



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Steve Miler

### **Gleason Unit #1-30**

#### **30 1s 28w Cheyenne,KS**

Start Date: 2014.03.12 @ 12:45:00

End Date: 2014.03.12 @ 19:45:00

Job Ticket #: 56805                      DST #: 1

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

Printed: 2014.03.20 @ 17:26:08



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne, KS**

**Gleason Unit #1-30**

Job Ticket: 56805      **DST#: 1**  
Test Start: 2014.03.12 @ 12:45:00

## GENERAL INFORMATION:

Formation: **Oread**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 14:56:30  
Time Test Ended: 19:45:00  
Interval: **3986.00 ft (KB) To 4030.00 ft (KB) (TVD)**  
Total Depth: 4030.00 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: 3127.00 ft (KB)  
3115.00 ft (CF)  
KB to GR/CF: 12.00 ft

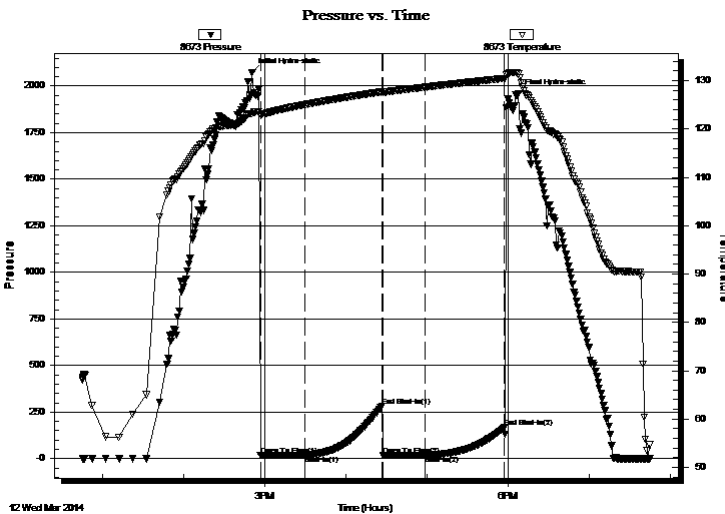
## Serial #: 8673

Inside

Press@RunDepth: 18.93 psig @ 3987.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.03.12      End Date: 2014.03.12      Last Calib.: 2014.03.12  
Start Time: 12:45:05      End Time: 19:44:59      Time On Btm: 2014.03.12 @ 14:50:30  
Time Off Btm: 2014.03.12 @ 18:07:30

TEST COMMENT: IF: Weak surface blow, Dead in 20 mins.  
IS: No blow back.  
FF: No blow.  
FS: No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2073.32	123.24	Initial Hydro-static
6	17.50	123.04	Open To Flow (1)
39	18.51	125.06	Shut-In(1)
96	281.97	127.71	End Shut-In(1)
97	18.40	127.64	Open To Flow (2)
128	18.93	128.67	Shut-In(2)
187	166.38	130.49	End Shut-In(2)
197	1959.87	131.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm-25%o75%m	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  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56805      **DST#: 1**  
Test Start: 2014.03.12 @ 12:45:00

**Tool Information**

Drill Pipe:	Length: 3794.00 ft	Diameter: 3.80 inches	Volume: 53.22 bbl	Tool Weight:	2400.00 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: 183.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 54.12 bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	3986.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	72.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			3963.00	
Hydraulic tool	5.00			3968.00	
Jars	5.00			3973.00	
Safety Joint	3.00			3976.00	
Packer	5.00			3981.00	28.00      Bottom Of Top Packer
Packer	5.00			3986.00	
Stubb	1.00			3987.00	
Recorder	0.00	8673	Inside	3987.00	
Recorder	0.00	8651	Outside	3987.00	
Perforations	1.00			3988.00	
change Over Sub	1.00			3989.00	
Blank Spacing	32.00			4021.00	
Change Over Sub	1.00			4022.00	
Perforations	5.00			4027.00	
Bullnose	3.00			4030.00	44.00      Bottom Packers & Anchor

**Total Tool Length: 72.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling

**30 1s 28w Cheyenne,KS**

250 N. Water Ste. 300  
Wichita KS 67202

**Gleason Unit #1-30**

Job Ticket: 56805

**DST#: 1**

ATTN: Steve Miller

Test Start: 2014.03.12 @ 12:45:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 80.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	ocm-25%o75%m	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

