



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water  
 STE 300  
 Wichita Ks.  
 ATTN: Mike Monte

**1-11s-24w Trego**  
**Ruder A #1-1**  
 Job Ticket: 45676 **DST#: 1**  
 Test Start: 2012.01.27 @ 15:12:05

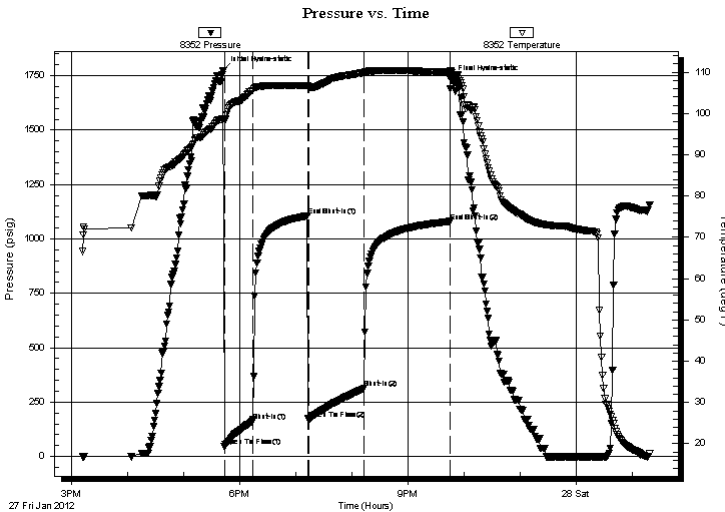
## GENERAL INFORMATION:

Formation: **Tor- LKC "B"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 17:43:40 Tester: Andy Carreira  
 Time Test Ended: 01:19:00 Unit No: 39  
 Interval: **3603.00 ft (KB) To 3683.00 ft (KB) (TVD)** Reference Elevations: 2293.00 ft (KB)  
 Total Depth: 3683.00 ft (KB) (TVD) 2288.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

**Serial #: 8352 Outside**  
 Press @ Run Depth: 313.06 psig @ 3610.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.01.27 End Date: 2012.01.28 Last Calib.: 2012.01.28  
 Start Time: 15:12:05 End Time: 01:19:00 Time On Btm: 2012.01.27 @ 17:42:20  
 Time Off Btm: 2012.01.27 @ 21:45:39

**TEST COMMENT:** IF:(30min) BOB, 6 min.  
 IS:(60min) 2" return blow  
 FF:(60min) BOB, 5 min.  
 FS:(90min) return blow, 10" in 65 min

## PRESSURE SUMMARY



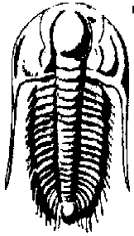
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1773.62	98.77	Initial Hydro-static
2	44.68	98.50	Open To Flow (1)
32	162.93	105.60	Shut-In(1)
91	1106.36	106.71	End Shut-In(1)
92	173.56	106.39	Open To Flow (2)
151	313.06	109.90	Shut-In(2)
243	1080.13	110.03	End Shut-In(2)
244	1731.58	110.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCMW o=5% m=40% w=55%	0.57
125.00	GOCWM g=10% o=20% w=30% m=40%	1.75
310.00	GMCO g=10% m=20% o=70%	4.35
255.00	CO o=100%	3.58
0.00	GIP=1200ft	0.00

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

Murfin Drilling Co.

