



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita KS 67202-1216

ATTN: Rocky Milford

### **Euhus #1-24**

#### **24-2s-30w Decatur,KS**

Start Date: 2017.01.15 @ 21:53:00

End Date: 2017.01.16 @ 06:57:00

Job Ticket #: 61223                      DST #: 1

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

Printed: 2017.01.19 @ 09:53:19



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**

**Euhus #1-24**

Job Ticket: 61223

**DST#: 1**

Test Start: 2017.01.15 @ 21:53:00

## GENERAL INFORMATION:

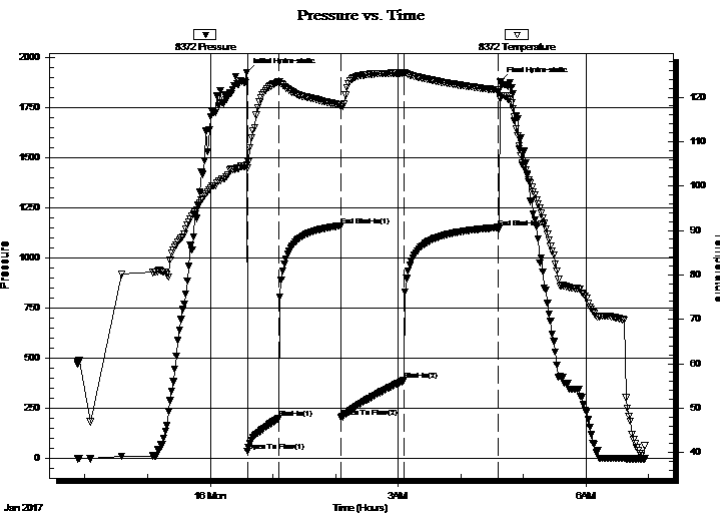
Formation: **LKC " A "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:35:30  
 Time Test Ended: 06:57:00  
 Interval: **3775.00 ft (KB) To 3832.00 ft (KB) (TVD)**  
 Total Depth: 3832.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Jim Svaty  
 Unit No: 76  
 Reference Elevations: 2814.00 ft (KB)  
 2809.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8372

**Outside**

Press@RunDepth: 388.50 psig @ 3778.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.01.15 End Date: 2017.01.16 Last Calib.: 2017.01.16  
 Start Time: 21:53:01 End Time: 06:56:30 Time On Btm: 2017.01.16 @ 00:35:00  
 Time Off Btm: 2017.01.16 @ 04:37:30

**TEST COMMENT:** 30-IFP- BOB in 5 min.  
 60-ISIP- 1"- 10 min. 1 1/2" - 17 min. Died Back in 24 min.  
 60-FFP- BOB in 8 min.  
 90-FSIP- Surface Blow Building to 1" In 16 min. Died Back in 26 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1924.66	104.72	Initial Hydro-static
1	37.07	104.15	Open To Flow (1)
31	200.46	123.51	Shut-In(1)
90	1159.86	118.24	End Shut-In(1)
91	204.03	117.84	Open To Flow (2)
151	388.50	125.47	Shut-In(2)
241	1151.81	121.61	End Shut-In(2)
243	1880.85	119.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
672.00	MCW 5% <i>m</i> 95% <i>w</i>	7.83
62.00	MCW 20% <i>m</i> 80% <i>w</i> Show of Oil	0.87
45.00	OMCW 20% <i>o</i> 30% <i>m</i> 50% <i>w</i>	0.63
5.00	CO 100%	0.07
0.00	100 GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 61223 **DST#: 1**  
Test Start: 2017.01.15 @ 21:53:00

## Tool Information

Drill Pipe:	Length: 3584.00 ft	Diameter: 3.80 inches	Volume: 50.27 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 175.00 ft	Diameter: 2.25 inches	Volume: 0.86 bbl	Weight to Pull Loose: 57000.00 lb
			<u>Total Volume: 51.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3775.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3748.00	
Shut In Tool	5.00			3753.00	
Hydraulic tool	5.00			3758.00	
Jars	5.00			3763.00	
Safety Joint	2.00			3765.00	
Packer	5.00			3770.00	28.00 Bottom Of Top Packer
Packer	5.00			3775.00	
Stubb	1.00			3776.00	
Perforations	1.00			3777.00	
Change Over Sub	1.00			3778.00	
Recorder	0.00	8789	Inside	3778.00	
Recorder	0.00	8372	Outside	3778.00	
Blank Spacing	31.00			3809.00	
Change Over Sub	1.00			3810.00	
Perforations	19.00			3829.00	
Bullnose	3.00			3832.00	57.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>85.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 61223      **DST#: 1**  
Test Start: 2017.01.15 @ 21:53:00

## Mud and Cushion Information

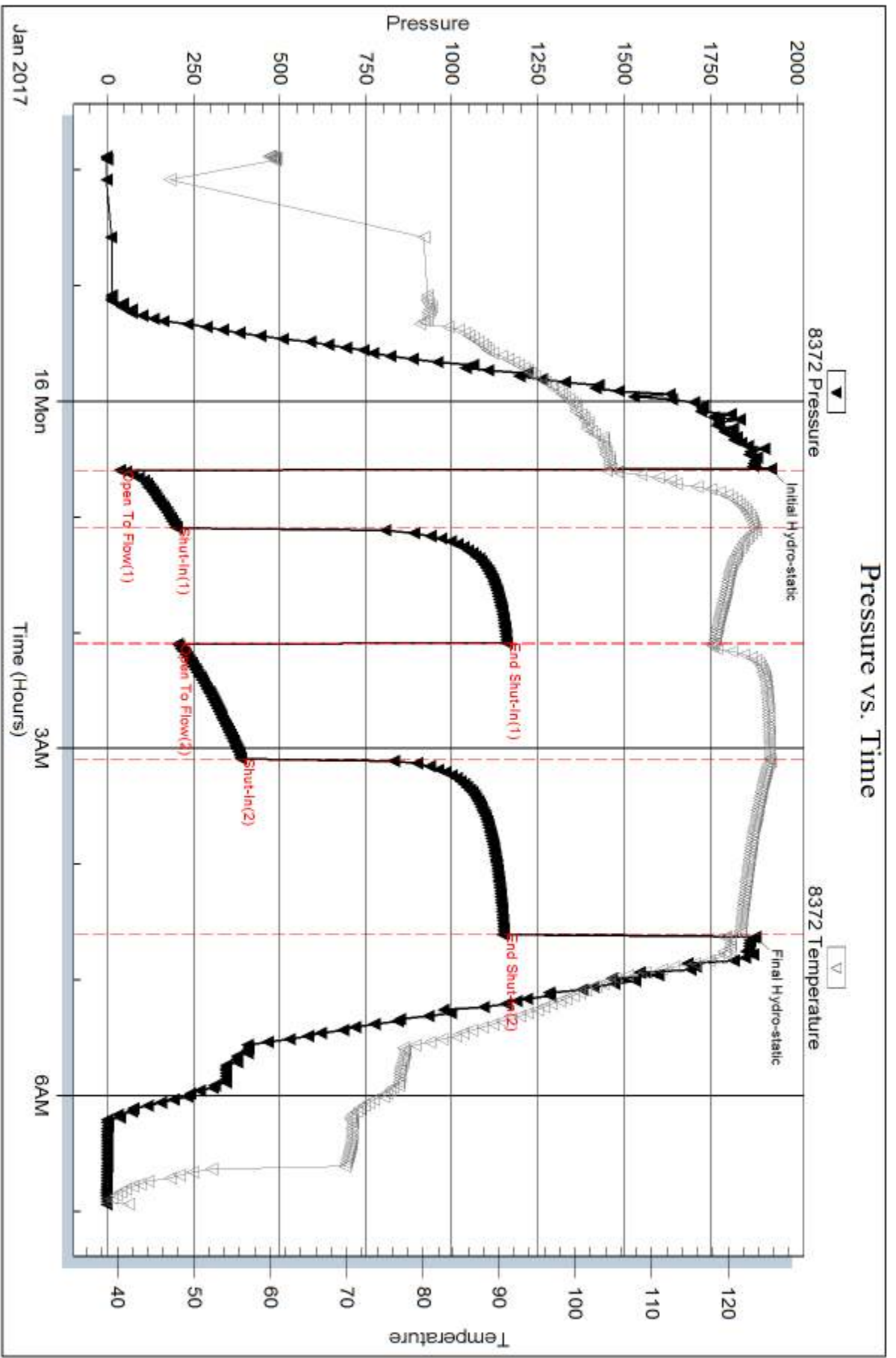
Mud Type: Gel Chem	Cushion Type:	Oil API: 33 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 180000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.96 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 900.00 ppm		
Filter Cake: 6.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
672.00	MCW 5%m 95%w	7.832
62.00	MCW 20%m 80%w Show of Oil	0.870
45.00	OMCW 20%o 30%m 50%w	0.631
5.00	CO 100%	0.070
0.00	100 GIP	0.000