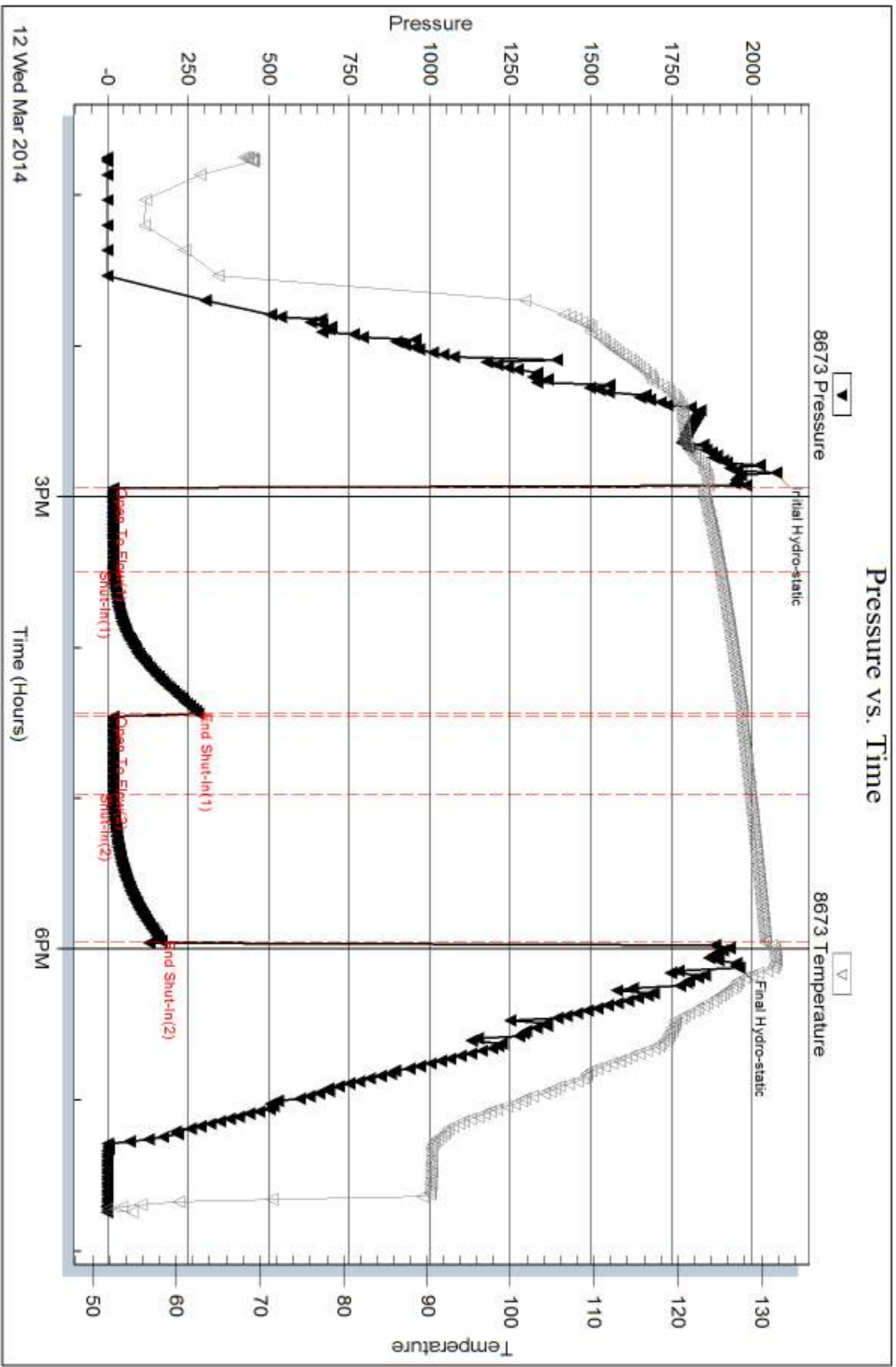
Num Gas Bombs: 0

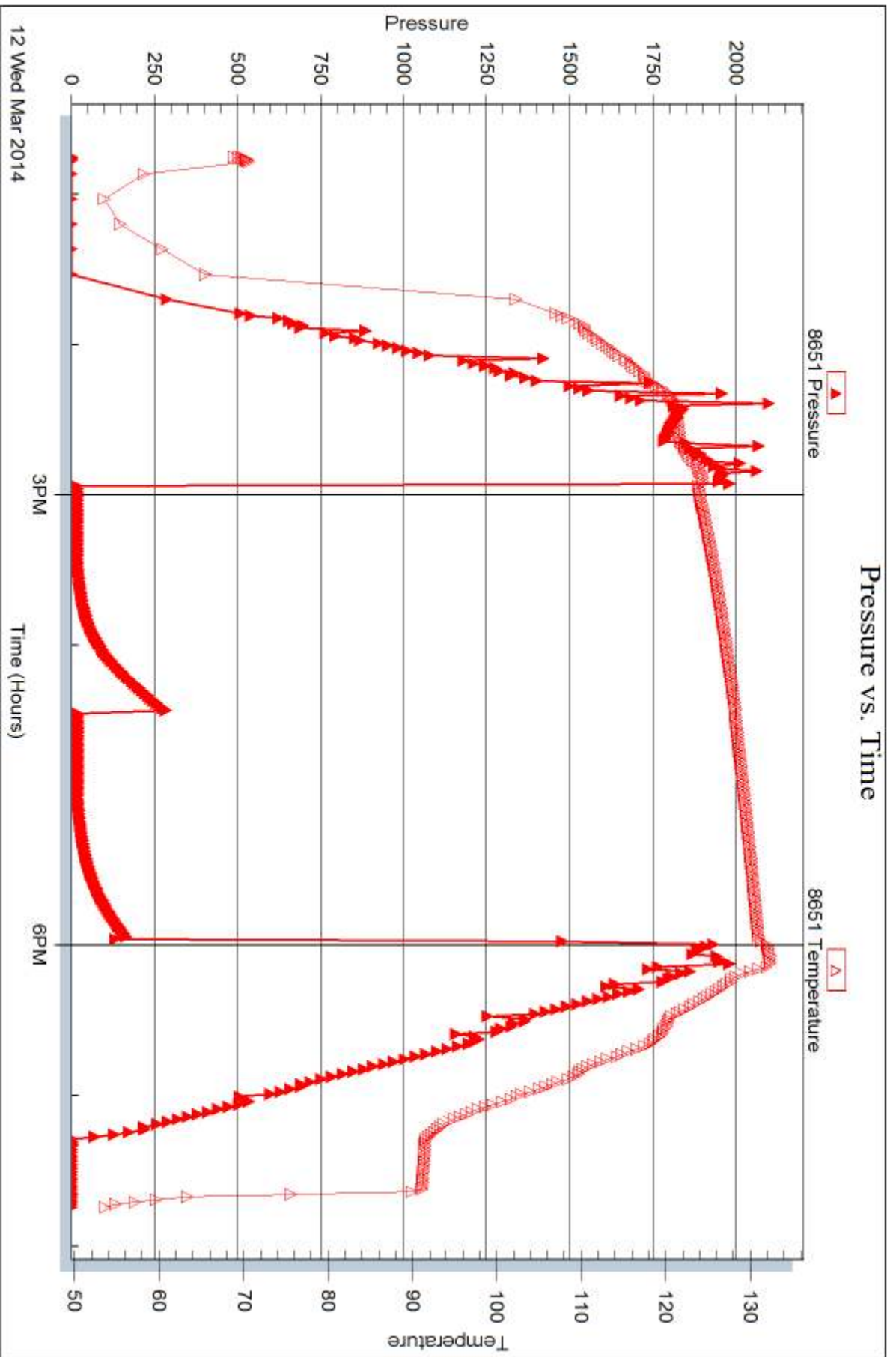
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Steve Miler

### **Gleason Unit #1-30**

#### **30 1s 28w Cheyenne,KS**

Start Date: 2014.03.13 @ 17:50:00

End Date: 2014.03.13 @ 23:18:30

Job Ticket #: 56806                      DST #: 2

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  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne, KS**

**Gleason Unit #1-30**

Job Ticket: 56806      **DST#: 2**  
Test Start: 2014.03.13 @ 17:50:00

## GENERAL INFORMATION:

Formation: **LKC-D-G**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:28:30  
Time Test Ended: 23:18:30  
Interval: **4120.00 ft (KB) To 4226.00 ft (KB) (TVD)**  
Total Depth: 4226.00 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: 3127.00 ft (KB)  
3115.00 ft (CF)  
KB to GR/CF: 12.00 ft

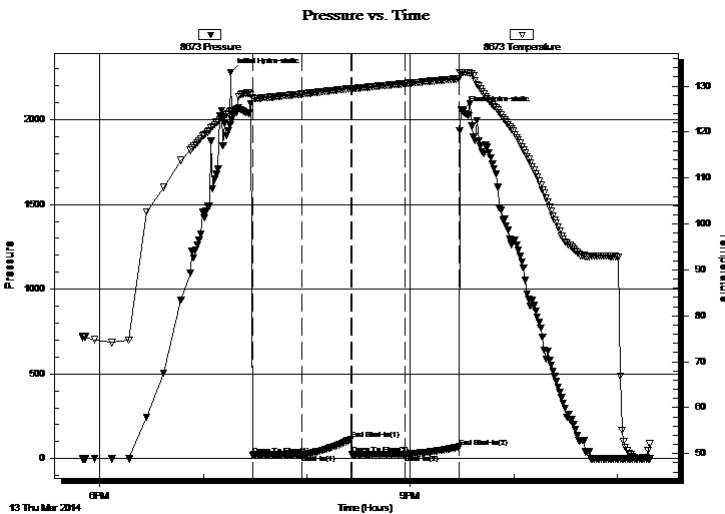
## Serial #: 8673

Inside

Press@RunDepth: 25.54 psig @ 4121.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.03.13      End Date: 2014.03.13      Last Calib.: 2014.03.13  
Start Time: 17:50:05      End Time: 23:18:29      Time On Btm: 2014.03.13 @ 19:16:00  
Time Off Btm: 2014.03.13 @ 21:30:00

TEST COMMENT: IF: Weak blow , Dead in 5 mins.  
IS: No blow back  
FF: No blow  
FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.33	124.62	Initial Hydro-static
13	21.78	127.39	Open To Flow (1)
41	24.06	128.29	Shut-In(1)
70	116.11	129.49	End Shut-In(1)
70	23.81	129.46	Open To Flow (2)
101	25.54	130.56	Shut-In(2)
132	70.10	131.63	End Shut-In(2)
134	2053.91	132.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud w ith oil spots	0.05

\* 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  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56806      **DST#: 2**  
Test Start: 2014.03.13 @ 17:50:00

