



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.10.27 @ 17:10:00

End Date: 2012.10.29 @ 10:01:00

Job Ticket #: 48222                      DST #: 1

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

Printed: 2012.11.13 @ 14:42:42







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins, KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48222

**DST#: 1**

ATTN: Bob Stolzle

Test Start: 2012.10.27 @ 17:10:00

## Tool Information

Drill Pipe:	Length: 3486.00 ft	Diameter: 3.80 inches	Volume: 48.90 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 0.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 0.00 lb
			<u>Total Volume: 51.51 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4026.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	92.00 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			4003.00	
Hydraulic tool	5.00			4008.00	
Jars	5.00			4013.00	
Safety Joint	3.00			4016.00	
Packer	5.00			4021.00	28.00 Bottom Of Top Packer
Packer	5.00			4026.00	
Stubb	1.00			4027.00	
Perforations	2.00			4029.00	
Change Over Sub	1.00			4030.00	
Recorder	0.00	8791	Inside	4030.00	
Recorder	0.00	8673	Outside	4030.00	
Drill Pipe	31.00			4061.00	
Change Over Sub	1.00			4062.00	
Perforations	25.00			4087.00	
Bullnose	3.00			4090.00	64.00 Bottom Packers & Anchor

**Total Tool Length: 92.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Witchita KS 67202

**PTL #1-22**

Job Ticket: 48222

**DST#: 1**

ATTN: Bob Stolzle

Test Start: 2012.10.27 @ 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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 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 ft	Description	Volume bbbl

Total Length:

ft

Total Volume:

bbbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

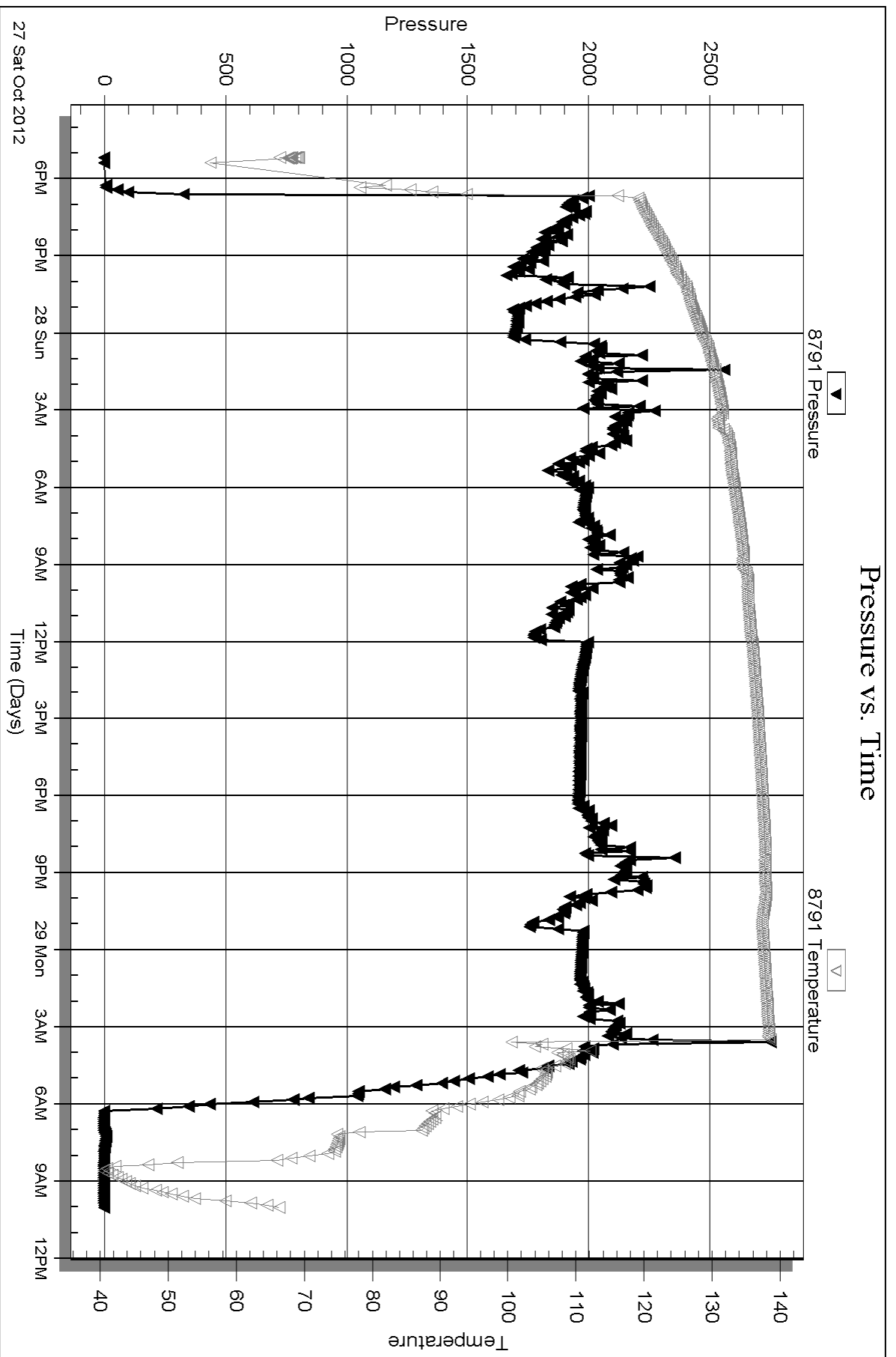
Serial #: 8791

Inside

Murfin Drilling Co.

PTL #1-22

DST Test Number: 1

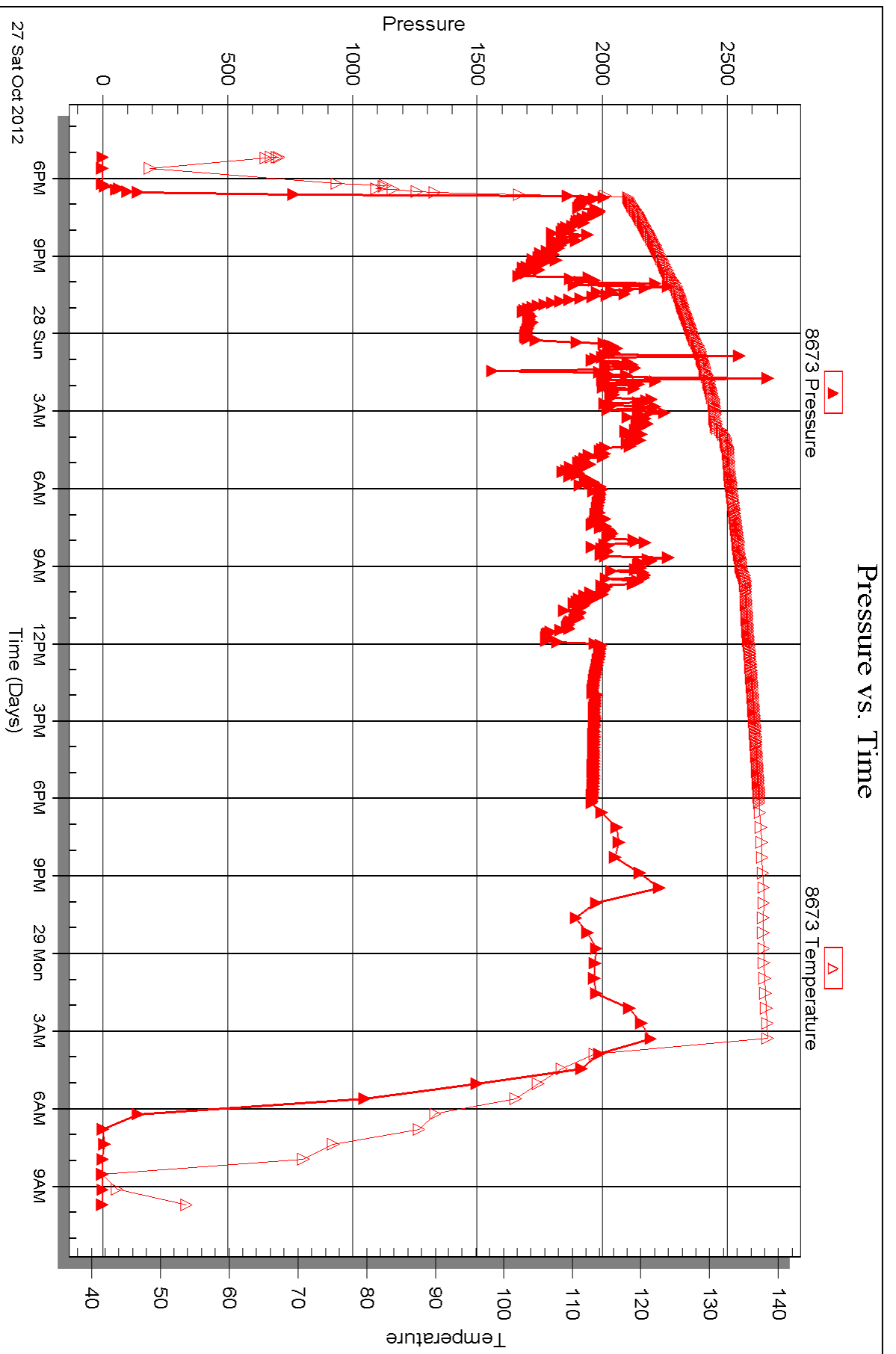


Serial #: 8673

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 48222

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## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.10.29 @ 18:25:00

End Date: 2012.10.30 @ 02:25:30

Job Ticket #: 48223                      DST #: 2

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

Printed: 2012.11.13 @ 14:42:00









**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48223

**DST#: 2**

ATTN: Bob Stolzle

Test Start: 2012.10.29 @ 18:25:00

## Tool Information

Drill Pipe:	Length: 3486.00 ft	Diameter: 3.80 inches	Volume: 48.90 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 51.51 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4026.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	92.00 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			4003.00	
Hydraulic tool	5.00			4008.00	
Jars	5.00			4013.00	
Safety Joint	3.00			4016.00	
Packer	5.00			4021.00	28.00 Bottom Of Top Packer
Packer	5.00			4026.00	
Stubb	1.00			4027.00	
Perforations	1.00			4028.00	
Change Over Sub	1.00			4029.00	
Recorder	0.00	8791	Inside	4029.00	
Recorder	0.00	8673	Outside	4029.00	
Drill Pipe	31.00			4060.00	
Change Over Sub	1.00			4061.00	
Perforations	25.00			4086.00	
Magnent	4.00			4090.00	64.00 Bottom Packers & Anchor

**Total Tool Length: 92.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48223

**DST#: 2**

ATTN: Bob Stolzle

Test Start: 2012.10.29 @ 18:25:00

## 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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 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 ft	Description	Volume bbl
30.00	vsocm-10%o90%m	0.148

