08:34:00

End Date: 2013.04.15 @ 15:54:00

Job Ticket #: 50730                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.24 @ 14:02:29



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 50730

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.04.15 @ 08:34:00

## GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:30

Time Test Ended: 15:54:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 44

**Interval: 3656.00 ft (KB) To 3695.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 3695.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8360**

**Inside**

Press @ Run Depth: 20.12 psig @ 3657.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.15

End Date:

2013.04.15

Last Calib.:

2013.04.15

Start Time: 08:34:05

End Time:

15:53:59

Time On Btm:

2013.04.15 @ 10:49:00

Time Off Btm:

2013.04.15 @ 14:18:30

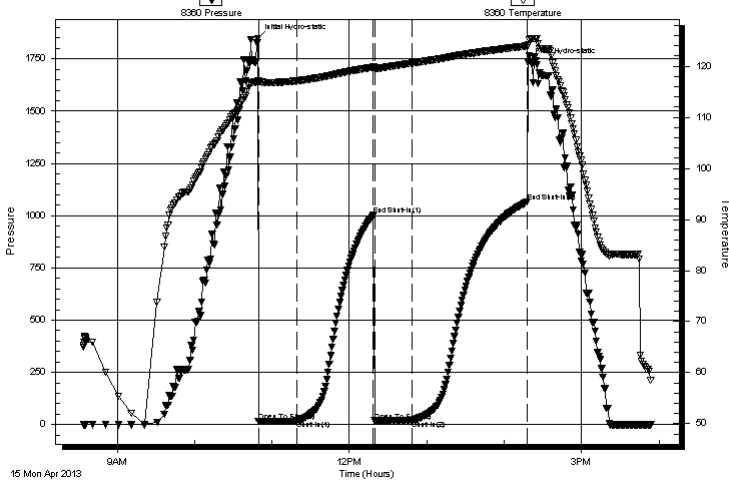
**TEST COMMENT:** 30 IF - 1/4" blow built to 3/4"

60 ISI - No return

30 FF - No blow

90 FSI - No return

Pressure vs. Time



## PRESSURE SUMMARY

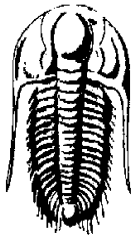
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1848.18         | 117.19       | Initial Hydro-static |
| 1           | 15.86           | 117.08       | Open To Flow (1)     |
| 30          | 18.64           | 117.13       | Shut-In(1)           |
| 90          | 1002.13         | 119.81       | End Shut-In(1)       |
| 91          | 18.39           | 119.54       | Open To Flow (2)     |
| 120         | 20.12           | 120.60       | Shut-In(2)           |
| 209         | 1065.09         | 123.93       | End Shut-In(2)       |
| 210         | 1733.37         | 124.16       | Final Hydro-static   |

## Recovery

| Length (ft) | Description              | Volume (bbl) |
|-------------|--------------------------|--------------|
| 5.00        | GOCM - 5%G - 35%O - 60%M | 0.02         |
|             |                          |              |
|             |                          |              |
|             |                          |              |
|             |                          |              |

## 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: Paul Gunzelman

**10-1s-37w Cheyenne, KS**

**Patti #2-10**

Job Ticket: 50730

**DST#: 1**

Test Start: 2013.04.15 @ 08:34:00

## GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:30

Time Test Ended: 15:54:00

**Interval: 3656.00 ft (KB) To 3695.00 ft (KB) (TVD)**

Total Depth: 3695.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 44

Reference Elevations: 3176.00 ft (KB)

3166.00 ft (CF)

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ Run Depth: psig @ 3657.00 ft (KB)

Start Date: 2013.04.15 End Date: 2013.04.15

Start Time: 08:34:45 End Time: 15:54:30

Capacity: 8000.00 psig

Last Calib.: 2013.04.15

Time On Btm:

Time Off Btm:

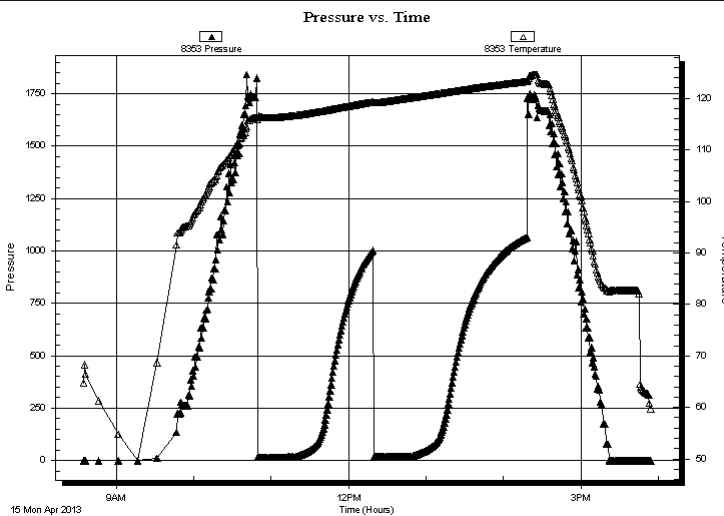
**TEST COMMENT:** 30 IF - 1/4" blow built to 3/4"

60 ISI - No return

30 FF - No blow

90 FSI - No return

## PRESSURE SUMMARY



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

## Recovery

| Length (ft) | Description              | Volume (bbl) |
|-------------|--------------------------|--------------|
| 5.00        | GOCM - 5%G - 35%O - 60%M | 0.02         |
|             |                          |              |
|             |                          |              |
|             |                          |              |
|             |                          |              |
|             |                          |              |

## 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

**Patti #2-10**

Job Ticket: 50730

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.04.15 @ 08:34:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3066.00 ft | Diameter: 3.80 inches | Volume: 43.01 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: 574.00 ft  | Diameter: 2.25 inches | Volume: 2.82 bbl               | Weight to Pull Loose:  | 82000.00 lb |
|                           |                    |                       | <u>Total Volume: 45.83 bbl</u> | Tool Chased            | 2.00 ft     |
| Drill Pipe Above KB:      | 11.00 ft           |                       |                                | String Weight: Initial | 64000.00 lb |
| Depth to Top Packer:      | 3656.00 ft         |                       |                                | Final                  | 64000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 39.00 ft           |                       |                                |                        |             |
| Tool Length:              | 66.00 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                |       |      |         |         |                               |
|----------------|-------|------|---------|---------|-------------------------------|
| Shut In Tool   | 5.00  |      |         | 3634.00 |                               |
| Hydraulic tool | 5.00  |      |         | 3639.00 |                               |
| Jars           | 5.00  |      |         | 3644.00 |                               |
| Safety Joint   | 3.00  |      |         | 3647.00 |                               |
| Packer         | 5.00  |      |         | 3652.00 | 27.00 Bottom Of Top Packer    |
| Packer         | 4.00  |      |         | 3656.00 |                               |
| Stubb          | 1.00  |      |         | 3657.00 |                               |
| Recorder       | 0.00  | 8360 | Inside  | 3657.00 |                               |
| Recorder       | 0.00  | 8353 | Outside | 3657.00 |                               |
| Perforations   | 35.00 |      |         | 3692.00 |                               |
| Bullnose       | 3.00  |      |         | 3695.00 | 39.00 Bottom Packers & Anchor |

**Total Tool Length: 66.00**



**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

**Patti #2-10**

Job Ticket: 50730

**DST#: 1**

ATTN: Paul Gunzelman

Test Start: 2013.04.15 @ 08:34:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description              | Volume<br>bbl |
|--------------|--------------------------|---------------|
| 5.00         | GOCM - 5%G - 35%o - 60%M | 0.025         |

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

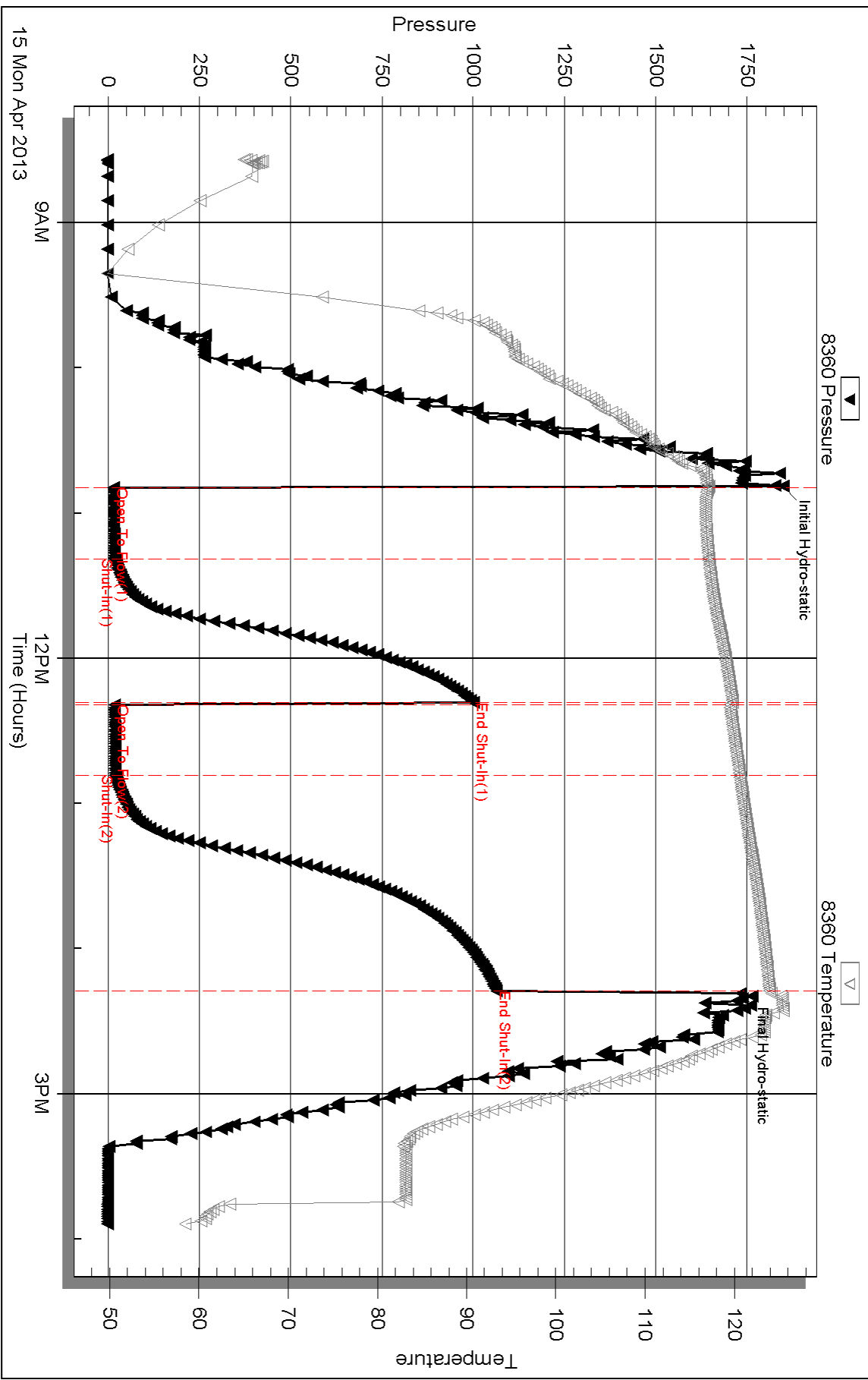
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