**Tool Information**

Drill Pipe:	Length: 3923.00 ft	Diameter: 3.80 inches	Volume: 55.03 bbl	Tool Weight: 2400.00 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: 183.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 55.93 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4120.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	106.00 ft			
Tool Length:	134.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			4097.00	
Hydraulic tool	5.00			4102.00	
Jars	5.00			4107.00	
Safety Joint	3.00			4110.00	
Packer	5.00			4115.00	28.00      Bottom Of Top Packer
Packer	5.00			4120.00	
Stubb	1.00			4121.00	
Recorder	0.00	8673	Inside	4121.00	
Recorder	0.00	8651	Outside	4121.00	
Perforations	6.00			4127.00	
change Over Sub	1.00			4128.00	
Drill Pipe	94.00			4222.00	
Change Over Sub	1.00			4223.00	
Bullnose	3.00			4226.00	106.00      Bottom Packers & Anchor

**Total Tool Length: 134.00**



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# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56806      **DST#: 2**  
Test Start: 2014.03.13 @ 17:50:00

### 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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: 2.00 inches			

### Recovery Information

Recovery Table

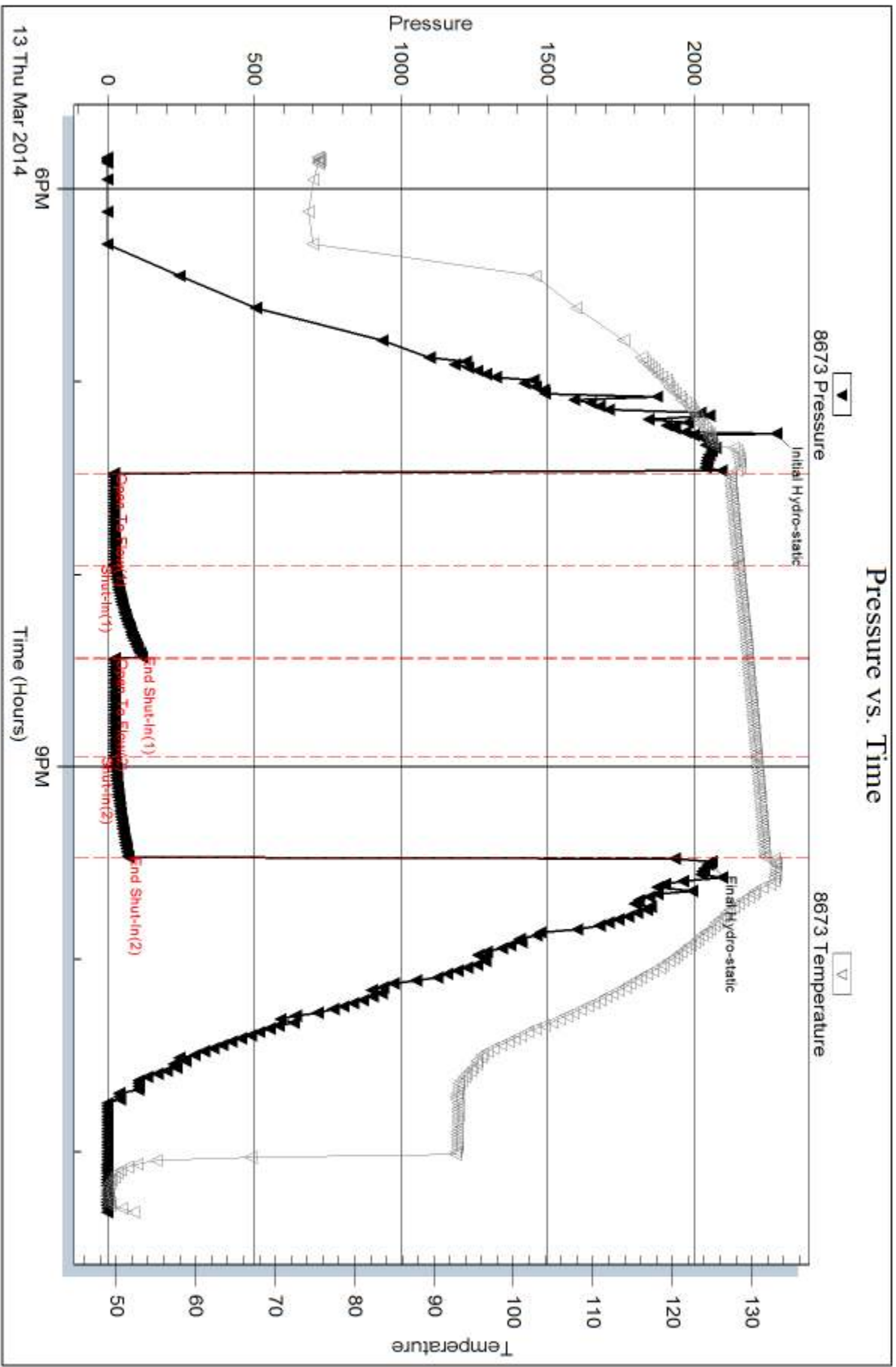
Length ft	Description	Volume bbl
10.00	mud w ith oil spots	0.049

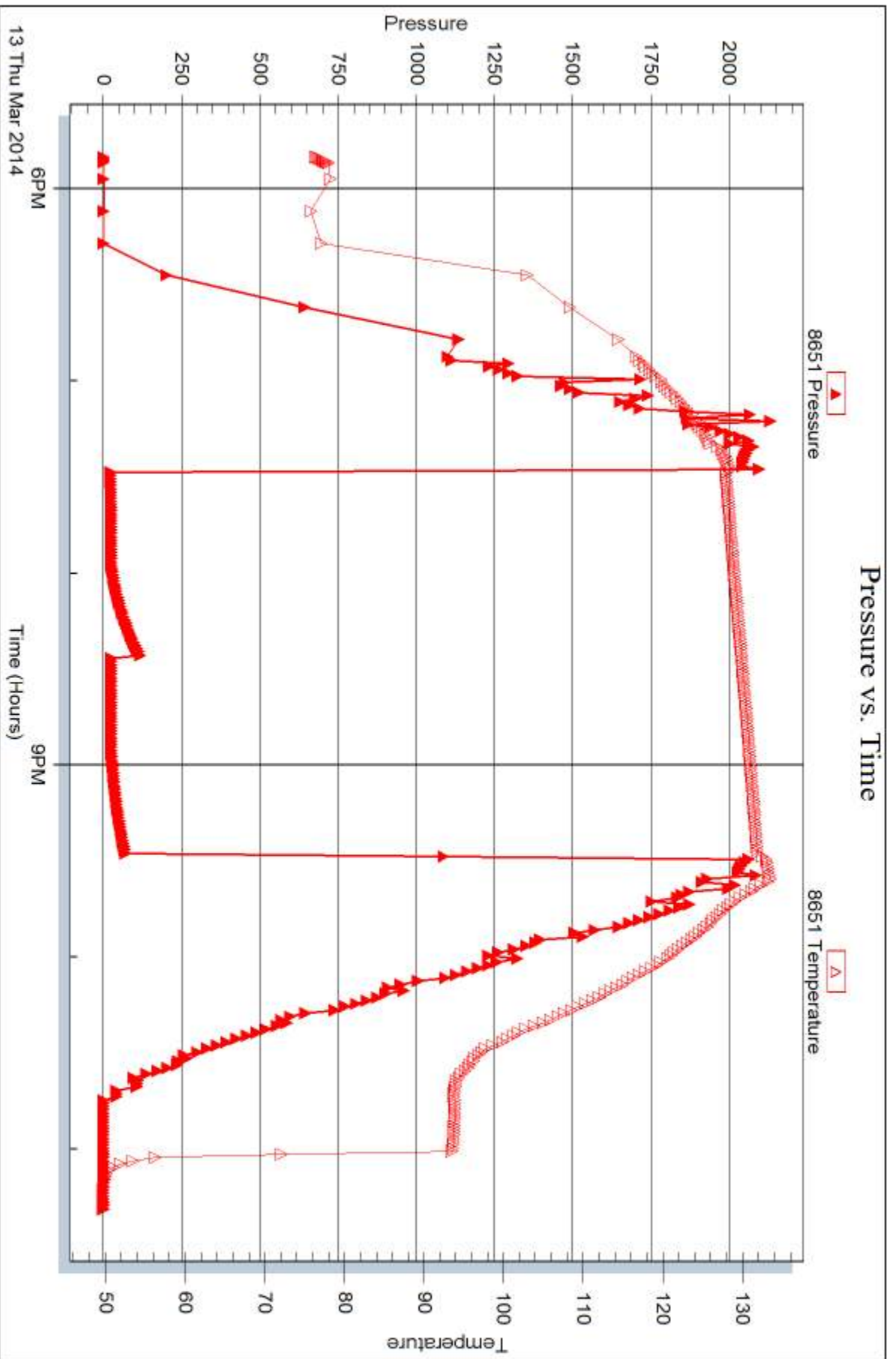
Total Length: 10.00 ft      Total Volume: 0.049 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Steve Miler