1-11s-24w Trego

250 N. Water  
STE 300  
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ATTN: Mike Monte

Ruder A #1-1

Job Ticket: 45676

**DST#: 1**

Test Start: 2012.01.27 @ 15:12:05

### GENERAL INFORMATION:

Formation: **Tor- LKC "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:43:40

Time Test Ended: 01:19:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Andy Carreira

Unit No: 39

Interval: **3603.00 ft (KB) To 3683.00 ft (KB) (TVD)**

Total Depth: 3683.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2293.00 ft (KB)

2288.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8017 Inside**

Press @ Run Depth: psig @ 3610.00 ft (KB)

Start Date: 2012.01.27 End Date: 2012.01.28

Start Time: 15:12:05 End Time: 01:19:00

Capacity: 8000.00 psig

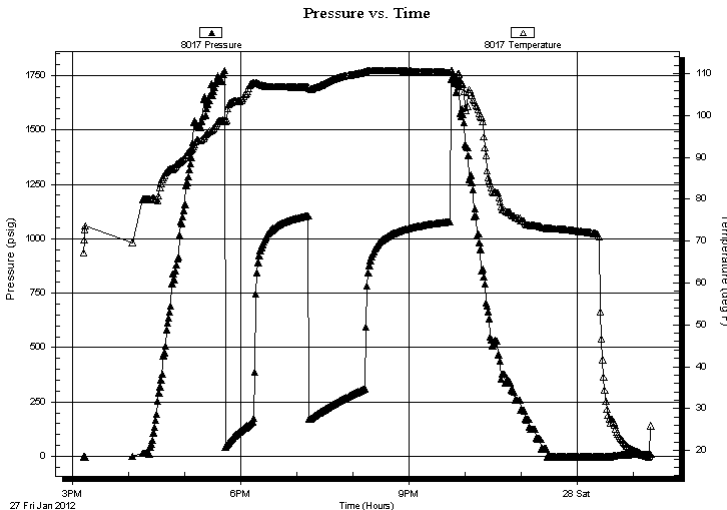
Last Calib.: 2012.01.28

Time On Btm:

Time Off Btm:

TEST COMMENT: IF:(30min) BOB, 6 min.  
ISl:(60min) 2" return blow  
FF:(60min) BOB, 5 min.  
FSl:(90min) return blow, 10" in 65 min

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCMW o=5% m=40% w=55%	0.57
125.00	GOCWM g=10% o=20% w=30% m=40%	1.75
310.00	GMCO g=10% m=20% o=70%	4.35
255.00	CO o=100%	3.58
0.00	GIP=1200ft	0.00

### Gas Rates

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



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45676

**DST#: 1**

Test Start: 2012.01.27 @ 15:12:05

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 6.80 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 600.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCMW o=5% m=40% w =55%	0.573
125.00	GOCWM g=10% o=20% w =30% m=40%	1.753
310.00	GMCO g=10% m=20% o=70%	4.348
255.00	CO o=100%	3.577
0.00	GIP=1200ft	0.000

Total Length: 750.00 ft      Total Volume: 10.251 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