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

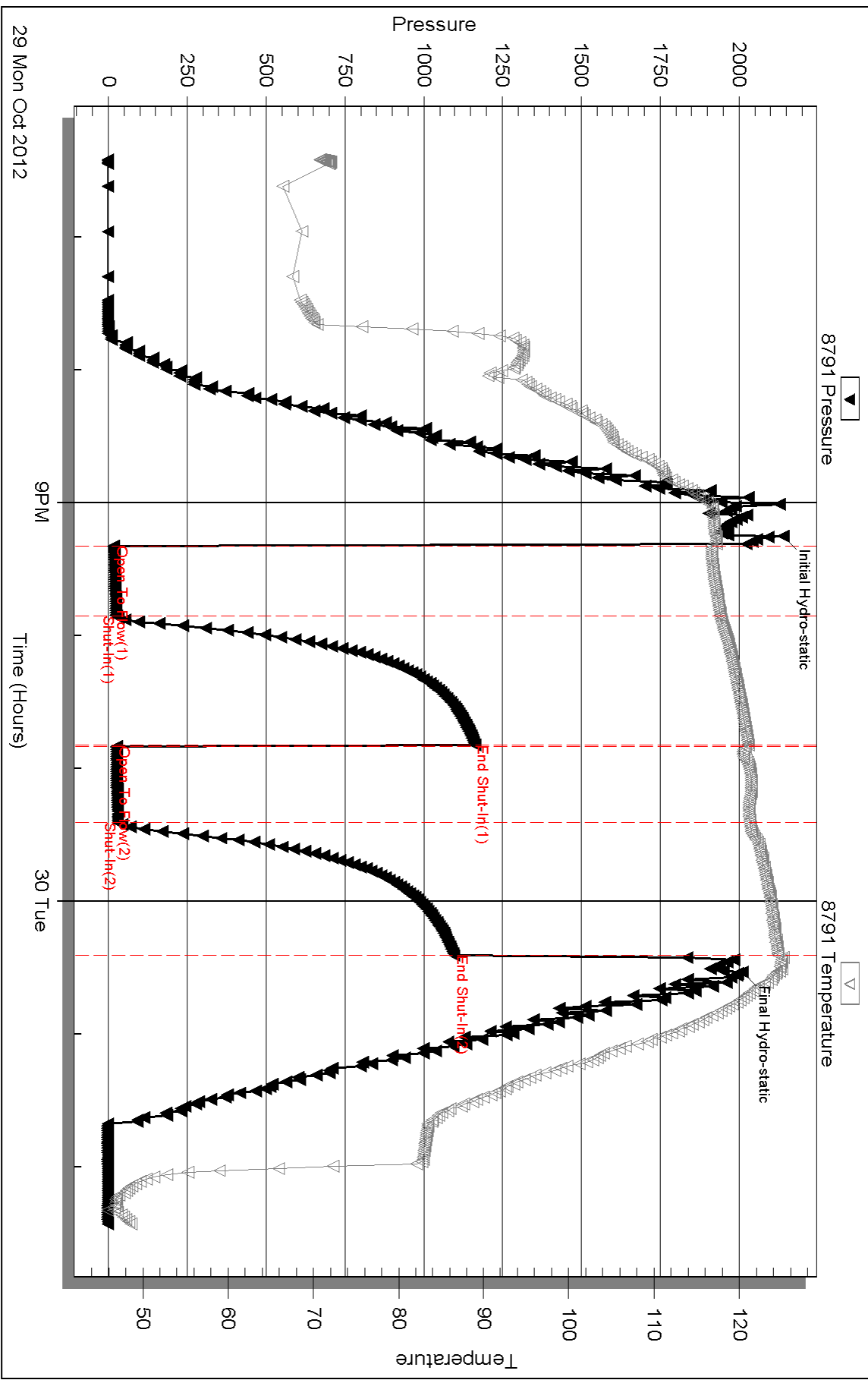
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

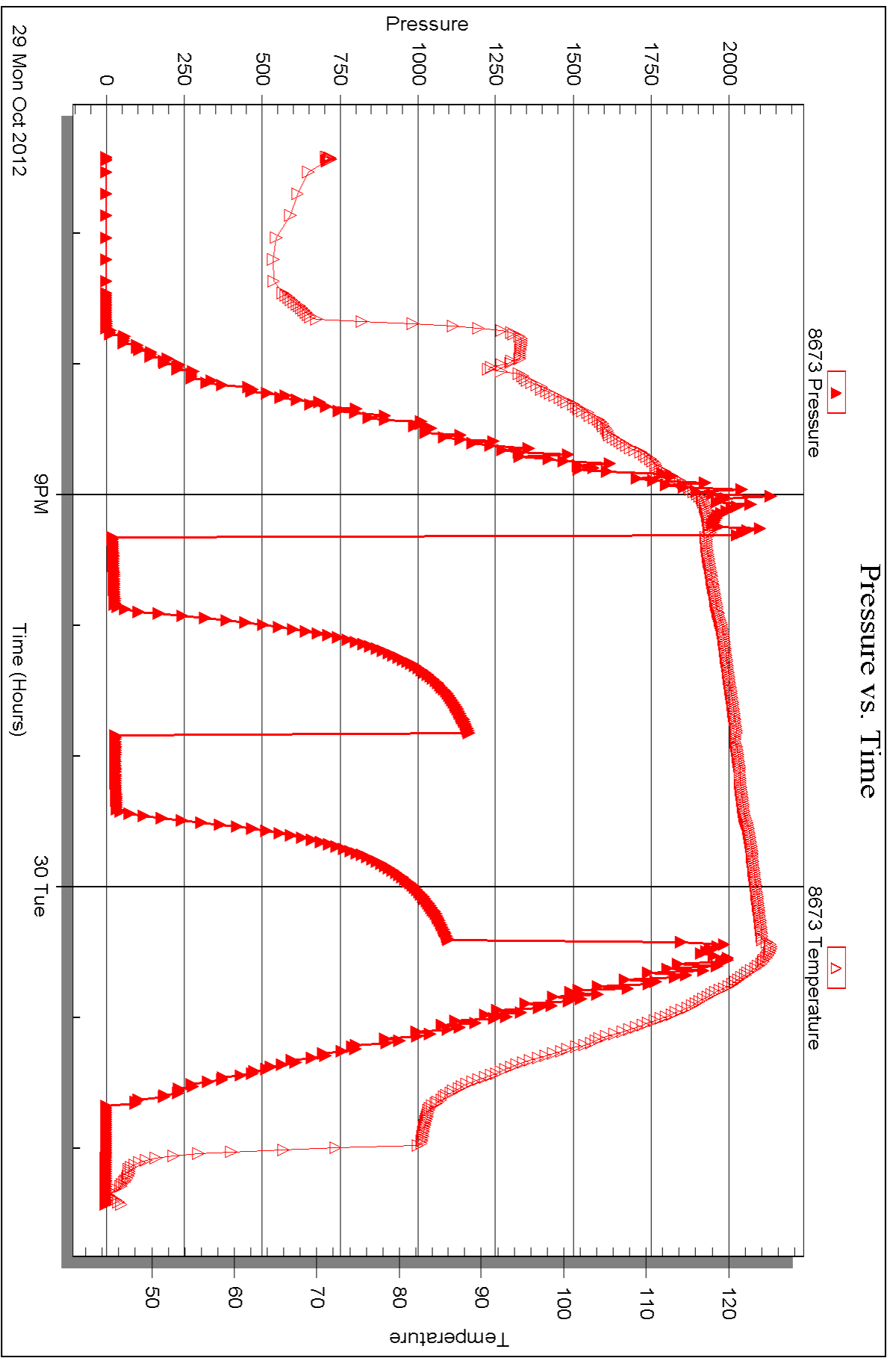


29 Mon Oct 2012

9PM

Time (Hours)

30 Tue





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.10.31 @ 16:55:00

End Date: 2012.11.01 @ 01:35:30

Job Ticket #: 48224                      DST #: 3

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

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**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.

**22-2s-36w Rawlins, KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48224

**DST#: 3**

ATTN: Bob Stolzle

Test Start: 2012.10.31 @ 16:55:00

## GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:00:30

Time Test Ended: 01:35:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Kreuzer Jr.

Unit No: 61

**Interval: 4136.00 ft (KB) To 4220.00 ft (KB) (TVD)**

Reference Elevations: 3344.00 ft (KB)

Total Depth: 4220.00 ft (KB) (TVD)

3334.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8791 Inside**

Press @ Run Depth: 352.70 psig @ 4139.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.10.31

End Date:

2012.11.01

Last Calib.: 2012.11.01

Start Time: 16:55:01

End Time:

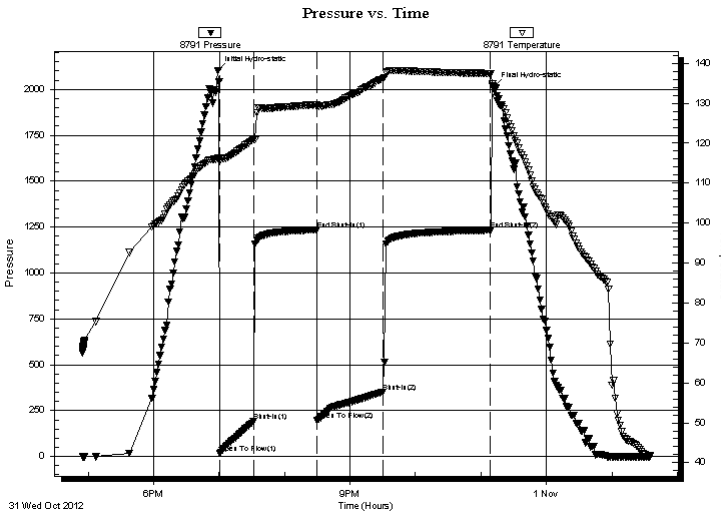
01:35:30

Time On Btm: 2012.10.31 @ 18:59:00

Time Off Btm: 2012.10.31 @ 23:12:00

**TEST COMMENT:** IF: Weak blow, Built to 8 in. over 30 mins.  
IS: Bled off, No blow back over 60 mins.  
FF: Fair blow, Built to B.O.B in 40 mins.  
FS: Bled off, No blow back over 90 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2101.89	116.36	Initial Hydro-static
2	18.14	115.36	Open To Flow (1)
33	190.25	120.86	Shut-In(1)
91	1235.13	129.66	End Shut-In(1)
91	196.35	129.13	Open To Flow (2)
152	352.70	136.24	Shut-In(2)
250	1233.15	137.46	End Shut-In(2)
253	2013.72	133.25	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
265.00	mcw -25% m75% w	1.30
265.00	w cm-35% w 65% m	1.30
127.00	mud-100%	1.77
0.00	.08 @ 138* = 3800	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48224

**DST#: 3**

ATTN: Bob Stolzle

Test Start: 2012.10.31 @ 16:55:00

## Tool Information

Drill Pipe:	Length: 3585.00 ft	Diameter: 3.80 inches	Volume: 50.29 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 26000.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 52.90 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4136.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	112.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4113.00	
Hydraulic tool	5.00			4118.00	
Jars	5.00			4123.00	
Safety Joint	3.00			4126.00	
Packer	5.00			4131.00	28.00 Bottom Of Top Packer
Packer	5.00			4136.00	
Stubb	1.00			4137.00	
Perforations	1.00			4138.00	
Change Over Sub	1.00			4139.00	
Recorder	0.00	8791	Inside	4139.00	
Recorder	0.00	8673	Outside	4139.00	
Drill Pipe	64.00			4203.00	
Change Over Sub	1.00			4204.00	
Perforations	13.00			4217.00	
Bullnose	3.00			4220.00	84.00 Bottom Packers & Anchor

**Total Tool Length: 112.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48224

**DST#: 3**

ATTN: Bob Stolzle

Test Start: 2012.10.31 @ 16:55:00

## 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:

3800 ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.08 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
265.00	mcw -25% m75% w	1.303
265.00	w cm-35% w 65% m	1.303
127.00	mud-100%	1.772
0.00	.08 @ 138 * = 3800	0.000