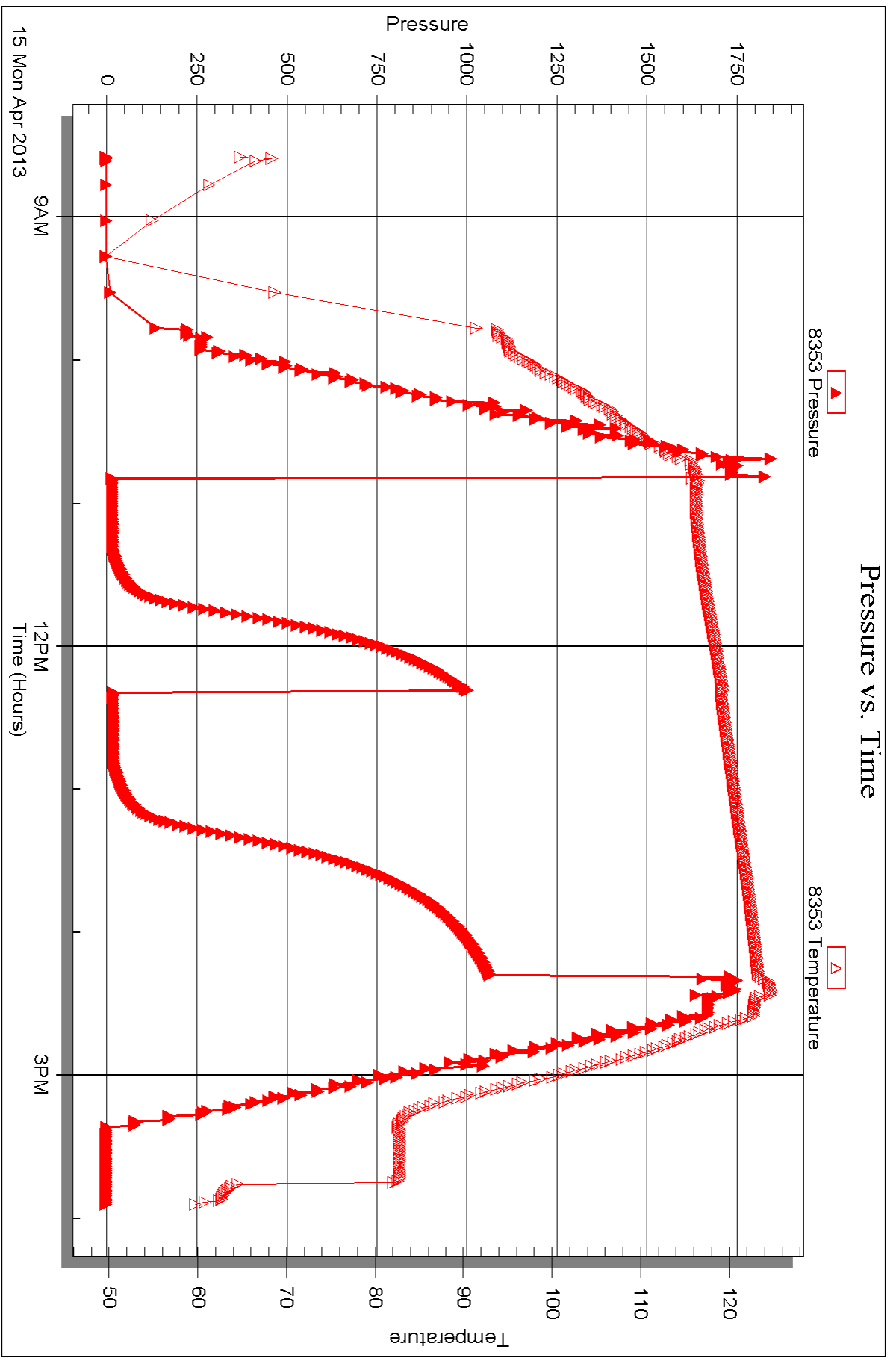


Serial #: 8353

Outside Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 1





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.16 @ 17:10:00

End Date: 2013.04.17 @ 00:45:45

Job Ticket #: 50650                      DST #: 2

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

Printed: 2013.04.24 @ 14:01:46

Murfin Drilling Company Inc. 10-1s-37w Cheyenne,KS Patti #2-10 DST # 2 Oread 2013.04.16





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 50650

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.04.16 @ 17:10:00

## GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:27:00

Time Test Ended: 00:45:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4000.00 ft (KB) To 4053.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4053.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ Run Depth: 16.57 psig @ 4001.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.16

End Date: 2013.04.17

Last Calib.: 2013.04.17

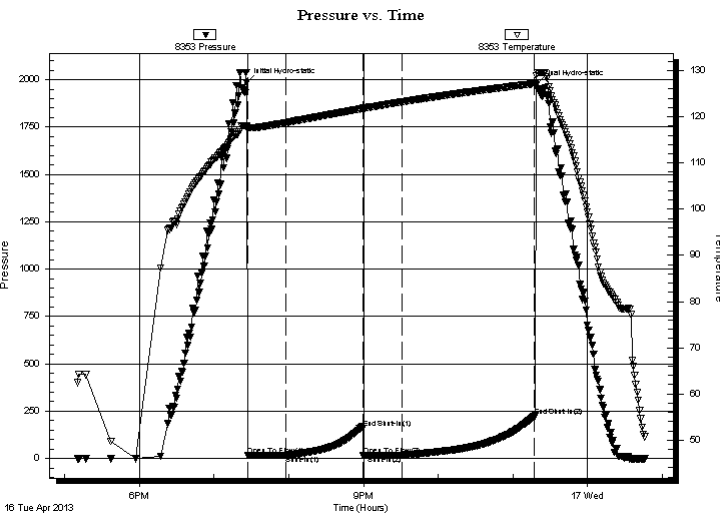
Start Time: 17:10:15

End Time: 00:45:45

Time On Btm: 2013.04.16 @ 19:26:15

Time Off Btm: 2013.04.16 @ 23:18:45

**TEST COMMENT:** 30 IF: Built to 1/4" Died back to surface blow after 20 min  
60 IS: No Blow  
30 FF: No Blow  
90 FS: No Blow



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1986.32         | 117.88       | Initial Hydro-static |
| 1           | 16.14           | 117.64       | Open To Flow (1)     |
| 32          | 16.93           | 118.74       | Shut-In(1)           |
| 93          | 159.50          | 121.78       | End Shut-In(1)       |
| 94          | 17.00           | 121.92       | Open To Flow (2)     |
| 125         | 16.57           | 123.22       | Shut-In(2)           |
| 231         | 222.73          | 127.19       | End Shut-In(2)       |
| 233         | 1972.25         | 128.94       | Final Hydro-static   |

## Recovery

| Length (ft) | Description   | Volume (bbl) |
|-------------|---------------|--------------|
| 2.00        | OCM 25%O 75%M | 0.01         |
|             |               |              |
|             |               |              |
|             |               |              |
|             |               |              |

\* 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

**Patti #2-10**

Job Ticket: 50650

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.04.16 @ 17:10:00

## GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:27:00

Time Test Ended: 00:45:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4000.00 ft (KB) To 4053.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4053.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8360 Inside**

Press @ Run Depth: psig @ 4001.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.16

End Date: 2013.04.17

Last Calib.: 2013.04.17

Start Time: 17:09:50

End Time: 00:44:44

Time On Btm:

Time Off Btm:

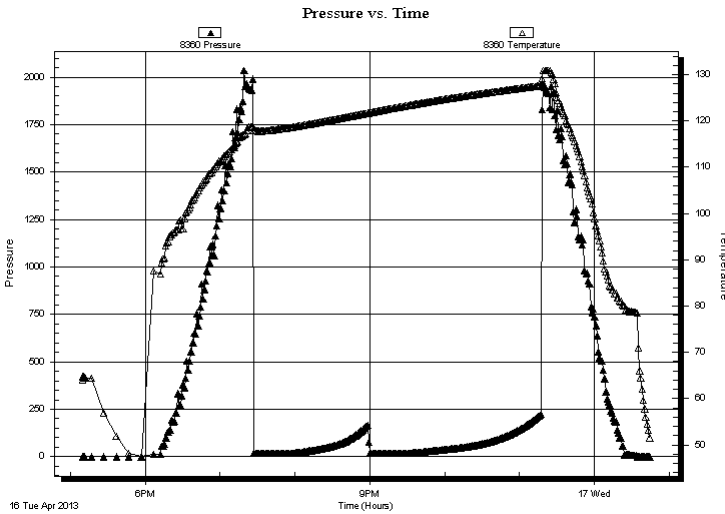
**TEST COMMENT:** 30 IF: Built to 1/4" Died back to surface blow after 20 min

60 IS: No Blow

30 FF: No Blow

90 FS: No Blow

## PRESSURE SUMMARY



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

## Recovery

## Gas Rates

| Length (ft) | Description   | Volume (bbl) |
|-------------|---------------|--------------|
| 2.00        | OCM 25%O 75%M | 0.01         |
|             |               |              |
|             |               |              |
|             |               |              |
|             |               |              |
|             |               |              |

|  | 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

**Patti #2-10**

Job Ticket: 50650

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.04.16 @ 17:10:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3416.00 ft | Diameter: 3.80 inches | Volume: 47.92 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: 574.00 ft  | Diameter: 2.25 inches | Volume: 2.82 bbl               | Weight to Pull Loose:  | 80000.00 lb |
|                           |                    |                       | <u>Total Volume: 50.74 bbl</u> | Tool Chased            | 2.00 ft     |
| Drill Pipe Above KB:      | 17.00 ft           |                       |                                | String Weight: Initial | 68000.00 lb |
| Depth to Top Packer:      | 4000.00 ft         |                       |                                | Final                  | 68000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 53.00 ft           |                       |                                |                        |             |
| Tool Length:              | 80.00 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                |
|---------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool        | 5.00        |            |          | 3978.00    |                               |
| Hydraulic tool jars | 5.00        |            |          | 3983.00    |                               |
| safety Joint        | 3.00        |            |          | 3988.00    |                               |
| Packer              | 5.00        |            |          | 3991.00    |                               |
| Packer              | 5.00        |            |          | 3996.00    | 27.00 Bottom Of Top Packer    |
| Packer              | 4.00        |            |          | 4000.00    |                               |
| Stubb               | 1.00        |            |          | 4001.00    |                               |
| Recorder            | 0.00        | 8360       | Inside   | 4001.00    |                               |
| Recorder            | 0.00        | 8353       | Outside  | 4001.00    |                               |
| Perforations        | 15.00       |            |          | 4016.00    |                               |
| change Over Sub     | 1.00        |            |          | 4017.00    |                               |
| Blank spacing       | 32.00       |            |          | 4049.00    |                               |
| Change Over Sub     | 1.00        |            |          | 4050.00    |                               |
| Bullnose            | 3.00        |            |          | 4053.00    | 53.00 Bottom Packers & Anchor |

**Total Tool Length: 80.00**



**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

**Patti #2-10**

Job Ticket: 50650

**DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2013.04.16 @ 17:10:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description   | Volume<br>bbl |
|--------------|---------------|---------------|
| 2.00         | OCM 25%O 75%M | 0.010         |

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

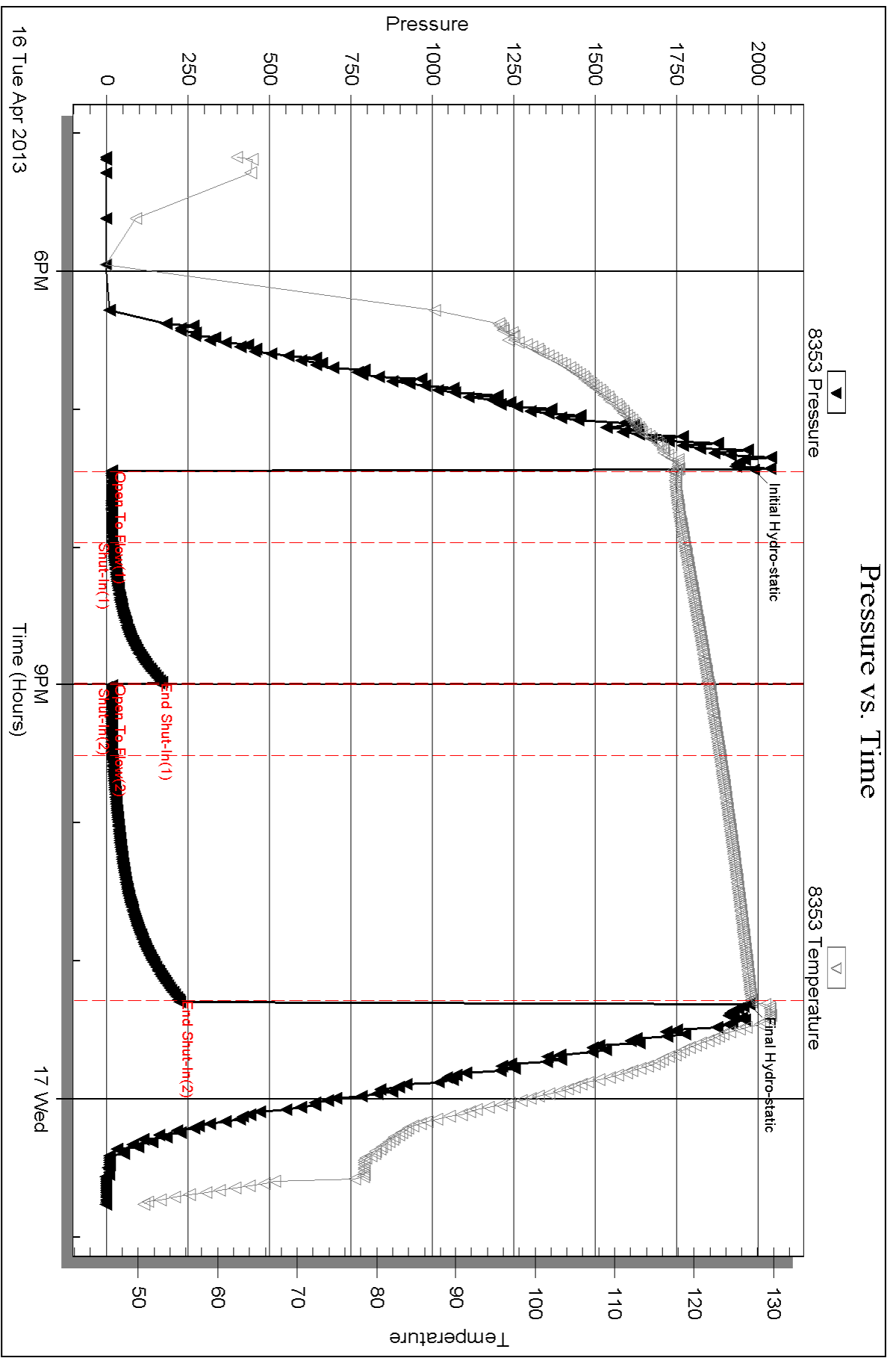
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