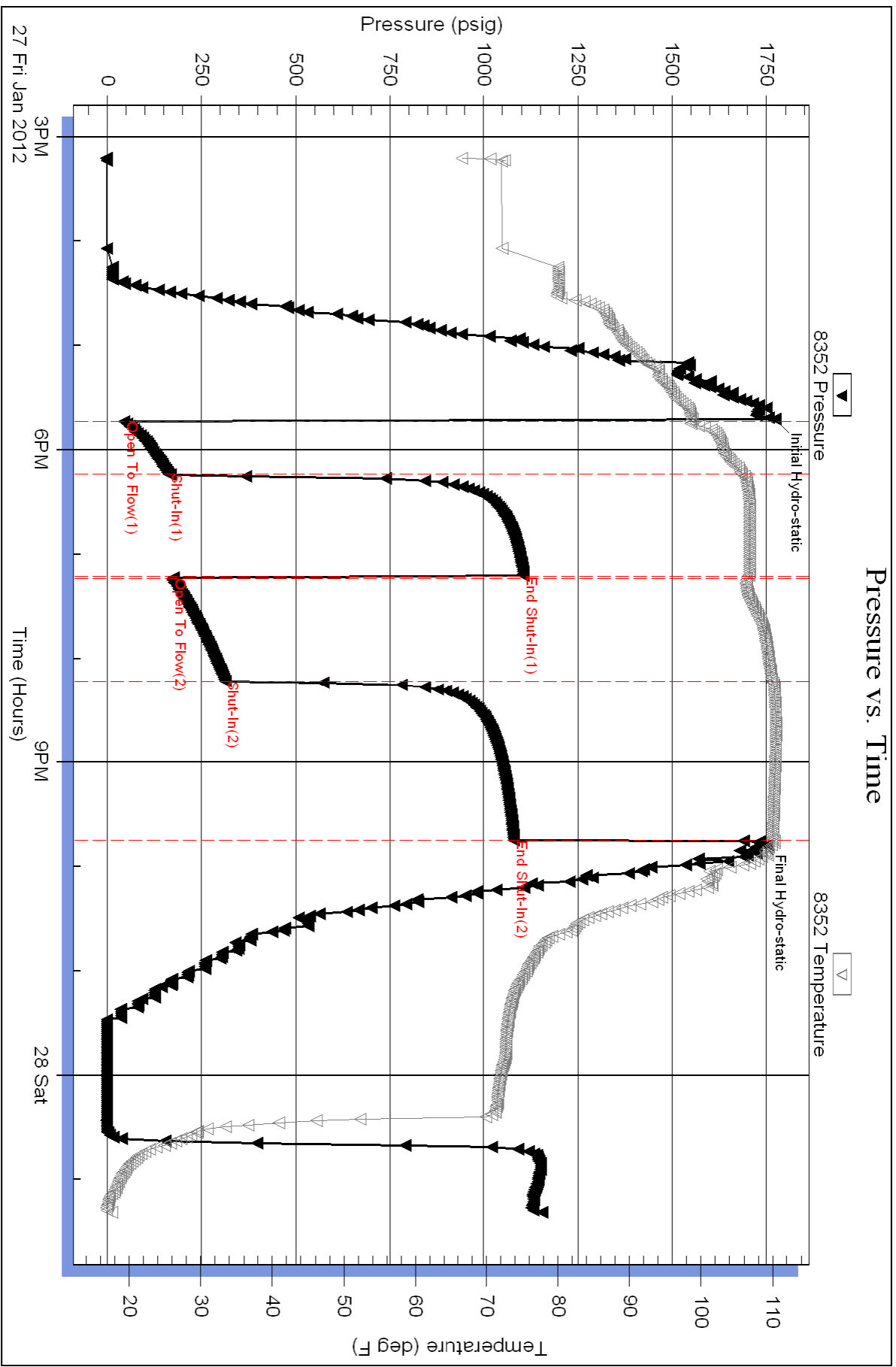
Recovery Comments:

Serial #: 8352

Outside Murfin Drilling Co.

