



## DRILL STEM TEST REPORT

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

250 N Water Ste. 300  
Wichita KS 67202

ATTN: Rocky Milford / Scot

**HMZ #1-29**

**29 1s 36w Rawlins,KS**

Start Date: 2013.12.13 @ 23:50:00

End Date: 2013.12.14 @ 10:01:00

Job Ticket #: 55933                      DST #: 1

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

Printed: 2013.12.23 @ 13:33:28



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55933

**DST#: 1**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.13 @ 23:50:00

## GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:36:30

Time Test Ended: 10:01:00

Test Type: Bottom Hole (Initial)

Tester: Chuck Kreuzer Jr.

Unit No: 61

**Interval: 3826.00 ft (KB) To 3980.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 3980.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8673**

**Inside**

Press@RunDepth: 49.99 psig @ 3827.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.13

End Date:

2013.12.14

Last Calib.: 2013.12.14

Start Time: 23:50:01

End Time:

10:01:00

Time On Btm: 2013.12.14 @ 03:28:00

Time Off Btm: 2013.12.14 @ 07:35:00

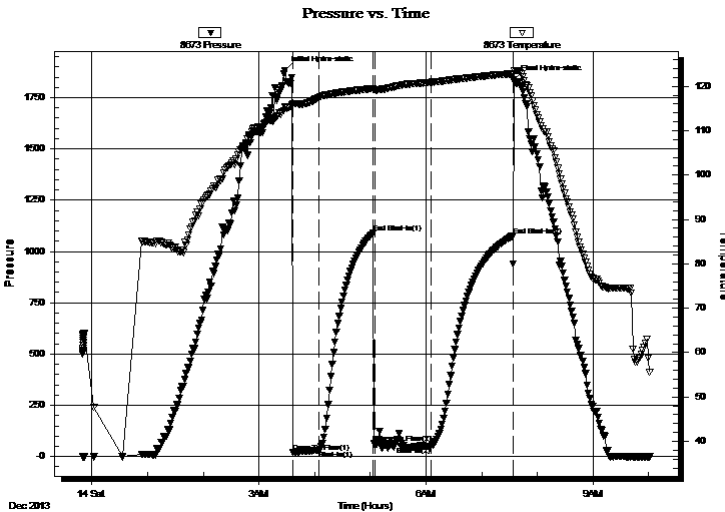
**TEST COMMENT:** IF: Weak blow , Built to 2 1/4" over 30 mins.

IS: No blow back over 60 mins.

FF: No blow over 60 mins.

FS: No blow back over 90 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.46	115.38	Initial Hydro-static
9	20.39	115.89	Open To Flow (1)
37	31.30	117.49	Shut-In(1)
95	1088.36	119.49	End Shut-In(1)
97	63.31	119.21	Open To Flow (2)
157	49.99	120.91	Shut-In(2)
246	1074.95	122.78	End Shut-In(2)
247	1836.42	123.44	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
64.00	ocm-35%o65%m	0.31

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55933

**DST#: 1**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.13 @ 23:50:00

## Tool Information

Drill Pipe:	Length: 3626.00 ft	Diameter: 3.80 inches	Volume: 50.86 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 51.77 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3826.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	154.00 ft			
Tool Length:	182.00 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			3803.00	
Hydraulic tool	5.00			3808.00	
Jars	5.00			3813.00	
Safety Joint	3.00			3816.00	
Packer	5.00			3821.00	28.00 Bottom Of Top Packer
Packer	5.00			3826.00	
Packer - Shale	0.00			3826.00	
Stubb	1.00			3827.00	
Recorder	0.00	8673	Inside	3827.00	
Recorder	0.00	8651	Outside	3827.00	
Perforations	20.00			3847.00	
change Over Sub	1.00			3848.00	
Drill Pipe	128.00			3976.00	
Change Over Sub	1.00			3977.00	
Bullnose	3.00			3980.00	154.00 Bottom Packers & Anchor

**Total Tool Length: 182.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55933

**DST#: 1**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.13 @ 23:50:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
64.00	ocm-35%o65%m	0.315

Total Length: 64.00 ft      Total Volume: 0.315 bbf

Num Fluid Samples: 0

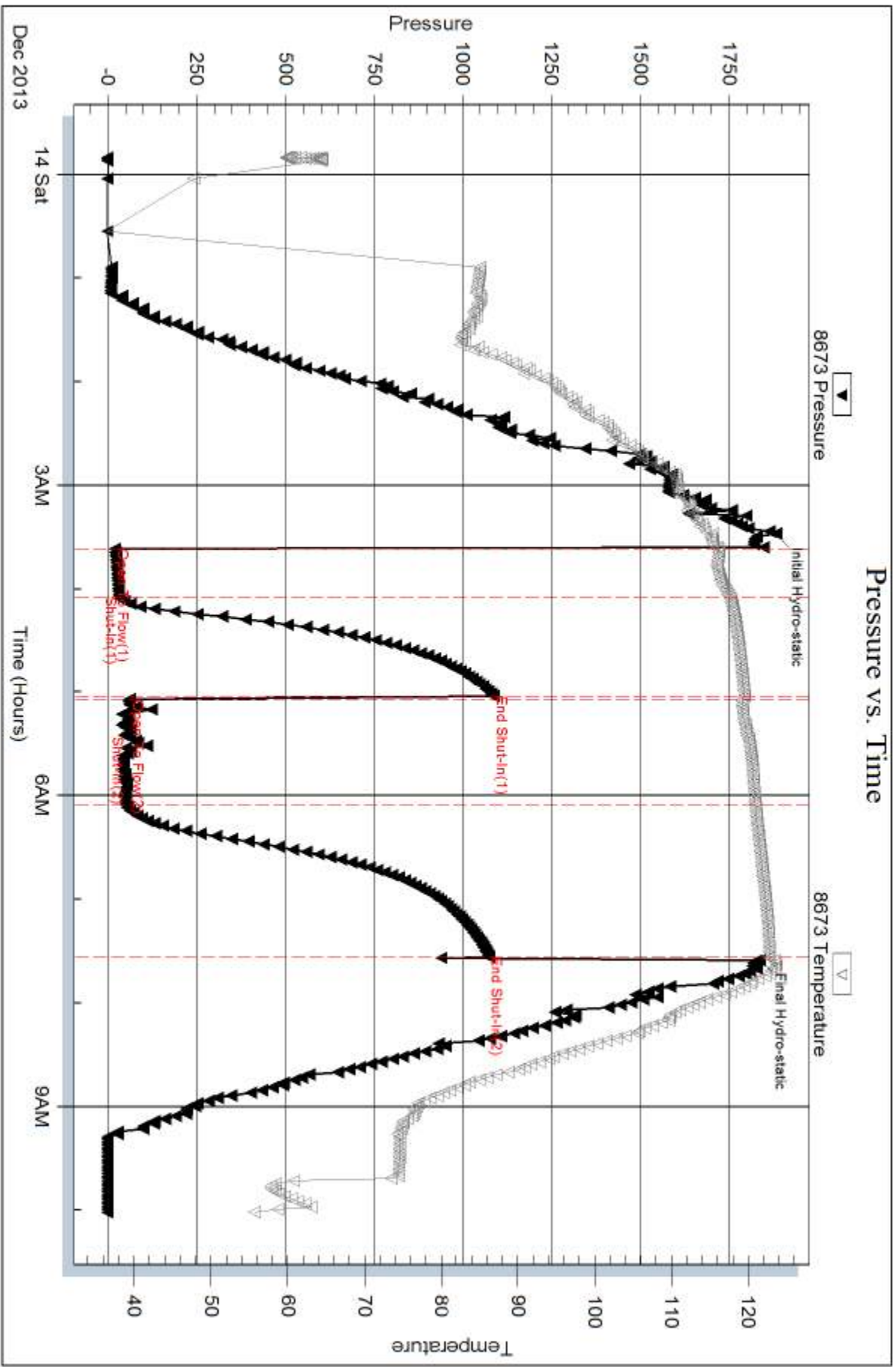
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