Total Length: 784.00 ft      Total Volume: 9.403 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: .115 @ 34



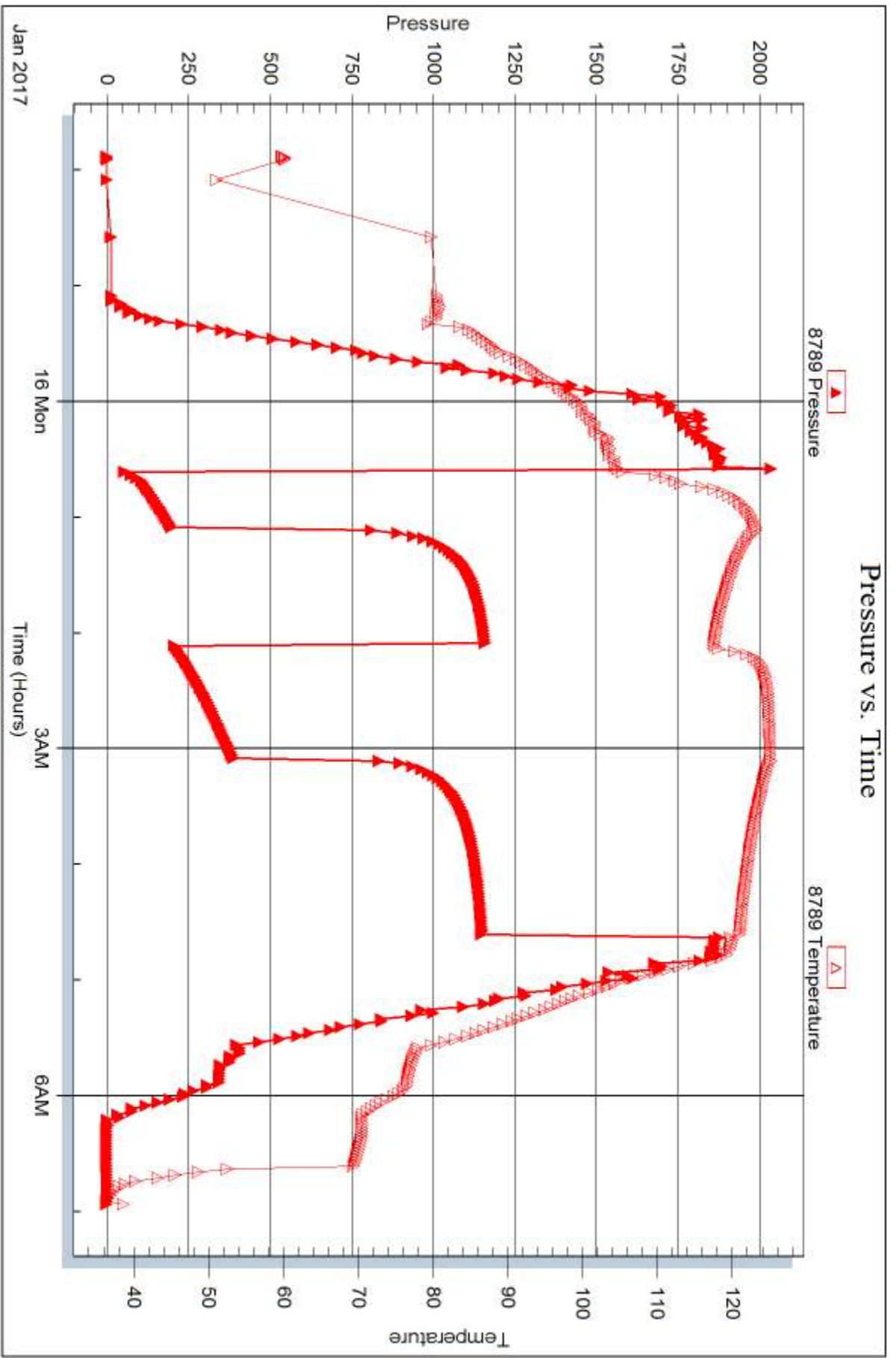
Serial #: 8789

Inside

Murfin Drilling Co Inc

Elhus #1-24

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61223

Printed: 2017.01.19 @ 09:53:20



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita KS 67202-1216

ATTN: Rocky Milford

### **Euhus #1-24**

#### **24-2s-30w Decatur,KS**

Start Date: 2017.01.16 @ 18:21:00

End Date: 2017.01.17 @ 02:12:00

Job Ticket #: 61224                      DST #: 2

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

Printed: 2017.01.19 @ 09:52:59





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur, KS**

**Euhus #1-24**

Job Ticket: 61224

**DST#: 2**

Test Start: 2017.01.16 @ 18:21:00

## GENERAL INFORMATION:

Formation: **LKC " D - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:06:00

Time Test Ended: 02:12:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

**Interval: 3827.00 ft (KB) To 3922.00 ft (KB) (TVD)**

Reference Elevations: 2814.00 ft (KB)

Total Depth: 3922.00 ft (KB) (TVD)

2809.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press@RunDepth: 134.22 psig @ 3831.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.01.16