Ruder A#1-1

DST Test Number: 1



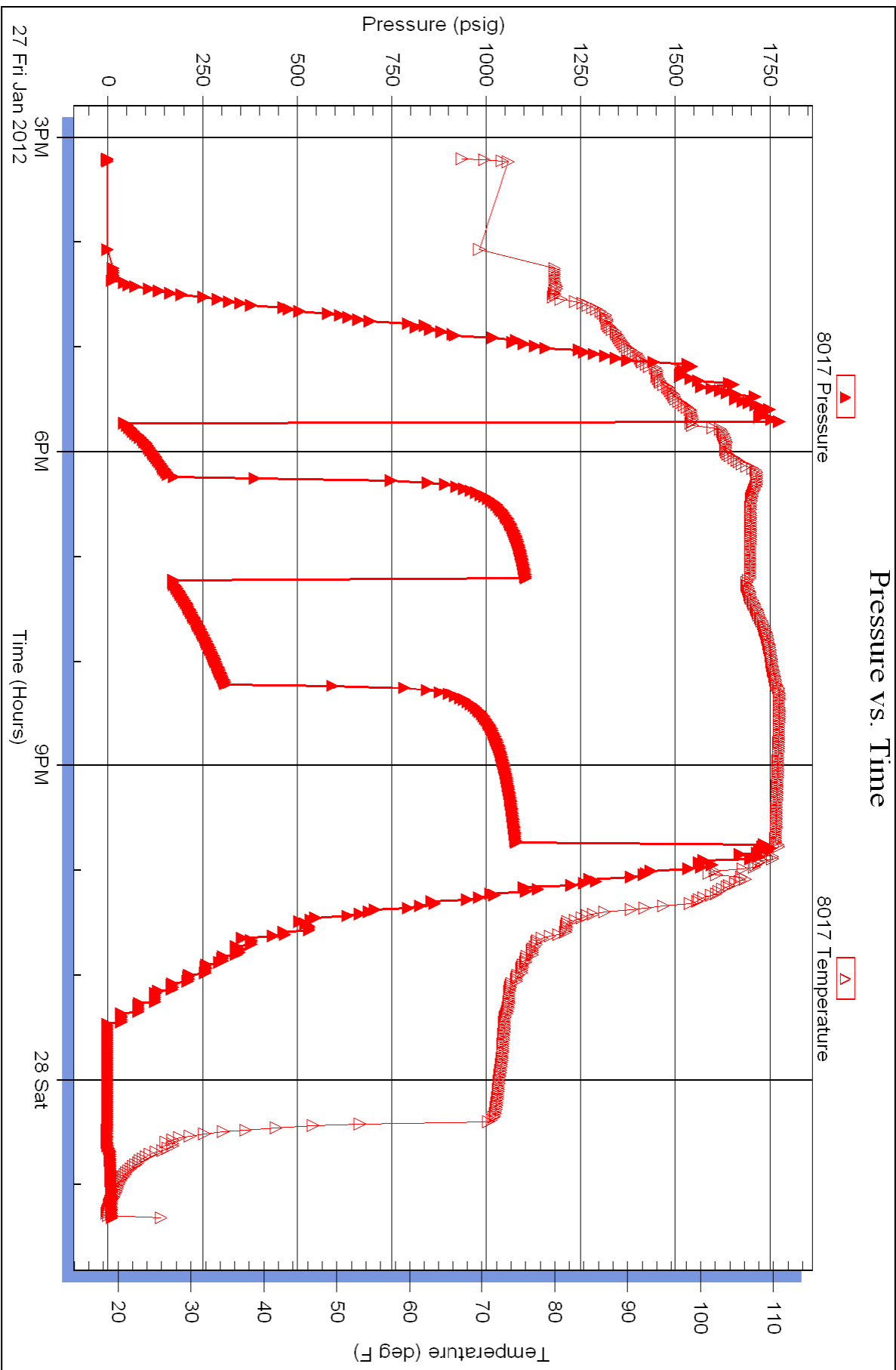
Serial #: 8017

Inside

Murfin Drilling Co.

Ruder A#1-1

DST Test Number: 1





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45677

**DST#: 2**

Test Start: 2012.01.28 @ 08:32:05

## GENERAL INFORMATION:

Formation: **LKC"D"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:27:30  
 Time Test Ended: 14:53:29  
 Interval: **3683.00 ft (KB) To 3700.00 ft (KB) (TVD)**  
 Total Depth: 3700.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Andy Carreira  
 Unit No: 39  
 Reference Elevations: 2293.00 ft (KB)  
 2288.00 ft (CF)  
 KB to GR/CF: 5.00 ft