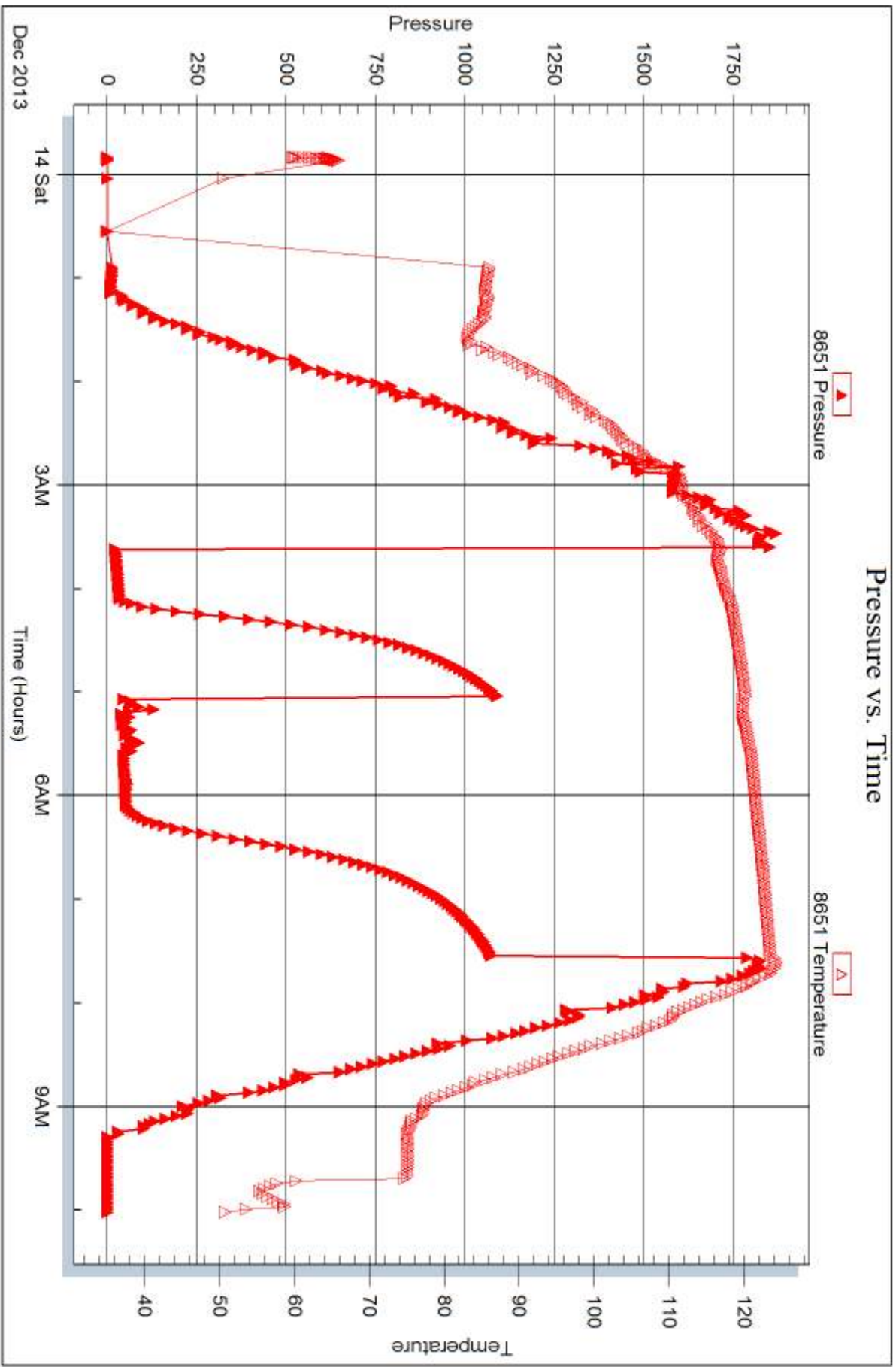


Serial #: 8651

Outside Murfin Drilling Co Inc.

HMZ #1-29

DST Test Number: 1





## DRILL STEM TEST REPORT

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

250 N Water Ste. 300  
Wichita KS 67202

ATTN: Rocky Milford / Scot

**HMZ #1-29**

**29 1s 36w Rawlins,KS**

Start Date: 2013.12.15 @ 09:40:04

End Date: 2013.12.15 @ 18:56:04

Job Ticket #: 55871                      DST #: 2

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

Printed: 2013.12.23 @ 13:34:10

Murfin Drilling Co Inc.

29 1s 36w Rawlins,KS

HMZ #1-29

DST # 2

Leavenworth - LKC "D"

2013.12.15





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55871

**DST#: 2**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.15 @ 09:40:04

## GENERAL INFORMATION:

Formation: **Leavenworth - LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:20:04

Time Test Ended: 18:56:04

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 61

**Interval: 4156.00 ft (KB) To 4290.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 3980.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8673**

**Inside**

Press@RunDepth: 99.71 psig @ 4160.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.15

End Date:

2013.12.15

Last Calib.: 2013.12.15

Start Time: 09:40:05

End Time:

18:56:04

Time On Btm: 2013.12.15 @ 12:16:04

Time Off Btm: 2013.12.15 @ 16:24:04

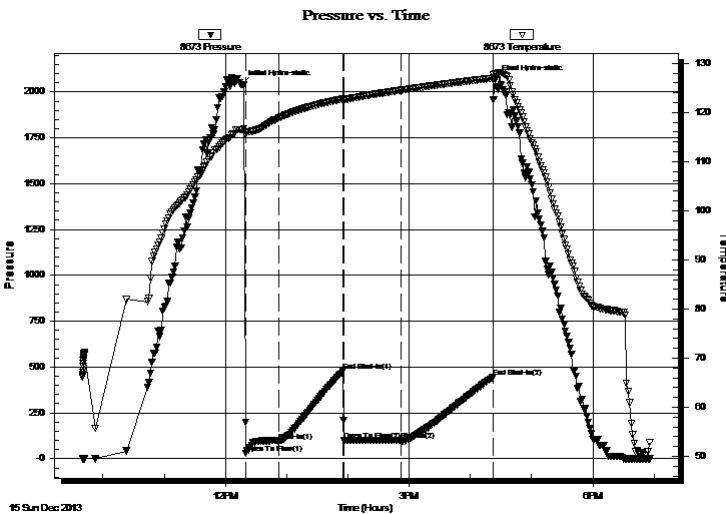
TEST COMMENT: I.F. - 30 - Weak ssurface blow built to 4 1/2"

I.S.I. - 60 - No blow back

F.F. - 60 - No blow

F.S.I. - 90 - No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2039.74	116.54	Initial Hydro-static
4	27.94	116.12	Open To Flow (1)
37	94.52	118.88	Shut-In(1)
99	477.97	122.76	End Shut-In(1)
100	98.49	122.62	Open To Flow (2)
156	99.71	124.52	Shut-In(2)
246	445.33	126.97	End Shut-In(2)
248	2065.95	127.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
131.00	MUD 100% (WITH FEW OIL SPECS)	0.64

\* 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 Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55871

**DST#: 2**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.15 @ 09:40:04

## Tool Information

Drill Pipe:	Length: 3971.00 ft	Diameter: 3.80 inches	Volume: 55.70 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 56.61 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4156.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	134.00 ft			
Tool Length:	162.00 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			4133.00	
Hydraulic tool	5.00			4138.00	
Jars	5.00			4143.00	
Safety Joint	3.00			4146.00	
Packer	5.00			4151.00	28.00 Bottom Of Top Packer
Packer	5.00			4156.00	
Packer - Shale	0.00			4156.00	
Stubb	1.00			4157.00	
Perforations	2.00			4159.00	
Change Over Sub	1.00			4160.00	
Recorder	0.00	8673	Inside	4160.00	
Recorder	0.00	8651	Outside	4160.00	
Drill Pipe	126.00			4286.00	
Change Over Sub	1.00			4287.00	
Bullnose	3.00			4290.00	134.00 Bottom Packers & Anchor

**Total Tool Length: 162.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55871

**DST#: 2**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.15 @ 09:40:04

## 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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
131.00	MUD 100% (WITH FEW OIL SPECS)	0.644