Total Length: 657.00 ft

Total Volume: 4.378 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

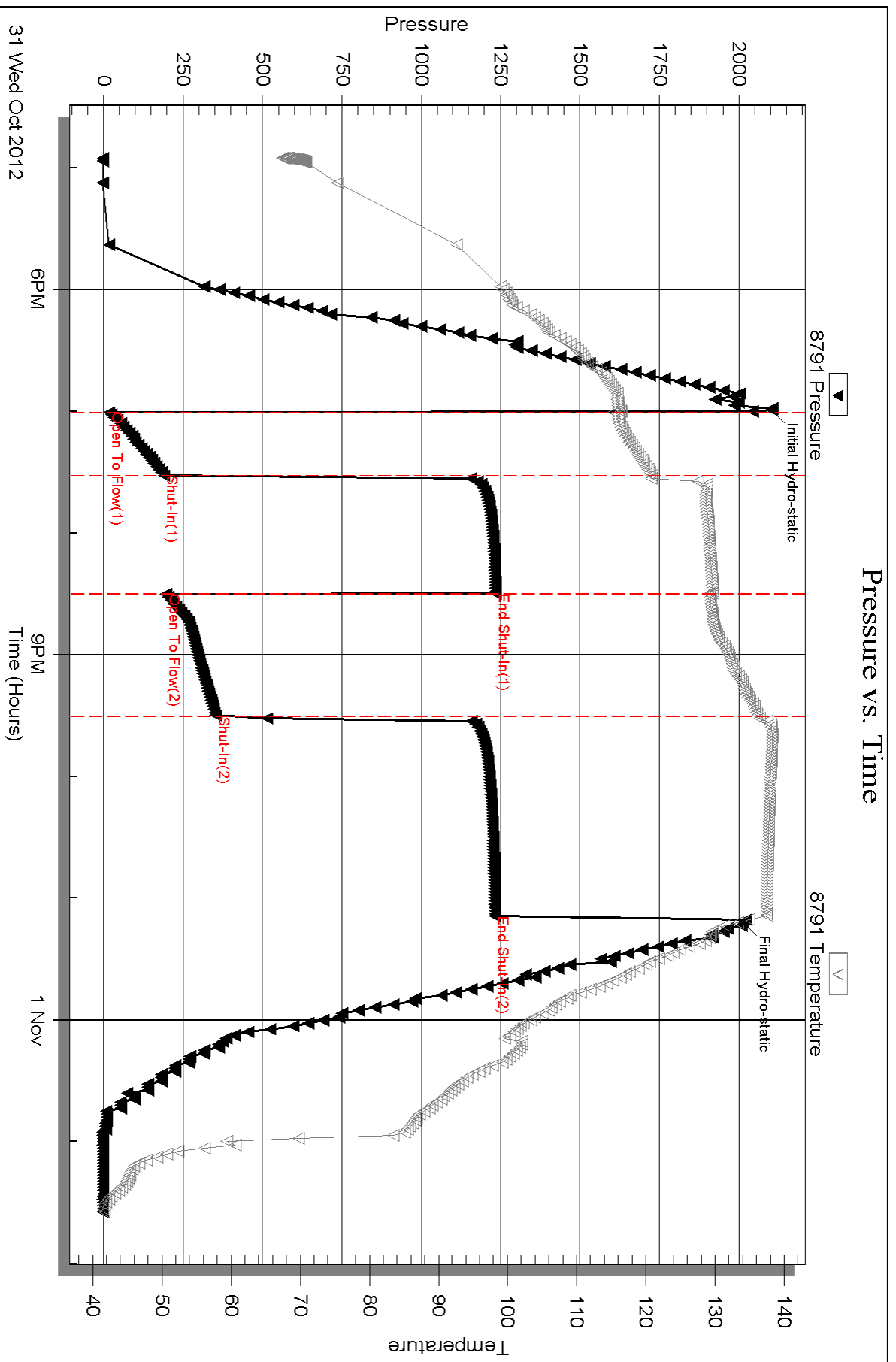
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

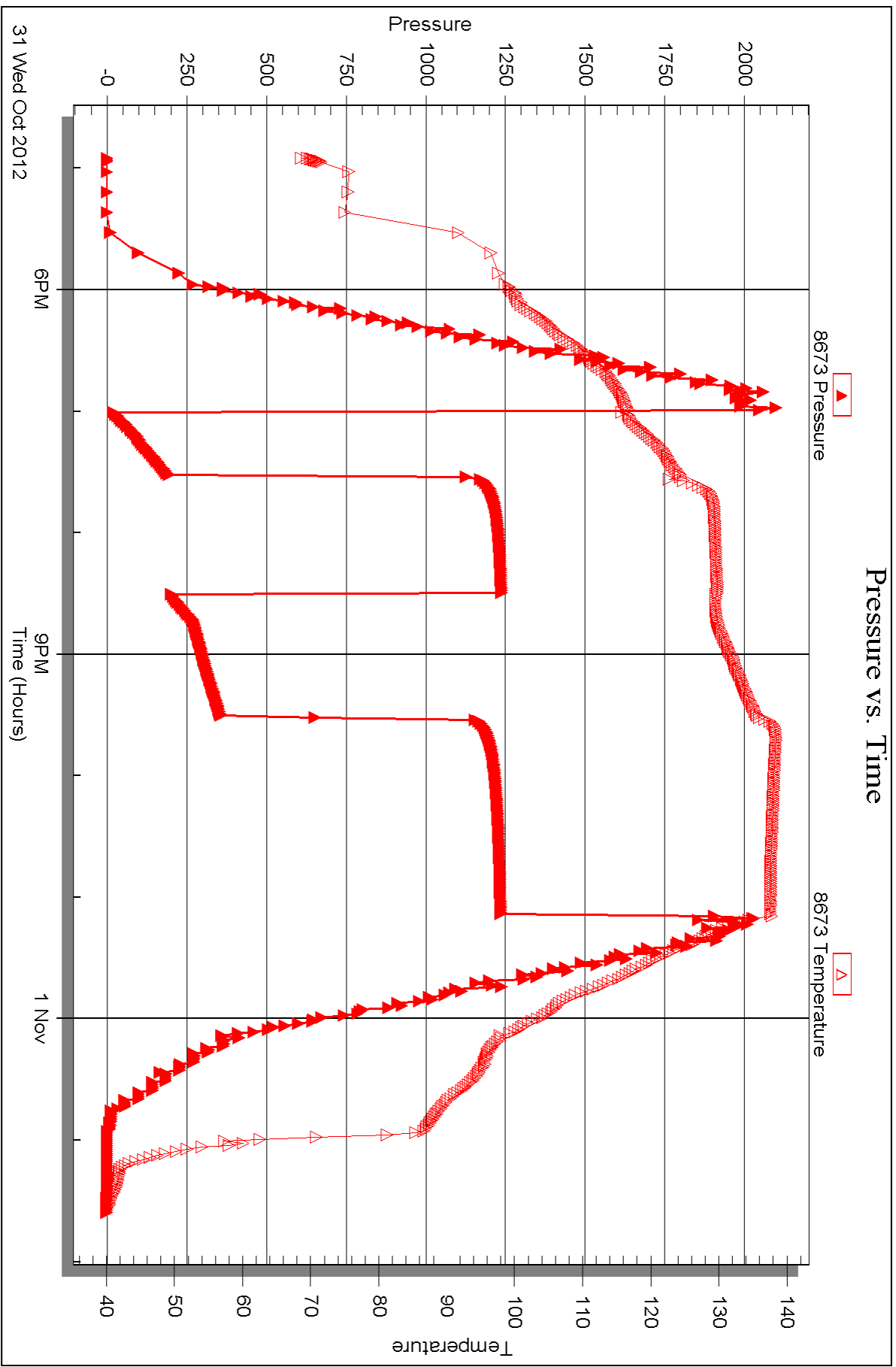


Serial #: 8673

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 48224

Printed: 2012.11.13 @ 14:41:24



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.11.01 @ 15:55:00

End Date: 2012.11.02 @ 00:47:30

Job Ticket #: 48225                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.11.13 @ 14:40:39



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Bob Stolzle

**22-2s-36w Rawlins, KS**  
**PTL #1-22**  
 Job Ticket: 48225      **DST#: 4**  
 Test Start: 2012.11.01 @ 15:55:00

## GENERAL INFORMATION:

Formation: **LKC-A,B**  
 Deviated: No Whipstock:      ft (KB)  
 Time Tool Opened: 18:30:00  
 Time Test Ended: 00:47:30  
 Interval: **4210.00 ft (KB) To 4360.00 ft (KB) (TVD)**  
 Total Depth: 4360.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3344.00 ft (KB)  
 3334.00 ft (CF)  
 KB to GR/CF: 10.00 ft

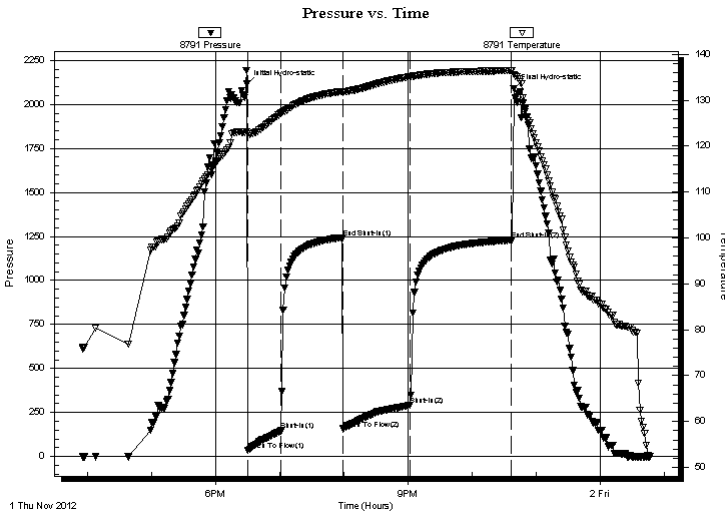
## Serial #: 8791

Inside

Press @ Run Depth: 291.37 psig @ 4213.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.11.01      End Date: 2012.11.02      Last Calib.: 2012.11.02  
 Start Time: 15:55:01      End Time: 00:47:30      Time On Btm: 2012.11.01 @ 18:29:00  
 Time Off Btm: 2012.11.01 @ 22:39:00

**TEST COMMENT:** IF: Fair blow, built to B.O.B in 25 mins.  
 IS: Bled off, Blow back after 10 mins. Built to 1/4in. over 60 mins.  
 FF: Fair blow, Built to B.O.B in 30 mins.  
 FS: Bled off, No blow back over 90 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2115.33	123.15	Initial Hydro-static
1	34.78	122.65	Open To Flow (1)
32	146.87	127.15	Shut-In(1)
90	1243.22	131.90	End Shut-In(1)
90	157.29	131.65	Open To Flow (2)
153	291.37	135.12	Shut-In(2)
248	1229.51	136.48	End Shut-In(2)
250	2088.65	135.57	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
151.00	gocm-20%g40%o40%m	0.74
190.00	gvsocm-10%g5%o85%m	0.93
190.00	gvsocw m-10%g10%w 30%o50%m	0.93
95.00	go-20%g80%	1.33
0.00	194 ft. gas in pipe	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48225

**DST#: 4**

ATTN: Bob Stolzle

Test Start: 2012.11.01 @ 15:55:00

## Tool Information

Drill Pipe:	Length: 3680.00 ft	Diameter: 3.80 inches	Volume: 51.62 bbl	Tool Weight: 2600.00 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: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 98000.00 lb
			<u>Total Volume: 54.23 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4210.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	150.00 ft			
Tool Length:	178.00 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			4187.00	
Hydraulic tool	5.00			4192.00	
Jars	5.00			4197.00	
Safety Joint	3.00			4200.00	
Packer	5.00			4205.00	28.00 Bottom Of Top Packer
Packer	5.00			4210.00	
Stubb	1.00			4211.00	
Perforations	1.00			4212.00	
Change Over Sub	1.00			4213.00	
Recorder	0.00	8791	Inside	4213.00	
Recorder	0.00	8673	Outside	4213.00	
Drill Pipe	128.00			4341.00	
Change Over Sub	1.00			4342.00	
Perforations	15.00			4357.00	
Bullnose	3.00			4360.00	150.00 Bottom Packers & Anchor

**Total Tool Length: 178.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 48225

**DST#: 4**

ATTN: Bob Stolzle

Test Start: 2012.11.01 @ 15:55:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
151.00	gocm-20%g40%o40%m	0.743
190.00	gvsocm-10%g5%o85%m	0.934
190.00	gvsocw m-10%g10%w 30%o50%m	0.934
95.00	go-20%g80%	1.333
0.00	194 ft. gas in pipe	0.000