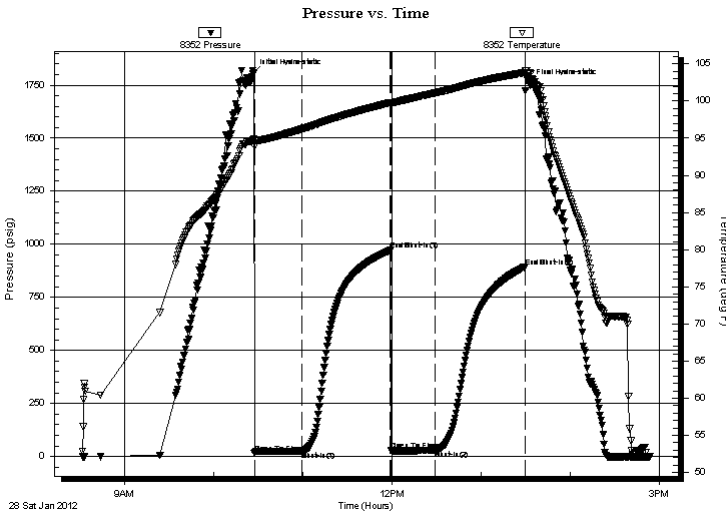
## Serial #: 8352

**Outside**

Press @ Run Depth: 28.27 psig @ 3684.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.01.28 End Date: 2012.01.28 Last Calib.: 2012.01.28  
 Start Time: 08:32:05 End Time: 14:53:29 Time On Btm: 2012.01.28 @ 10:26:40  
 Time Off Btm: 2012.01.28 @ 13:32:29

**TEST COMMENT:** IF:(30min) Weak 1" blow .  
 ISl:(60min) No Return  
 FF:(30min) Weak surface blow  
 FSl:(60min) No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1802.99	94.76	Initial Hydro-static
1	16.33	93.87	Open To Flow (1)
33	24.84	96.23	Shut-In(1)
93	972.10	99.80	End Shut-In(1)
93	26.85	99.64	Open To Flow (2)
123	28.27	101.08	Shut-In(2)
183	893.71	103.84	End Shut-In(2)
186	1759.23	103.78	Final Hydro-static

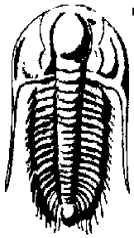
## Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud w/oil spcks in tool	0.10

\* Recovery from multiple tests

## Gas Rates

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



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## DRILL STEM TEST REPORT

Murfin Drilling Co.

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**1-11s-24w Trego**

**Ruder A #1-1**

Job Ticket: 45677

**DST#: 2**

Test Start: 2012.01.28 @ 08:32:05

### GENERAL INFORMATION:

Formation: **LKC"D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:27:30

Time Test Ended: 14:53:29

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3683.00 ft (KB) To 3700.00 ft (KB) (TVD)**

Reference Elevations: 2293.00 ft (KB)

Total Depth: 3700.00 ft (KB) (TVD)

2288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8017** **Inside**

Press@RunDepth: psig @ 3684.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.28

End Date:

2012.01.28

Last Calib.:

2012.01.28

Start Time: 08:32:05

End Time:

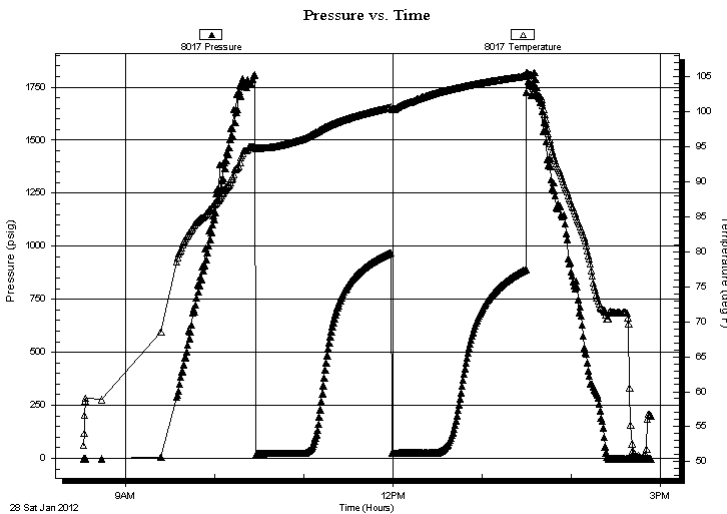
14:53:29

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF:(30min) Weak 1" blow.  
ISl:(60min) No Return  
FF:(30min) Weak surface blow  
FSl:(60min) No Return

### PRESSURE SUMMARY



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

Length (ft)	Description	Volume (bbl)
20.00	Mud w/oil spcks in tool	0.10

### Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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\* Recovery from multiple tests



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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.