Total Length: 131.00 ft      Total Volume: 0.644 bbl

Num Fluid Samples: 0

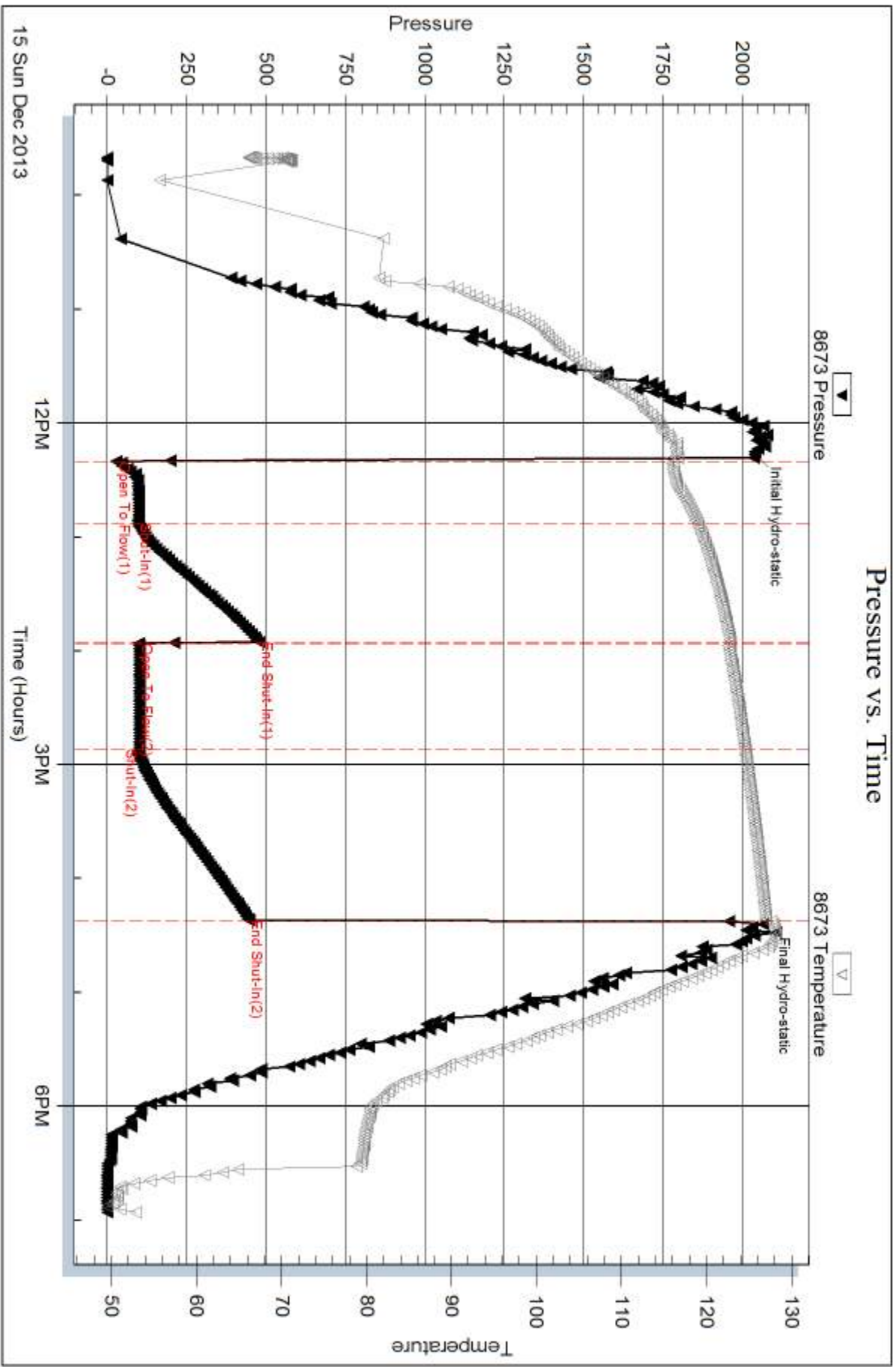
Num Gas Bombs: 0

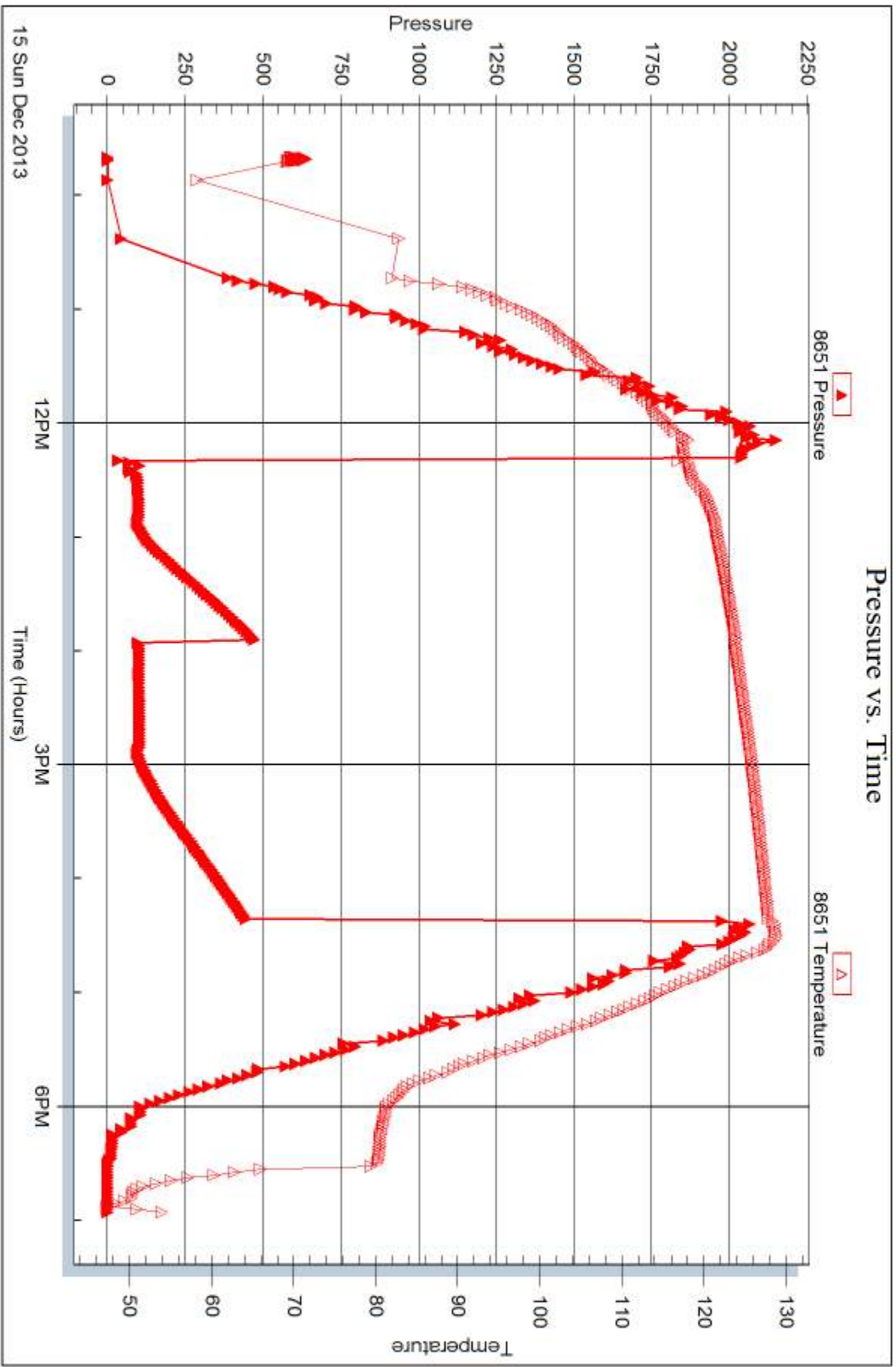
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

250 N Water Ste. 300  
Wichita KS 67202

ATTN: Rocky Milford / Scot

**HMZ #1-29**

**29 1s 36w Rawlins,KS**

Start Date: 2013.12.16 @ 08:07:00

End Date: 2013.12.16 @ 17:02:30

Job Ticket #: 55872                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.12.23 @ 13:26:57



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55872

**DST#: 3**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.16 @ 08:07:00

## GENERAL INFORMATION:

Formation: **LKC "G - I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:21:30

Time Test Ended: 17:02:30

Test Type: Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 61

**Interval: 4283.00 ft (KB) To 4395.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 4395.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8673**

**Inside**

Press@RunDepth: 139.01 psig @ 4381.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.16

End Date:

2013.12.16

Last Calib.:

2013.12.16

Start Time: 08:07:01

End Time:

17:02:30

Time On Btm:

2013.12.16 @ 10:19:00

Time Off Btm:

2013.12.16 @ 14:25:30

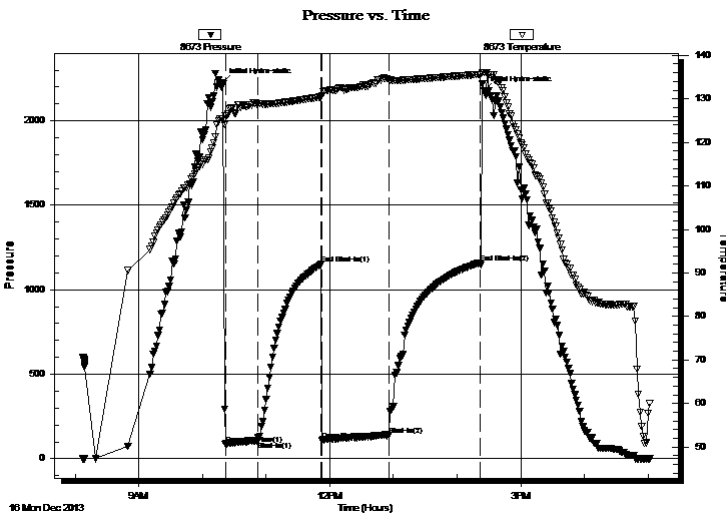
TEST COMMENT: I.F. - 30 - weak surface blow built to 1 3/4"

I.S.I - 60 - No blow back

F.F. - 60 - Weak surface blow throughout

F.S. - 90 - No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2226.15	125.42	Initial Hydro-static
3	84.61	126.09	Open To Flow (1)
33	105.78	128.82	Shut-In(1)
93	1150.51	130.43	End Shut-In(1)
94	110.32	130.79	Open To Flow (2)
157	139.01	134.50	Shut-In(2)
243	1160.74	135.64	End Shut-In(2)
247	2178.14	136.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
131.00	O,C,M, 10% OIL 90% MUD	0.64

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins, KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55872

**DST#: 3**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.16 @ 08:07:00

## GENERAL INFORMATION:

Formation: **LKC "G - I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:21:30

Time Test Ended: 17:02:30

Test Type: Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 61

**Interval: 4283.00 ft (KB) To 4395.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 4395.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8651 Outside**

Press@RunDepth: psig @ 4381.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.16

End Date:

2013.12.16

Last Calib.:

2013.12.16

Start Time: 08:07:01

End Time:

17:02:00

Time On Btm:

Time Off Btm:

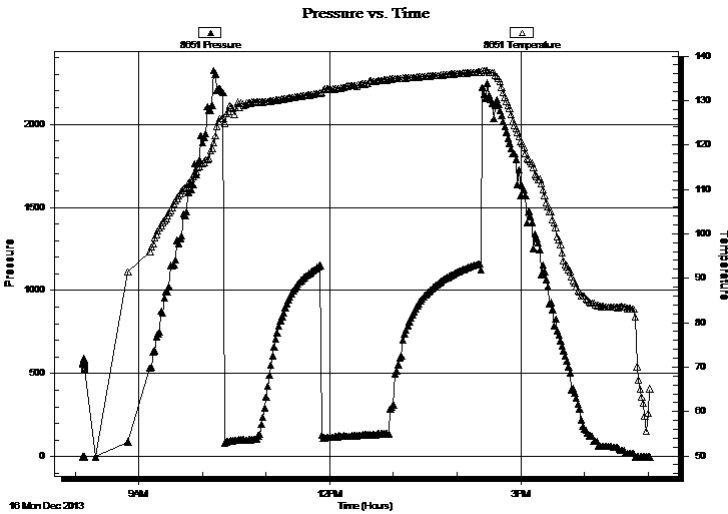
TEST COMMENT: I.F. - 30 - weak surface blow built to 1 3/4"

I.S.I - 60 - No blow back

F.F. - 60 - Weak surface blow throughout

F.S. - 90 - No blow back

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
131.00	O,C,M, 10% OIL 90% MUD	0.64

## 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 Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55872

**DST#: 3**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.16 @ 08:07:00

## Tool Information

Drill Pipe:	Length: 4090.00 ft	Diameter: 3.80 inches	Volume: 57.37 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 58.28 bbl</u>	Tool Chased 3.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4283.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	112.00 ft			
Tool Length:	140.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4260.00	
Hydraulic tool	5.00			4265.00	
Jars	5.00			4270.00	
Safety Joint	3.00			4273.00	
Packer	5.00			4278.00	28.00 Bottom Of Top Packer
Packer	5.00			4283.00	
Packer - Shale	0.00			4283.00	
Stubb	1.00			4284.00	
Perforations	2.00			4286.00	
Change Over Sub	1.00			4287.00	
Drill Pipe	94.00			4381.00	
Recorder	0.00	8673	Inside	4381.00	
Recorder	0.00	8651	Outside	4381.00	
Change Over Sub	1.00			4382.00	
Perforations	10.00			4392.00	
Bullnose	3.00			4395.00	112.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>140.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55872

**DST#: 3**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.16 @ 08:07:00

### 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: 79.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
131.00	O,C,M, 10% OIL 90% MUD	0.644

Total Length: 131.00 ft      Total Volume: 0.644 bbl

Num Fluid Samples: 0

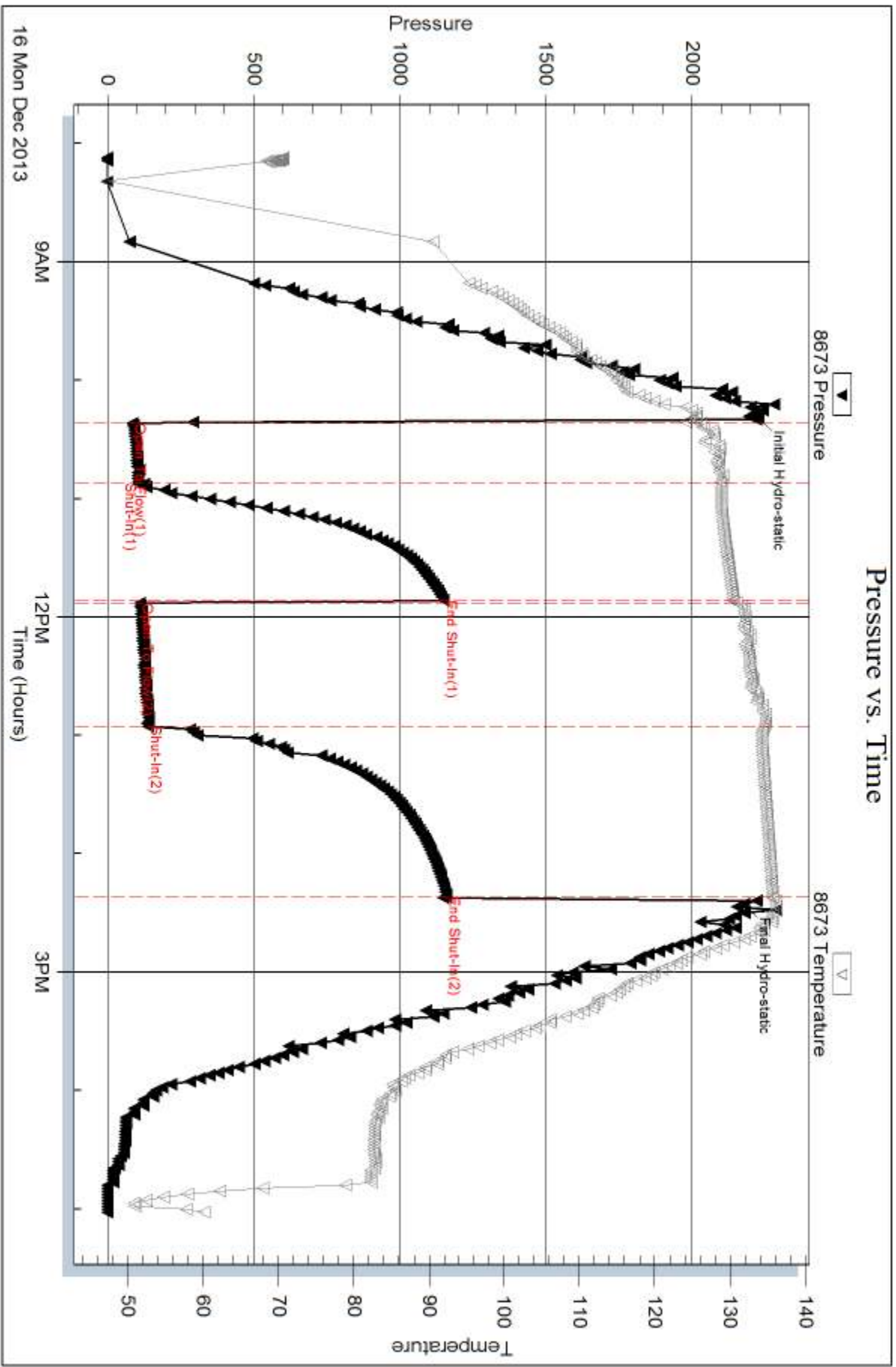
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

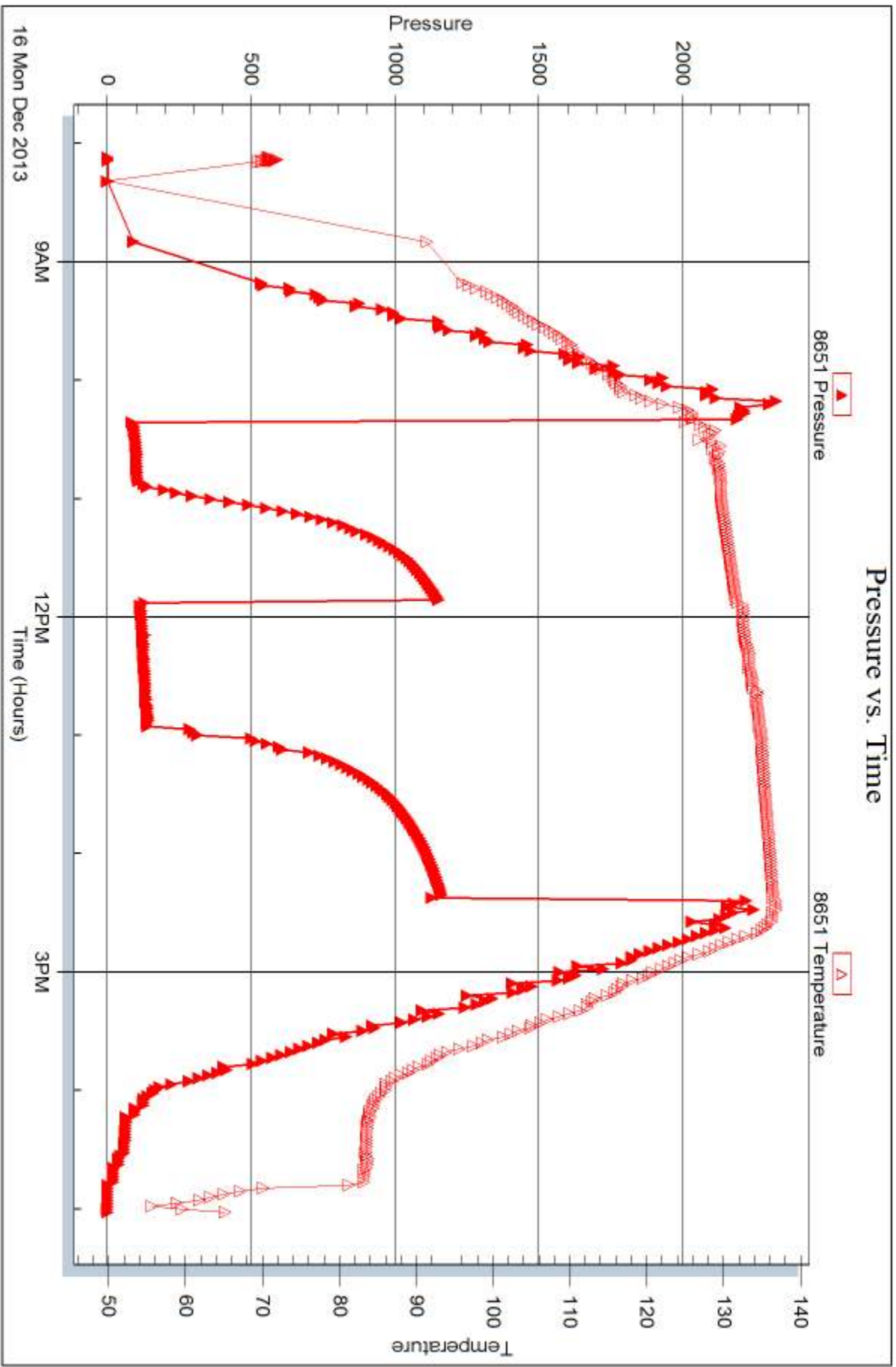


Serial #: 8651

Outside Murfin Drilling Co Inc.