End Date: 2017.01.17

Last Calib.: 2017.01.17

Start Time: 18:21:01

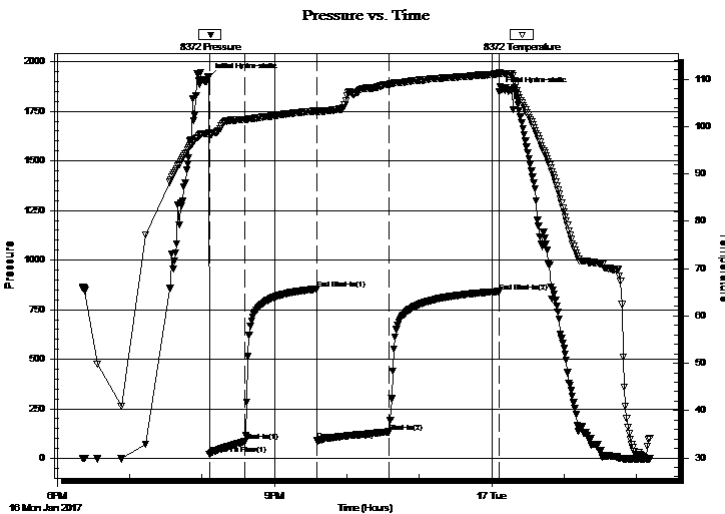
End Time: 02:11:30

Time On Btm: 2017.01.16 @ 20:05:30

Time Off Btm: 2017.01.17 @ 00:06:30

**TEST COMMENT:** 30-IFP- weak blow built to 7 3/4".  
60-ISIP- Surface Blow in 2 min. Dead in 35 min.  
60-FFP- BOB in 45 1/2 min.  
90-FSIP- Weak Surface Blow in 2 1/2 min. Dead in 20 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1920.27	98.79	Initial Hydro-static
1	22.39	98.37	Open To Flow (1)
30	84.95	101.44	Shut-In(1)
90	854.14	103.36	End Shut-In(1)
90	89.63	102.96	Open To Flow (2)
150	134.22	108.89	Shut-In(2)
241	841.63	111.17	End Shut-In(2)
241	1850.99	111.47	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
175.00	OWCM 10%o 30%w 60%m	0.86
77.00	OCM 30%o 70%m	1.08
0.00	50 GIP	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 Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 61224      **DST#: 2**  
Test Start: 2017.01.16 @ 18:21:00

**Tool Information**

Drill Pipe:	Length: 3646.00 ft	Diameter: 3.80 inches	Volume: 51.14 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 175.00 ft	Diameter: 2.25 inches	Volume: 0.86 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 52.00 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3827.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	95.00 ft			
Tool Length:	123.00 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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Change Over Sub	1.00			3800.00	
Shut In Tool	5.00			3805.00	
Hydraulic tool	5.00			3810.00	
Jars	5.00			3815.00	
Safety Joint	2.00			3817.00	
Packer	5.00			3822.00	28.00      Bottom Of Top Packer
Packer	5.00			3827.00	
Stubb	1.00			3828.00	
Perforations	3.00			3831.00	
Recorder	0.00	8789	Inside	3831.00	
Recorder	0.00	8372	Outside	3831.00	
Perforations	24.00			3855.00	
Change Over Sub	1.00			3856.00	
Blank Spacing	62.00			3918.00	
Change Over Sub	1.00			3919.00	
Bullnose	3.00			3922.00	95.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>123.00</b>				



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# DRILL STEM TEST REPORT

## FLUID SUMMARY

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250 N Water Ste 300  
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ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 61224      **DST#: 2**  
Test Start: 2017.01.16 @ 18:21:00

### Mud and Cushion Information

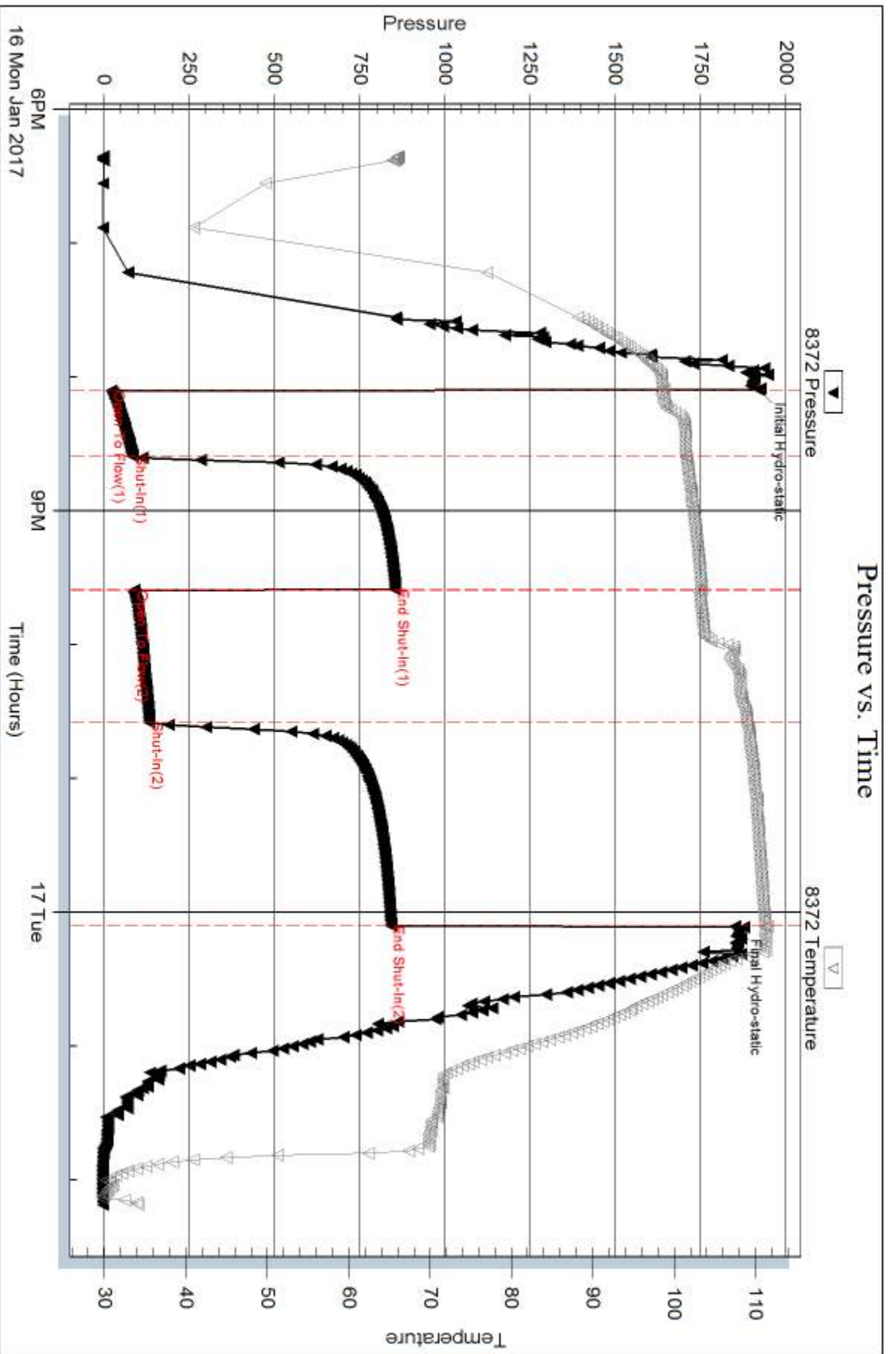
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	58000 ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.76 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1100.00 ppm			
Filter Cake: 5.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
175.00	OWCM 10%o 30%w 60%m	0.861
77.00	OCM 30%o 70%m	1.080
0.00	50 GIP	0.000

Total Length: 252.00 ft      Total Volume: 1.941 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: .305 @ 30