**Ruder A #1-1**

Job Ticket: 45677

**DST#: 2**

ATTN: Mike Monte

Test Start: 2012.01.28 @ 08:32:05

**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: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud w/oil spcks in tool	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

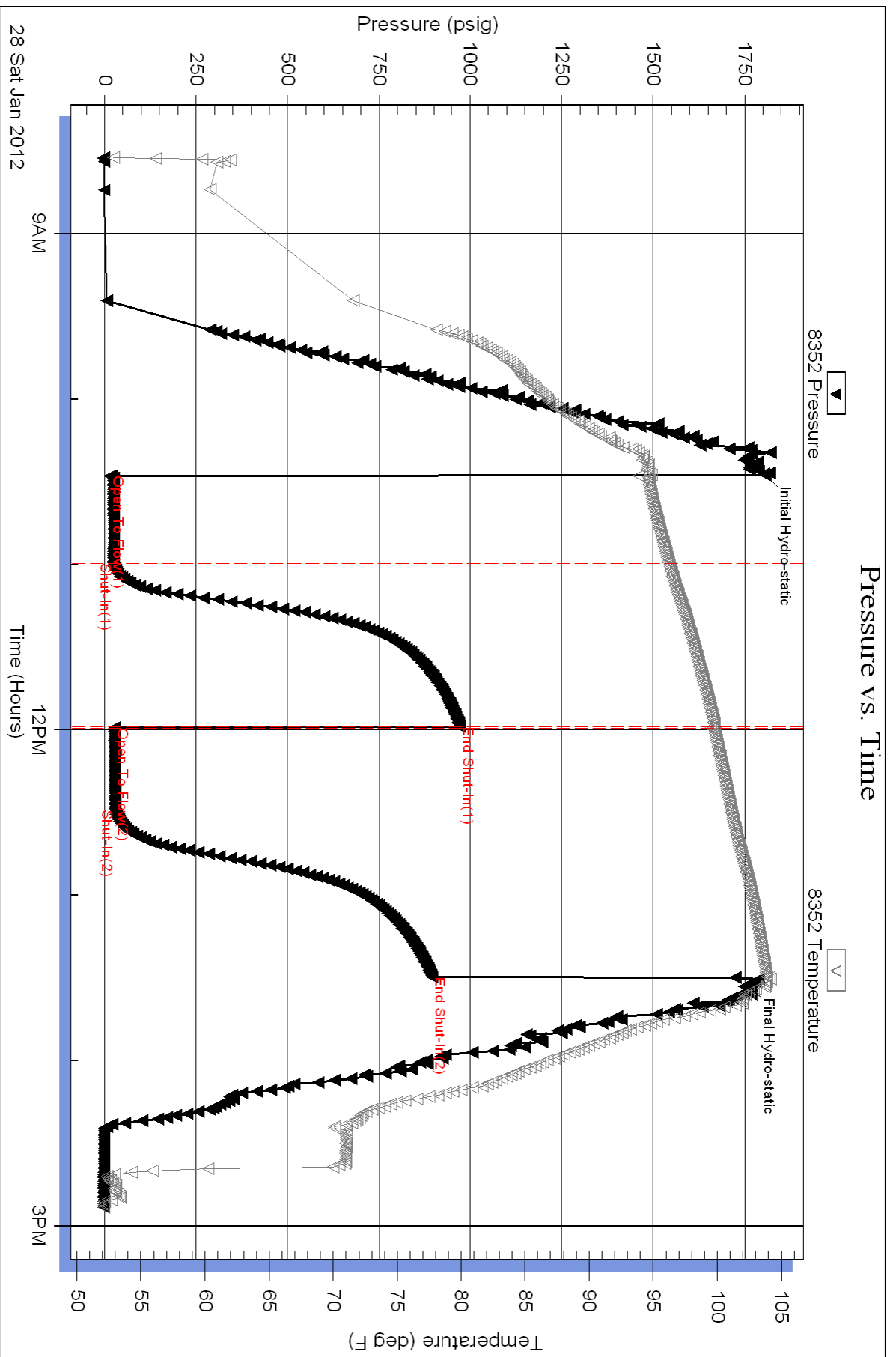
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