### **Gleason Unit #1-30**

#### **30 1s 28w Cheyenne,KS**

Start Date: 2014.03.14 @ 19:45:00

End Date: 2014.03.15 @ 03:41:00

Job Ticket #: 56807                      DST #: 3

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

Printed: 2014.03.20 @ 17:25:23



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**

**Gleason Unit #1-30**

Job Ticket: 56807      **DST#: 3**  
Test Start: 2014.03.14 @ 19:45:00

## GENERAL INFORMATION:

Formation: **LKC-H-K**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 21:38:30      Tester: Chuck Kreuzer Jr.  
Time Test Ended: 03:41:00      Unit No: 61  
**Interval: 4236.00 ft (KB) To 4380.00 ft (KB) (TVD)**      Reference Elevations: 3127.00 ft (KB)  
Total Depth: 4380.00 ft (KB) (TVD)      3115.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 12.00 ft

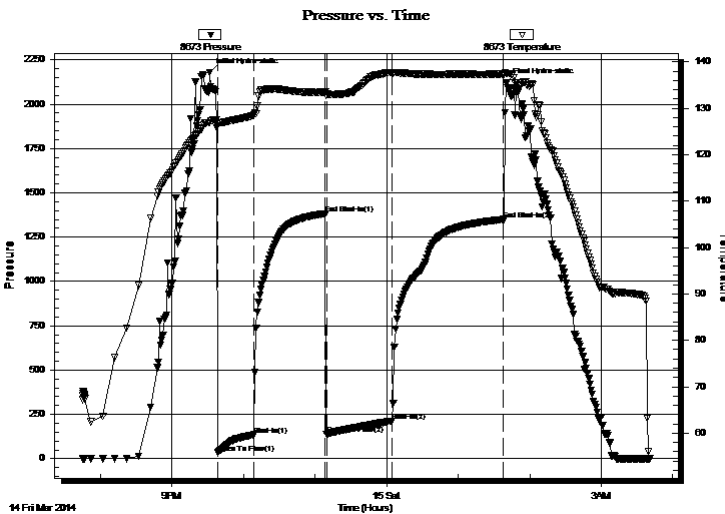
## Serial #: 8673

Inside

Press@RunDepth: 212.92 psig @ 4237.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.03.14      End Date: 2014.03.15      Last Calib.: 2014.03.15  
Start Time: 19:45:05      End Time: 03:40:59      Time On Btm: 2014.03.14 @ 21:31:30  
Time Off Btm: 2014.03.15 @ 01:40:30

TEST COMMENT: IF: Fair blow , built to B.O.B in 20 mins.  
IS: No blow back  
FF: No blow  
FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2179.77	126.93	Initial Hydro-static
7	33.05	126.87	Open To Flow (1)
37	134.68	128.58	Shut-In(1)
97	1383.12	133.46	End Shut-In(1)
98	138.15	132.85	Open To Flow (2)
153	212.92	137.57	Shut-In(2)
247	1350.38	137.37	End Shut-In(2)
249	2120.10	137.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw -50% m50% w	0.94
124.00	w cm-20% w 80% m	1.74
124.00	mud-100%	1.74

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

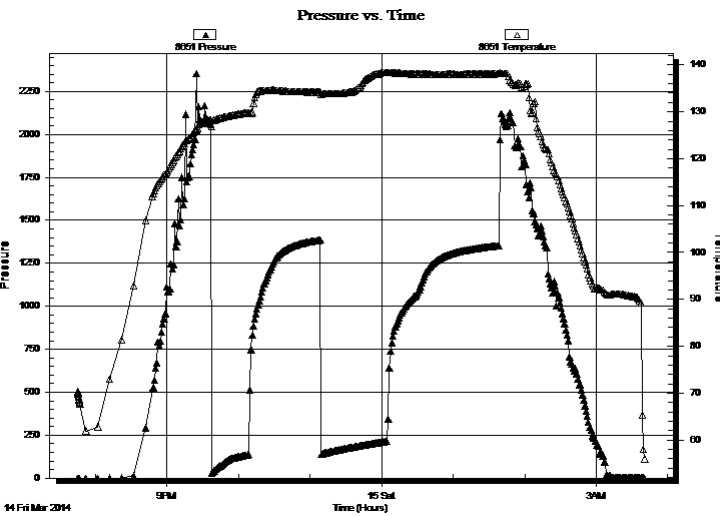
**30 1s 28w Cheyenne, KS**  
**Gleason Unit #1-30**  
Job Ticket: 56807 **DST#: 3**  
Test Start: 2014.03.14 @ 19:45:00

## GENERAL INFORMATION:

Formation: **LKC-H-K**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 21:38:30  
Time Test Ended: 03:41:00  
Interval: **4236.00 ft (KB) To 4380.00 ft (KB) (TVD)**  
Total Depth: 4380.00 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: 3127.00 ft (KB)  
3115.00 ft (CF)  
KB to GR/CF: 12.00 ft

**Serial #: 8651 Outside**  
Press@RunDepth: psig @ 4237.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.03.14 End Date: 2014.03.15 Last Calib.: 2014.03.15  
Start Time: 19:45:05 End Time: 03:40:59 Time On Btm:  
Time Off Btm:

TEST COMMENT: IF: Fair blow, built to B.O.B in 20 mins.  
IS: No blow back  
FF: No blow  
FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw -50% m50% w	0.94
124.00	w cm-20% w 80% m	1.74
124.00	mud-100%	1.74

\* 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  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56807 **DST#: 3**  
Test Start: 2014.03.14 @ 19:45:00

## Tool Information

Drill Pipe:	Length: 4055.00 ft	Diameter: 3.80 inches	Volume: 56.88 bbl	Tool Weight: 2400.00 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: 183.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 84000.00 lb
			<u>Total Volume: 57.78 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	4236.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	144.00 ft			
Tool Length:	172.00 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			4213.00	
Hydraulic tool	5.00			4218.00	
Jars	5.00			4223.00	
Safety Joint	3.00			4226.00	
Packer	5.00			4231.00	28.00 Bottom Of Top Packer
Packer	5.00			4236.00	
Stubb	1.00			4237.00	
Recorder	0.00	8673	Inside	4237.00	
Recorder	0.00	8651	Outside	4237.00	
Perforations	10.00			4247.00	
change Over Sub	1.00			4248.00	
Drill Pipe	124.00			4372.00	
Change Over Sub	1.00			4373.00	
Perforations	4.00			4377.00	
Bullnose	3.00			4380.00	144.00 Bottom Packers & Anchor

**Total Tool Length: 172.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56807      **DST#: 3**  
Test Start: 2014.03.14 @ 19:45:00