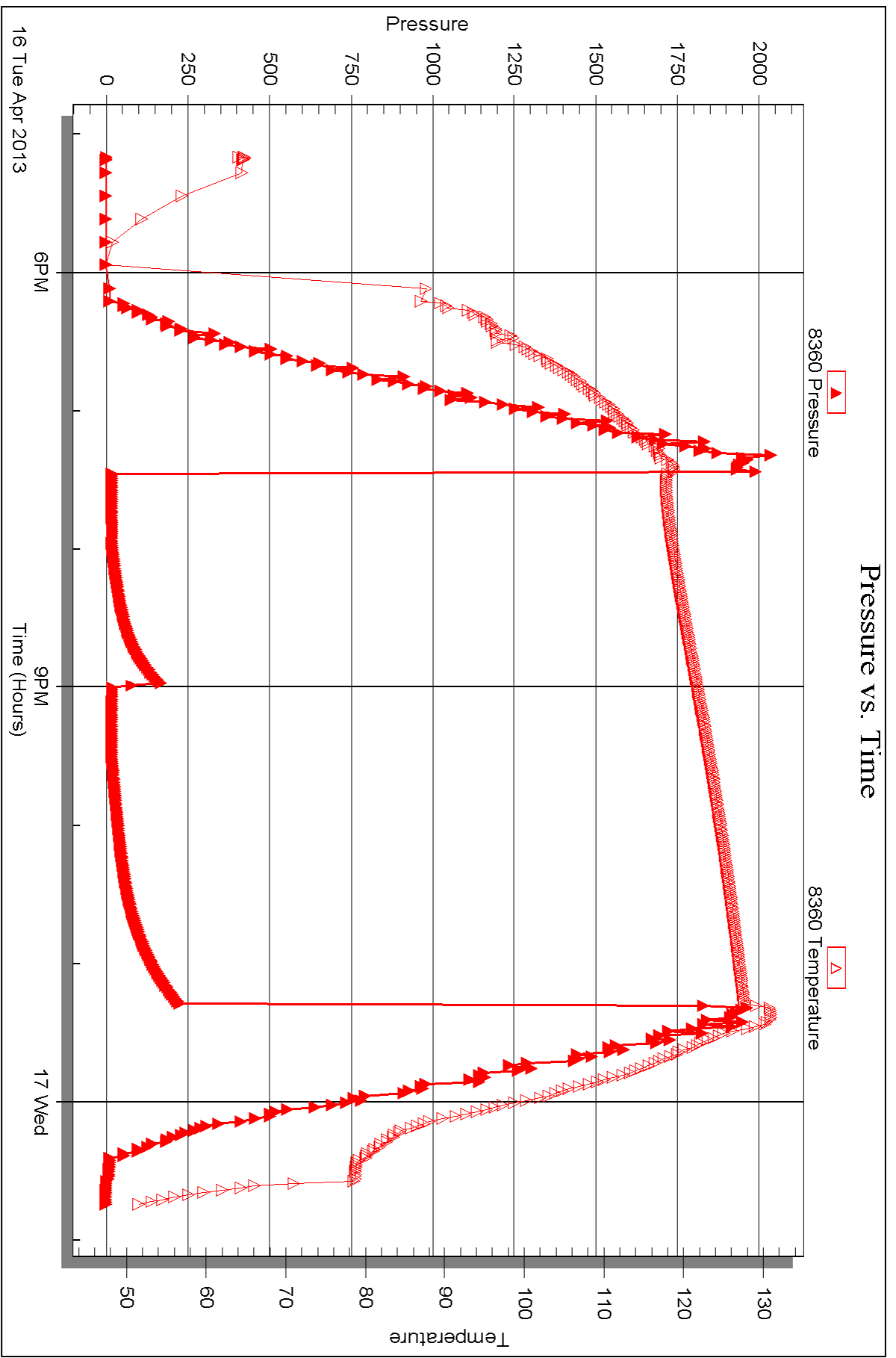
Serial #: 8360

Inside

Murfin Drilling Company Inc.

Patti #2-10

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 50650

Printed: 2013.04.24 @ 14:01:49



## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.17 @ 15:45:00

End Date: 2013.04.17 @ 23:06:45

Job Ticket #: 52576                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.24 @ 14:00:56



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52576

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.04.17 @ 15:45:00

## GENERAL INFORMATION:

Formation: **LKC A-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:42:30

Time Test Ended: 23:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4127.00 ft (KB) To 4198.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4198.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ Run Depth: 61.67 psig @ 4128.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.17

End Date:

2013.04.17

Last Calib.:

2013.04.17

Start Time: 15:45:15

End Time:

23:06:45

Time On Btm:

2013.04.17 @ 17:42:00

Time Off Btm:

2013.04.17 @ 21:13:00

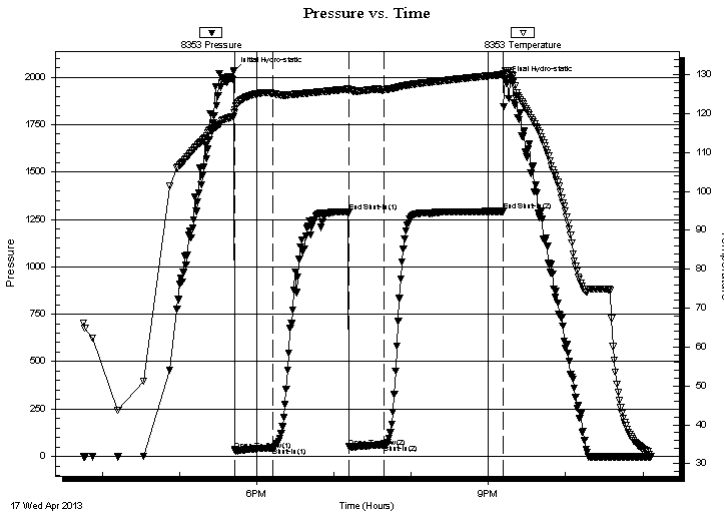
**TEST COMMENT:** 30 IF; Built to 6 1/2"

60 IS; No Blow

30 FF; No Blow

90 FS; No Blow

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2030.92         | 119.37       | Initial Hydro-static |
| 1           | 34.42           | 120.22       | Open To Flow (1)     |
| 31          | 45.37           | 125.18       | Shut-In(1)           |
| 89          | 1288.15         | 126.30       | End Shut-In(1)       |
| 90          | 50.20           | 125.98       | Open To Flow (2)     |
| 117         | 61.67           | 126.13       | Shut-In(2)           |
| 210         | 1292.88         | 130.04       | End Shut-In(2)       |
| 211         | 1984.29         | 130.95       | Final Hydro-static   |

## Recovery

| Length (ft) | Description        | Volume (bbl) |
|-------------|--------------------|--------------|
| 120.00      | GMCO 5%G 45%M 50%O | 0.59         |
|             |                    |              |
|             |                    |              |
|             |                    |              |
|             |                    |              |

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52576

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.04.17 @ 15:45:00

## GENERAL INFORMATION:

Formation: **LKC A-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:42:30

Time Test Ended: 23:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4127.00 ft (KB) To 4198.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4198.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8360** Inside

Press @ Run Depth: psig @ 4128.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.17 End Date: 2013.04.17

Last Calib.: 2013.04.17

Start Time: 15:45:05 End Time: 23:06:29

Time On Btm:

Time Off Btm:

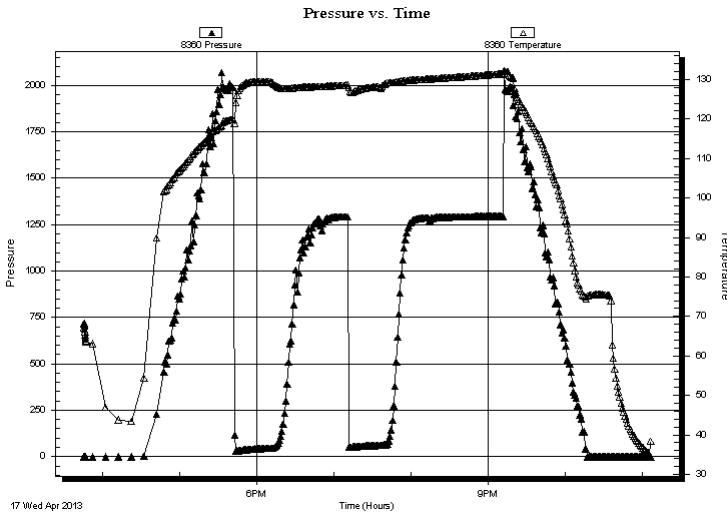
TEST COMMENT: 30 IF; Built to 6 1/2"

60 IS; No Blow

30 FF; No Blow

90 FS; No Blow

## PRESSURE SUMMARY



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

## Recovery

| Length (ft) | Description        | Volume (bbl) |
|-------------|--------------------|--------------|
| 120.00      | GMCO 5%G 45%M 50%O | 0.59         |
|             |                    |              |
|             |                    |              |
|             |                    |              |
|             |                    |              |

## 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

**Patti #2-10**

Job Ticket: 52576

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.04.17 @ 15:45:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3581.00 ft | Diameter: 3.80 inches | Volume: 50.23 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: 534.00 ft  | Diameter: 2.25 inches | Volume: 2.63 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 52.86 bbl</u> | Tool Chased 1.00 ft                |
| Drill Pipe Above KB:      | 15.00 ft           |                       |                                | String Weight: Initial 70000.00 lb |
| Depth to Top Packer:      | 4127.00 ft         |                       |                                | Final 70000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 71.00 ft           |                       |                                |                                    |
| Tool Length:              | 98.00 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                |
|---------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool        | 5.00        |            |          | 4105.00    |                               |
| Hydraulic tool jars | 5.00        |            |          | 4110.00    |                               |
| safety Joint        | 5.00        |            |          | 4115.00    |                               |
| Packer              | 3.00        |            |          | 4118.00    |                               |
| Packer              | 5.00        |            |          | 4123.00    | 27.00 Bottom Of Top Packer    |
| Packer              | 4.00        |            |          | 4127.00    |                               |
| Stubb               | 1.00        |            |          | 4128.00    |                               |
| Recorder            | 0.00        | 8360       | Inside   | 4128.00    |                               |
| Recorder            | 0.00        | 8353       | Outside  | 4128.00    |                               |
| Perforations        | 33.00       |            |          | 4161.00    |                               |
| change Over Sub     | 1.00        |            |          | 4162.00    |                               |
| Blank Spacing       | 32.00       |            |          | 4194.00    |                               |
| change Over Sub     | 1.00        |            |          | 4195.00    |                               |
| Bullnose            | 3.00        |            |          | 4198.00    | 71.00 Bottom Packers & Anchor |

**Total Tool Length: 98.00**



**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

**Patti #2-10**

Job Ticket: 52576

**DST#: 3**

ATTN: Paul Gunzelman

Test Start: 2013.04.17 @ 15:45:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description        | Volume<br>bbl |
|--------------|--------------------|---------------|
| 120.00       | GMCO 5%G 45%M 50%O | 0.590         |

Total Length: 120.00 ft      Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