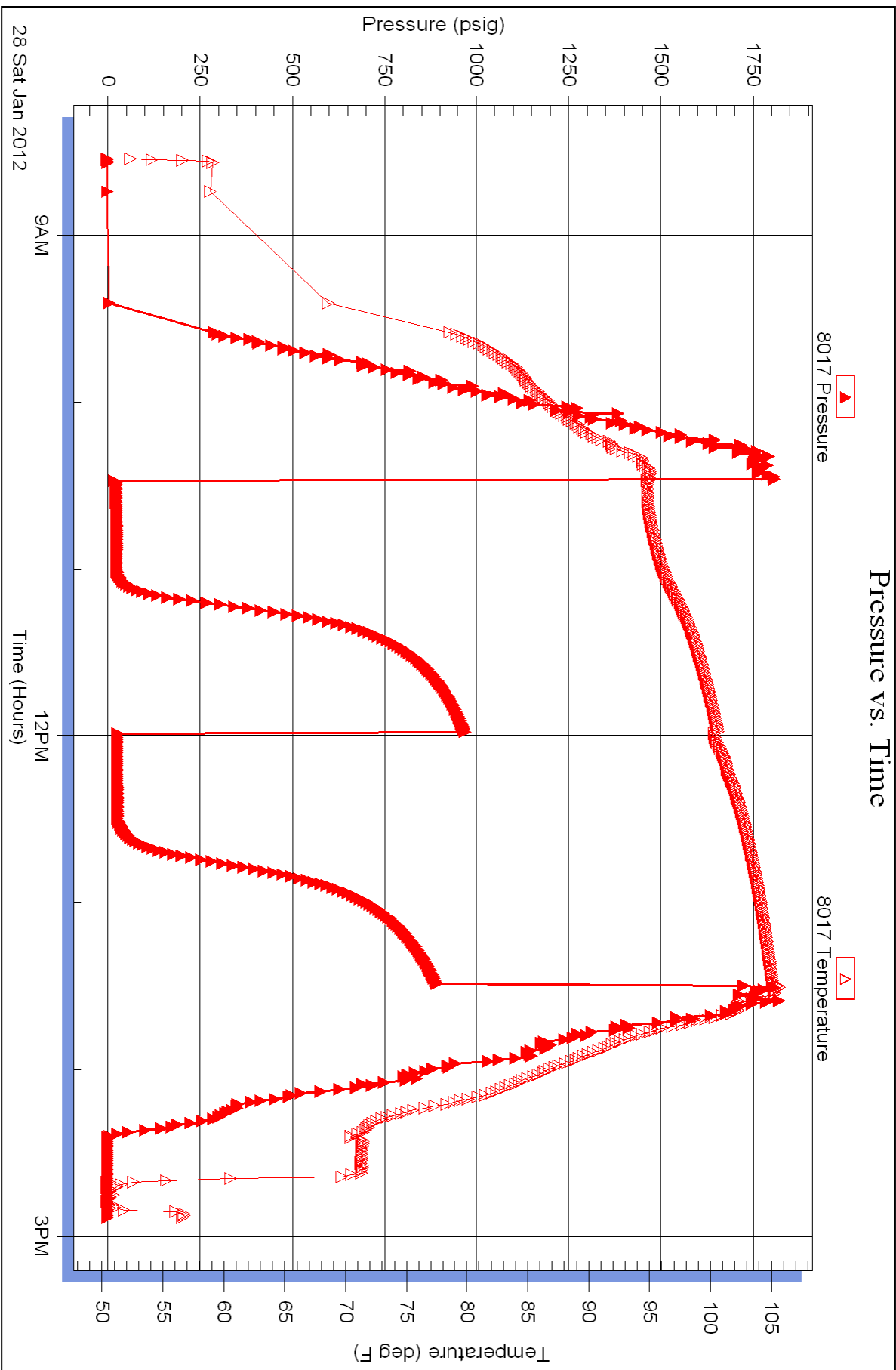
Serial #: 8017

Inside

Murfin Drilling Co.