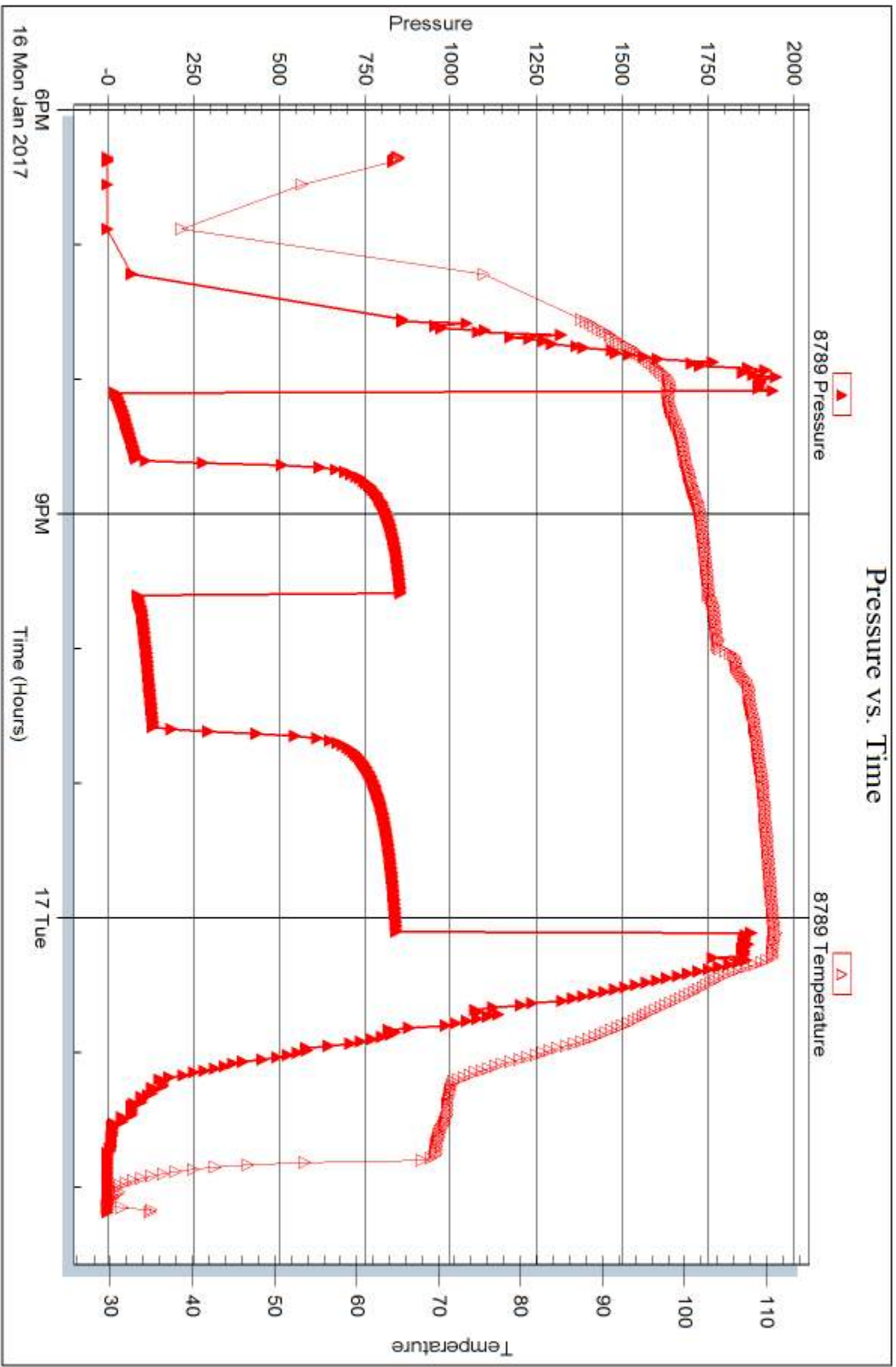
Serial #: 8789

Inside

Murfin Drilling Co Inc

Elhus #1-24

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 61224

Printed: 2017.01.19 @ 09:53:00



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita KS 67202-1216

ATTN: Rocky Milford

### **Euhus #1-24**

#### **24-2s-30w Decatur,KS**

Start Date: 2017.01.17 @ 11:27:00

End Date: 2017.01.17 @ 18:12:00

Job Ticket #: 61225                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.01.19 @ 09:52:35

Murfin Drilling Co Inc  
24-2s-30w Decatur,KS  
Euhus #1-24  
DST # 3  
LKC "H-J"  
2017.01.17



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita KS 67202-1216  
 ATTN: Rocky Milford

**24-2s-30w Decatur,KS**

**Euhus #1-24**

Job Ticket: 61225

**DST#: 3**

Test Start: 2017.01.17 @ 11:27:00

## GENERAL INFORMATION:

Formation: **LKC "H - J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:31:30  
 Time Test Ended: 18:12:00  
 Interval: **3917.00 ft (KB) To 3985.00 ft (KB) (TVD)**  
 Total Depth: 3985.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 76  
 Reference Elevations: 2814.00 ft (KB)  
 2809.00 ft (CF)  
 KB to GR/CF: 5.00 ft

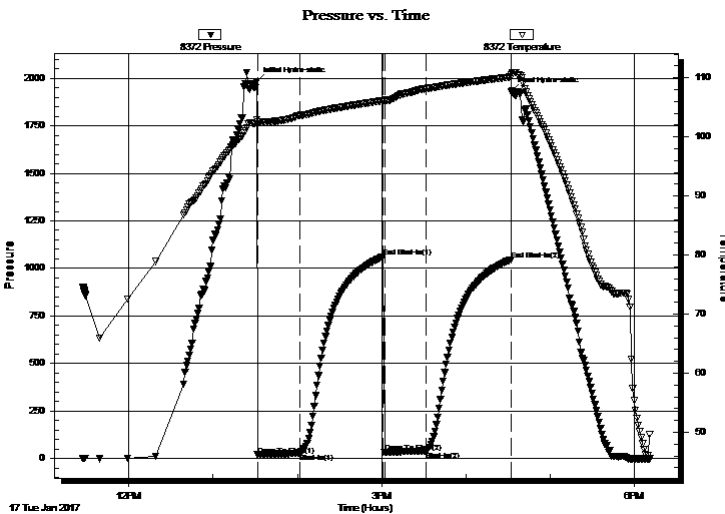
## Serial #: 8372

**Outside**

Press@RunDepth: 39.77 psig @ 3920.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.01.17 End Date: 2017.01.17 Last Calib.: 2017.01.17  
 Start Time: 11:27:01 End Time: 18:11:30 Time On Btm: 2017.01.17 @ 13:31:00  
 Time Off Btm: 2017.01.17 @ 16:32:30

**TEST COMMENT:** 30-IFP- Surface Blow Building to 1" in 11 min.  
 60-ISIP- No Blow  
 30-FFP- Weak Surface Blow Died in 4 min.  
 60-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1982.06	102.92	Initial Hydro-static
1	19.72	102.19	Open To Flow (1)
31	28.70	103.63	Shut-In(1)
90	1061.03	106.16	End Shut-In(1)
91	33.32	106.00	Open To Flow (2)
121	39.77	108.19	Shut-In(2)
181	1045.81	110.14	End Shut-In(2)
182	1929.51	110.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100%	0.07

\* 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  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 61225      **DST#: 3**  
Test Start: 2017.01.17 @ 11:27:00