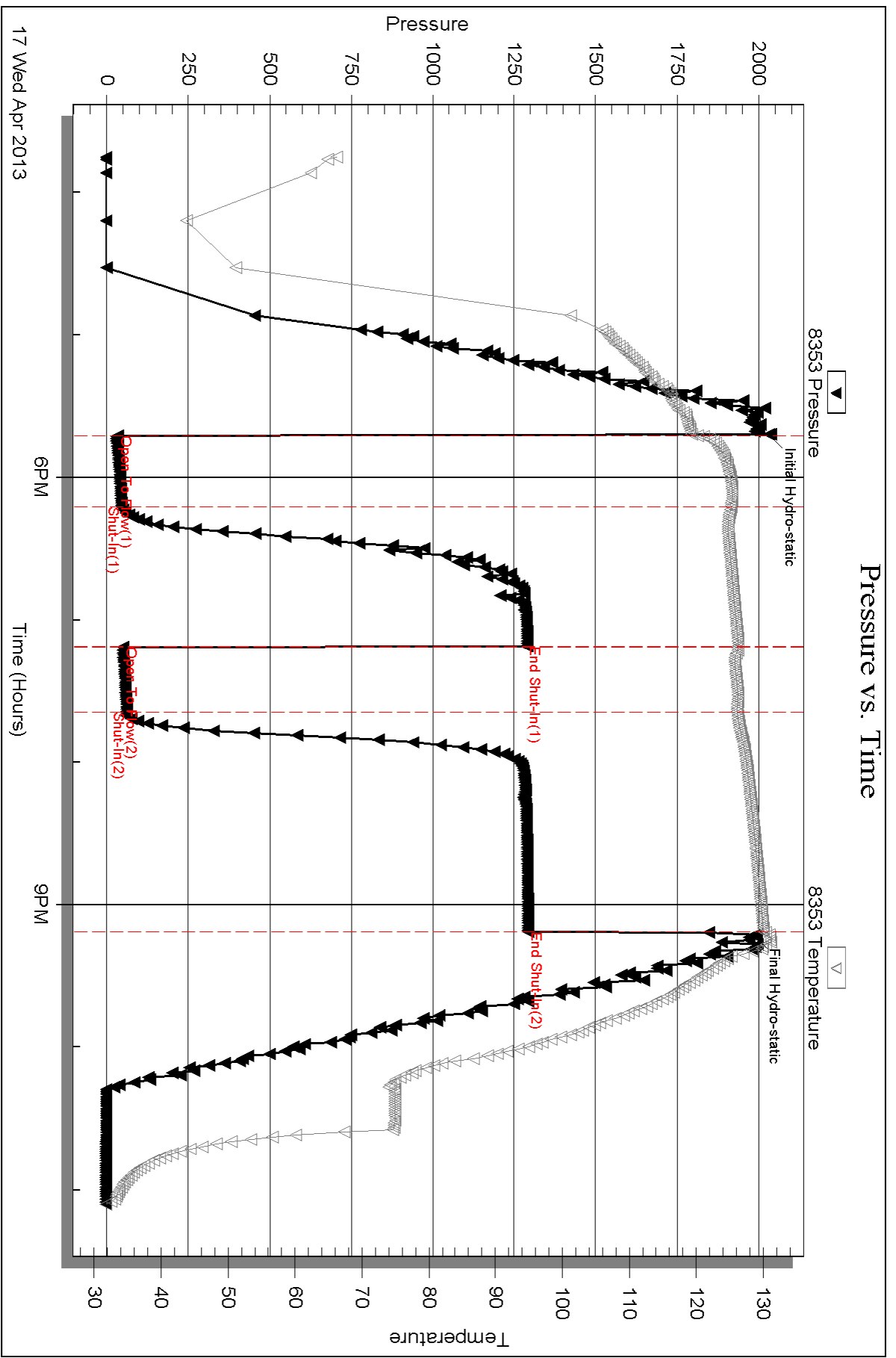
Recovery Comments:

Serial #: 8353

Outside Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 52576

Printed: 2013.04.24 @ 14:00:59

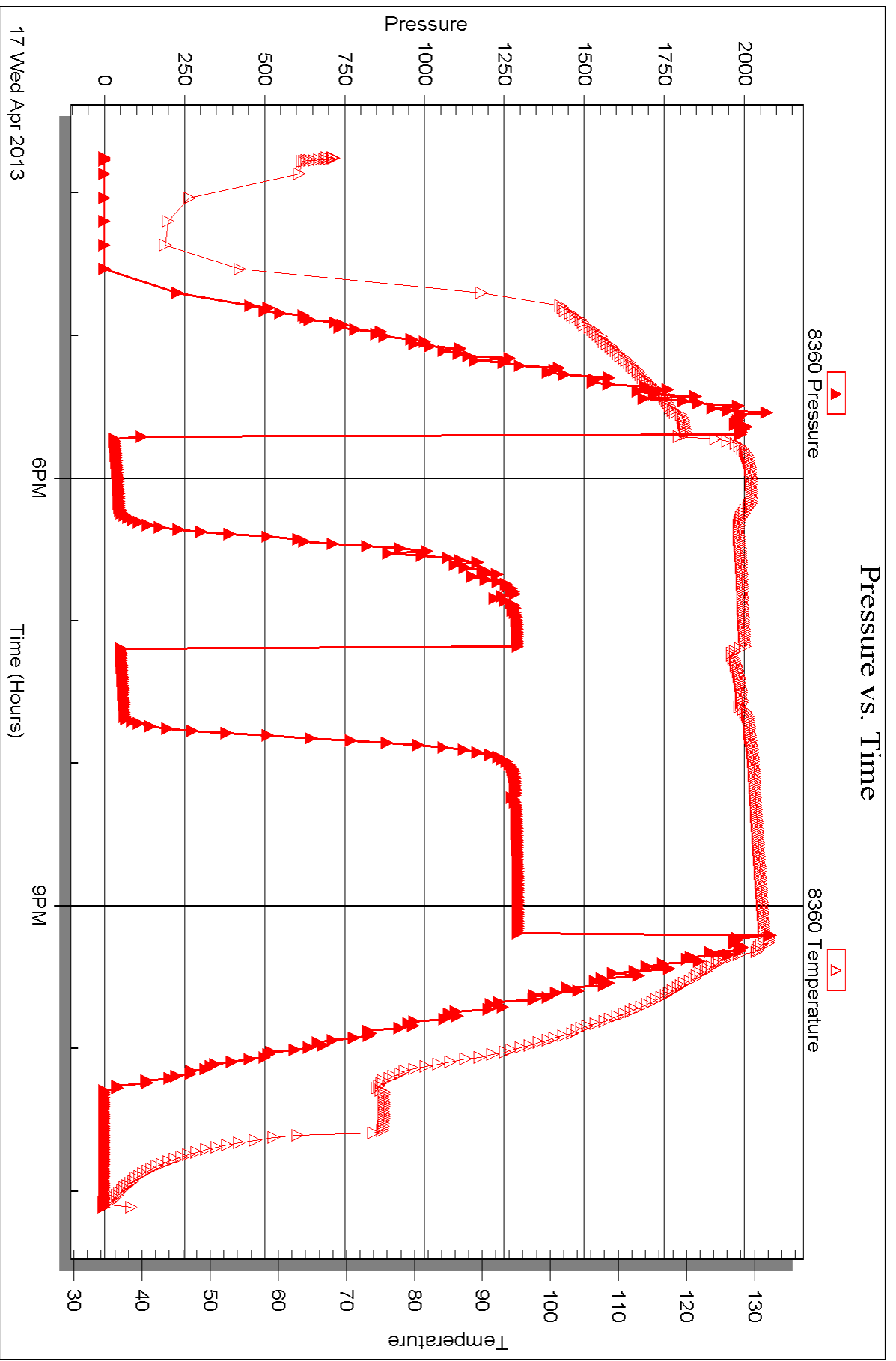
Serial #: 8360

Inside

Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 3





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.18 @ 13:20:00

End Date: 2013.04.18 @ 20:30:15

Job Ticket #: 52577                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.24 @ 14:00:18



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52577

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.04.18 @ 13:20:00

## GENERAL INFORMATION:

Formation: **LKC G-H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:25:45

Time Test Ended: 20:30:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4195.00 ft (KB) To 4303.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4303.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ RunDepth: 23.23 psig @ 4196.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.18

End Date: 2013.04.18

Last Calib.: 2013.04.18

Start Time: 13:20:15

End Time: 20:30:15

Time On Btm: 2013.04.18 @ 15:25:15

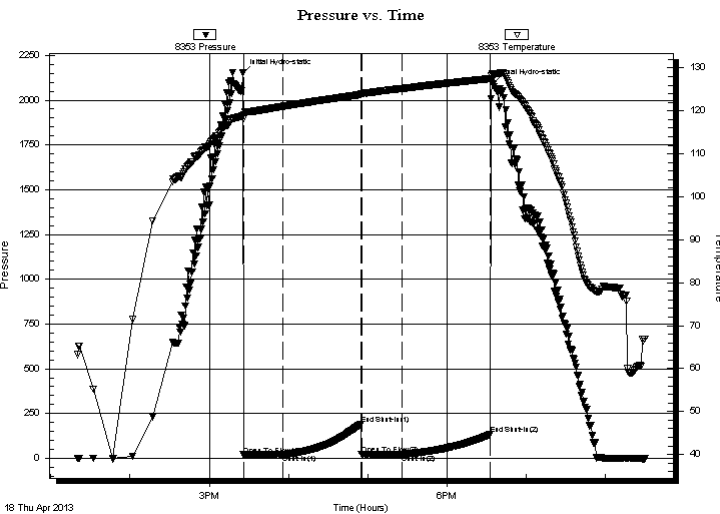
Time Off Btm: 2013.04.18 @ 18:34:45

**TEST COMMENT:** 30 IF; Built to 1/2"

60 IS; No Blow

30 FF; No Blow

60 FS; No Blow



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2150.97         | 118.79       | Initial Hydro-static |
| 1           | 18.47           | 118.18       | Open To Flow (1)     |
| 31          | 20.64           | 121.04       | Shut-In(1)           |
| 90          | 189.87          | 123.80       | End Shut-In(1)       |
| 90          | 21.45           | 124.00       | Open To Flow (2)     |
| 121         | 23.23           | 125.21       | Shut-In(2)           |
| 188         | 132.93          | 127.52       | End Shut-In(2)       |
| 190         | 2092.82         | 128.68       | Final Hydro-static   |

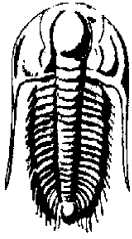
## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00        | Mud         | 0.01         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

\* 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

**Patti #2-10**

ATTN: Paul Gunzelman

Job Ticket: 52577

**DST#: 4**

Test Start: 2013.04.18 @ 13:20:00

**GENERAL INFORMATION:**

Formation: **LKC G-H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:25:45

Time Test Ended: 20:30:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

Interval: **4195.00 ft (KB) To 4303.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4303.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8360 Inside**

Press @ Run Depth: psig @ 4196.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.18 End Date: 2013.04.18

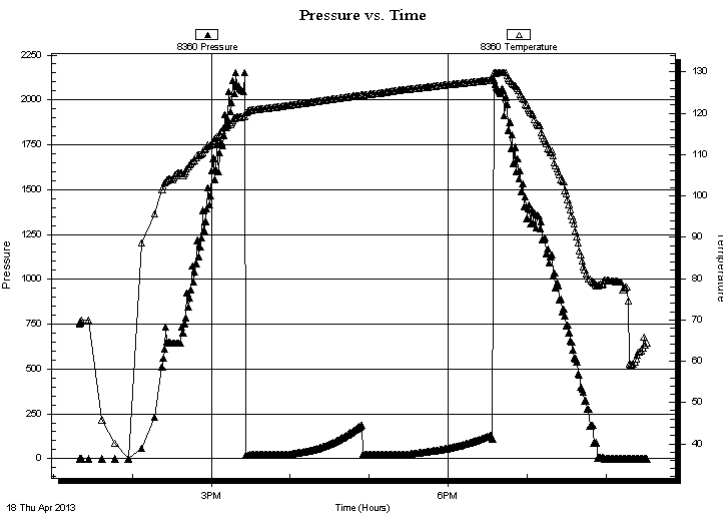
Last Calib.: 2013.04.18

Start Time: 13:20:05 End Time: 20:30:29

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30 IF; Built to 1/2"  
60 IS; No Blow  
30 FF; No Blow  
60 FS; No Blow



**PRESSURE SUMMARY**

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

**Recovery**

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 2.00        | Mud         | 0.01         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

**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

**Patti #2-10**

Job Ticket: 52577

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.04.18 @ 13:20:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3645.00 ft | Diameter: 3.80 inches | Volume: 51.13 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: 534.00 ft  | Diameter: 2.25 inches | Volume: 2.63 bbl               | Weight to Pull Loose:  | 78000.00 lb |
|                           |                    |                       | <u>Total Volume: 53.76 bbl</u> | Tool Chased            | 1.00 ft     |
| Drill Pipe Above KB:      | 11.00 ft           |                       |                                | String Weight: Initial | 70000.00 lb |
| Depth to Top Packer:      | 4195.00 ft         |                       |                                | Final                  | 70000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 108.00 ft          |                       |                                |                        |             |
| Tool Length:              | 135.00 ft          |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |
| Tool Comments:            |                    |                       |                                |                        |             |