Total Length: 626.00 ft

Total Volume: 0.743 bbl

Num Fluid Samples: 0

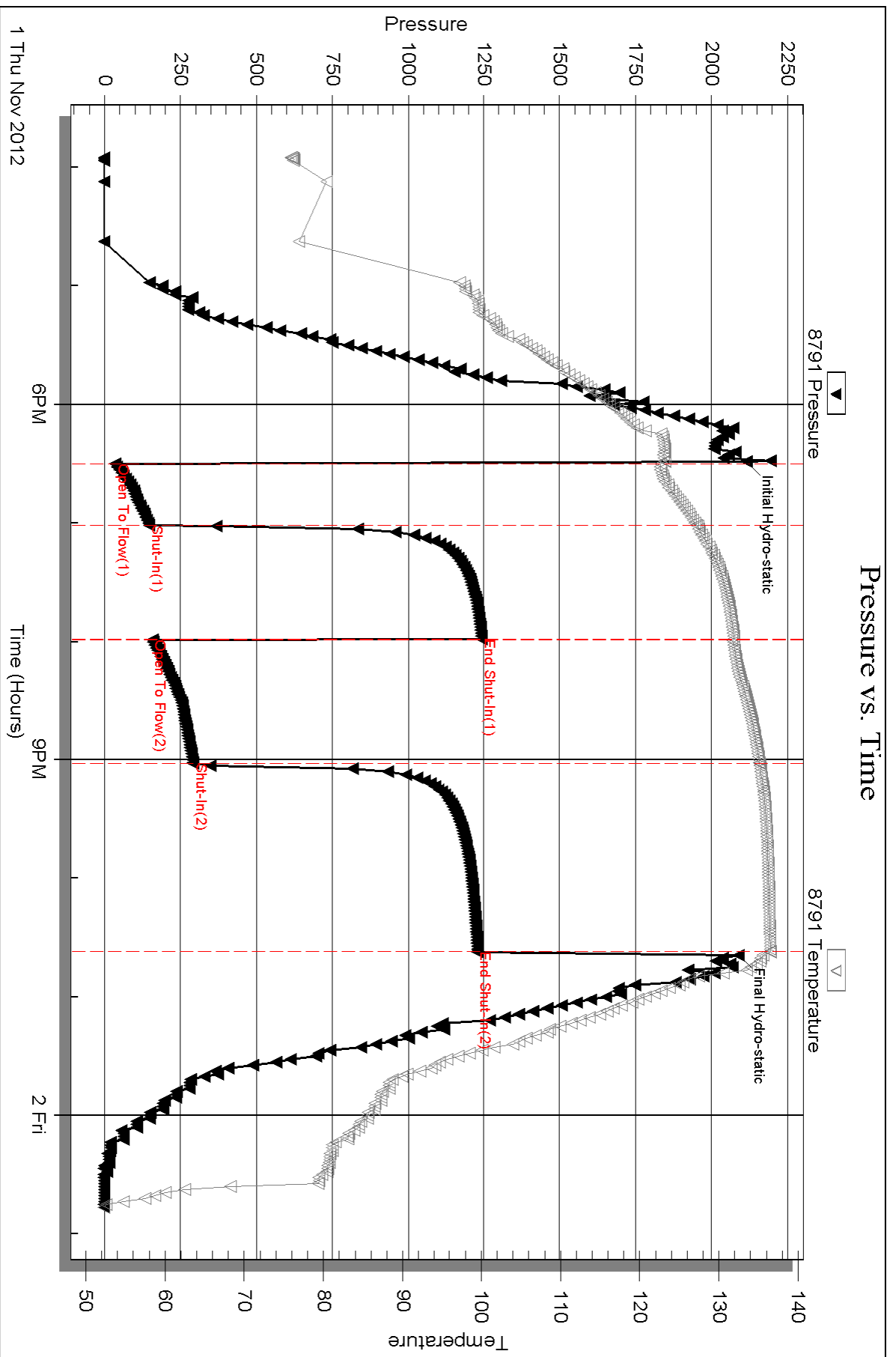
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

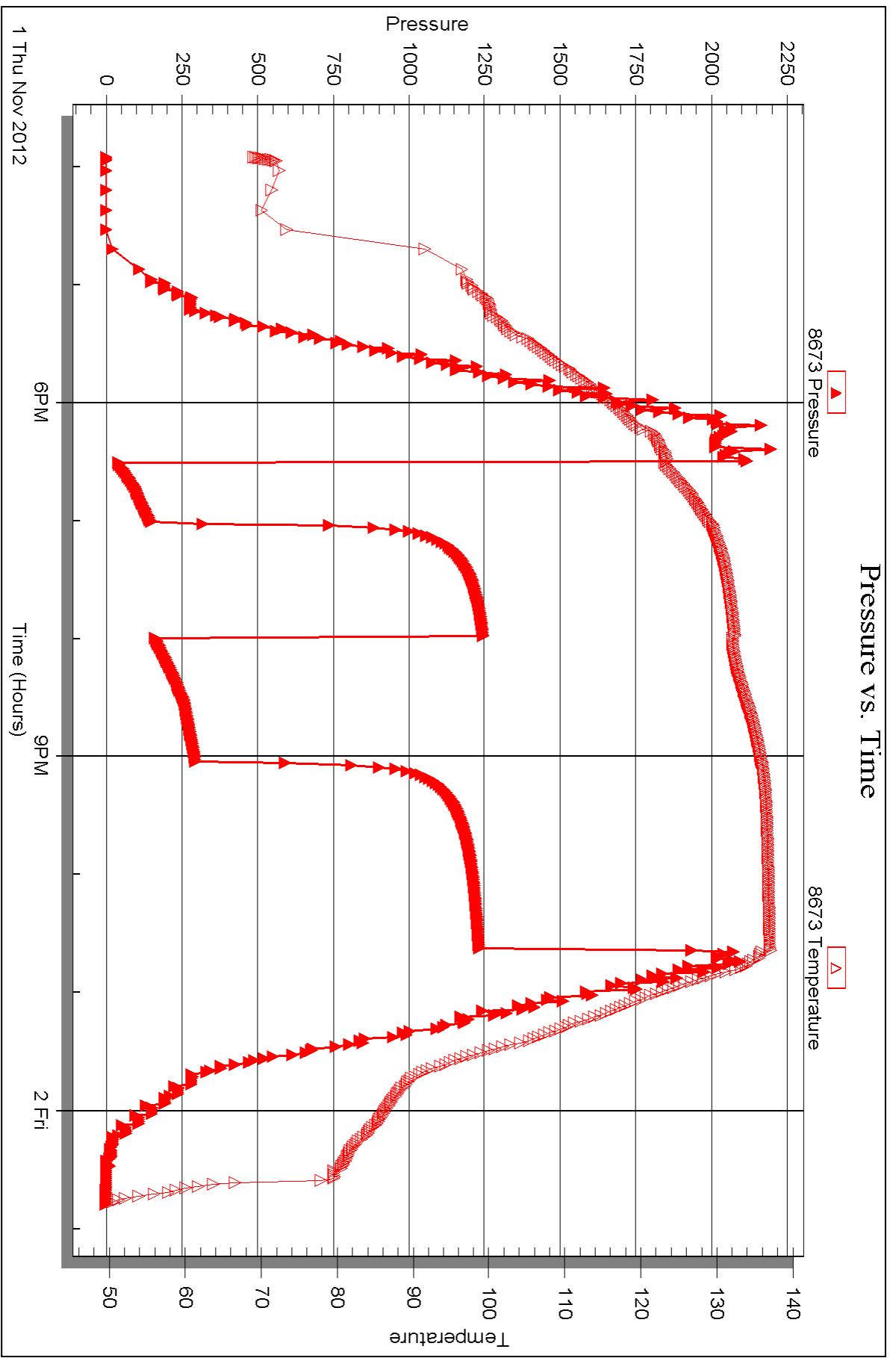


Serial #: 8673

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 48225

Printed: 2012.11.13 @ 14:40:44



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.11.02 @ 17:10:00

End Date: 2012.11.03 @ 02:20:00

Job Ticket #: 043001                      DST #: 5

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

Printed: 2012.11.13 @ 14:39:44



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Bob Stolzle

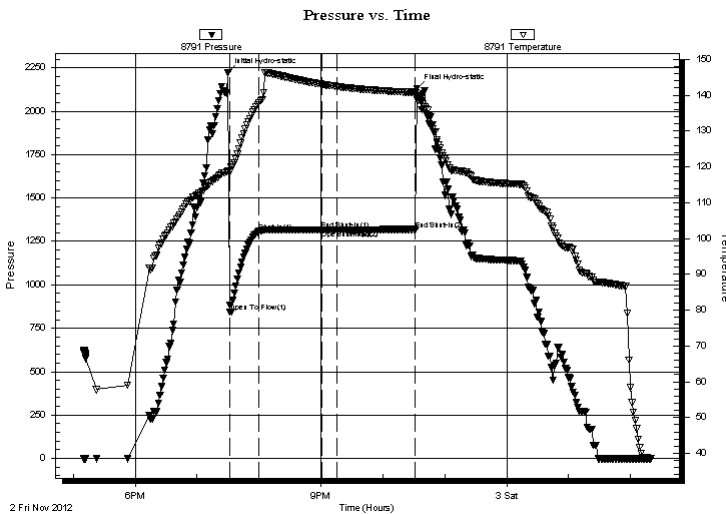
**22-2s-36w Rawlins, KS**  
**PTL #1-22**  
 Job Ticket: 043001 **DST#: 5**  
 Test Start: 2012.11.02 @ 17:10:00

## GENERAL INFORMATION:

Formation: **LKC-G,H**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 19:32:00 Tester: Chuck Kreuzer Jr.  
 Time Test Ended: 02:20:00 Unit No: 61  
 Interval: **4354.00 ft (KB) To 4460.00 ft (KB) (TVD)** Reference Elevations: 3344.00 ft (KB)  
 Total Depth: 4460.00 ft (KB) (TVD) 3334.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

**Serial #: 8791 Inside**  
 Press @ Run Depth: 1318.52 psig @ 4360.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.11.02 End Date: 2012.11.03 Last Calib.: 2012.11.03  
 Start Time: 17:10:01 End Time: 02:20:00 Time On Btm: 2012.11.02 @ 19:30:00  
 Time Off Btm: 2012.11.02 @ 22:33:00

**TEST COMMENT:** IF: Strong blow , Built to B.O.B in 30 sec. Blow started to die back. After 20 mins. blow w as 4 in. after 30 mins.  
 IS: No blow back over 60 mins.  
 FF: No blow over 30 mins.  
 FS: No blow back over 60 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2223.59	118.86	Initial Hydro-static
2	842.42	118.91	Open To Flow (1)
30	1307.61	137.95	Shut-In(1)
90	1318.39	143.10	End Shut-In(1)
91	1318.39	143.07	Open To Flow (2)
105	1318.52	142.47	Shut-In(2)
182	1318.81	140.76	End Shut-In(2)
183	2130.14	138.79	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2052.00	water-100%	23.95
476.00	w cm-10% m90%w	6.68
476.00	mcw -40%w 60%m	6.68
20.00	mud-100%	0.28

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 043001

**DST#: 5**

ATTN: Bob Stolzle

Test Start: 2012.11.02 @ 17:10:00

## Tool Information

Drill Pipe:	Length: 3807.00 ft	Diameter: 3.80 inches	Volume: 53.40 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 56.01 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4354.00 ft			Final 92000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	105.00 ft			
Tool Length:	133.00 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			4331.00	
Hydraulic tool	5.00			4336.00	
Jars	5.00			4341.00	
Safety Joint	3.00			4344.00	
Packer	5.00			4349.00	28.00 Bottom Of Top Packer
Packer	5.00			4354.00	
Stubb	1.00			4355.00	
Perforations	4.00			4359.00	
Change Over Sub	1.00			4360.00	
Recorder	0.00	8791	Inside	4360.00	
Recorder	0.00	8673	Outside	4360.00	
Drill Pipe	95.00			4455.00	
Change Over Sub	1.00			4456.00	
Bullnose	3.00			4459.00	105.00 Bottom Packers & Anchor