**Tool Information**

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 175.00 ft	Diameter: 2.25 inches	Volume: 0.86 bbl	Weight to Pull Loose: 57000.00 lb
			<u>Total Volume: 53.31 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3917.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Recorder 8789 was plugged off in the handling sub.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3890.00	
Shut In Tool	5.00			3895.00	
Hydraulic tool	5.00			3900.00	
Jars	5.00			3905.00	
Safety Joint	2.00			3907.00	
Packer	5.00			3912.00	28.00      Bottom Of Top Packer
Packer	5.00			3917.00	
Stubb	1.00			3918.00	
Perforations	2.00			3920.00	
Recorder	0.00	8789	Inside	3920.00	
Recorder	0.00	8372	Outside	3920.00	
Perforations	29.00			3949.00	
Change Over Sub	1.00			3950.00	
Blank Spacing	31.00			3981.00	
Change Over Sub	1.00			3982.00	
Bullnose	3.00			3985.00	68.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>96.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc

**24-2s-30w Decatur,KS**

250 N Water Ste 300  
Wichita KS 67202-1216

**Euhus #1-24**

Job Ticket: 61225

**DST#: 3**

ATTN: Rocky Milford

Test Start: 2017.01.17 @ 11:27:00

## 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 8.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud 100%	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

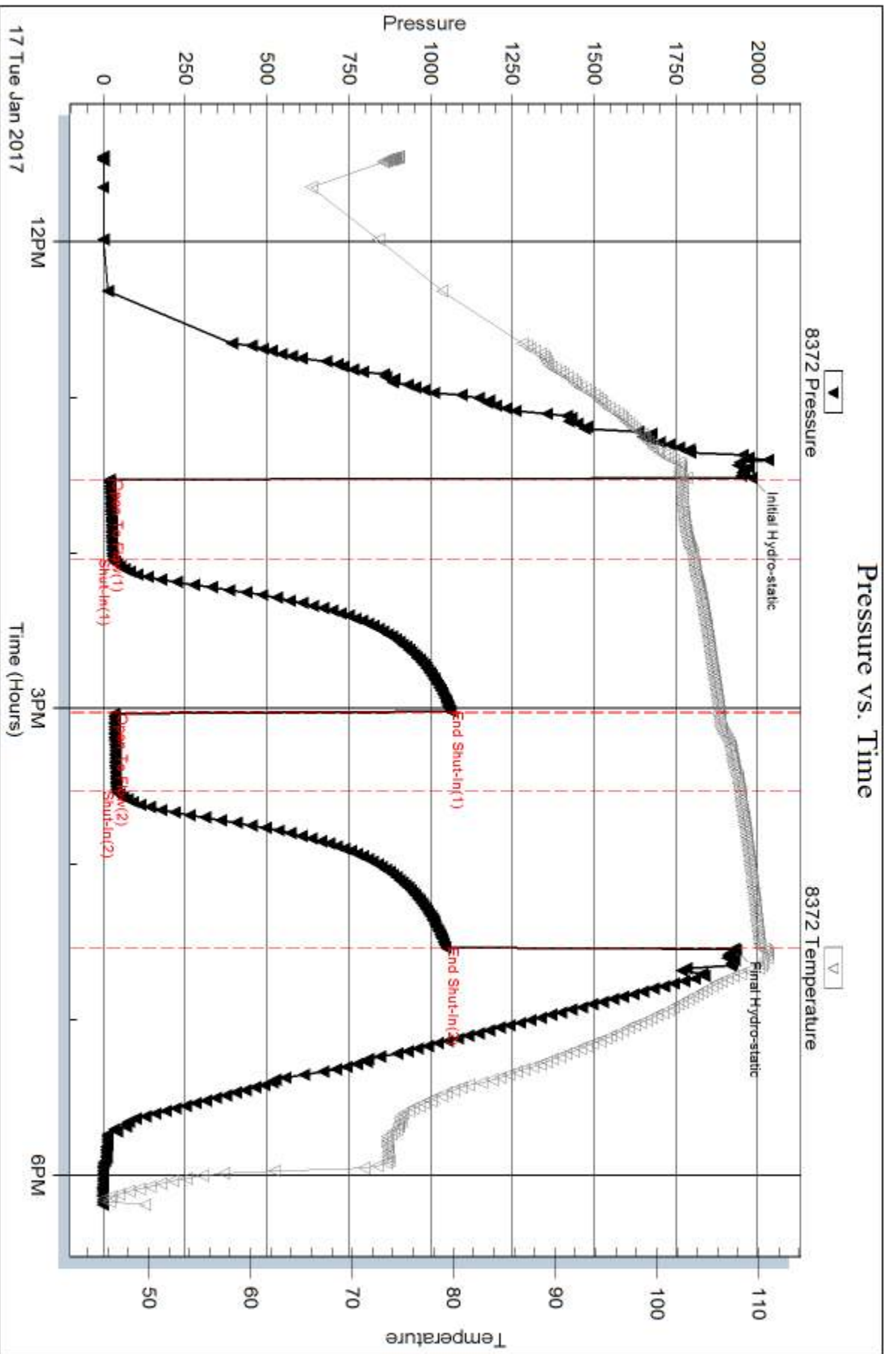
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