HWZ #1-29

DST Test Number: 3





## DRILL STEM TEST REPORT

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

250 N Water Ste. 300  
Wichita KS 67202

ATTN: Rocky Milford / Scot

**HMZ #1-29**

**29 1s 36w Rawlins,KS**

Start Date: 2013.12.17 @ 04:23:00

End Date: 2013.12.17 @ 14:13:30

Job Ticket #: 55873                      DST #: 4

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

Printed: 2013.12.23 @ 13:25:26

Murfin Drilling Co Inc. 29 1s 36w Rawlins,KS HMZ #1-29 DST # 4 LKC "J" 2013.12.17



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55873

**DST#: 4**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.17 @ 04:23:00

## GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:09:00

Time Test Ended: 14:13:30

Test Type: Bottom Hole (Reset)

Tester: Chuck Kreuzer Jr.

Unit No: 61

**Interval: 4380.00 ft (KB) To 4432.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 4432.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8673**

**Inside**

Press@RunDepth: 130.28 psig @ 4382.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.17

End Date:

2013.12.17

Last Calib.:

2013.12.17

Start Time: 04:23:01

End Time:

14:13:30

Time On Btm:

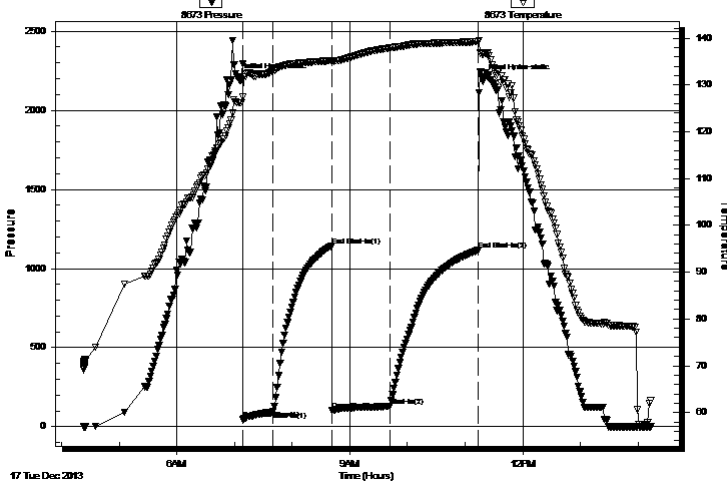
2013.12.17 @ 07:03:00

Time Off Btm:

2013.12.17 @ 11:18:00

**TEST COMMENT:** I.F. - 30 - Weak surface blow built to 5 3/4"  
I.S.I. - 60 - No blow back  
F.F. - 60 - Weak surface blow built to 6 1/2"  
F.F. - 90 - No blow back

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2206.95	126.26	Initial Hydro-static
6	44.54	127.47	Open To Flow (1)
37	94.75	133.01	Shut-In(1)
98	1142.92	135.24	End Shut-In(1)
99	101.87	134.88	Open To Flow (2)
159	130.28	137.89	Shut-In(2)
251	1115.08	139.25	End Shut-In(2)
255	2197.68	136.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
63.00	S,O,S,H,W,C,M, (OIL SPECS) 35%WTR	6.0.31UD
63.00	S,O,C,W,C,M, 5%OIL 10%WTR. 85%MU	0.31
63.00	H,O,C,M, 30%OIL 70%MUJ	0.35
11.00	C/OIL 100%	0.15

\* 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 Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55873

**DST#: 4**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.17 @ 04:23:00

## Tool Information

Drill Pipe:	Length: 4173.00 ft	Diameter: 3.80 inches	Volume: 58.54 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 59.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4380.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## 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			4357.00	
Hydraulic tool	5.00			4362.00	
Jars	5.00			4367.00	
Safety Joint	3.00			4370.00	
Packer	5.00			4375.00	28.00 Bottom Of Top Packer
Packer	5.00			4380.00	
Packer - Shale	0.00			4380.00	
Stubb	1.00			4381.00	
Change Over Sub	1.00			4382.00	
Recorder	0.00	8673	Inside	4382.00	
Recorder	0.00	8651	Outside	4382.00	
Drill Pipe	31.00			4413.00	
Change Over Sub	1.00			4414.00	
Perforations	15.00			4429.00	
Perforations	3.00			4432.00	52.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55873

**DST#: 4**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.17 @ 04:23:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33.8 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

36000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
63.00	S,O,S,H,W,C,M, (OIL SPECS) 35%WTR 65%M	0.310
63.00	S,O,C,W,C,M, 5%OIL 10%WTR. 85%MUD	0.310
63.00	H,O,C,M, 30%OIL 70%MUD	0.346
11.00	C/OIL 100%	0.154

Total Length: 200.00 ft Total Volume: 1.120 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API = 33.8 API @ 60 F