### Mud and Cushion Information

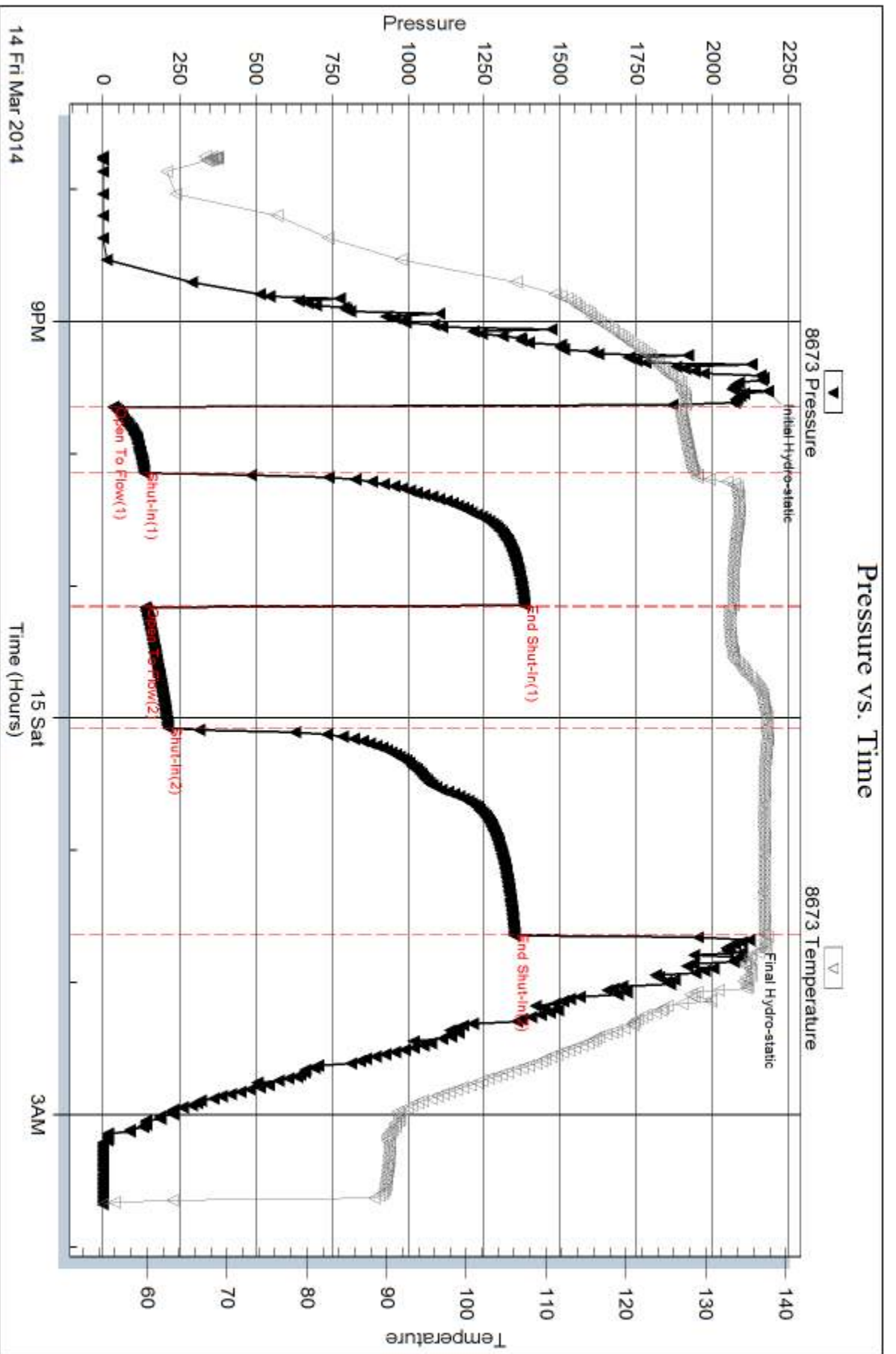
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: 2.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw -50% m50%w	0.942
124.00	w cm-20%w 80%m	1.739
124.00	mud-100%	1.739

Total Length: 434.00 ft      Total Volume: 4.420 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