**Total Tool Length: 133.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 043001

**DST#: 5**

ATTN: Bob Stolzle

Test Start: 2012.11.02 @ 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: 54.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
2052.00	water-100%	23.947
476.00	w cm-10% m90%w	6.677
476.00	mcw -40%w 60%m	6.677
20.00	mud-100%	0.281

Total Length: 3024.00 ft

Total Volume: 37.582 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

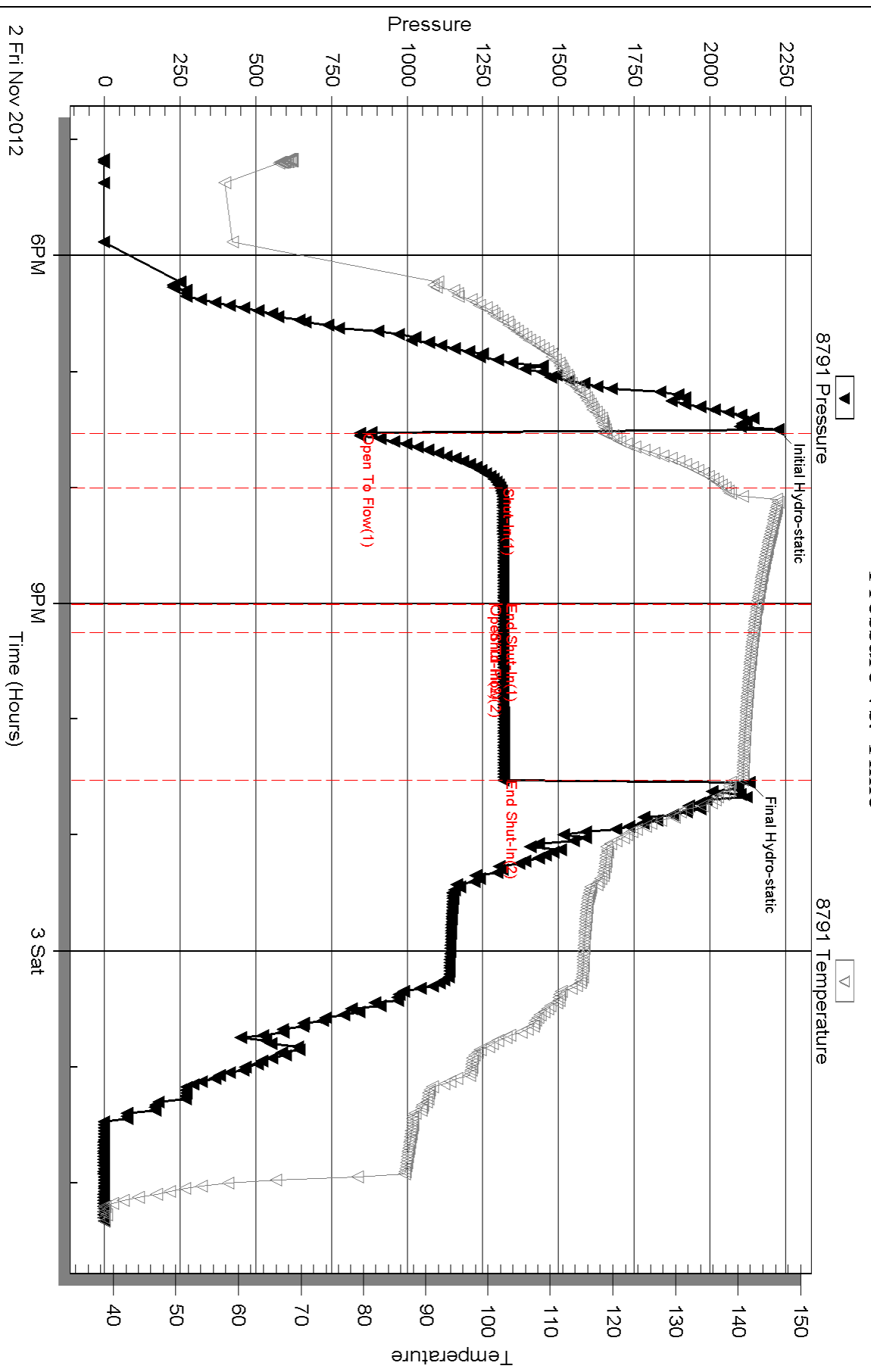
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

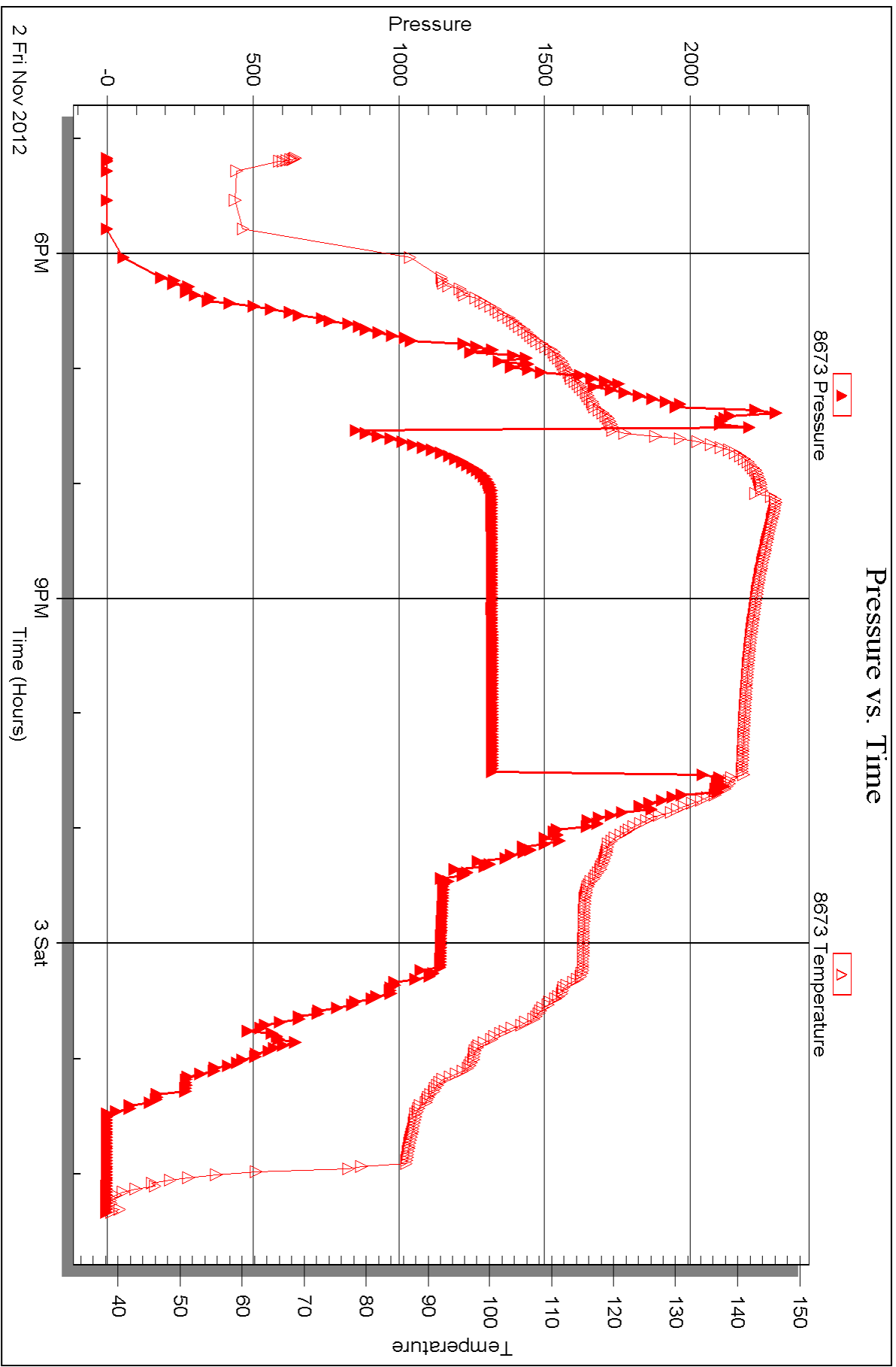


Serial #: 8673

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolze

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.11.03 @ 14:05:00

End Date: 2012.11.03 @ 23:07:00

Job Ticket #: 43002                      DST #: 6

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

Printed: 2012.11.13 @ 14:39:03



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Bob Stolzle

**22-2s-36w Rawlins, KS**  
**PTL #1-22**  
 Job Ticket: 43002      **DST#: 6**  
 Test Start: 2012.11.03 @ 14:05:00

## GENERAL INFORMATION:

Formation: **LKC-J,K**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:15:00  
 Time Test Ended: 23:07:00  
 Interval: **4446.00 ft (KB) To 4535.00 ft (KB) (TVD)**  
 Total Depth: 4535.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 61  
 Reference Elevations: 3344.00 ft (KB)  
 3334.00 ft (CF)  
 KB to GR/CF: 10.00 ft

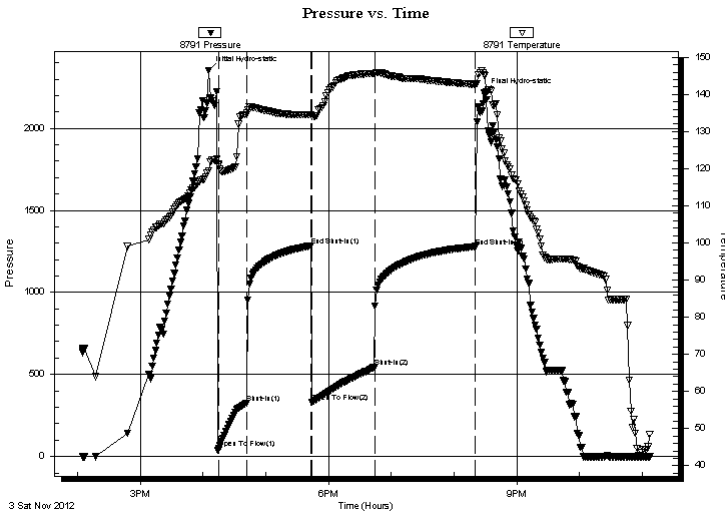
## Serial #: 8791

Inside

Press @ Run Depth: 544.04 psig @ 4452.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.11.03      End Date: 2012.11.03      Last Calib.: 2012.11.03  
 Start Time: 14:05:01      End Time: 23:07:00      Time On Btm: 2012.11.03 @ 16:05:30  
 Time Off Btm: 2012.11.03 @ 20:29:00

**TEST COMMENT:** IF: Fair blow , Built to B.O.B in 11 mins.  
 IS: No blow back over 60 mins.  
 FF: Fair blow , Built to B.O.B in 11 mins.  
 FS: No blow back over 90 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2353.03	119.41	Initial Hydro-static
10	47.25	120.94	Open To Flow (1)
37	326.69	135.02	Shut-In(1)
98	1283.88	134.47	End Shut-In(1)
99	329.58	134.19	Open To Flow (2)
159	544.04	145.54	Shut-In(2)
255	1279.50	142.69	End Shut-In(2)
264	2216.97	145.24	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
531.00	water-100%	2.61
285.00	mcw -40% m60%w	4.00
285.00	mud-100%	4.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 43002