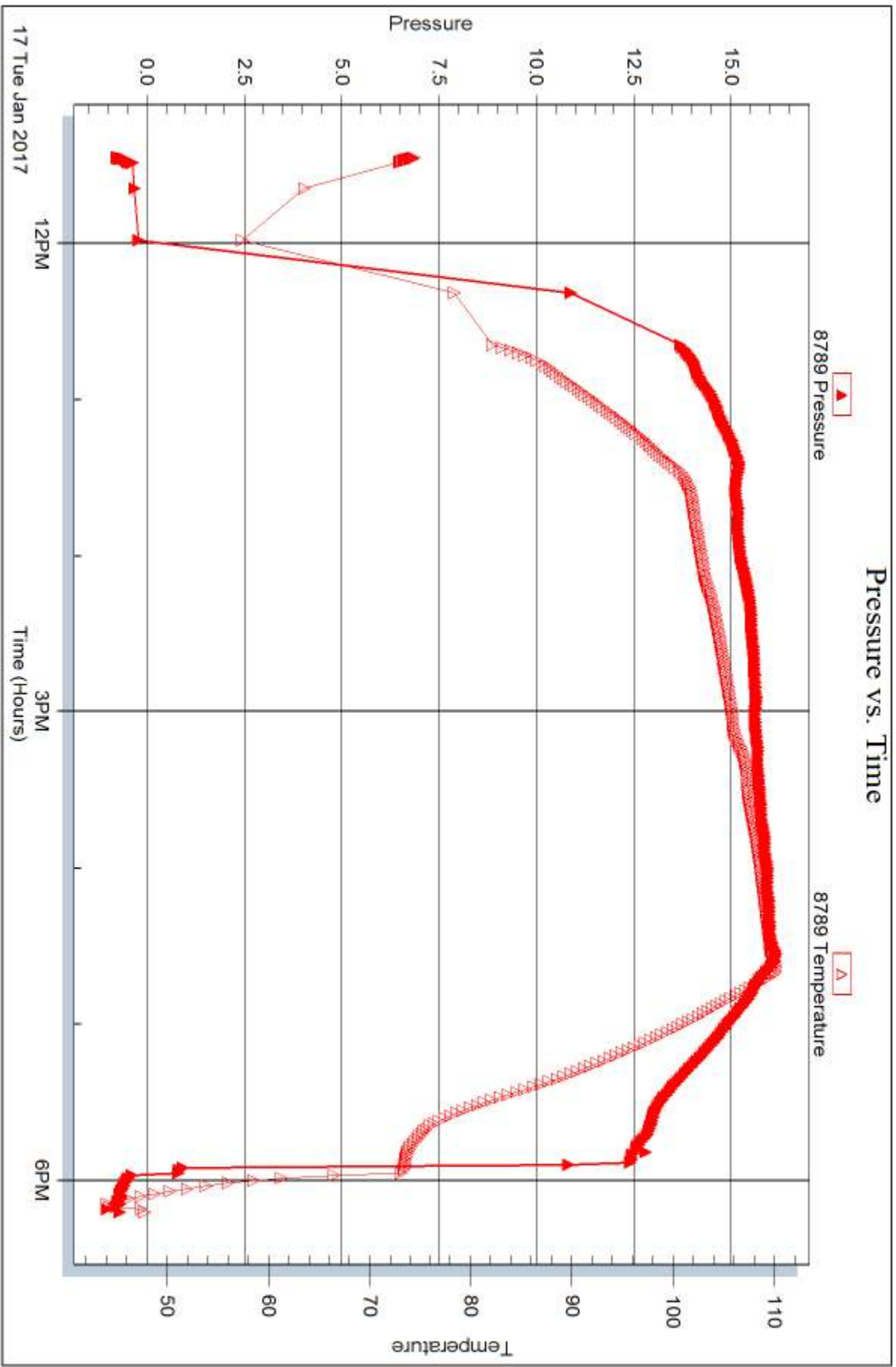
Serial #: 8789

Inside

Murfin Drilling Co Inc

Elhus #1-24

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 61225

Printed: 2017.01.19 @ 09:52:35



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita KS 67202-1216

ATTN: Rocky Milford

### **Euhus #1-24**

#### **24-2s-30w Decatur,KS**

Start Date: 2017.01.18 @ 02:57:00

End Date: 2017.01.18 @ 09:46:00

Job Ticket #: 64051                      DST #: 4

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

Printed: 2017.01.19 @ 09:52:10



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**

**Euhus #1-24**

Job Ticket: 64051

**DST#: 4**

Test Start: 2017.01.18 @ 02:57:00

## GENERAL INFORMATION:

Formation: **LKC " K - L "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:45:30

Time Test Ended: 09:46:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

**Interval: 3981.00 ft (KB) To 4038.00 ft (KB) (TVD)**

Total Depth: 4038.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2814.00 ft (KB)

2809.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8372 Outside**

Press@RunDepth: 34.36 psig @ 3984.00 ft (KB)

Start Date: 2017.01.18

End Date:

2017.01.18

Start Time: 02:57:01

End Time:

09:45:30

Capacity: 8000.00 psig

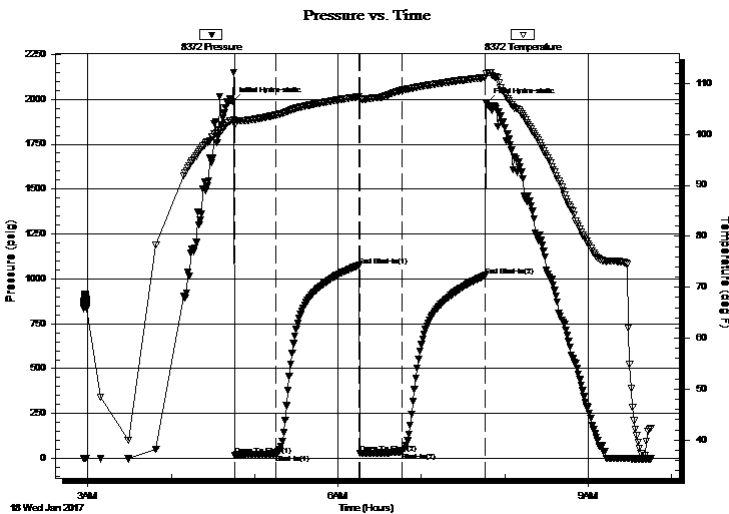
Last Calib.: 2017.01.18

Time On Btm: 2017.01.18 @ 04:44:30

Time Off Btm: 2017.01.18 @ 07:47:00

**TEST COMMENT:** 30-IFP- 1" Blow in 6 min. Building to 2"  
60-ISIP- No Blow  
30-FFP- Surface Blow Building to 1/2"  
60-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1985.25	102.72	Initial Hydro-static
1	17.27	101.77	Open To Flow (1)
31	24.60	103.79	Shut-In(1)
91	1074.95	107.40	End Shut-In(1)
92	27.33	106.97	Open To Flow (2)
122	34.36	108.64	Shut-In(2)
182	1018.39	111.14	End Shut-In(2)
183	1978.32	111.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%	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 Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 64051      **DST#: 4**  
Test Start: 2017.01.18 @ 02:57:00

## Tool Information

Drill Pipe:	Length: 3801.00 ft	Diameter: 3.80 inches	Volume: 53.32 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 175.00 ft	Diameter: 2.25 inches	Volume: 0.86 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 54.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3981.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3954.00	
Shut In Tool	5.00			3959.00	
Hydraulic tool	5.00			3964.00	
Jars	5.00			3969.00	
Safety Joint	2.00			3971.00	
Packer	5.00			3976.00	28.00      Bottom Of Top Packer
Packer	5.00			3981.00	
Stubb	1.00			3982.00	
Perforations	1.00			3983.00	
Change Over Sub	1.00			3984.00	
Recorder	0.00	8789	Inside	3984.00	
Recorder	0.00	8372	Outside	3984.00	
Blank Spacing	31.00			4015.00	
Change Over Sub	1.00			4016.00	
Perforations	19.00			4035.00	
Bullnose	3.00			4038.00	57.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>85.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita KS 67202-1216  
ATTN: Rocky Milford