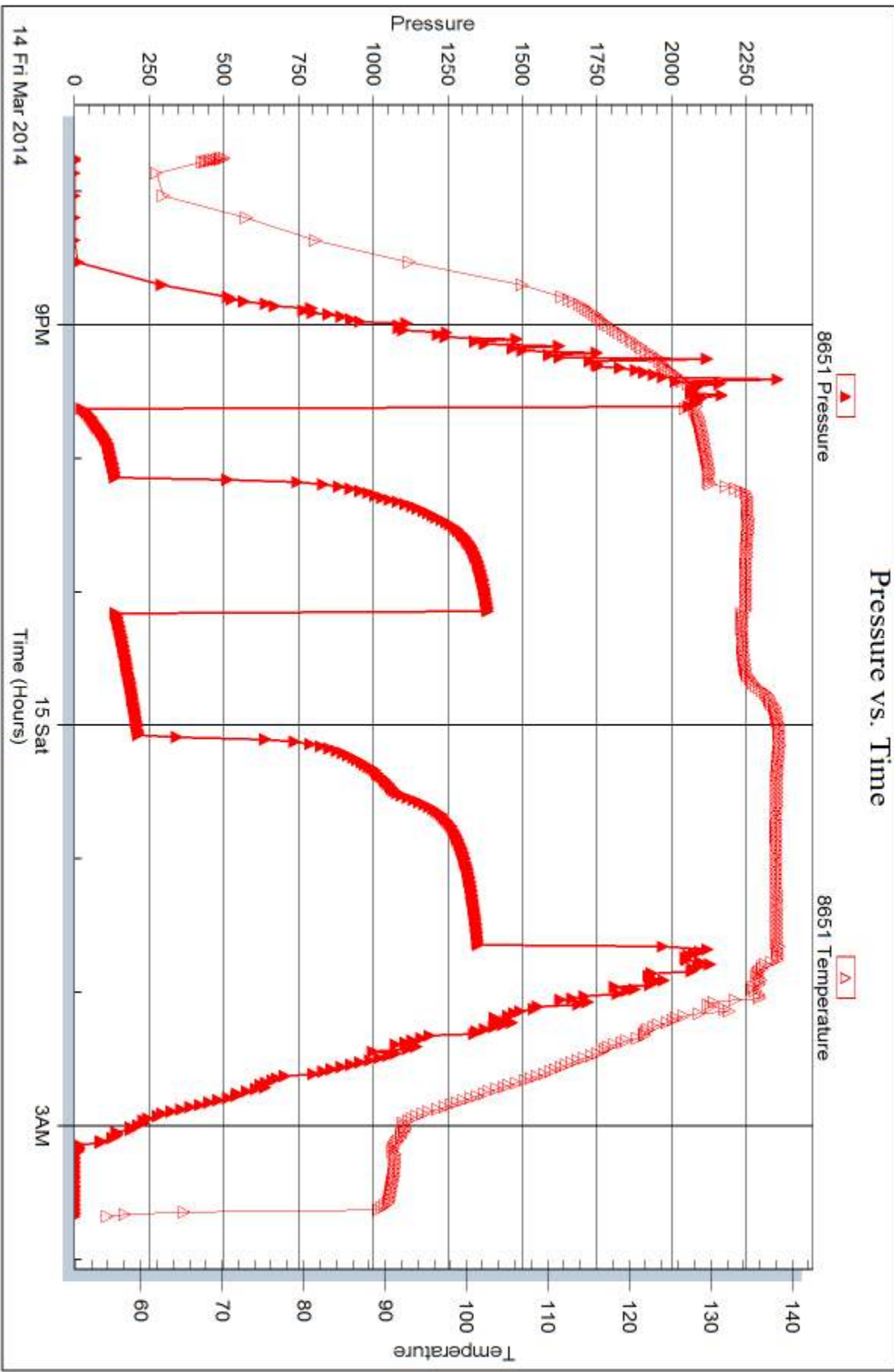


Serial #: 8651

Outside Murfin Drilling

Geason Unit #1-30

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 56807

Printed: 2014.03.20 @ 17:25:25



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling**

250 N. Water Ste. 300  
Wichita KS 67202

ATTN: Steve Miler

### **Gleason Unit #1-30**

#### **30 1s 28w Cheyenne,KS**

Start Date: 2014.03.15 @ 21:45:00

End Date: 2014.03.16 @ 05:08:00

Job Ticket #: 56808                      DST #: 4

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

Printed: 2014.03.20 @ 17:20:32



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne, KS**

**Gleason Unit #1-30**

Job Ticket: 56808      **DST#: 4**  
Test Start: 2014.03.15 @ 21:45:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 23:50:30      Tester: Chuck Kreuzer Jr.  
Time Test Ended: 05:08:00      Unit No: 61  
**Interval: 4399.00 ft (KB) To 4515.00 ft (KB) (TVD)**      Reference Elevations: 3127.00 ft (KB)  
Total Depth: 4515.00 ft (KB) (TVD)      3115.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 12.00 ft

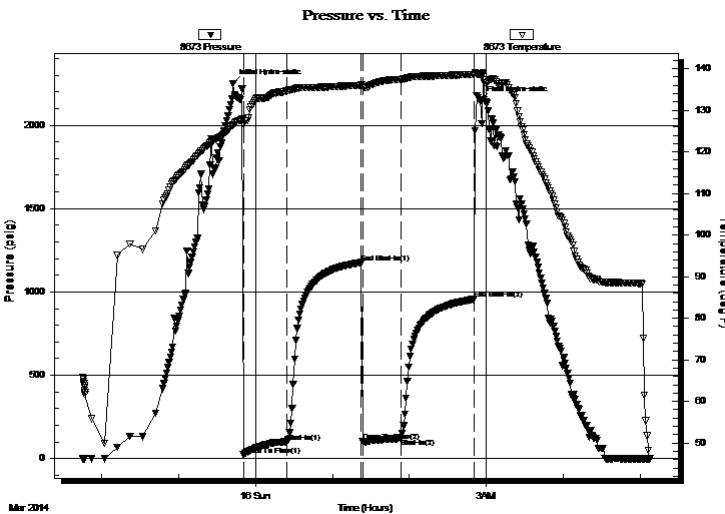
## Serial #: 8673

Inside

Press@RunDepth: 122.60 psig @ 4400.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.03.15      End Date: 2014.03.16      Last Calib.: 2014.03.16  
Start Time: 21:45:05      End Time: 05:07:59      Time On Btm: 2014.03.15 @ 23:42:30  
Time Off Btm: 2014.03.16 @ 02:55:30

**TEST COMMENT:** IF: Fair blow, Built to B.O.B in 20 mins.  
IS: No blow back.  
FF: Weak blow, Built to 5 in. over 30 mins.  
FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2247.80	126.45	Initial Hydro-static
8	23.32	126.53	Open To Flow (1)
42	101.33	134.69	Shut-In(1)
100	1176.66	136.05	End Shut-In(1)
101	104.47	135.65	Open To Flow (2)
131	122.60	137.44	Shut-In(2)
188	956.47	138.66	End Shut-In(2)
193	2144.53	138.60	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	gmco-10%g45%m45%o	0.59
62.00	gocm-30%g15%o55%m	0.30
62.00	gmco-5%g30%m65%o	0.86
15.00	oil	0.21
0.00	186 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

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**

**Gleason Unit #1-30**

Job Ticket: 56808 **DST#: 4**

Test Start: 2014.03.15 @ 21:45:00

## GENERAL INFORMATION:

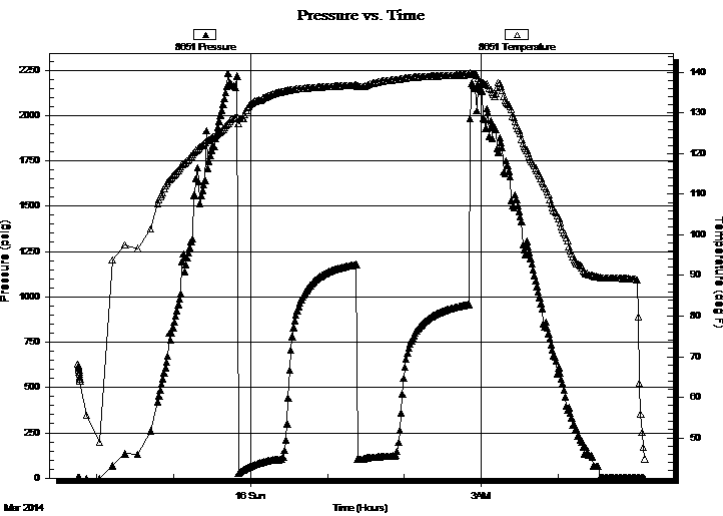
Formation: **Pawnee**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 23:50:30  
Time Test Ended: 05:08:00  
Interval: **4399.00 ft (KB) To 4515.00 ft (KB) (TVD)**  
Total Depth: 4515.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Chuck Kreuzer Jr.  
Unit No: 61  
Reference Elevations: 3127.00 ft (KB)  
3115.00 ft (CF)  
KB to GR/CF: 12.00 ft

## Serial #: 8651

Outside

Press@RunDepth: psig @ 4400.00 ft (KB)  
Start Date: 2014.03.15 End Date: 2014.03.16  
Start Time: 21:45:05 End Time: 05:07:59  
Capacity: 8000.00 psig  
Last Calib.: 2014.03.16  
Time On Btm:  
Time Off Btm:

**TEST COMMENT:** IF: Fair blow, Built to B.O.B in 20 mins.  
IS: No blow back.  
FF: Weak blow, Built to 5 in. over 30 mins.  
FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	gmco-10%g45%m45%o	0.59
62.00	gocm-30%g15%o55%m	0.30
62.00	gmco-5%g30%m65%o	0.86
15.00	oil	0.21
0.00	186 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  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56808 **DST#: 4**  
Test Start: 2014.03.15 @ 21:45:00

## Tool Information

Drill Pipe:	Length: 4203.00 ft	Diameter: 3.80 inches	Volume: 58.96 bbl	Tool Weight: 2400.00 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: 183.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.86 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4399.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	116.00 ft			
Tool Length:	144.00 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			4376.00	
Hydraulic tool	5.00			4381.00	
Jars	5.00			4386.00	
Safety Joint	3.00			4389.00	
Packer	5.00			4394.00	28.00 Bottom Of Top Packer
Packer	5.00			4399.00	
Stubb	1.00			4400.00	
Recorder	0.00	8673	Inside	4400.00	
Recorder	0.00	8651	Outside	4400.00	
Perforations	16.00			4416.00	
change Over Sub	1.00			4417.00	
Drill Pipe	94.00			4511.00	
Change Over Sub	1.00			4512.00	
Bullnose	3.00			4515.00	116.00 Bottom Packers & Anchor

**Total Tool Length: 144.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling  
250 N. Water Ste. 300  
Wichita KS 67202  
ATTN: Steve Miller

**30 1s 28w Cheyenne,KS**  
**Gleason Unit #1-30**  
Job Ticket: 56808      **DST#: 4**  
Test Start: 2014.03.15 @ 21:45:00