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                 |       |      |         |         |                                |
|-----------------|-------|------|---------|---------|--------------------------------|
| shut In Tool    | 5.00  |      |         | 4173.00 |                                |
| Hydraulic tool  | 5.00  |      |         | 4178.00 |                                |
| jars            | 5.00  |      |         | 4183.00 |                                |
| safety Joint    | 3.00  |      |         | 4186.00 |                                |
| Packer          | 5.00  |      |         | 4191.00 | 27.00 Bottom Of Top Packer     |
| Packer          | 4.00  |      |         | 4195.00 |                                |
| Stubb           | 1.00  |      |         | 4196.00 |                                |
| Recorder        | 0.00  | 8360 | Inside  | 4196.00 |                                |
| Recorder        | 0.00  | 8353 | Outside | 4196.00 |                                |
| Perforations    | 7.00  |      |         | 4203.00 |                                |
| change Over Sub | 1.00  |      |         | 4204.00 |                                |
| blank spacing   | 95.00 |      |         | 4299.00 |                                |
| change Over Sub | 1.00  |      |         | 4300.00 |                                |
| Bullnose        | 3.00  |      |         | 4303.00 | 108.00 Bottom Packers & Anchor |

**Total Tool Length: 135.00**



**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

**Patti #2-10**

Job Ticket: 52577

**DST#: 4**

ATTN: Paul Gunzelman

Test Start: 2013.04.18 @ 13:20:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 2.00         | Mud         | 0.010         |

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

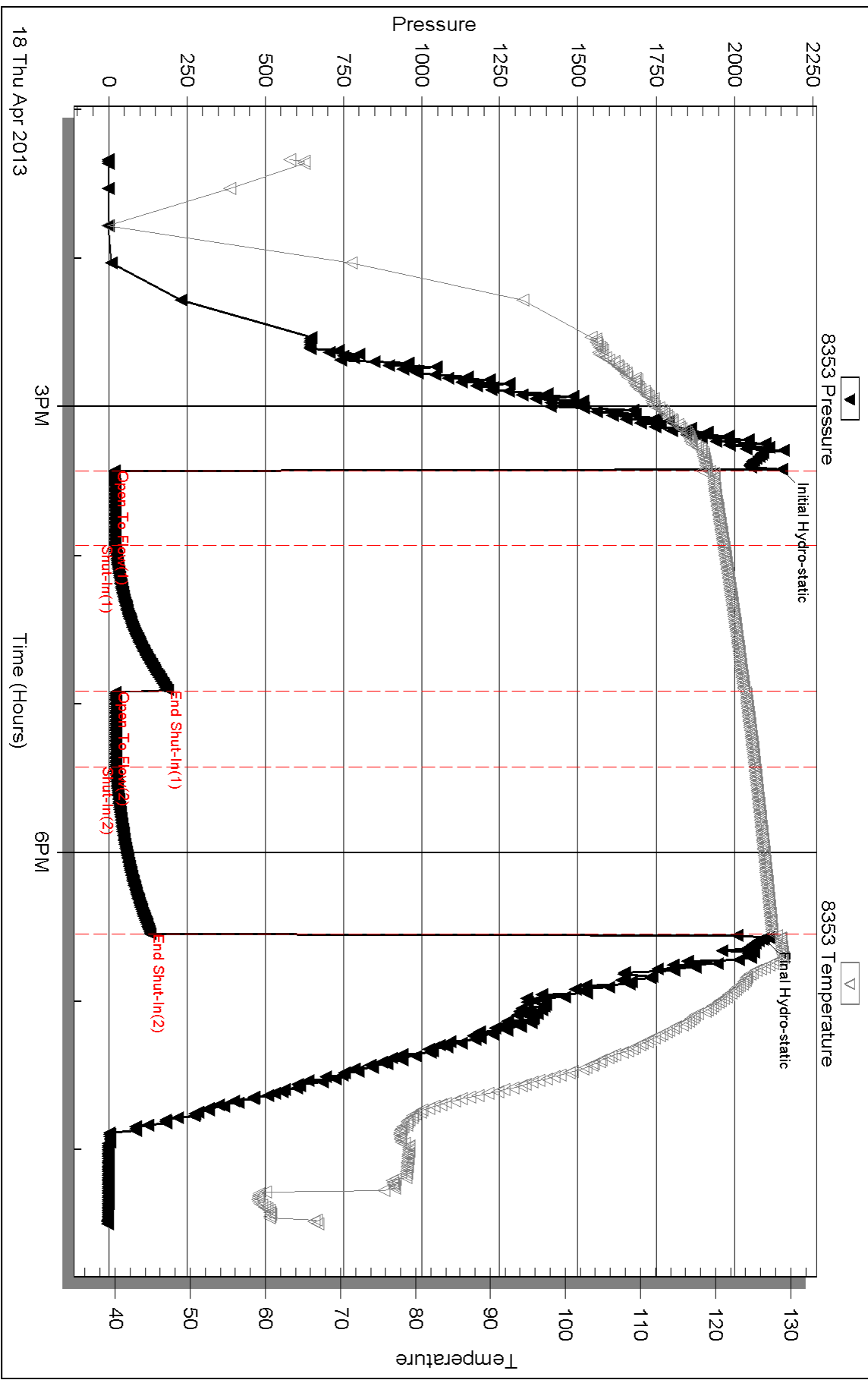
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time



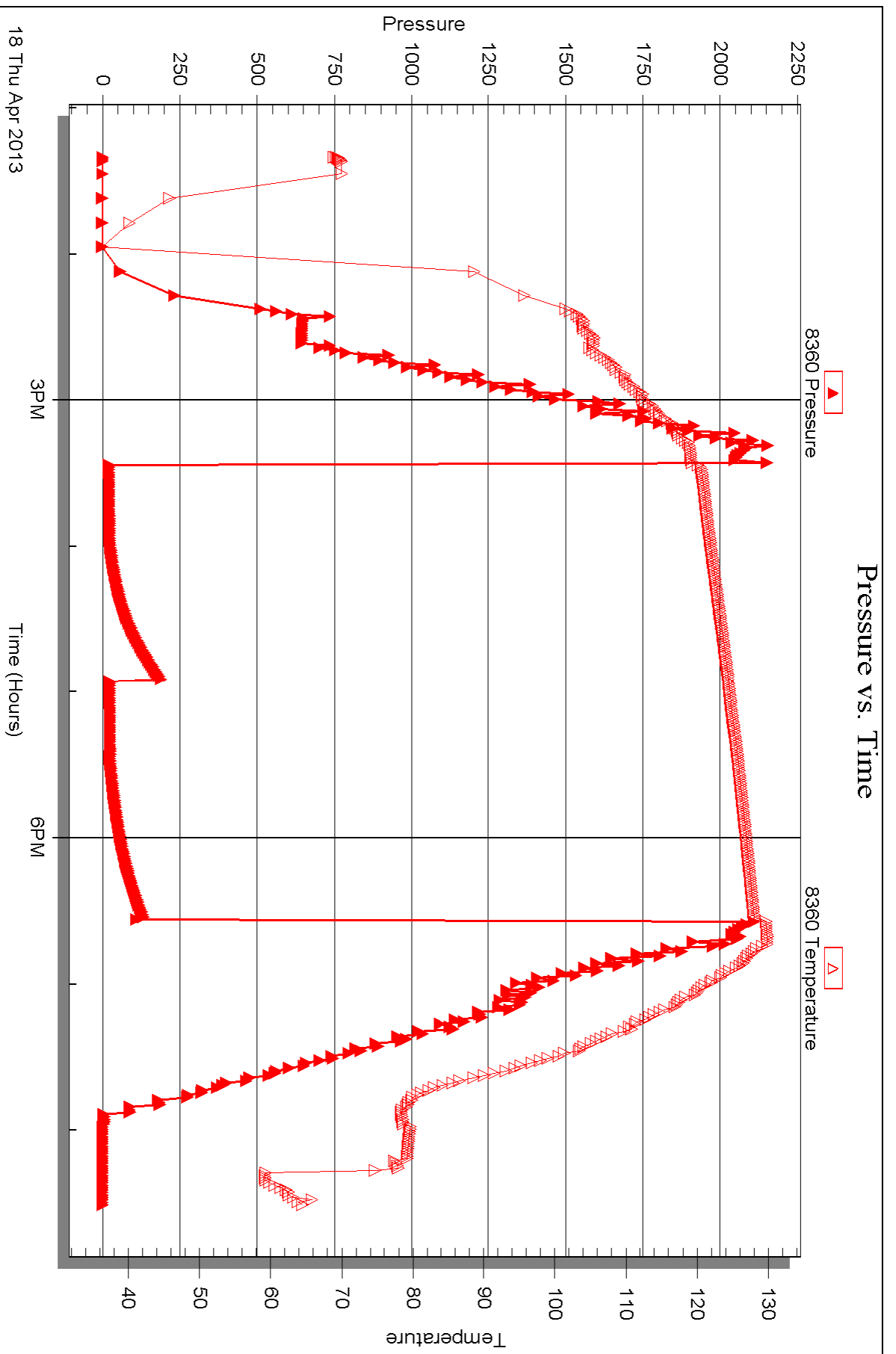
Serial #: 8360

Inside

Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 4





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.19 @ 05:15:00

End Date: 2013.04.19 @ 12:48:45

Job Ticket #: 52578                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.24 @ 13:59:41



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52578

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2013.04.19 @ 05:15:00

## GENERAL INFORMATION:

Formation: **LKC J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:02:15

Time Test Ended: 12:48:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4292.00 ft (KB) To 4390.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ Run Depth: 34.62 psig @ 4293.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.19

End Date: 2013.04.19

Last Calib.: 2013.04.19

Start Time: 05:15:15

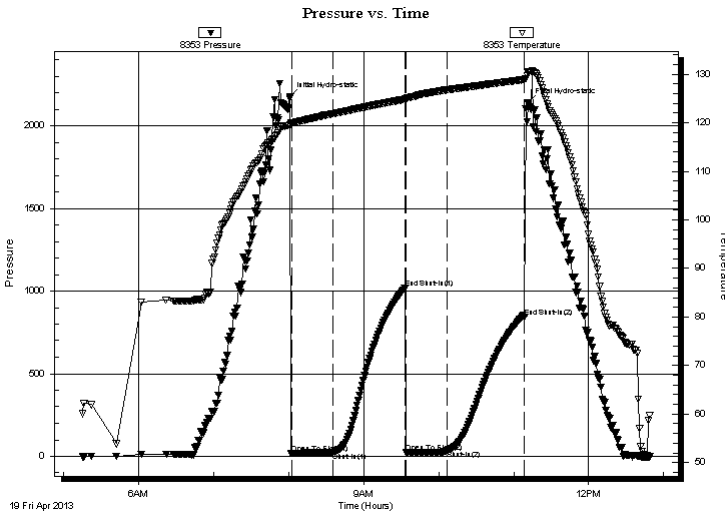
End Time: 12:48:45

Time On Btm: 2013.04.19 @ 08:01:15

Time Off Btm: 2013.04.19 @ 11:11:15

**TEST COMMENT:** 30 IF; Built to 3/4"  
60 IS; No Blow  
30 FF; No Blow  
60 FS; No Blow

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2177.93         | 119.63       | Initial Hydro-static |
| 1           | 18.28           | 120.05       | Open To Flow (1)     |
| 35          | 25.40           | 121.87       | Shut-In(1)           |
| 92          | 1019.96         | 124.84       | End Shut-In(1)       |
| 93          | 22.73           | 124.83       | Open To Flow (2)     |
| 126         | 34.62           | 126.78       | Shut-In(2)           |
| 188         | 842.83          | 128.90       | End Shut-In(2)       |
| 190         | 2141.51         | 130.31       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 5.00        | Mud         | 0.02         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**10-1s-37w Cheyenne, KS**

**Patti #2-10**

Job Ticket: 52578

**DST#: 5**

Test Start: 2013.04.19 @ 05:15:00

### GENERAL INFORMATION:

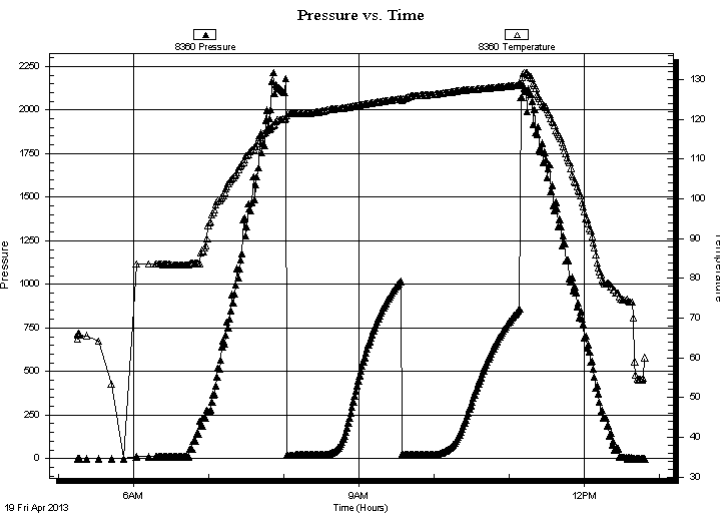
|   |                      |         |   |
|---|----------------------|---------|---|
| Formation: <b>LKC J</b>                                   |                      |         |   |
| Deviated: No Whipstock:                                   |                      | ft (KB) | Test Type: Conventional Bottom Hole (Reset) |
| Time Tool Opened: 08:02:15                                |                      |         | Tester: Wilbur Steinbeck                    |
| Time Test Ended: 12:48:45                                 |                      |         | Unit No: 44                                 |
| <b>Interval: 4292.00 ft (KB) To 4390.00 ft (KB) (TVD)</b> |                      |         | Reference Elevations: 3176.00 ft (KB)       |
| Total Depth: 4390.00 ft (KB) (TVD)                        |                      |         | 3166.00 ft (CF)                             |
| Hole Diameter: 7.88 inches                                | Hole Condition: Fair |         | KB to GR/CF: 10.00 ft                       |