**24-2s-30w Decatur,KS**  
**Euhus #1-24**  
Job Ticket: 64051      **DST#: 4**  
Test Start: 2017.01.18 @ 02:57:00

## Mud and Cushion Information

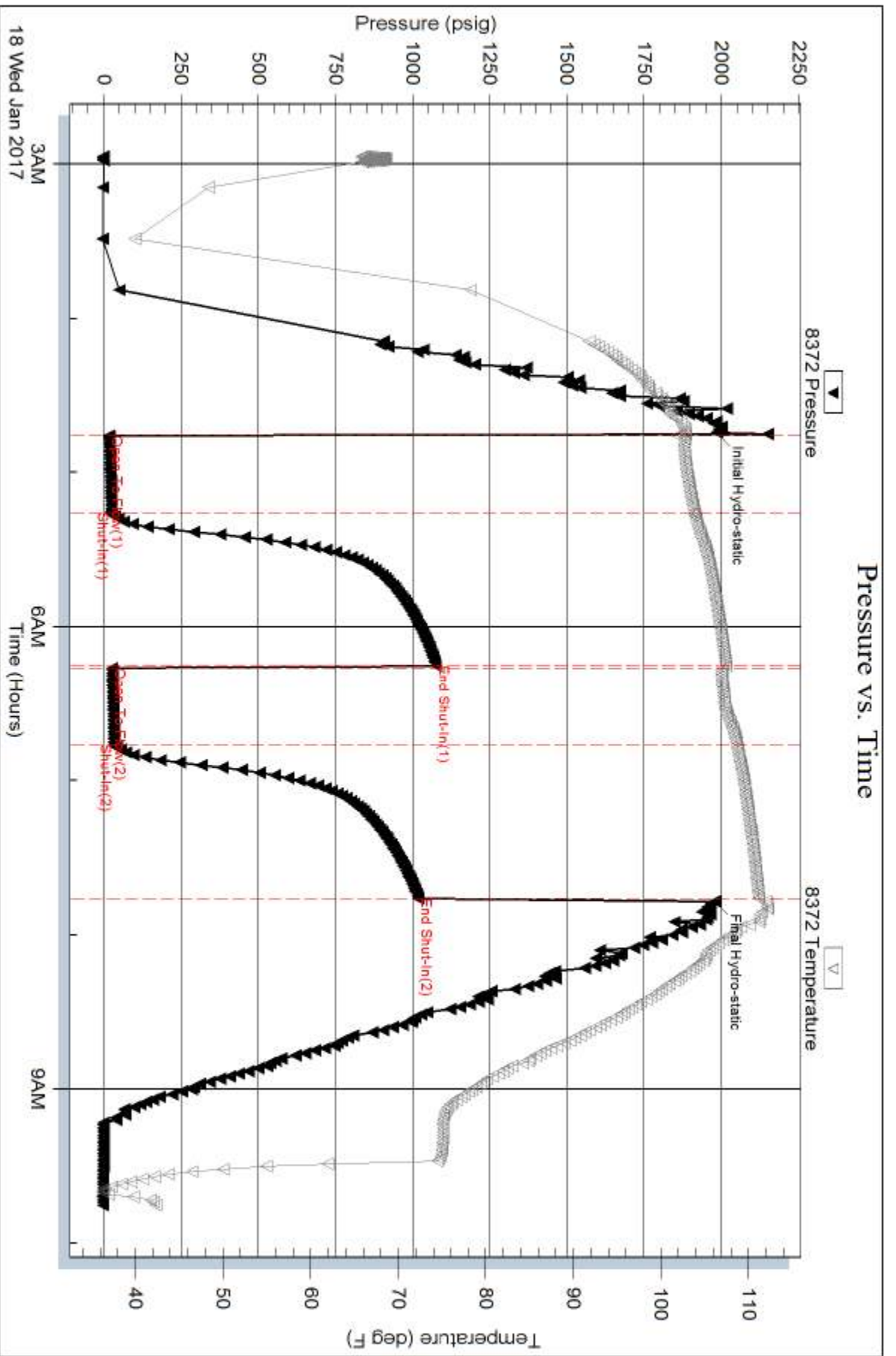
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 62.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3600.00 ppm			
Filter Cake: 8.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100%	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:



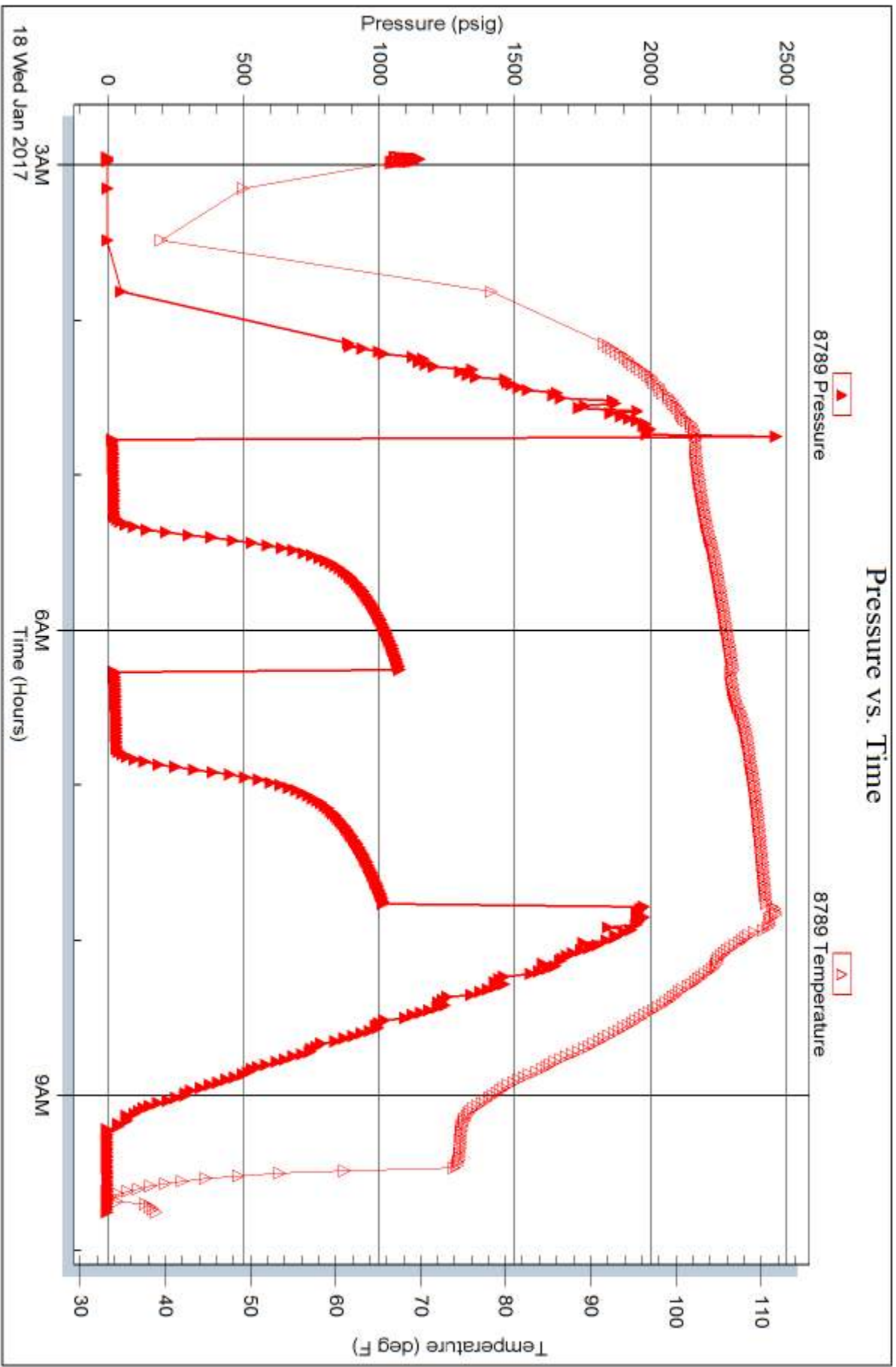
Serial #: 8789

Inside

Murfin Drilling Co Inc

Elhus #1-24

DST Test Number: 4



18 Wed Jan 2017

6AM  
Time (Hours)

9AM



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61223

4/10

Well Name & No. Euhus 1-24 Test No. 1 Date 1-15-17  
 Company Murfin Drilling Co. Inc. Elevation 2814 KB 2809 GL  
 Address 250 N. Water Ste 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin #3  
 Location: Sec. 24 Twp. 25 Rge. 30W Co. Decatur State KS