### Mud and Cushion Information

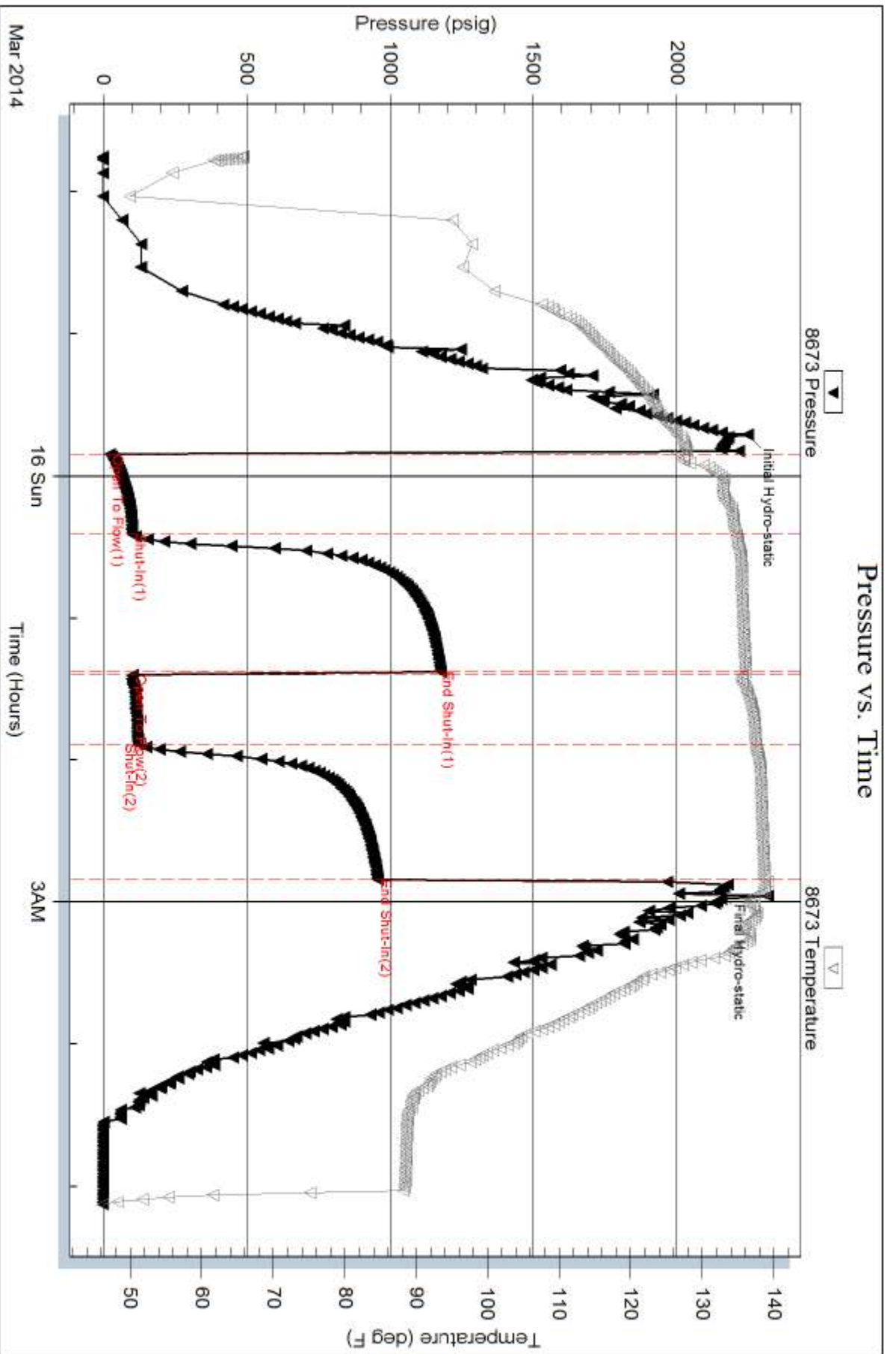
Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 75.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.40 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 700.00 ppm		
Filter Cake: 2.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	gmco-10%g45%m45%o	0.590
62.00	gocm-30%g15%o55%m	0.305
62.00	gmco-5%g30%m65%o	0.861
15.00	oil	0.210
0.00	186 ft. gas in pipe	0.000

Total Length: 259.00 ft      Total Volume: 1.966 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: 36@70\*=-

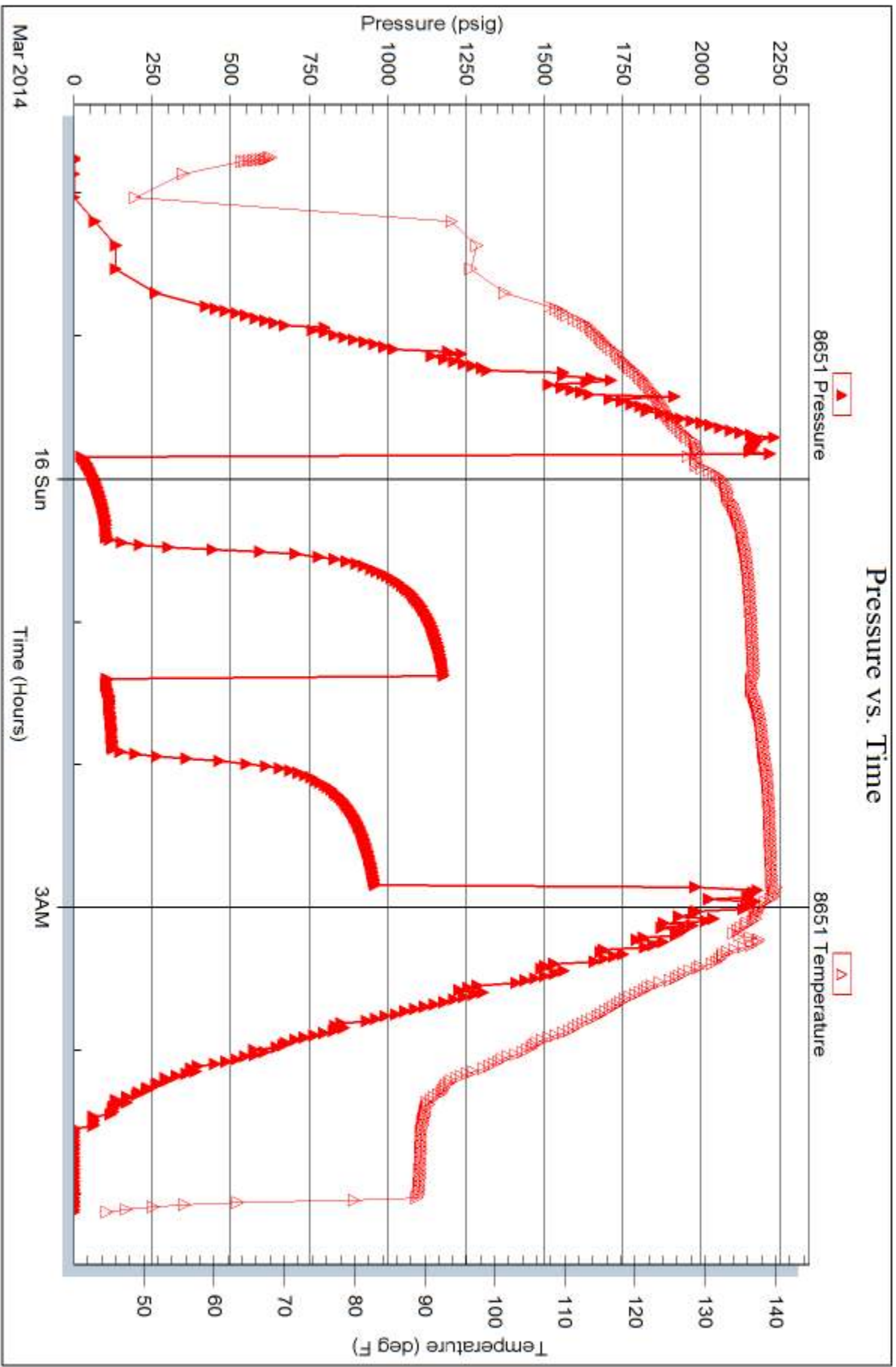


Serial #: 8651

Outside Murfin Drilling

Geason Unit #1-30

DST Test Number: 4





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56805

4/10

Well Name & No. Gleason unit #1-30 Test No. 1 Date 3-12-2014  
 Company Murfin Drilling Co. Elevation 3127 KB 3115 GL  
 Address 250 N. Water Ste. 300 Wichita KS 67207  
 Co. Rep / Geo. Steve Miller Rig Murfin #20  
 Location: Sec. 30 Twp. 15 Rge. 28W Co. Cheyenne State Ks