**DST#: 6**

ATTN: Bob Stolzle

Test Start: 2012.11.03 @ 14:05:00

## Tool Information

Drill Pipe:	Length: 3898.00 ft	Diameter: 3.80 inches	Volume: 54.68 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 57.29 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4446.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	89.00 ft			
Tool Length:	117.00 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			4423.00	
Hydraulic tool	5.00			4428.00	
Jars	5.00			4433.00	
Safety Joint	3.00			4436.00	
Packer	5.00			4441.00	28.00 Bottom Of Top Packer
Packer	5.00			4446.00	
Stubb	1.00			4447.00	
Perforations	4.00			4451.00	
Change Over Sub	1.00			4452.00	
Recorder	0.00	8791	Inside	4452.00	
Recorder	0.00	8673	Outside	4452.00	
Drill Pipe	64.00			4516.00	
Change Over Sub	1.00			4517.00	
Perforations	15.00			4532.00	
Bullnose	3.00			4535.00	89.00 Bottom Packers & Anchor

**Total Tool Length: 117.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 43002

**DST#: 6**

ATTN: Bob Stolzle

Test Start: 2012.11.03 @ 14:05:00

## 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:

4000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.08 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
531.00	water-100%	2.611
285.00	mcw -40% m60%w	3.998
285.00	mud-100%	3.998

Total Length: 1101.00 ft

Total Volume: 10.607 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

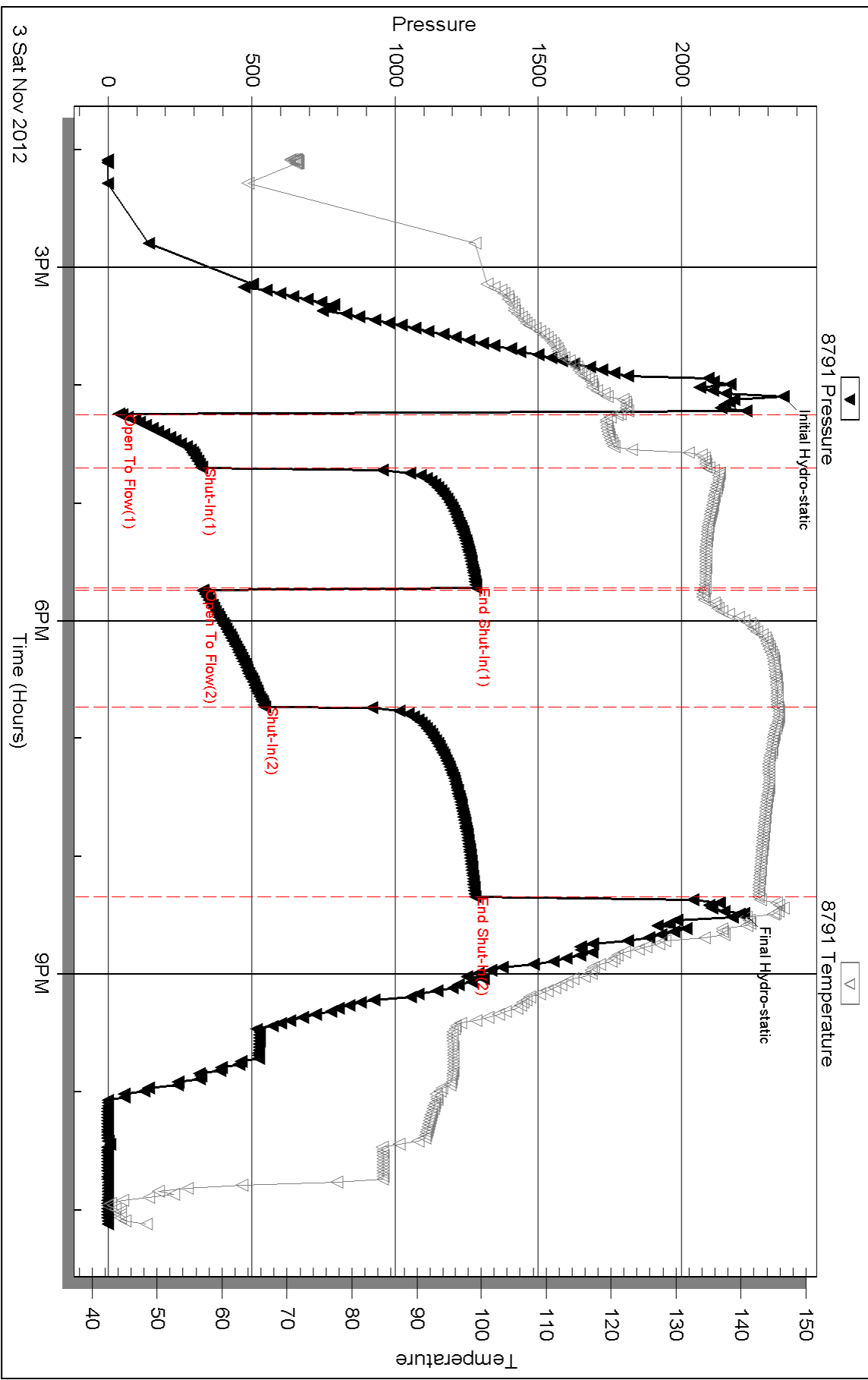
Laboratory Name:

Laboratory Location:

Recovery Comments: 145 temp.



### Pressure vs. Time

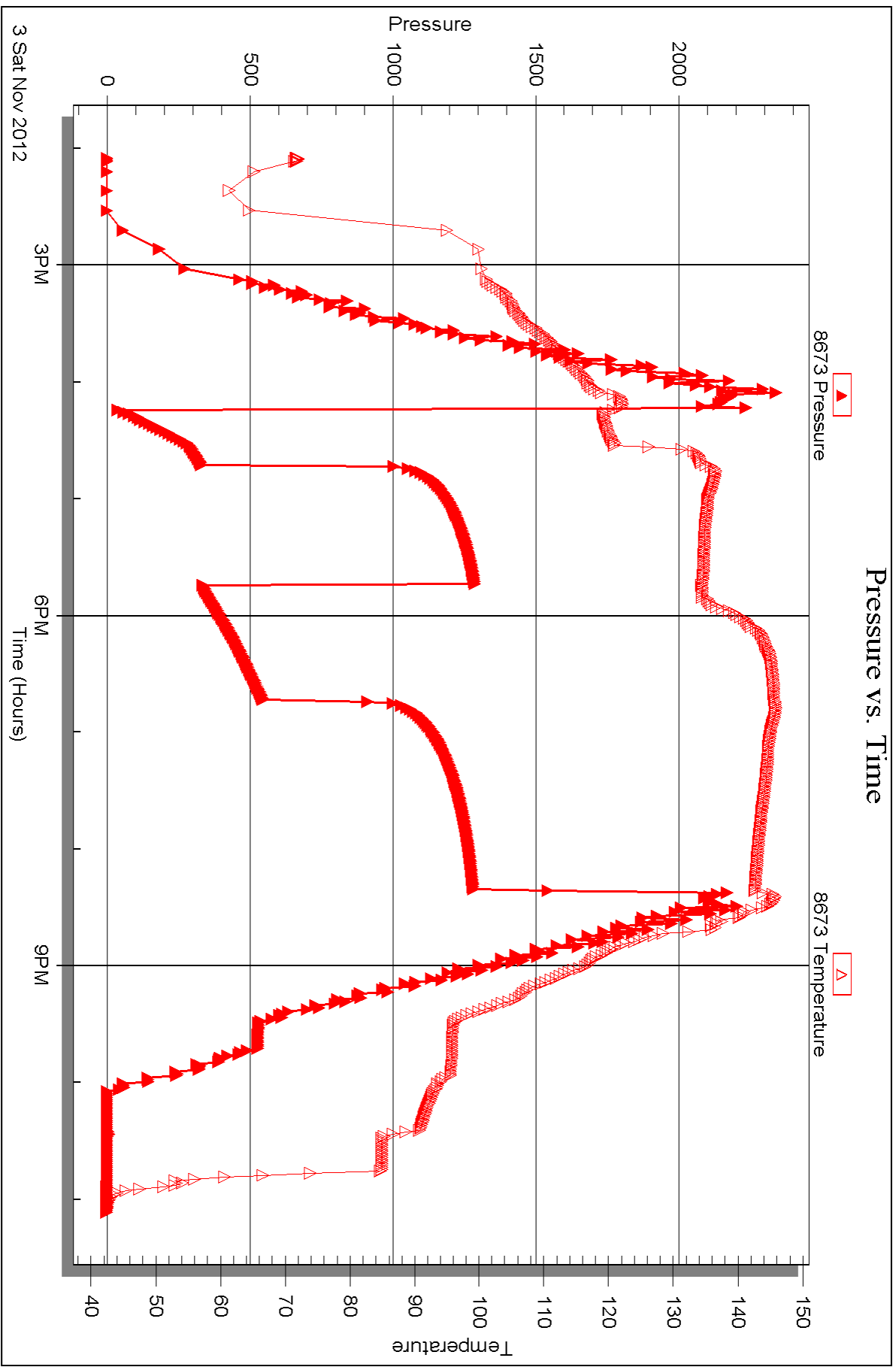


Serial #: 8673

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 6





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Bob Stolzle

**PTL #1-22**

**22-2s-36w Rawlins,KS**

Start Date: 2012.11.04 @ 19:05:00

End Date: 2012.11.05 @ 01:56:30

Job Ticket #: 43003                      DST #: 7

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

Printed: 2012.11.13 @ 14:38:20



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.

**22-2s-36w Rawlins, KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 43003

**DST#: 7**

ATTN: Bob Stolzle

Test Start: 2012.11.04 @ 19:05:00

## GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:13:30

Time Test Ended: 01:56:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Kreuzer Jr.

Unit No: 61

**Interval: 4638.00 ft (KB) To 4720.00 ft (KB) (TVD)**

Reference Elevations: 3344.00 ft (KB)

Total Depth: 4720.00 ft (KB) (TVD)

3334.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

**Serial #: 8791**

**Inside**

Press @ Run Depth: 212.02 psig @ 4643.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.11.04

End Date:

2012.11.05

Last Calib.: 2012.11.05

Start Time: 19:05:01

End Time:

01:56:30

Time On Btm: 2012.11.04 @ 21:03:30

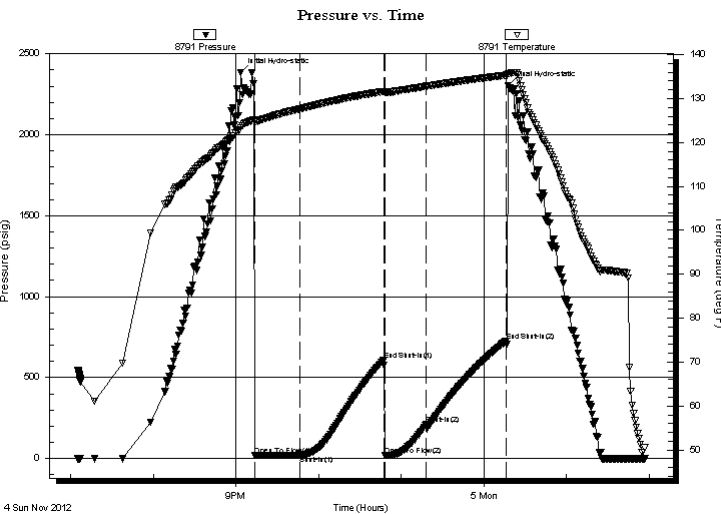
Time Off Btm: 2012.11.05 @ 00:17:30

**TEST COMMENT:** IF: Blow started at 1/4 in. Died in 18 mins.

IS: No blow back

FF: No blow

FS: No blow back.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2385.15	123.32	Initial Hydro-static
10	18.25	124.77	Open To Flow (1)
43	20.68	127.69	Shut-In(1)
104	608.20	131.64	End Shut-In(1)
105	21.10	131.44	Open To Flow (2)
135	212.02	132.81	Shut-In(2)
193	726.62	135.32	End Shut-In(2)
194	2305.39	135.69	Final Hydro-static

## Recovery

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

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co.