R.W. = .219 @ 63.7 F

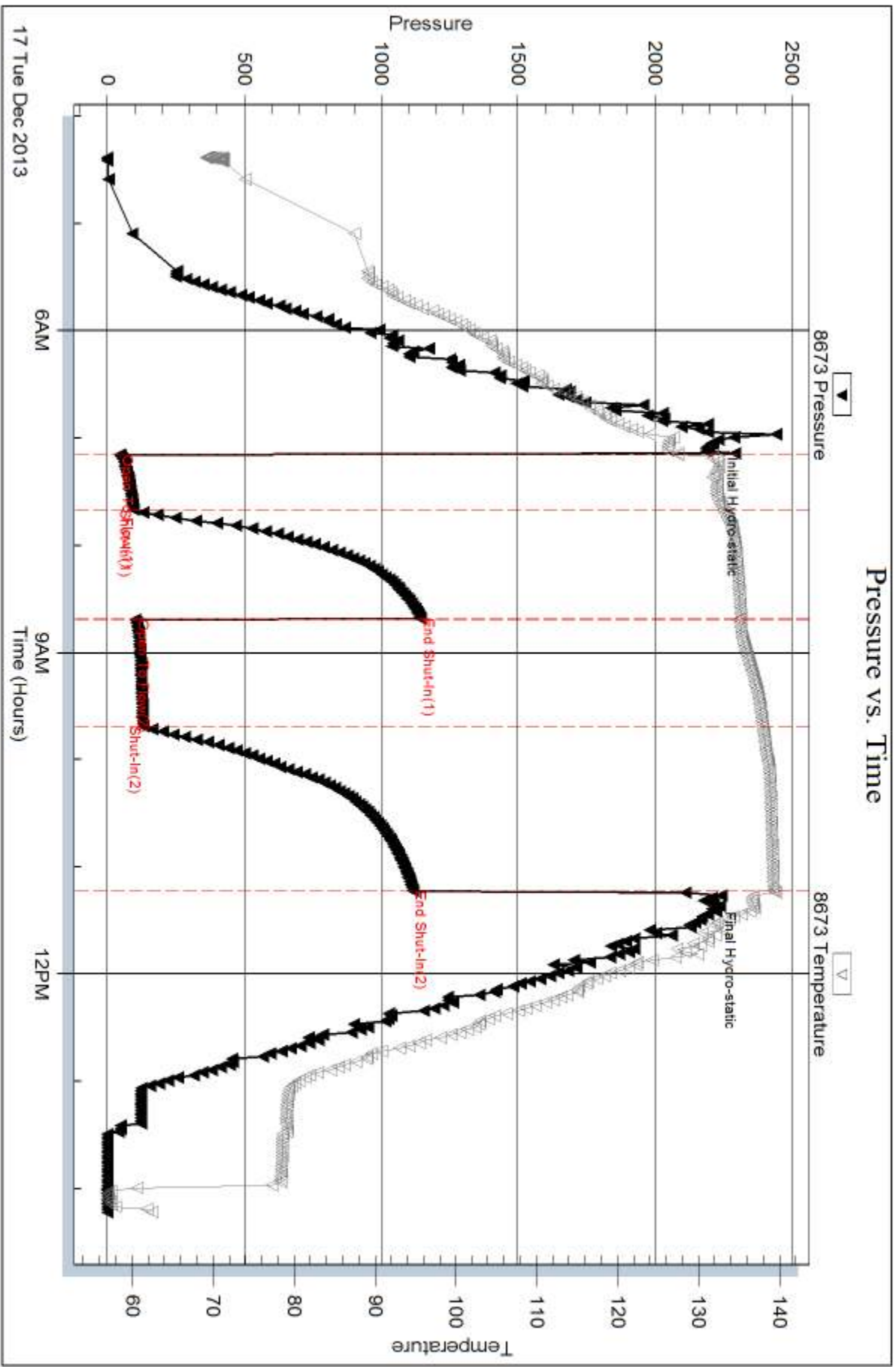
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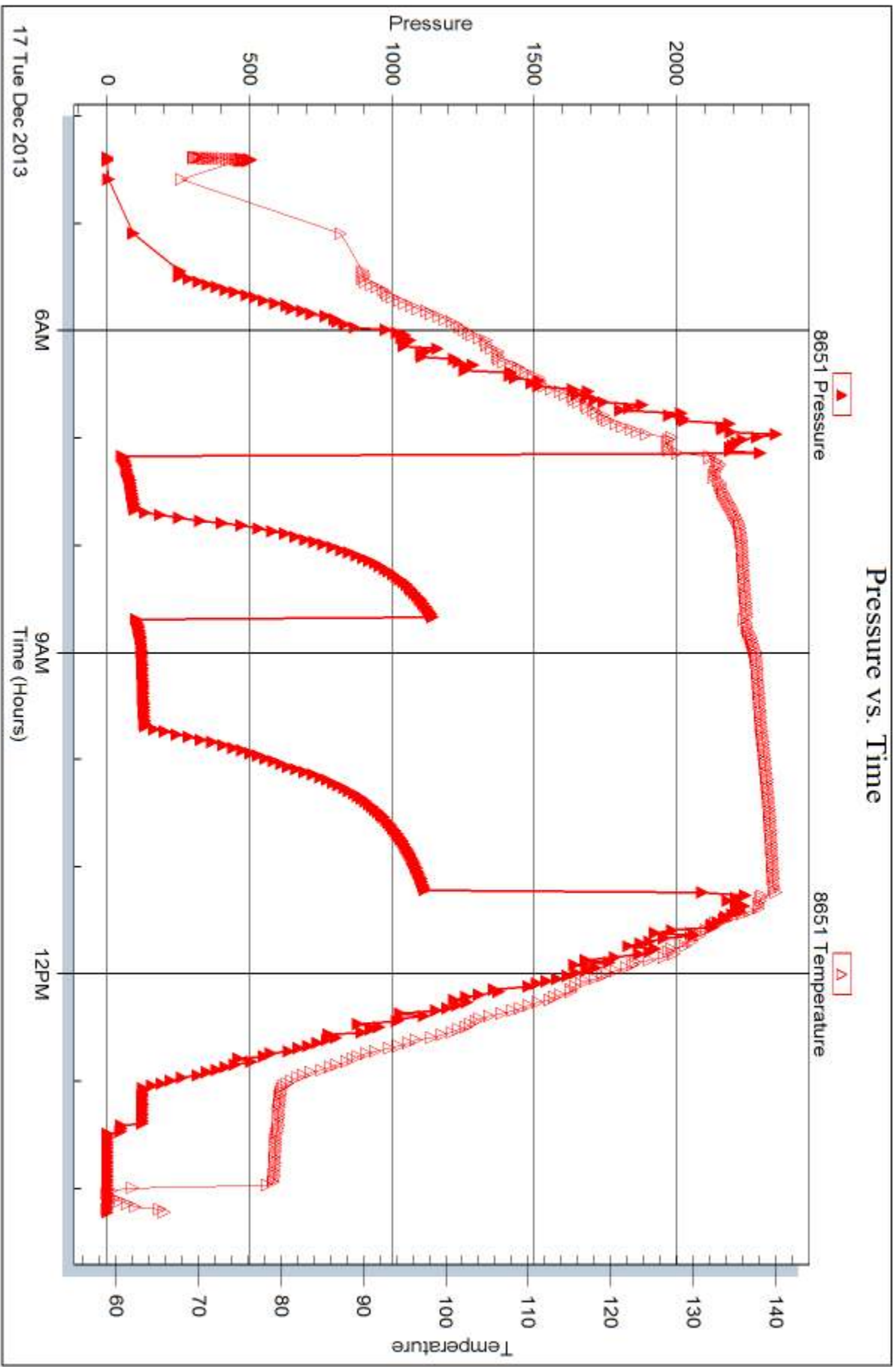
Inside

Murfin Drilling Co Inc.

HMZ #1-29

DST Test Number: 4







## DRILL STEM TEST REPORT

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

250 N Water Ste. 300  
Wichita KS 67202

ATTN: Rocky Milford / Scot

**HMZ #1-29**

**29 1s 36w Rawlins,KS**

Start Date: 2013.12.18 @ 17:05:00

End Date: 2013.12.19 @ 01:32:30

Job Ticket #: 55874                      DST #: 5

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

Printed: 2013.12.23 @ 13:22:32

Murfin Drilling Co Inc.

29 1s 36w Rawlins,KS

HMZ #1-29

DST # 5

Ft Scott - Verdigris

2013.12.18



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55874

**DST#: 5**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.18 @ 17:05:00

## GENERAL INFORMATION:

Formation: **Ft Scott - Verdigris**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:57:00

Time Test Ended: 01:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 61

**Interval: 4654.00 ft (KB) To 4714.00 ft (KB) (TVD)**

Reference Elevations: 3292.00 ft (KB)

Total Depth: 4714.00 ft (KB) (TVD)

3287.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8673**

**Inside**

Press@RunDepth: 54.61 psig @ 4691.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.18

End Date:

2013.12.19

Last Calib.: 2013.12.19

Start Time: 17:05:01

End Time:

01:32:30

Time On Btm: 2013.12.18 @ 19:52:00

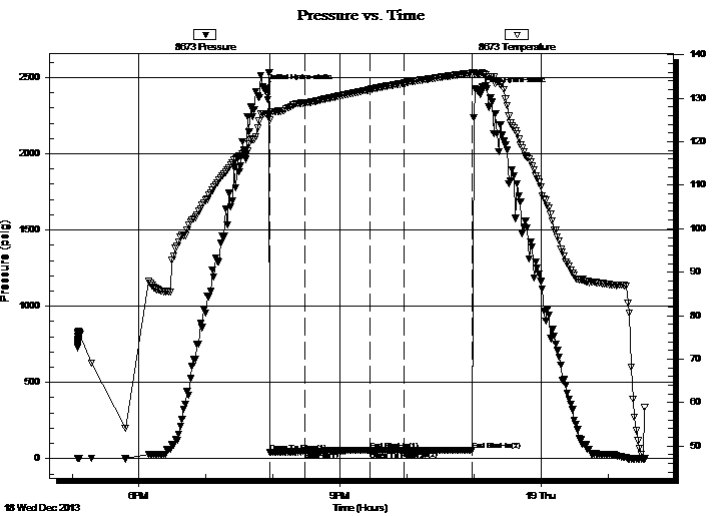
Time Off Btm: 2013.12.18 @ 23:03:30

**TEST COMMENT:** I.F. - 30 - Weak surface blow died in 8 min

I.S.I. - 60 - No blow back

F.F. - 30 - No blow

F.S.I. - 60 No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2427.93	126.51	Initial Hydro-static
5	40.14	124.97	Open To Flow (1)
36	45.78	128.93	Shut-In(1)
95	54.51	132.01	End Shut-In(1)
95	49.03	132.04	Open To Flow (2)
126	54.61	133.50	Shut-In(2)
187	56.61	135.87	End Shut-In(2)
192	2410.72	135.73	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	MUD 100%	0.01

\* 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 Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55874

**DST#: 5**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.18 @ 17:05:00

## Tool Information

Drill Pipe:	Length: 4449.00 ft	Diameter: 3.80 inches	Volume: 62.41 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 63.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4654.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	88.00 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			4631.00	
Hydraulic tool	5.00			4636.00	
Jars	5.00			4641.00	
Safety Joint	3.00			4644.00	
Packer	5.00			4649.00	28.00 Bottom Of Top Packer
Packer	5.00			4654.00	
Packer - Shale	0.00			4654.00	
Stubb	1.00			4655.00	
Perforations	2.00			4657.00	
Change Over Sub	1.00			4658.00	
Drill Pipe	32.00			4690.00	
Change Over Sub	1.00			4691.00	
Recorder	0.00	8673	Inside	4691.00	
Recorder	0.00	8651	Outside	4691.00	
Perforations	20.00			4711.00	
Bullnose	3.00			4714.00	60.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>88.00</b>				





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc.