### Serial #: 8360

Inside

|  |                         |
|--|-------------------------|
| Press @ RunDepth: psig @ 4293.00 ft (KB) | Capacity: 8000.00 psig  |
| Start Date: 2013.04.19                   | End Date: 2013.04.19    |
| Start Time: 05:15:05                     | End Time: 12:48:59      |
|  | Last Calib.: 2013.04.19 |
|  | Time On Btm:            |
|  | Time Off Btm:           |

TEST COMMENT: 30 IF; Built to 3/4"  
60 IS; No Blow  
30 FF; No Blow  
60 FS; No Blow



### PRESSURE SUMMARY

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

### Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 5.00        | Mud         | 0.02         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

### 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

**Patti #2-10**

Job Ticket: 52578

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2013.04.19 @ 05:15:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3741.00 ft | Diameter: 3.80 inches | Volume: 52.48 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: 534.00 ft  | Diameter: 2.25 inches | Volume: 2.63 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 55.11 bbl</u> | Tool Chased 1.00 ft                |
| Drill Pipe Above KB:      | 10.00 ft           |                       |                                | String Weight: Initial 70000.00 lb |
| Depth to Top Packer:      | 4292.00 ft         |                       |                                | Final 70000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 48.00 ft           |                       |                                |                                    |
| Tool Length:              | 75.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                     |       |      |         |         |                               |
|---------------------|-------|------|---------|---------|-------------------------------|
| Shut In Tool        | 5.00  |      |         | 4270.00 |                               |
| Hydraulic tool jars | 5.00  |      |         | 4275.00 |                               |
| safety Joint        | 3.00  |      |         | 4280.00 |                               |
| Packer              | 5.00  |      |         | 4288.00 | 27.00 Bottom Of Top Packer    |
| Packer              | 4.00  |      |         | 4292.00 |                               |
| Stubb               | 1.00  |      |         | 4293.00 |                               |
| Recorder            | 0.00  | 8360 | Inside  | 4293.00 |                               |
| Recorder            | 0.00  | 8353 | Outside | 4293.00 |                               |
| Perforations        | 10.00 |      |         | 4303.00 |                               |
| change Over Sub     | 1.00  |      |         | 4304.00 |                               |
| Blank spacing       | 32.00 |      |         | 4336.00 |                               |
| change Over Sub     | 1.00  |      |         | 4337.00 |                               |
| Bullnose            | 3.00  |      |         | 4340.00 | 48.00 Bottom Packers & Anchor |

**Total Tool Length: 75.00**





**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

**Patti #2-10**

Job Ticket: 52578

**DST#: 5**

ATTN: Paul Gunzelman

Test Start: 2013.04.19 @ 05:15:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 5.00         | Mud         | 0.025         |

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

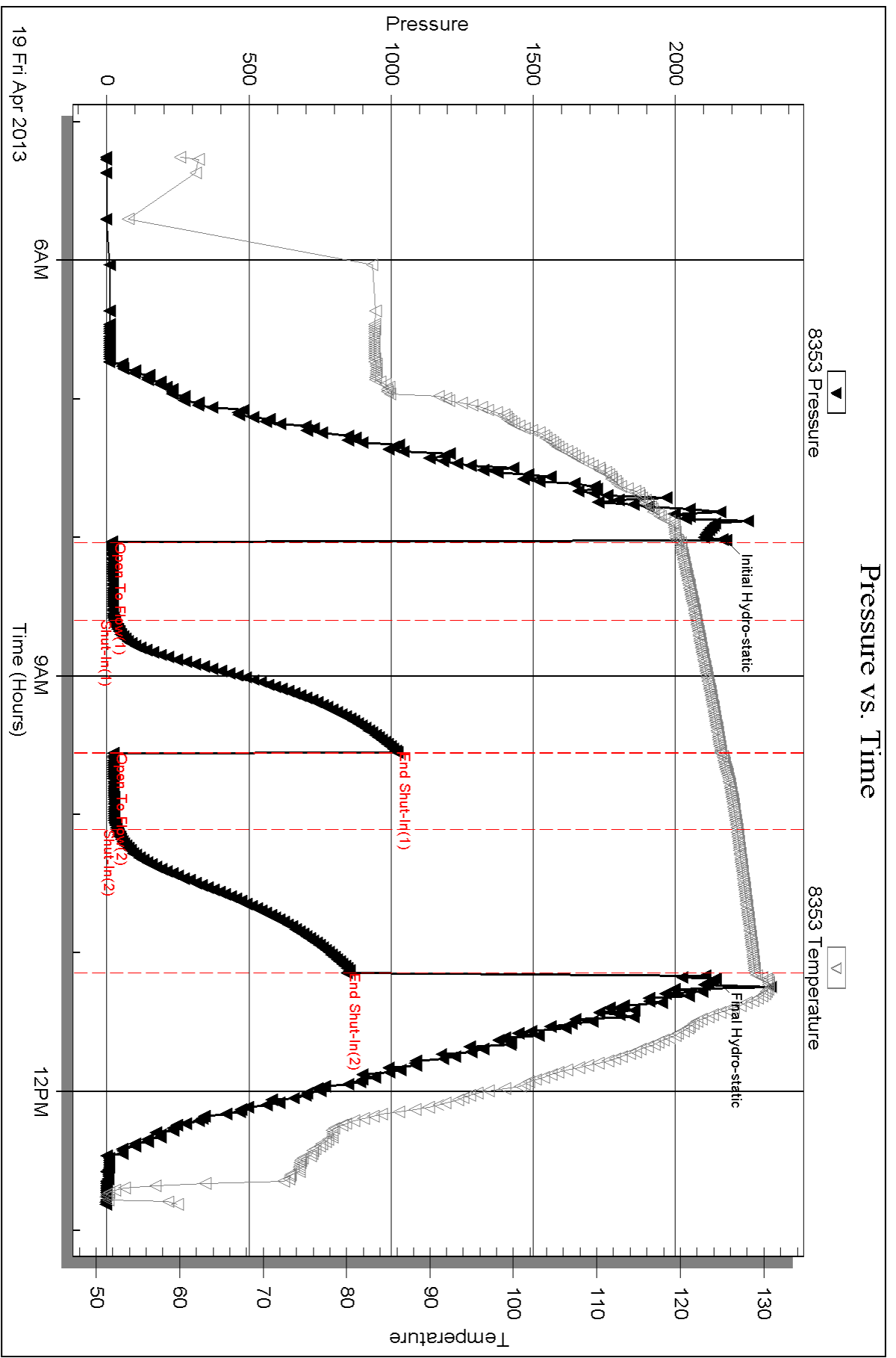
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



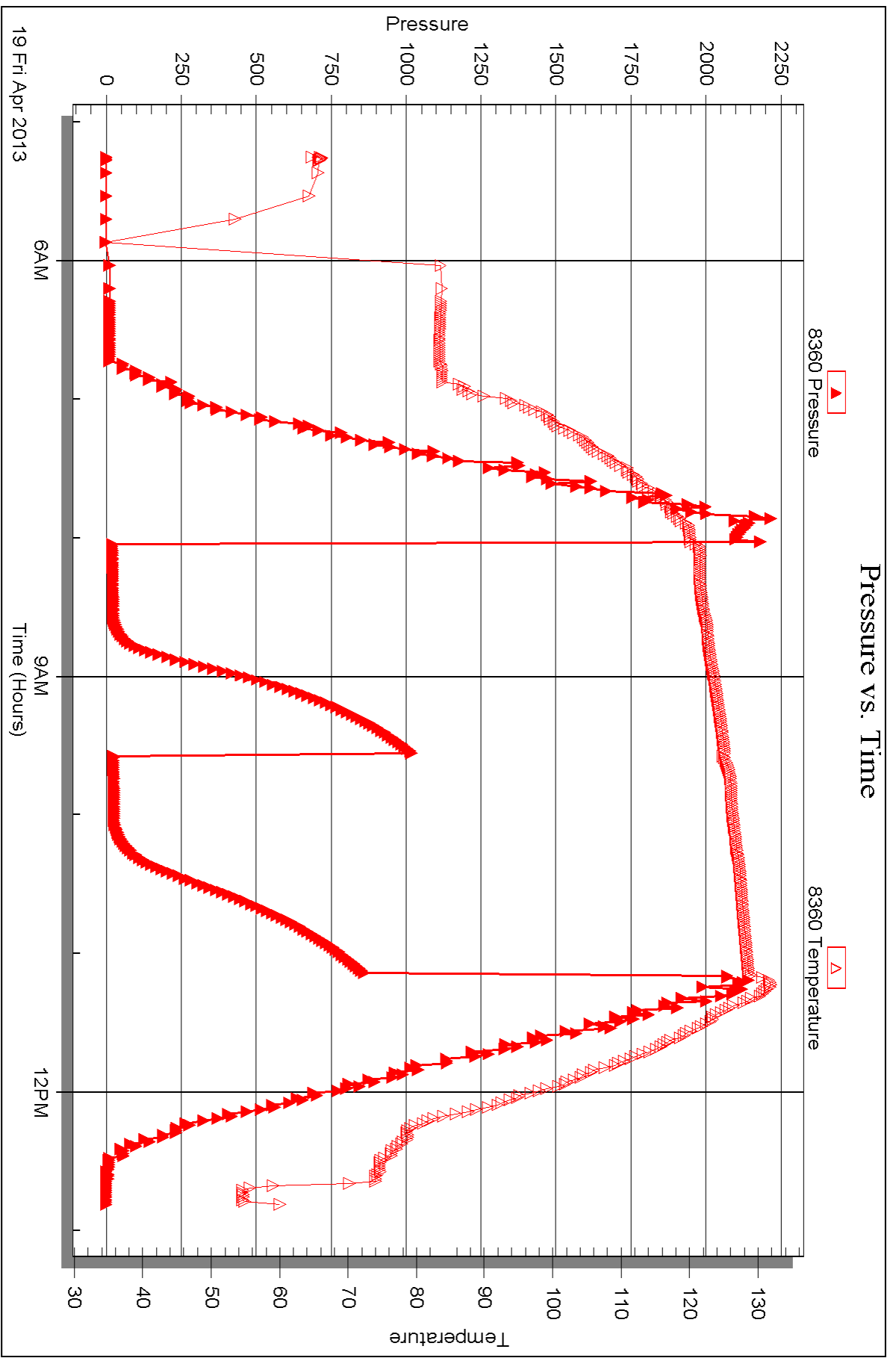
Serial #: 8360

Inside

Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 5





## DRILL STEM TEST REPORT

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

250 N Water STE 300  
Wichita, KS 67202

ATTN: Paul Gunzelman

**Patti #2-10**

**10-1s-37w Cheyenne,KS**

Start Date: 2013.04.20 @ 06:40:00

End Date: 2013.04.20 @ 15:57:15

Job Ticket #: 52579                      DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.04.24 @ 13:59:00



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52579

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.04.20 @ 06:40:00

## GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:28:15

Time Test Ended: 15:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4492.00 ft (KB) To 4539.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4539.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8353 Outside**

Press @ Run Depth: 102.71 psig @ 4493.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.20

End Date:

2013.04.20

Last Calib.: 2013.04.20

Start Time: 06:40:15

End Time:

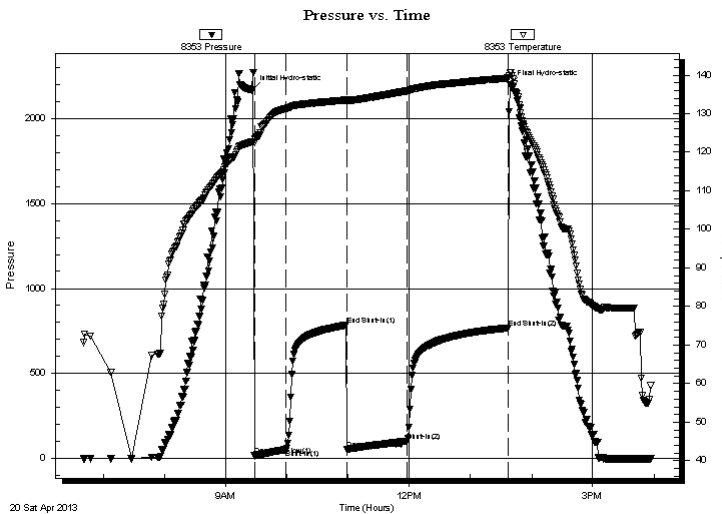
15:57:15

Time On Btm: 2013.04.20 @ 09:26:00

Time Off Btm: 2013.04.20 @ 13:38:45

**TEST COMMENT:** 30 IF; Built to 7 1/4"  
60 IS; No Blow  
60 FF; BOB in 35 min  
90 FS; No Blow

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2167.53         | 122.64       | Initial Hydro-static |
| 3           | 17.58           | 123.59       | Open To Flow (1)     |
| 33          | 51.25           | 131.27       | Shut-In(1)           |
| 93          | 785.89          | 133.53       | End Shut-In(1)       |
| 93          | 52.45           | 133.39       | Open To Flow (2)     |
| 152         | 102.71          | 135.88       | Shut-In(2)           |
| 251         | 767.72          | 139.19       | End Shut-In(2)       |
| 253         | 2198.04         | 140.57       | Final Hydro-static   |

## Recovery

| Length (ft) | Description              | Volume (bbl) |
|-------------|--------------------------|--------------|
| 170.00      | GMCO 20%G 30%M 50%O      | 0.84         |
| 50.00       | FREE OIL & GAS 25%G 75%O | 0.25         |
| 0.00        | 540 GIP                  | 0.00         |
|             |                          |              |
|             |                          |              |

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Murfin Drilling Company Inc.