Interval Tested 3775-3832 Zone Tested LKC "A"  
 Anchor Length 57 Drill Pipe Run 3584 Mud Wt. 8.8  
 Top Packer Depth 3770 Drill Collars Run 175 Vis 55  
 Bottom Packer Depth 3775 Wt. Pipe Run 0 WL 6  
 Total Depth 3832 Chlorides 900 ppm System LCM 6

Blow Description IFP - BOB in 5min.  
ISIP - 1in-10min - 1 1/2 in 17min. Died Back in 24min.  
AFP - BOB in 8min.  
FSIP - Surface Blow Building to 1in. In 16min. Died Back 26min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>672</u>	<u>mcw</u>		<u>95</u>	<u>5</u>	
<u>62</u>	<u>mcw show of Oil</u>		<u>80</u>	<u>20</u>	
<u>45</u>	<u>0mcw</u>	<u>20</u>	<u>50</u>	<u>30</u>	
<u>5</u>	<u>CO</u>	<u>100</u>			
	<u>100 SIP</u>				

Rec Total 784 BHT 121 Gravity 33 API RW .115 @ 34 °F Chlorides 180,000 ppm

(A) Initial Hydrostatic 1924  Test 1050 T-On Location 19:53  
 (B) First Initial Flow 37  Jars 250 T-Started 21:53  
 (C) First Final Flow 200  Safety Joint 75 T-Open 00:36  
 (D) Initial Shut-In 1159  Circ Sub \_\_\_\_\_ T-Pulled 04:36  
 (E) Second Initial Flow 204  Hourly Standby \_\_\_\_\_ T-Out 06:57  
 (F) Second Final Flow 388  Mileage 13.50 RT 18 Comments \_\_\_\_\_  
 (G) Final Shut-In 1151  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1880  Straddle \_\_\_\_\_

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_  
 Final Flow 60  Day Standby \_\_\_\_\_  
 Final Shut-In 90  Accessibility \_\_\_\_\_  
 Sub Total 1638.50 Total 1638.50 MP/DST Disc't \_\_\_\_\_

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

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





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61224

Well Name & No. Euhus 1-24 Test No. 2 Date 1-16-17  
 Company MurFin Drilling Co., Inc. Elevation 2814 KB 2809 GL  
 Address 250 N. Water Ste 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig MurFin 3  
 Location: Sec. 24 Twp. 25 Rge. 30W Co. Decatur State KS

Interval Tested 3827-3922 Zone Tested LKC "D-2"  
 Anchor Length 95 Drill Pipe Run 3646 Mud Wt. 9  
 Top Packer Depth 3822 Drill Collars Run 175 Vis 58  
 Bottom Packer Depth 3827 Wt. Pipe Run 0 WL 6.8  
 Total Depth 3922 Chlorides 1100 ppm System LCM 5

Blow Description I FP - (1-3m) (2"-6 1/2) (3"-10m) (4"-14m) (5"-18m) (6"-22m) (7"-26m) (7 3/4"-30m)  
ISIP - Surface Blow in 2min. Dead in 35min.  
FFP - BOB in 45 1/2 min.  
FSIP - Weak Surface Blow in 2 1/2 min. Dead in 20 min.

Rec <u>175</u>	Feet of <u>0 WCM</u>	%gas <u>10</u>	%oil <u>30</u>	%water <u>60</u>	%mud
Rec <u>77</u>	Feet of <u>0 cm</u>	%gas <u>30</u>	%oil	%water <u>70</u>	%mud
Rec	Feet of <u>50 MIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 252 BHT 111 Gravity \_\_\_\_\_ API RW 1305 @ 30 ° F Chlorides 58000 ppm

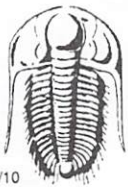
(A) Initial Hydrostatic <u>1920</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>17:00</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>18:21</u>
(C) First Final Flow <u>84</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>20:06</u>
(D) Initial Shut-In <u>854</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>00:06</u>
(E) Second Initial Flow <u>89</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>02:12</u>
(F) Second Final Flow <u>134</u>	<input checked="" type="checkbox"/> Mileage <u>13.50</u>	Comments _____
(G) Final Shut-In <u>841</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1850</u>	<input type="checkbox"/> Straddle	

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

Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1388.50  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative [Signature]  
 TriLOBITE TESTING Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61225

4/10

Well Name & No. Euhus 1-24 Test No. 3 Date 1-17-17  
 Company Murfin Drilling Co. Inc. Elevation 2814 KB 2809 GL  
 Address 250 N. Water St 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin 3  
 Location: Sec. 24 Twp. 2<sup>s</sup> Rge. 30<sup>w</sup> Co. Decatur State KS

Interval Tested 3917-3985 Zone Tested LKC "H-J"  
 Anchor Length 68 Drill Pipe Run 3739 Mud Wt. 9.2  
 Top Packer Depth 3912 Drill Collars Run 175 Vis 62  
 Bottom Packer Depth 3917 Wt. Pipe Run ⊖ WL 5.6  
 Total Depth 3985 Chlorides 3600 ppm System LCM 8  
 Blow Description IFP - Surface Blow Building to 11". In 11 min.  
ISIP - No Blow  
FFP - Weak Surface Blow Died in 4 min.  
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>MUD</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 110 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1982</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>10:49</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:27</u>
(C) First Final Flow <u>28</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>13:32</u>
(D) Initial Shut-In <u>1061</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>16:32</u>
(E) Second Initial Flow <u>33</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>18:12</u>
(F) Second Final Flow <u>39</u>	<input checked="" type="checkbox"/> Mileage <u>13.50</u>	Comments _____
(G) Final Shut-In <u>1045</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1929</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>1388.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1388.50</u>	

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **64051**

Well Name & No. Euhas 1-24 Test No. 4 Date 1-18-17  
 Company Murfin Drilling Co. Inc. Elevation 2814 KB 2809 GL  
 Address 250 N. WATER ST. 300 WICHITA KS. 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin 3  
 Location: Sec. 24 Twp. 2S Rge. 30W Co. Decatur State KS

Interval Tested 3981-4038 Zone Tested LKC "K+L"  
 Anchor Length 57 Drill Pipe Run 3801 Mud Wt. 9.2  
 Top Packer Depth 3976 Drill Collars Run 175 Vis 62  
 Bottom Packer Depth 3981 Wt. Pipe Run 0 WL 5.6  
 Total Depth 4038 Chlorides 3600 ppm System LCM 8

Blow Description IFP - in Blowline - Building to 2 in.  
ISIP - No Blow  
FFP - Surface Blow Building to 1/2 in.  
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>MUD</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 112 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1985  Test 1150 T-On Location 02:19  
 (B) First Initial Flow 17  Jars 250 T-Started 02:57  
 (C) First Final Flow 24  Safety Joint 75 T-Open 04:46  
 (D) Initial Shut-In 1074  Circ Sub \_\_\_\_\_ T-Pulled 07:46  
 (E) Second Initial Flow 27  Hourly Standby \_\_\_\_\_ T-Out 09:46  
 (F) Second Final Flow 34  Mileage 27 X2 Comments \_\_\_\_\_  
 (G) Final Shut-In 1018  Sampler \_\_\_\_\_ loaded tools 1/19 3:51  
 (H) Final Hydrostatic 1978  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  
 Final Shut-In 60  Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1502 Sub Total 1502 MP/DST Disc't \_\_\_\_\_

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