**29 1s 36w Rawlins,KS**

250 N Water Ste. 300  
Wichita KS 67202

**HMZ #1-29**

Job Ticket: 55874

**DST#: 5**

ATTN: Rocky Milford / Scot

Test Start: 2013.12.18 @ 17:05:00

### 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: 94.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	MUD 100%	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8673

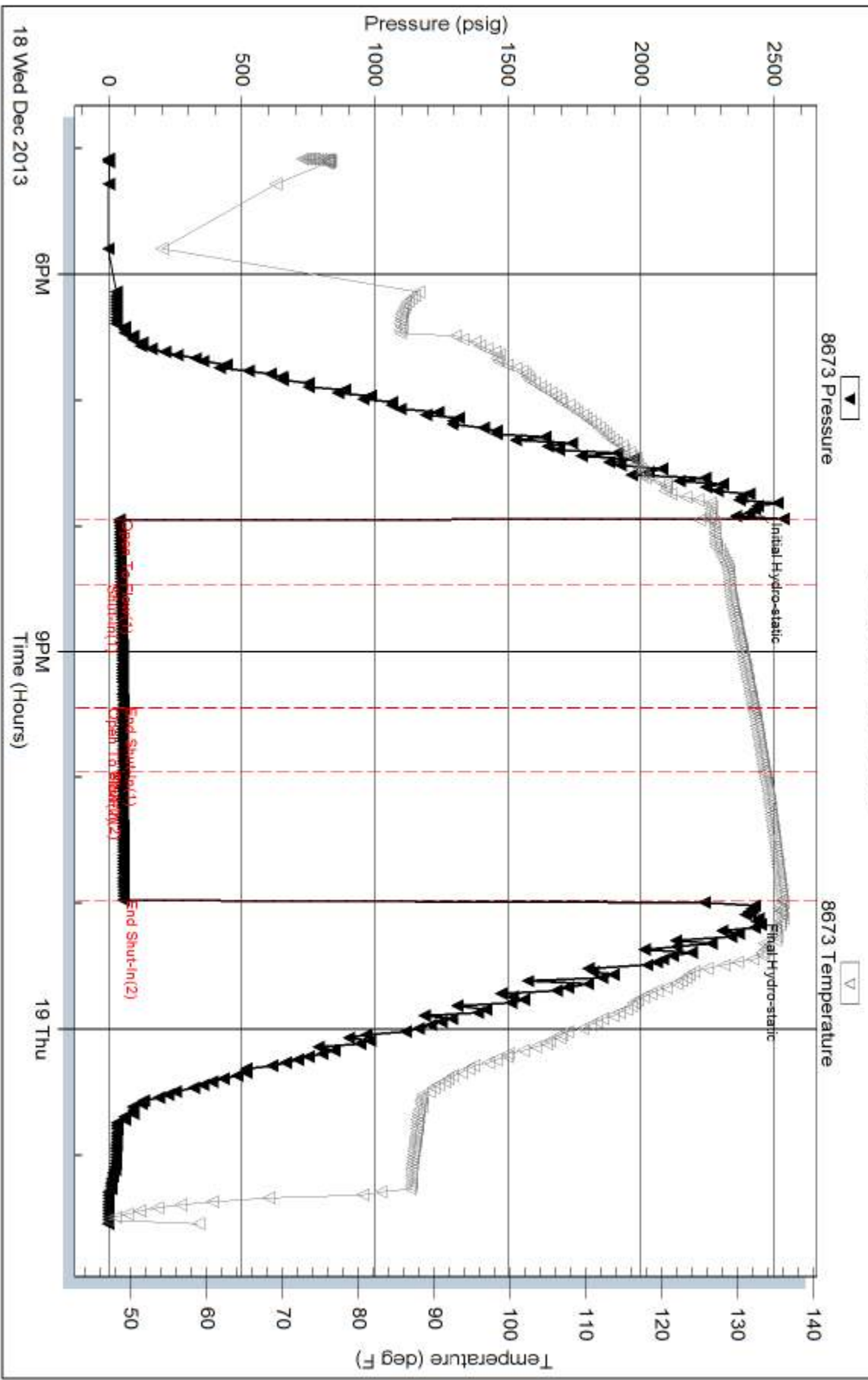
Inside

Murfin Drilling Co Inc.

HMZ #1-29

DST Test Number: 5

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 55874

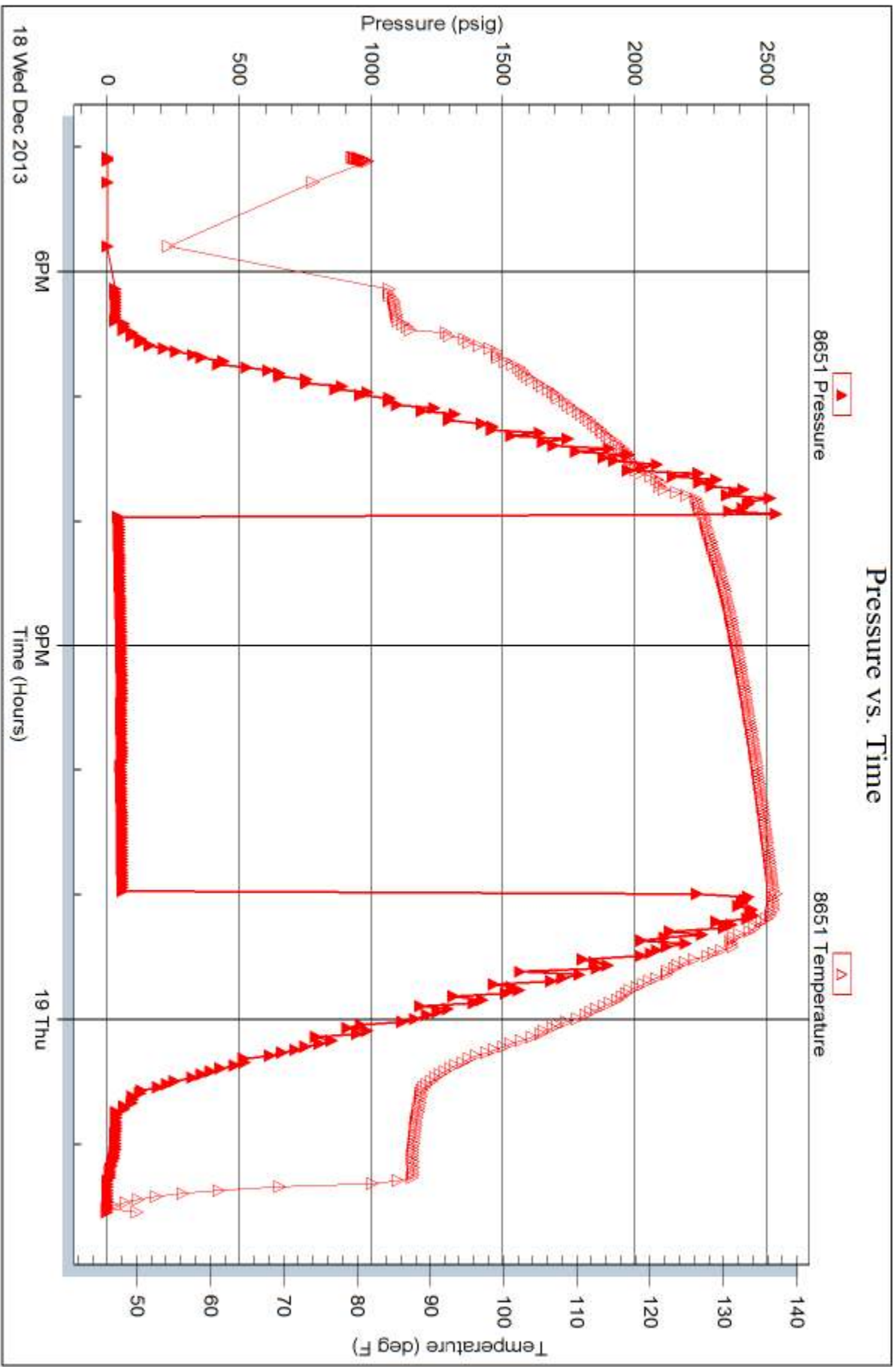
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Serial #: 8651

Outside Murfin Drilling Co Inc.

HMZ #1-29

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **55933**

Well Name & No. HMZ #1-29 Test No. 1 Date 12-13-2013  
 Company Mur Fin Drilling Co. Inc. Elevation 3292 KB 3287 GL  
 Address 250 N. Water Ste. 300 Wichita Ks. 67202  
 Co. Rep / Geo. Rocky Milford Rig MurFin #8  
 Location: Sec. 29 Twp. 1s Rge. 36w Co. Rawlins State Ks

Interval Tested 3826 3980 Zone Tested stotler  
 Anchor Length 154 Drill Pipe Run 3626 Mud Wt. 8.6  
 Top Packer Depth 3821 Drill Collars Run 185 Vis 58  
 Bottom Packer Depth 3826 Wt. Pipe Run -0- WL 6.4  
 Total Depth 3980 Chlorides 600 ppm System LCM 6#

Blow Description IF: Weak blow built to 2 1/4 in. over 30 mins.  
ISF: No blow back  
FF: No blow  
FSS: No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>64</u>	<u>00CM</u>		<u>35</u>		<u>65</u>

Rec Total 64 BHT 121 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1882</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>12-13</u> <u>22:50</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12-14</u> <u>23:50</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open _____ <u>3:36</u>
(D) Initial Shut-In <u>1088</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled _____ <u>7:35</u>
(E) Second Initial Flow <u>63</u>	<input type="checkbox"/> Hourly Standby _____	T-Out _____ <u>10:01</u>
(F) Second Final Flow <u>50</u>	<input checked="" type="checkbox"/> Mileage <u>60x2=120x1.55</u> <u>186</u>	Comments _____
(G) Final Shut-In <u>1075</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>1836</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1911</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1911</u>	

Approved By \_\_\_\_\_ Our Representative Chuck Nye

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. **55871**

Well Name & No. HMZ# 1-29 Test No. 2 Date 12-15-13  
 Company Murfin Drilling Com. Inc. Elevation 3,292 KB 3,287 GL  
 Address 250 N. Water Suite 300 Wichita KS. 67202  
 Co. Rep / Geo. Scott Robinson / Rocky Millford Rig Murfin Rig #8  
 Location: Sec. 29 Twp. 1-S Rge. 36-W Co. Rawlins State Ks.