**10-1s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita, KS 67202

**Patti #2-10**

Job Ticket: 52579

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.04.20 @ 06:40:00

**GENERAL INFORMATION:**

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:28:15

Time Test Ended: 15:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Wilbur Steinbeck

Unit No: 44

**Interval: 4492.00 ft (KB) To 4539.00 ft (KB) (TVD)**

Reference Elevations: 3176.00 ft (KB)

Total Depth: 4539.00 ft (KB) (TVD)

3166.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8360**

**Inside**

Press @ RunDepth: psig @ 4493.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.04.20 End Date: 2013.04.20

Last Calib.: 2013.04.20

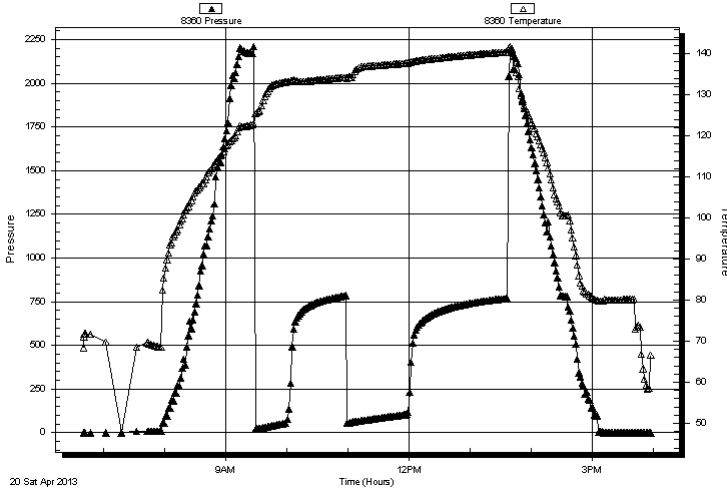
Start Time: 06:40:05 End Time: 15:57:30

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30 IF; Built to 7 1/4"  
60 IS; No Blow  
60 FF; BOB in 35 min  
90 FS; No Blow

**Pressure vs. Time**



**PRESSURE SUMMARY**

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

**Recovery**

| Length (ft) | Description              | Volume (bbl) |
|-------------|--------------------------|--------------|
| 170.00      | GMCO 20%G 30%M 50%O      | 0.84         |
| 50.00       | FREE OIL & GAS 25%G 75%O | 0.25         |
| 0.00        | 540 GIP                  | 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

**Patti #2-10**

Job Ticket: 52579

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.04.20 @ 06:40:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3964.00 ft | Diameter: 3.80 inches | Volume: 55.60 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: 534.00 ft  | Diameter: 2.25 inches | Volume: 2.63 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 58.23 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 33.00 ft           |                       |                                | String Weight: Initial 75000.00 lb |
| Depth to Top Packer:      | 4492.00 ft         |                       |                                | Final 75000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 47.00 ft           |                       |                                |                                    |
| Tool Length:              | 74.00 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                |
|---------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool        | 5.00        |            |          | 4470.00    |                               |
| Hydraulic tool jars | 5.00        |            |          | 4475.00    |                               |
| safety Joint        | 5.00        |            |          | 4480.00    |                               |
| Packer              | 3.00        |            |          | 4483.00    |                               |
| Packer              | 5.00        |            |          | 4488.00    | 27.00 Bottom Of Top Packer    |
| Packer              | 4.00        |            |          | 4492.00    |                               |
| Stubb               | 1.00        |            |          | 4493.00    |                               |
| Recorder            | 0.00        | 8360       | Inside   | 4493.00    |                               |
| Recorder            | 0.00        | 8353       | Outside  | 4493.00    |                               |
| Perforations        | 9.00        |            |          | 4502.00    |                               |
| change Over Sub     | 1.00        |            |          | 4503.00    |                               |
| blank spacing       | 32.00       |            |          | 4535.00    |                               |
| change Over Sub     | 1.00        |            |          | 4536.00    |                               |
| Bullnose            | 3.00        |            |          | 4539.00    | 47.00 Bottom Packers & Anchor |

**Total Tool Length: 74.00**



**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

**Patti #2-10**

Job Ticket: 52579

**DST#: 6**

ATTN: Paul Gunzelman

Test Start: 2013.04.20 @ 06:40:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

| Length<br>ft | Description              | Volume<br>bbl |
|--------------|--------------------------|---------------|
| 170.00       | GMCO 20%G 30%M 50%O      | 0.836         |
| 50.00        | FREE OIL & GAS 25%G 75%O | 0.246         |
| 0.00         | 540 GIP                  | 0.000         |

Total Length: 220.00 ft      Total Volume: 1.082 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

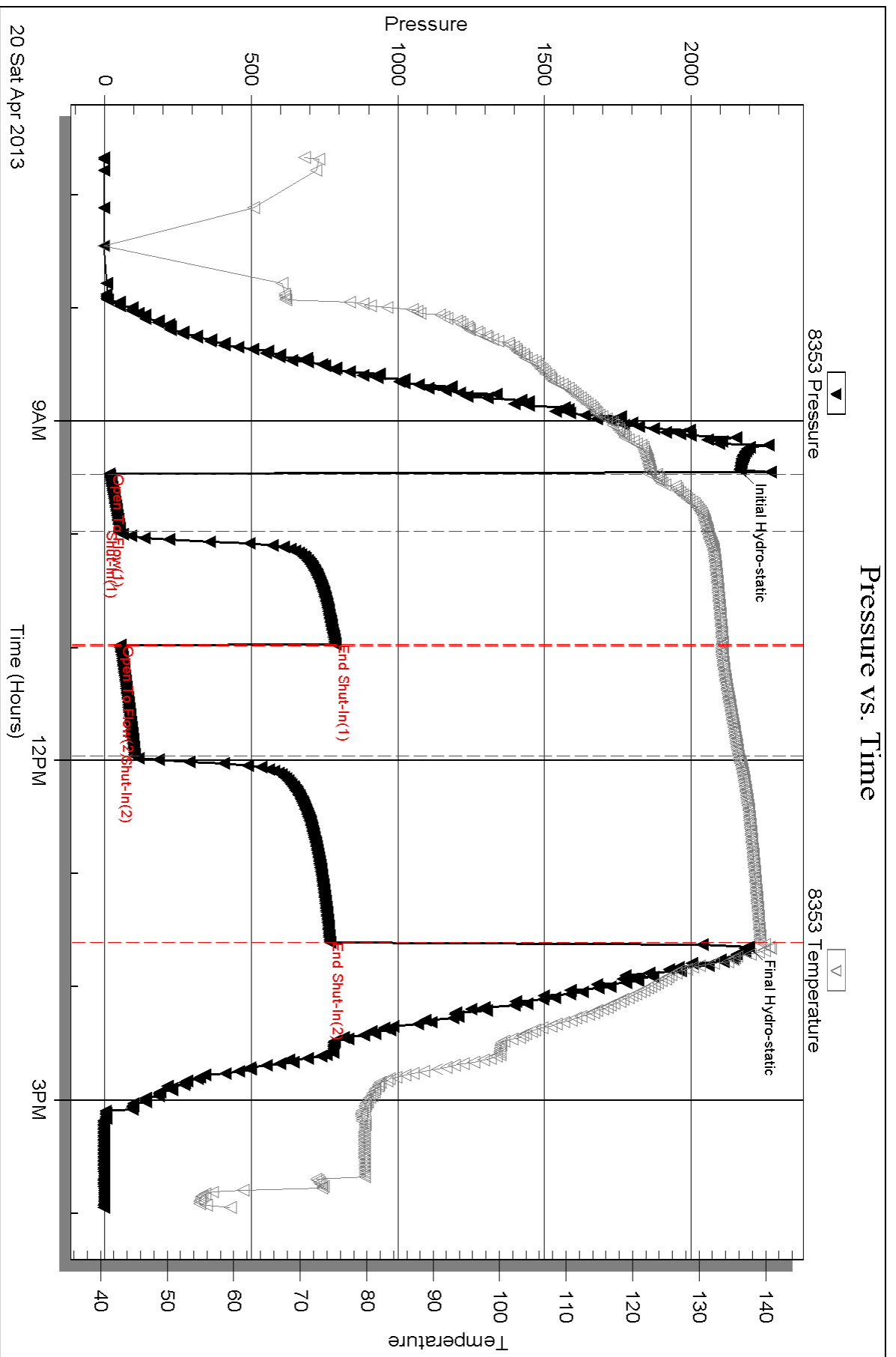
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





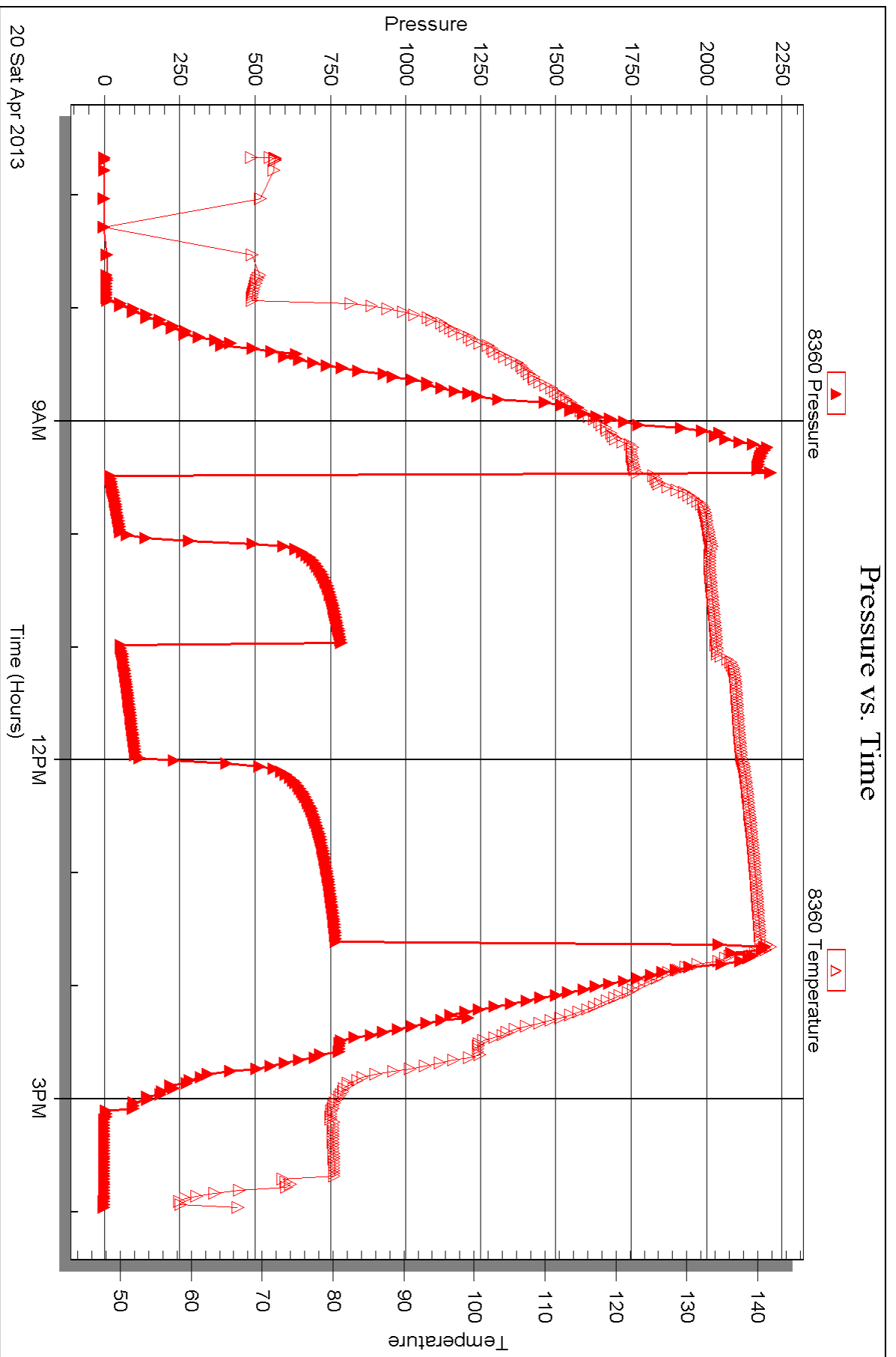
Serial #: 8360

Inside

Murfin Drilling Company Inc.