Interval Tested 3486 4030 Zone Tested CREAD  
 Anchor Length 44 Drill Pipe Run 3799 Mud Wt. 9.2  
 Top Packer Depth 3981 Drill Collars Run 183 Vis 80  
 Bottom Packer Depth 3486 Wt. Pipe Run - 0 WL 5.6  
 Total Depth 4030 Chlorides 500 ppm System LCM 6#

Blow Description IFT Weak blow, surface Dead in 20 mins  
 IFT: No blow back  
 FF: No blow  
 FST: No blow back

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

Rec Total 5 BHT 129 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2073</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>12:00</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:45</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:58</u>
(D) Initial Shut-In <u>282</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>17:55</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>19:45</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>70x2=140x1.55</u> 217	Comments _____
(G) Final Shut-In <u>166</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1950</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>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1792</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1792</u>	

Approved By \_\_\_\_\_ Our Representative Chuck [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.

785-259-3188



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56806

Well Name & No. Gleason Unit #1-30 Test No. 2 Date 3-13-2014  
 Company Murfin Drilling Elevation 3127 KB 3115 GL  
 Address 250 N. Water Ste 300 Wichita KS 67202  
 Co. Rep / Geo. Steve Miller Rig Murfin #20  
 Location: Sec. 30 Twp. 1s Rge. 28W Co. Cherokee State KS

Interval Tested 4120 4226 Zone Tested LKC-D-6  
 Anchor Length 106 Drill Pipe Run 3923 Mud Wt. 9.4  
 Top Packer Depth 4115 Drill Collars Run 183 Vis 65  
 Bottom Packer Depth 4120 Wt. Pipe Run -0- WL 6.0  
 Total Depth 4226 Chlorides 500 ppm System LCM 4#

Blow Description IF: Weak blow, Dead in 5 mins.  
ISI: No blow back  
FF: No blow  
FBI: No blow back

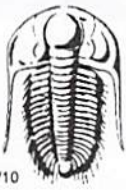
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud with oil spots</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 130 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>227A</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>18:35</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:50</u>
(C) First Final Flow <u>24</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:28</u>
(D) Initial Shut-In <u>116</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>21:30</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>23:18</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>70x2 = 140x1.55</u> <u>217</u>	Comments _____
(G) Final Shut-In <u>70</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2054</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1792</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1792</u>	

Approved By \_\_\_\_\_ Our Representative Chuck Kuyper

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56807

4/10

Well Name & No. Gleason unit # 1-30 Test No. 3 Date 3-14-2014  
 Company Murfin Drilling Elevation 3127 KB 3115 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Steve Miller Rig Murfin #20  
 Location: Sec. 30 Twp. 1S Rge. 28W Co. \_\_\_\_\_ State KS

Interval Tested 4236 4380 Zone Tested LKC-H-R  
 Anchor Length \_\_\_\_\_ 144 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.4  
 Top Packer Depth \_\_\_\_\_ 4231 Drill Collars Run 183 Vis SS  
 Bottom Packer Depth \_\_\_\_\_ 4236 Wt. Pipe Run -0- WL 6.0  
 Total Depth \_\_\_\_\_ 4380 Chlorides 500 ppm System LCM 4H

Blow Description IF: Fair Blow, Bu: 14 to B.O.B in 20 mins.  
Is I: No blow back  
FF: Weak blow, Bu: 14 in over 60 mins.  
FES: No blow back

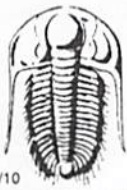
Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>m</u>				<u>100%</u>
<u>124</u>	<u>wcm</u>			<u>20</u>	<u>80</u>
<u>186</u>	<u>new</u>			<u>50</u>	<u>50</u>
_____	_____				
_____	_____				

Rec Total 434 BHT 138 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic _____ <u>2180</u>	<input checked="" type="checkbox"/> Test _____ <u>1250</u>	T-On Location _____ <u>18:45</u>
(B) First Initial Flow _____ <u>33</u>	<input checked="" type="checkbox"/> Jars _____ <u>250</u>	T-Started _____ <u>19:45</u>
(C) First Final Flow _____ <u>135</u>	<input checked="" type="checkbox"/> Safety Joint _____ <u>75</u>	T-Open _____ <u>21:38</u>
(D) Initial Shut-In _____ <u>1383</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled _____ <u>1:35</u>
(E) Second Initial Flow _____ <u>138</u>	<input type="checkbox"/> Hourly Standby _____	T-Out _____ <u>3:41</u>
(F) Second Final Flow _____ <u>213</u>	<input checked="" type="checkbox"/> Mileage <u>72x2=144x1.55= 217</u>	Comments _____
(G) Final Shut-In _____ <u>1350</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic _____ <u>2110</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<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>60</u>	<input type="checkbox"/> Day Standby _____	Total _____ <u>1792</u>
Final Shut-In _____ <u>90</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total _____ <u>1792</u>	

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56808

Well Name & No. Gleason unit # 1-30 Test No. 4 Date 3-16-2014  
 Company Murfin Drilling Co. Elevation 3127 KB 3115 GL  
 Address 250 N. Water Ste. 300 Wichita KS  
 Co. Rep / Geo. Steve Miller Rig Murfin # 20  
 Location: Sec. 30 Twp. 1S Rge. 28W Co. Cheyenne State KS

Interval Tested 4349 4515 Zone Tested Pawnee  
 Anchor Length 116 Drill Pipe Run 4203 Mud Wt. 9.4  
 Top Packer Depth 4344 Drill Collars Run 183 Vis 75  
 Bottom Packer Depth 4344 Wt. Pipe Run 0- WL 6.4  
 Total Depth 4515 Chlorides 700 ppm System LCM 4#

Blow Description IF: Fair blow, Built to B.O.B in 20 mins  
ISI: No blow back  
FF: Weak blow sin over 30 mins  
FSE: No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>22</u>	<u>186 ft gas in pipe</u>				
<u>15</u>	<u>oil</u>	<u>10</u>	<u>90</u>		
<u>62</u>	<u>9mco</u>	<u>5</u>	<u>65</u>		<u>30</u>
<u>62</u>	<u>90cm</u>	<u>30</u>	<u>15</u>		<u>55</u>
<u>120</u>	<u>9mco</u>	<u>10</u>	<u>45</u>		<u>45</u>

Rec Total 254 BHT 137 Gravity 36 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic <u>2248</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>21:30</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>21:45</u>
(C) First Final Flow <u>101</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:50</u>
(D) Initial Shut-In <u>1177</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2:55</u>
(E) Second Initial Flow <u>104</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>5:08</u>
(F) Second Final Flow <u>123</u>	<input checked="" type="checkbox"/> Mileage <u>72x2 = 144x1.5 = 434</u>	Comments <u>loaded tools</u>
(G) Final Shut-In <u>956</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2145</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Total <u>2009</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't
	<input type="checkbox"/> Accessibility	
	Sub Total <u>2009</u>	

Approved By \_\_\_\_\_

Our Representative Charles White

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