Interval Tested 4156-4290 Zone Tested Leavenworth - h.k.c. "D"  
 Anchor Length 134 Drill Pipe Run 3971 Mud Wt. 9.1  
 Top Packer Depth 4151 Drill Collars Run 186' Vis 56  
 Bottom Packer Depth 4156 Wt. Pipe Run \_\_\_\_\_ WL 6.8  
 Total Depth 4290 Chlorides 600 ppm System LCM 6.0

Blow Description I.F. - 30 - 1/4 INT. Blow Built to (4 1/2" in 30 Min.)  
E.S.I. - 60 - No B.B.  
E.F. - 60 - No INT. Blow (No Build)  
E.S.I. - 90 - No B.B.

Rec	Feet of	%gas	%oil	%water	%mud
<u>131</u>	<u>505 M (few oil specs)</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 _____

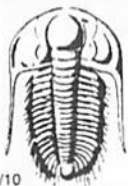
Rec Total 131 BHT 128' Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2,040  Test 1250 T-On Location 09:15:00  
 (B) First Initial Flow 28  Jars 250 T-Started 09:40:00  
 (C) First Final Flow 95  Safety Joint 75 T-Open 12:20:00  
 (D) Initial Shut-In 478  Circ Sub \_\_\_\_\_ T-Pulled 16:20:00  
 (E) Second Initial Flow 98  Hourly Standby \_\_\_\_\_ T-Out 18:50:00  
 (F) Second Final Flow 100  Mileage 120 R.T. 186 Comments \_\_\_\_\_  
 (G) Final Shut-In 445  Sampler \_\_\_\_\_ "Thank-you"  
 (H) Final Hydrostatic 2066  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 31  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 60  Day Standby \_\_\_\_\_ Total 1761  
 Final Shut-In 90  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1761

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. **55872**

Well Name & No. HMZ #1-29 Test No. 3 Date 12-16-13  
 Company Murfin Drilling Co. INC. Elevation 3,292 KB 3,287 GL  
 Address 250 N Water Suite 300 Wichita KS. 67202  
 Co. Rep / Geo. Scott Robinson / Rocky M. Ford Rig Murfin Rig #8  
 Location: Sec. 29 Twp. 1-5. Rge. 36-W. Co. Rawlins State KS.

Interval Tested 4283-4395 Zone Tested Lansing "G-I" zns  
 Anchor Length 112' Drill Pipe Run 4090 Mud Wt. 9.3  
 Top Packer Depth 4278 Drill Collars Run 186' Vis 79  
 Bottom Packer Depth 4283 Wt. Pipe Run --- WL 2.2  
 Total Depth 4395 Chlorides 000 ppm System LCM 6.0

Blow Description I.F. - 30 - 1/4 INT. Blow Built to (1 3/4" in 30 Min)  
I.S.I - 60 - No B.B.  
F.F. - 60 - 1/4 INT. Blow No Build  
E.S.I - 90 - No B.B.

Rec	Feet of	%gas	%oil	%water	%mud
<u>126</u>	<u>OCM</u>		<u>10</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 126 BHT 136 Gravity --- API RW --- @ --- °F Chlorides --- ppm

- (A) Initial Hydrostatic 2,226
- (B) First Initial Flow 85
- (C) First Final Flow 106
- (D) Initial Shut-In 1151
- (E) Second Initial Flow 110
- (F) Second Final Flow 139
- (G) Final Shut-In 1,161
- (H) Final Hydrostatic 2,178

- Test 1250
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 120 R.T. 186
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

- T-On Location 06:50:00
- T-Started 08:07:00
- T-Open 10:22:00
- T-Pulled 14:22:00
- T-Out 17:00:00

Comments "Thank-you"

- Ruined Shale Packer
- Ruined Packer
- Extra Copies

Sub Total 0  
 Total 1761  
 MP/DST Disc't ---

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

Approved By \_\_\_\_\_ Our Representative Bd Ahmed

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. **55873**

Well Name & No. H.M.Z. # 1-29 Test No. 4 Date 12-17-13  
 Company Murkin Drilling Co. INC. Elevation 3,292 KB 3,287 GL  
 Address 250 N. Water Suite 300 Wichita KS. 67202  
 Co. Rep / Geo. Scott Robinson / Rocky Milford Rig Murkin Rig #8  
 Location: Sec. 29 Twp. 1-S. Rge. 36-W Co. Rawlins. State KS.

Interval Tested 4380 - 4432 Zone Tested 205' Sing "J"  
 Anchor Length 52' Drill Pipe Run 4173 Mud Wt. 9.4  
 Top Packer Depth 4375 Drill Collars Run 180' Vis 60  
 Bottom Packer Depth ~~4000~~ 4380 Wt. Pipe Run — WL 6.3  
 Total Depth 4432 Chlorides 900 ppm System LCM 4.0

Blow Description I.F. - 30 - 1/4 INT. Blow Built to (5 3/4" in 30 min.)  
I.S.I. - 60 - No B.B.  
F.F. - 60 - 1/4 INT. Blow Built to (6 1/2" in 60 min.)  
F.S.I. - 90 - No B.B.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>C/O</u>	<u>100</u>			
<u>63</u>	<u>HOC, M</u>	<u>30</u>		<u>70</u>	
<u>63</u>	<u>SOC, W, C, M</u>	<u>5</u>	<u>10</u>	<u>85</u>	
<u>63</u>	<u>S, S, H, W, C, M (oil specs)</u>	<u>SRCS</u>	<u>35</u>	<u>65</u>	

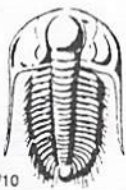
Rec Total 200 BHT 137 Gravity 33.8 API RW .219 @ 63.7° F Chlorides 36,000 ppm

(A) Initial Hydrostatic 2,207  Test 1250 T-On Location 03:50:00  
 (B) First Initial Flow 45  Jars 250 T-Started 04:23:00  
 (C) First Final Flow 95  Safety Joint 75 T-Open 07:09:00  
 (D) Initial Shut-In 1,143  Circ Sub \_\_\_\_\_ T-Pulled 11:09:00  
 (E) Second Initial Flow 102  Hourly Standby \_\_\_\_\_ T-Out 14:13:00  
 (F) Second Final Flow 130  Mileage 120 R.O.F. 186 Comments \_\_\_\_\_  
 (G) Final Shut-In 1,115  Sampler \_\_\_\_\_ Thank you!  
 (H) Final Hydrostatic 2,198  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 60  Day Standby \_\_\_\_\_ Total 1761  
 Final Shut-In 90  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1761

Approved By \_\_\_\_\_ Our Representative B. H. H. H.

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. **55874**

Well Name & No. H.M.E # 1-29 Test No. 5 Date 12-18-13  
 Company Murfin Drilling Co. INC. Elevation 3,292 KB 3,287 GL  
 Address 250 N. Water Suite 300 Wichita KS. 67202  
 Co. Rep / Geo. Scott Robinson / Rocky Milford Rig Murfin Rig #8  
 Location: Sec. 29 Twp. 1-5 Rge. 36 - W Co. Rawlins State KS.

Interval Tested 4654 - 4714 Zone Tested Ft. Scott - Verdigris  
 Anchor Length 60 Drill Pipe Run 4449 Mud Wt. 9.2  
 Top Packer Depth 4649 Drill Collars Run 188' Vis 94  
 Bottom Packer Depth 4654 Wt. Pipe Run \_\_\_\_\_ WL 6.8  
 Total Depth 4714 Chlorides 900 ppm System LCM 4.0

Blow Description IF-30-W.S.B. (Died in 8 min)  
EST-60-NO B.B.  
EF-30-NO Blow  
F.SI-60-NO B.B.

Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>				<u>100</u>	

Rec Total 3 BHT 135.7 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2428  Test 1250 T-On Location 16:00:00  
 (B) First Initial Flow 40  Jars 250 T-Started 17:05:00  
 (C) First Final Flow 46  Safety Joint 75 T-Open 20:00:00  
 (D) Initial Shut-In 55  Circ Sub \_\_\_\_\_ T-Pulled 23:00:00  
 (E) Second Initial Flow 49  Hourly Standby \_\_\_\_\_ T-Out 01:30:00  
 (F) Second Final Flow 55  Mileage 120 R.T. 186 Comments Loaded tools  
 (G) Final Shut-In 57  Sampler \_\_\_\_\_ on 12-19-13 @ 2:50:00  
 (H) Final Hydrostatic 2,911  Straddle \_\_\_\_\_ "Thank you"  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 91.67  
 Final Flow 30  Day Standby 1d 2.75h Total 1852.67  
 Final Shut-In 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1761

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

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