**22-2s-36w Rawlins, KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 43003

**DST#: 7**

ATTN: Bob Stolzle

Test Start: 2012.11.04 @ 19:05:00

### Tool Information

Drill Pipe:	Length: 4091.00 ft	Diameter: 3.80 inches	Volume: 57.39 bbl	Tool Weight: 2600.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 531.00 ft	Diameter: 2.25 inches	Volume: 2.61 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 60.00 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4638.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	110.00 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			4615.00	
Hydraulic tool	5.00			4620.00	
Jars	5.00			4625.00	
Safety Joint	3.00			4628.00	
Packer	5.00			4633.00	28.00 Bottom Of Top Packer
Packer	5.00			4638.00	
Stubb	1.00			4639.00	
Perforations	3.00			4642.00	
Change Over Sub	1.00			4643.00	
Recorder	0.00	8791	Inside	4643.00	
Recorder	0.00	8651	Outside	4643.00	
Drill Pipe	63.00			4706.00	
Change Over Sub	1.00			4707.00	
Perforations	10.00			4717.00	
Bullnose	3.00			4720.00	82.00 Bottom Packers & Anchor

**Total Tool Length: 110.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Murfin Drilling Co.

**22-2s-36w Rawlins,KS**

250 N. Water Ste 300  
Wichita KS 67202

**PTL #1-22**

Job Ticket: 43003

**DST#: 7**

ATTN: Bob Stolzle

Test Start: 2012.11.04 @ 19:05:00

**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: 73.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
5.00	mud-100%	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

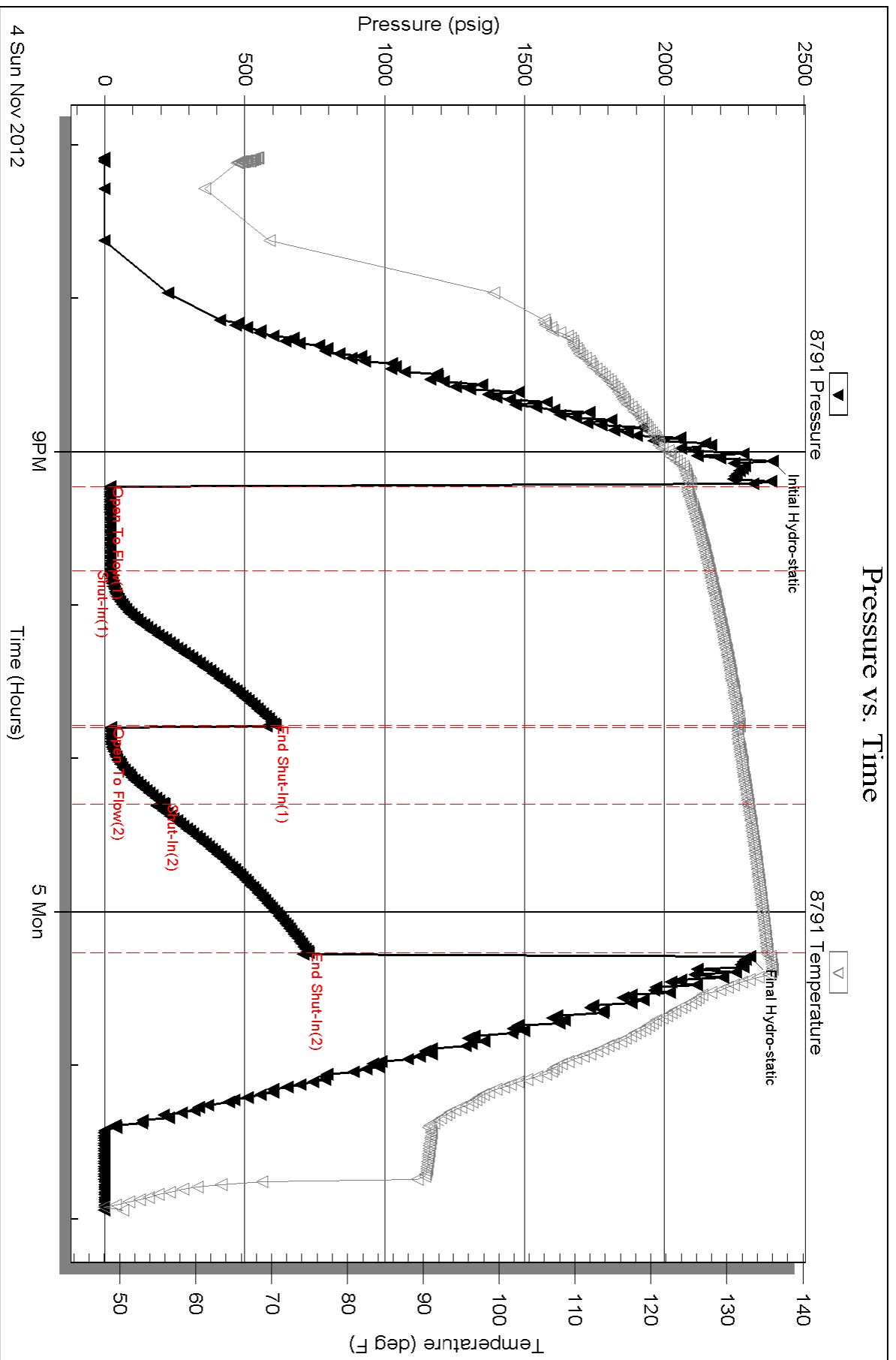
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



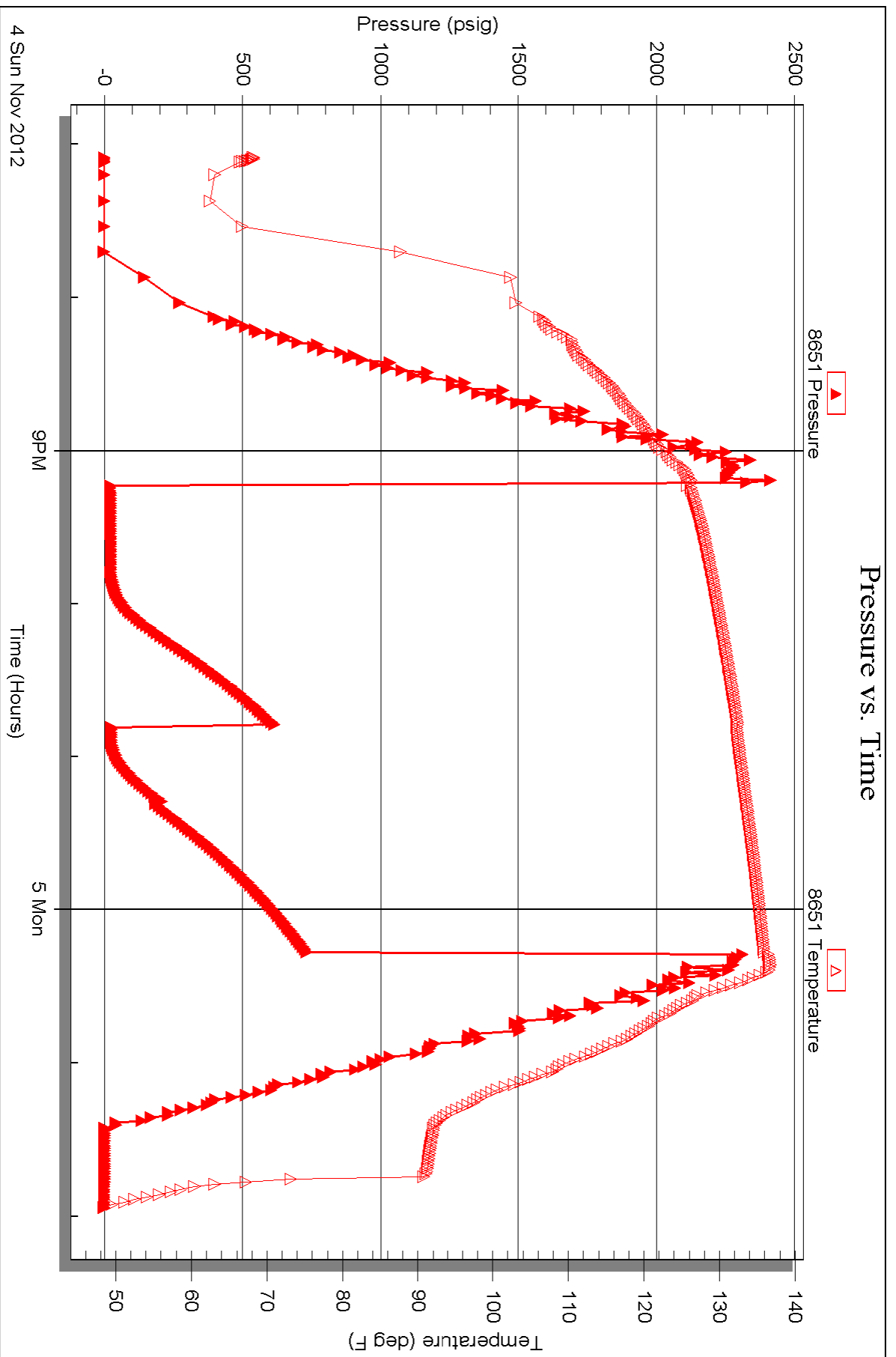


Serial #: 8651

Outside Murfin Drilling Co.

PTL #1-22

DST Test Number: 7





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

NO. 48222

Well Name & No. PTL #1-22 Test No. 11 Date 10/27/2012  
 Company Murfin Drilling Co Elevation 3344 KB 3334 GL  
 Address 250 N. Water Ste 300 Wichita KS. 67202  
 Co. Rep / Geo. Bob Stolzle Rig Murfin #14  
 Location: Sec. 22 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4026 4090 Zone Tested Topeka Fm.  
 Anchor Length 64 Drill Pipe Run 3486 Mud Wt. 9.1  
 Top Packer Depth 4021 Drill Collars Run 531 Vis 52  
 Bottom Packer Depth 4036 Wt. Pipe Run -0- WL 6.4  
 Total Depth 4090 Chlorides 1000 ppm System LCM 4#

Blow Description Running collars in hole had pressure on sub. checked and was taking on mud  
check circ. sub pin was good come out to tool all that was there was head of shaft tool 19:30 - 21:30  
went in with over shot. Hit bridge at 1800ft. came out went in with bit. went back in with over shot  
came out didn't get tool. Got different fishing tool from Kansas fishing tool. bit tipped in with fish. Trip out  
14:00. 16:30. 18:00. 19:10 - 21:10. 21:30 - 00:15  
~~1:30~~ Trip in with 58 grapple got a hold of tool come out. Break tool down -  
~~1:30~~ 14:00 4:00 7:40 11:10 %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	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

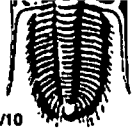
Rec Total \_\_\_\_\_ BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic \_\_\_\_\_  Test Wait on Paul T-On Location 15:20  
 (B) First Initial Flow \_\_\_\_\_  Jars \_\_\_\_\_ T-Started 18:05  
 (C) First Final Flow \_\_\_\_\_  Safety Joint \_\_\_\_\_ T-Open \_\_\_\_\_  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled \_\_\_\_\_  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 10:AM on 10/29/2012  
 (F) Second Final Flow \_\_\_\_\_  Mileage 55x2=110x1.55=170.50 Comments Worked on Air Com.  
 (G) Final Shut-In \_\_\_\_\_  Sampler to get tools from Paul 1 hr. After they got out of hole  
 (H) Final Hydrostatic \_\_\_\_\_  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 66  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 60  Day Standby \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ Total \_\_\_\_\_  
 Sub Total \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Approved By Robert Stolzle, Agent

Our Representative Chuck Meyer

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.



# TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

NO. 48223

Well Name & No. PTL # 1-22 Test No. 2 Date 10-27-2012  
 Company Murfin Drilling Co. Elevation 3344 KB 3334 GL  
 Address 250 N. Water St. 300. Wichita KS 67202  
 Co. Rep / Geo. Bob Stolze Rig Murfin # 14  
 Location: Sec. 22 Twp. 25 Rge. 36W Co. Rawlins State Ks

Interval Tested 4026 4090 Zone Tested Topeka Fm.  
 Anchor Length 64 Drill Pipe Run 3488 Mud Wt. 9.1  
 Top Packer Depth 4021 Drill Collars Run 531 Vis 52  
 Bottom Packer Depth 4026 Wt. Pipe Run -0- WL 6.4  
 Total Depth 4090 Chlorides 1000 ppm System LCM 4#

Blow Description IF: Weak blow, Built to 1/2 in. over 10 mins started to D/C. Weak surface after 30 mins.  
FSI: No blow back  
FF: No blow  
FSI: No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>150cm</u>				<u>90</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 30 BHT 121 Gravity 1250 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic	<u>2139</u>
(B) First Initial Flow	<u>17</u>
(C) First Final Flow	<u>26</u>
(D) Initial Shut-In	<u>1163</u>
(E) Second Initial Flow	<u>26</u>
(F) Second Final Flow	<u>31</u>
(G) Final Shut-In	<u>1096</u>
(H) Final Hydrostatic	<u>2012</u>

- Test 1250
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 55x2=110x2=220 <sup>17050</sup> ~~170.50~~
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

T-On Location 15:50  
 T-Started 18:25  
 T-Open 21:19  
 T-Pulled 00:25  
 T-Out 2:25  
 Comments \_\_\_\_\_  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1745.50  
 MP/DST Disc't \_\_\_\_\_

Initial Open	<u>30</u>
Initial Shut-In	<u>60</u>
Final Flow	<u>30</u>
Final Shut-In	<u>60</u>

Approved By Robert Stolze, Agent Our Representative Chuck Meyer

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.

T.L. #1-22

Test No. 3 Date 10-31-2012

Company MurFin Drilling Co. Elevation 3344 KB 3334 GL

Address 250 N. Water STE 300 Wichita Drilling Co.

Co. Rep / Geo. Bob Stolzle Rig MurFin #14

Location: Sec. 22 Twp. 25 Rge. 36W Co. Rawlins State Ks

Interval Tested 4136 4220 Zone Tested Oread

Anchor Length 84 Drill Pipe Run 3585 Mud Wt. 9.1

Top Packer Depth 4131 Drill Collars Run 531 Vis 65

Bottom Packer Depth 4136 Wt. Pipe Run -0- WL 6.0

Total Depth 4220 Chlorides 900 ppm System LCM 6#

Blow Description IF: Fair blow, Built to 8 in. over 30mins.

ISI: Bled off, No blow back over 60mins

FF: Fair blow, Built to B.O.B in 40mins.

FSI: Bled off, No blow back over 90mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>127</u>	<u>mud</u>				<u>100</u>
<u>265</u>	<u>WCM</u>			<u>35</u>	<u>65</u>
<u>265</u>	<u>MCW</u>			<u>75</u>	<u>25</u>

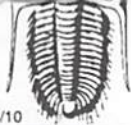
Rec Total 657 BHT 137 Gravity \_\_\_\_\_ API RW .68 @ 140 ° F Chlorides 3800 ppm

- (A) Initial Hydrostatic 2102  Test 1250 T-On Location 16:50
- (B) First Initial Flow 18  Jars 250 T-Started 16:55
- (C) First Final Flow 190  Safety Joint 75 T-Open 19:00
- (D) Initial Shut-In 1235  Circ Sub T-Pulled 23:00
- (E) Second Initial Flow 196  Hourly Standby T-Out 1:35
- (F) Second Final Flow 353  Mileage 170.50
- (G) Final Shut-In 1233  Sampler
- (H) Final Hydrostatic 2014  Straddle

- Shale Packer 250  Ruined Shale Packer
- Extra Packer  Ruined Packer
- Extra Recorder  Extra Copies
- Day Standby
- Accessibility
- Sub Total 1995.50 Sub Total 0
- Total 1995.50 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Chuck Kayer

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# TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

NO. 48225

Well Name & No. P.T.L. # 1-22 Test No. 4 Date 11-01-2012  
 Company Murfin Drilling Co. Elevation 3344 KB 3334 GL  
 Address 250 N. Water Ste. 300 Wichita Ks. 67202  
 Co. Rep / Geo. Bob Stolze Rig Murfin # 14  
 Location: Sec. 22 Twp. 2S Rge. 36W Co. Rawlins State Ks.

Interval Tested 4210 4360 Zone Tested EKE=A, B  
 Anchor Length 150 Drill Pipe Run 3680 Mud Wt. 9.1  
 Top Packer Depth 4205 Drill Collars Run 574 Vis 62  
 Bottom Packer Depth 4210 Wt. Pipe Run - 0' WL 6.4  
 Total Depth 4360 Chlorides 1,400 ppm System LCM 6#

Blow Description IF: Fair blow, Built to B.O.B in 25 mins.  
ISI: Bled off, Blow back after 10 mins. Built to 1/4 in. over 60 mins.  
FF: Fair blow, Built to B.O.B in 30 mins.  
FSI: Bled off, ~~Blow~~ <sup>NO Flow</sup> back after 90 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>95</u>	<u>go</u>	<u>20</u>	<u>80</u>		
<u>190</u>	<u>gvsocwm</u>	<u>10</u>	<u>30</u>	<u>10</u>	<u>50</u>
<u>190</u>	<u>gvsocm</u>	<u>10</u>	<u>5</u>		<u>85</u>
<u>151</u>	<u>gocm</u>	<u>20</u>	<u>40</u>		<u>40</u>
<u>200</u>	<u>gas in pipe</u>	<u>20</u>	<u>20</u>		<u>20</u>

Rec Total 626 BHT 135 Gravity 28 API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2115  Test 1250 T-On Location 15:30  
 (B) First Initial Flow 35  Jars 250 T-Started 15:55  
 (C) First Final Flow 147  Safety Joint 75 T-Open 18:30  
 (D) Initial Shut-In 1243  Circ Sub \_\_\_\_\_ T-Pulled 22:30  
 (E) Second Initial Flow 157  Hourly Standby \_\_\_\_\_ T-Out 00:47  
 (F) Second Final Flow 291  Mileage 55x2 = 110x1.55 = 170.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 1230  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2089  Straddle \_\_\_\_\_  Ruined Shale Packer 350  
 Shale Packer 250  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 350  
 Day Standby \_\_\_\_\_ Total 2345.50  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1995.50

Approved By \_\_\_\_\_ Our Representative Chuck Payer

Tribolite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 043001

Well Name & No. P.T.L # 1-22 Test No. 5 Date 11-02-2012  
 Company Murfin Drilling Co. Elevation 3344 KB 3334 GL  
 Address 250 N. water ste. 300 Wichita Ks 67202  
 Co. Rep / Geo. Bob Stolze Rig Murfin #14  
 Location: Sec. 22 Twp. 2s Rge. 36w Co. Rawlins State Ks

Interval Tested 4354 4460 Zone Tested LKC-G, H  
 Anchor Length 106 Drill Pipe Run 3807 Mud Wt. 9.2  
 Top Packer Depth 4349 Drill Collars Run 531 Vis 54  
 Bottom Packer Depth 4354 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4460 Chlorides 1,400 ppm System LCM 7#

Blow Description IF: strong blow, Built to B. QB in 30 sec. Blow Died to 4in. over 30 mins  
ISI: Bled off in one min. No blow back over 60 mins  
FF: No blow on sec. open over 15 mins.  
FST: No blow back over 60 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>mud</u>			<u>100</u>	
<u>476</u>	<u>mcw</u>			<u>40</u>	<u>60</u>
<u>476</u>	<u>wcm</u>			<u>90</u>	<u>10</u>
<u>2052</u>	<u>100</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 3024 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW .63 @ .33 ° F Chlorides 24,000 ppm

(A) Initial Hydrostatic <u>2224</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>17:00</u>
(B) First Initial Flow <u>842</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>17:05</u>
(C) First Final Flow <u>1308</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>19:32</u>
(D) Initial Shut-In <u>1318</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>22:30</u>
(E) Second Initial Flow <u>1318</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2:20</u>
(F) Second Final Flow <u>1319</u>	<input checked="" type="checkbox"/> Mileage <u>55x2 = 110x1.55</u> 170.50	Comments _____
(G) Final Shut-In <u>1319</u>	<input type="checkbox"/> Sampler	<input checked="" type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2130</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1745.50</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____

Sub Total 1745.50

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

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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 043002

Well Name & No. P.T.L # 1-22 Test No. 6 Date 11-03-2012  
 Company Murfin Drilling Co. Elevation 3344 KB 3334 GL  
 Address 250 N. Water Ste. 300 Wichita Ks. 67202  
 Co. Rep / Geo. Bob Stolze Rig Murfin #14  
 Location: Sec. 22 Twp. 2S Rge. 36W Co. Rawlins State Ks

Interval Tested 4446 4535 Zone Tested LKC-J, K  
 Anchor Length 89 Drill Pipe Run 3898 Mud Wt. 9.0  
 Top Packer Depth 4441 Drill Collars Run 531 Vis 58  
 Bottom Packer Depth 4446 Wt. Pipe Run - 0 - WL 5.6  
 Total Depth 4535 Chlorides 1200 ppm System LCM 8#

Blow Description IF: Fair blow, Built to B.O.B in 11 mins.  
ISI: No blow back over 60 mins.  
FF: Fair blow, Built to B.O.B in 11 mins.  
FSI: No blow back over 90 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>285</u>	<u>mud</u>				<u>100%</u>
<u>285</u>	<u>MCW</u>			<u>60%</u>	<u>40%</u>
<u>531</u>	<u>Water</u>			<u>100%</u>	

Rec Total 1101 BHT 145 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2353</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>14:00</u>
(B) First Initial Flow <u>47</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>14:00</u>
(C) First Final Flow <u>327</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>16:15</u>
(D) Initial Shut-In <u>1284</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>20:15</u>
(E) Second Initial Flow <u>330</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>23:07</u>
(F) Second Final Flow <u>544</u>	<input checked="" type="checkbox"/> Mileage <u>55x2 = 110x1.55</u> 170.50	Comments _____
(G) Final Shut-In <u>1280</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2217</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 0
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Total 1745.50
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total 1745.50	

Approved By \_\_\_\_\_ Our Representative Chuck Nege  
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# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

Rec. # 871  
Rec out 8651

NO. 043003

Well Name & No. P.T.L #1-22 Test No. 7 Date 11-04-2012  
 Company Mur Fin Drilling Co. Elevation 3344 KB 3334 GL  
 Address 250 N. Water Ste. 300 Wichita Ks. 67202  
 Co. Rep / Geo. Bob Stolzle Rig Mur Fin #14  
 Location: Sec. 22 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4638 4720 Zone Tested Pawnee  
 Anchor Length 82 Drill Pipe Run 4091 Mud Wt. 9.1  
 Top Packer Depth 4633 Drill Collars Run 531 Vis 73  
 Bottom Packer Depth 4638 Wt. Pipe Run -0- WL 6.0  
 Total Depth 4720 Chlorides 1,200 ppm System LCM 6#

Blow Description IF: Blow started at 1/4 in. Dried in 18 mins.

ISI: No blow Back

FF: No blow

FSI: No blow Back

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

Rec Total 5 BHT 135 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2385  Test 1250 T-On Location 18:45  
 (B) First Initial Flow 18  Jars 250 T-Started 19:05  
 (C) First Final Flow 21  Safety Joint 75 T-Open 21:13  
 (D) Initial Shut-In 608  Circ Sub T-Pulled 00:10  
 (E) Second Initial Flow 210  Hourly Standby T-Out 1:56  
 (F) Second Final Flow 212  Mileage 55 x 2 = 110 x 1.55 = 341 Comments Lead tools on 11-05  
 (G) Final Shut-In 727  Sampler at  
 (H) Final Hydrostatic 2305  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1916.00  
 Accessibility MP/DST Disc't \_\_\_\_\_  
 Sub Total 1916.00

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