Pat# #2-10

DST Test Number: 6





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50730

4/10

Well Name & No. Patti # 2-10 Test No. 1 Date 4/15/13  
 Company Murfin Drilling Company Inc. Elevation 3176 KB 3166 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #14  
 Location: Sec. 10 Twp. 1S Rge. 37W Co. Cheyene State KS

Interval Tested 3656 - 3695 Zone Tested Foraker  
 Anchor Length ~~39~~ 39' Drill Pipe Run 3066' Mud Wt. 8.9  
 Top Packer Depth 3651 Drill Collars Run ~~534~~ 534' Vis 64  
 Bottom Packer Depth 3656 Wt. Pipe Run 0' WL 5.6  
 Total Depth 3695 Chlorides 1000 ppm System LCM 4  
 Blow Description IF - 1/4" blow built to 3/4"  
ISI - No return  
FF - No blow  
FBI - No return

| Rec       | Feet of                    | %gas     | %oil      | %water    | %mud |
|-----------|----------------------------|----------|-----------|-----------|------|
| <u>5'</u> | <u><del>100</del> GOCM</u> | <u>5</u> | <u>35</u> | <u>60</u> |      |
| Rec       | Feet of                    | %gas     | %oil      | %water    | %mud |
| Rec       | Feet of                    | %gas     | %oil      | %water    | %mud |
| Rec       | Feet of                    | %gas     | %oil      | %water    | %mud |
| Rec       | Feet of                    | %gas     | %oil      | %water    | %mud |

Rec Total 5' BHT 124° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1848  Test 1150 T-On Location 07:45  
 (B) First Initial Flow 16  Jars 250 T-Started 08:35  
 (C) First Final Flow ~~19~~ 19  Safety Joint 75 T-Open 10:49  
 (D) Initial Shut-In 1002  Circ Sub NC T-Pulled 14:19  
 (E) Second Initial Flow 18  Hourly Standby \_\_\_\_\_ T-Out 15:55  
 (F) Second Final Flow ~~20~~ 20  Mileage 154 RT 238.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1065  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1733  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

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

Sub Total 1713.70

Sub Total 1713.70

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. 50650

Well Name & No. Patti #2-10 Test No. 2 Date 4/16/13  
 Company Martin Drilling Co. Elevation 3176 KB 3166 GL  
 Address 250 N Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Paul G. Gurdeman Rig Martin #14  
 Location: Sec. 10 Twp. 1s Rge. 32w Co. Cheyenne State KS

Interval Tested 4000 4053 Zone Tested Oread  
 Anchor Length 53 Drill Pipe Run 3416 Mud Wt. 8.9  
 Top Packer Depth 3995 Drill Collars Run 534 Vis 64  
 Bottom Packer Depth 4000 Wt. Pipe Run 0 WL 5.6  
 Total Depth 4053 Chlorides 1000 ppm System LCM

Blow Description 1F; Drill to 1/4" did back to surface after 20min  
1st; NO Blow  
FP; NO Blow  
FSL; NO Blow

| Rec      | Feet of    | %gas      | %oil | %water    | %mud |
|----------|------------|-----------|------|-----------|------|
| <u>2</u> | <u>OCM</u> | <u>25</u> |      | <u>75</u> |      |
| Rec      | Feet of    | %gas      | %oil | %water    | %mud |
| Rec      | Feet of    | %gas      | %oil | %water    | %mud |
| Rec      | Feet of    | %gas      | %oil | %water    | %mud |

Rec Total 2 BHT 129° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1986  Test 1250 T-On Location 17:00  
 (B) First Initial Flow 16  Jars 250 T-Started 17:10  
 (C) First Final Flow 17  Safety Joint 75 T-Open 19:27  
 (D) Initial Shut-In 160  Circ Sub NA T-Pulled 22:57  
 (E) Second Initial Flow 17  Hourly Standby \_\_\_\_\_ T-Out 02:45  
 (F) Second Final Flow 17  Mileage 154 RT 238.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 223  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1972  Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Ruined Packer 320  
 Final Flow 30  Extra Packer \_\_\_\_\_  
 Final Shut-In 90  Extra Recorder \_\_\_\_\_  
 Sub Total 0  
 Total 2133.70  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1813.70

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. 52576

Well Name & No. Patt; 2-10 Test No. 3 Date 4-17-13  
 Company Murfin Drilling Co. Elevation 3176 KB 3166 GL  
 Address 250 N Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Paul Gunzelman Rig Murfin 14  
 Location: Sec. 10 Twp. 1s Rge. 37w Co. Cheyenne State KS

Interval Tested 4127 4198 Zone Tested LKC A-D  
 Anchor Length 71 Drill Pipe Run 3581 Mud Wt. 9.1  
 Top Packer Depth 4122 Drill Collars Run 534 Vis 60  
 Bottom Packer Depth 4127 Wt. Pipe Run 0 WL 6.0  
 Total Depth 4198 Chlorides 800 ppm System LCM 6

Blow Description IF; Built to 6'1/2"  
1st; No Blow  
FP; No Blow  
PSI; No Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----|---------|------|------|--------|------|
| 120 |         | 5    | 50   | 45     |      |
| 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 120 BHT 131° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2031  Test 1250 T-On Location 15:00  
 (B) First Initial Flow 34  Jars 250 T-Started 15:45  
 (C) First Final Flow 45  Safety Joint 75 T-Open 18:40  
 (D) Initial Shut-In 1288  Circ Sub T-Pulled 21:10  
 (E) Second Initial Flow 50  Hourly Standby T-Out 22:50  
 (F) Second Final Flow 62  Mileage 154 RT 238.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1293  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1984  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_  
 Final Flow 30  Day Standby \_\_\_\_\_  
 Final Shut-In 90  Accessibility \_\_\_\_\_  
 Sub Total 1813.70 MP/DST Disc't \_\_\_\_\_

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. 52577

Well Name & No. Patd; 2-10 Test No. 4 Date 4-18-13  
 Company Murfin Drilling Co. Elevation 3176 KB 3166 GL  
 Address 260 N Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Paul Gonczelman Rig Murfin 14  
 Location: Sec. 10 Twp. 1s Rge. 31w Co. Cheyenne State KS

Interval Tested 4195 4305 Zone Tested LRC G-H  
 Anchor Length 108 Drill Pipe Run 3645 Mud Wt. 9.3  
 Top Packer Depth 4190 Drill Collars Run 534 Vis 68  
 Bottom Packer Depth 4195 Wt. Pipe Run 0 WL 5.6  
 Total Depth 4303 Chlorides 900 ppm System LCM 6

Blow Description 1F; Built to 1/2"  
1st; No blow  
FF; No blow  
1st; No blow

| Rec      | Feet of    | %gas | %oil | %water     | %mud |
|----------|------------|------|------|------------|------|
| <u>2</u> | <u>Mod</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 2 BHT 129° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2,151  Test 1250 T-On Location 12:45  
 (B) First Initial Flow 18  Jars 250 T-Started 13:20  
 (C) First Final Flow 21  Safety Joint 75 T-Open 15:25  
 (D) Initial Shut-In 190  Circ Sub NA T-Pulled 18:25  
 (E) Second Initial Flow 21  Hourly Standby T-Out 20:25  
 (F) Second Final Flow 23  Mileage 154 RT 238.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 133  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2,093  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 30  Day Standby \_\_\_\_\_ Total 1813.70  
 Final Shut-In 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1813.70

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52578

Well Name & No. Patti #2-10 Test No. 5 Date 4-19-13  
 Company Murkin Drilling Co. Elevation 3176 KB 3166 GL  
 Address 250 N Water- Ste 300 White KS 67202  
 Co. Rep / Geo. Paul Guncelmann Rig Murkin 14  
 Location: Sec. 10 Twp. 1s Rge. 37w Co. Cherokee State Ks

Interval Tested 4292 4340 Zone Tested LKC 'J'  
 Anchor Length 48 Drill Pipe Run 3741 Mud Wt. 9.3  
 Top Packer Depth 4287 Drill Collars Run 534 Vis 68  
 Bottom Packer Depth 4292 Wt. Pipe Run 0 WL 5.6  
 Total Depth 4340 Chlorides 900 ppm System LCM 6

Blow Description IF; Bail to 3/4"  
ISI; No Blow  
FF; No Blow  
FST; No 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 |

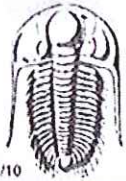
Rec Total 5 BHT 130° Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

|                                     |  |  |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>2178</u> | <input checked="" type="checkbox"/> Test 1250                    | T-On Location <u>5:00</u>                    |
| (B) First Initial Flow <u>18</u>    | <input checked="" type="checkbox"/> Jars 250                     | T-Started <u>5:15</u>                        |
| (C) First Final Flow <u>25</u>      | <input checked="" type="checkbox"/> Safety Joint 75              | T-Open <u>8:05</u>                           |
| (D) Initial Shut-In <u>1,020</u>    | <input checked="" type="checkbox"/> Circ Sub <u>NA</u>           | T-Pulled <u>11:05</u>                        |
| (E) Second Initial Flow <u>23</u>   | <input type="checkbox"/> Hourly Standby                          | T-Out <u>12:50</u>                           |
| (F) Second Final Flow <u>35</u>     | <input checked="" type="checkbox"/> Mileage <u>154 RT</u> 238.70 | Comments _____                               |
| (G) Final Shut-In <u>843</u>        | <input type="checkbox"/> Sampler                                 | <input type="checkbox"/> Ruined Shale Packer |
| (H) Final Hydrostatic <u>2,142</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>30</u>      | <input type="checkbox"/> Extra Recorder | Total <u>1813.70</u>                  |
| Final Shut-In <u>60</u>   | <input type="checkbox"/> Day Standby    | MP/DST Disc't _____                   |
|                           | <input type="checkbox"/> Accessibility  |                                       |
|                           | Sub Total <u>1813.70</u>                |                                       |

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52579

Well Name & No. Patti 2-10 Test No. 6 Date 4-20-13  
 Company Morton Drilling Co Elevation 3176 KB 3166 GL  
 Address 250 N Water STE 300 Wichita KS 67202  
 Co. Rep / Geo. Paul Gonzalez Rig Morton 14  
 Location: Sec. 10 Twp. 1s Rge. 37w Co. Cheyenne State KS

Interval Tested 4492 4539 Zone Tested Pounce  
 Anchor Length 47 Drill Pipe Run 3964 Mud Wt. 9.3  
 Top Packer Depth 4487 Drill Collars Run 534 Vis 69  
 Bottom Packer Depth 4492 Wt. Pipe Run 0 WL 6.0  
 Total Depth 4539 Chlorides 1700 ppm System LCM 4

Blow Description IF; Built to 7'4"  
1st; No blow  
FF; BOB in 35 min  
FSL; No blow

| Rec                   | Feet of                  | %gas      | %oil      | %water   | %mud      |
|-----------------------|--------------------------|-----------|-----------|----------|-----------|
| <u>30</u>             | <u>Free oil + GRS 25</u> | <u>75</u> |           |          |           |
| <u><del>270</del></u> | <u>G.M.C.O</u>           | <u>20</u> | <u>50</u> | <u>0</u> | <u>30</u> |
|                       | <u>540' GIP</u>          |           |           |          |           |
|                       |                          |           |           |          |           |
|                       |                          |           |           |          |           |

Rec Total ~~20~~ 20 BHT 141° Gravity 8.2018 = 37 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 2168  Test 1250 T-On Location 6:10  
 (B) First Initial Flow 18  Jars 250 T-Started 6:40  
 (C) First Final Flow 51  Safety Joint 75 T-Open 9:50  
 (D) Initial Shut-In 786  Circ Sub T-Pulled 13:30  
 (E) Second Initial Flow 52  Hourly Standby T-Out 16:00  
 (F) Second Final Flow 103  Mileage 154 RT 238.70 Comments  
 (G) Final Shut-In 768  Sampler  
 (H) Final Hydrostatic 2198  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder  
 Day Standby  
 Accessibility

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1813.70  
 MP/DST Disc't

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

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