Ruder A#1-1

DST Test Number: 2





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# DRILL STEM TEST REPORT

Murfin Drilling Co.  
250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**1-11s-24w Trego**

**Ruder A #1-1**

Job Ticket: 45678

**DST#: 3**

Test Start: 2012.01.28 @ 23:31:05

## GENERAL INFORMATION:

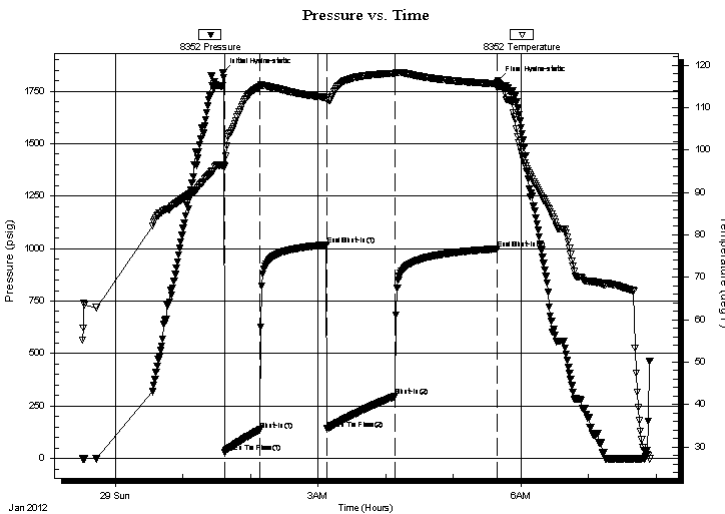
Formation: **LKC"E-F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:37:00  
 Time Test Ended: 07:54:09  
 Interval: **3702.00 ft (KB) To 3736.00 ft (KB) (TVD)**  
 Total Depth: 3736.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Andy Carreira  
 Unit No: 39  
 Reference Elevations: 2293.00 ft (KB)  
 2288.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8352 Outside

Press @ Run Depth: 296.39 psig @ 3703.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.01.28 End Date: 2012.01.29 Last Calib.: 2012.01.29  
 Start Time: 23:31:05 End Time: 07:54:10 Time On Btm: 2012.01.29 @ 01:35:40  
 Time Off Btm: 2012.01.29 @ 05:39:39

**TEST COMMENT:** IF:(30min) BOB, 8 min.  
 IS:(60min) Return blow, 1" in 10min, 1.5" in 20min, Surface blow in 45min.  
 FF:(60min) BOB, 10 min.  
 FS:(90min) Return blow, 1" in 10 min. Died in 30 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1839.20	96.38	Initial Hydro-static
2	27.01	96.07	Open To Flow (1)
33	136.12	115.00	Shut-In(1)
92	1017.76	112.35	End Shut-In(1)
93	141.01	111.87	Open To Flow (2)
153	296.39	118.09	Shut-In(2)
244	998.71	115.59	End Shut-In(2)
244	1800.92	115.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
550.00	Water	7.45
10.00	Oil	0.14
0.00	GIP= 180ft	0.00

\* Recovery from multiple tests

## Gas Rates

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



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45678

**DST#: 3**

Test Start: 2012.01.28 @ 23:31:05

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 6.80 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 1200.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: 100000 ppm

deg API

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
550.00	Water	7.446
10.00	Oil	0.140
0.00	GIP= 180ft	0.000

Total Length: 560.00 ft      Total Volume: 7.586 bbl

Num Fluid Samples: 0

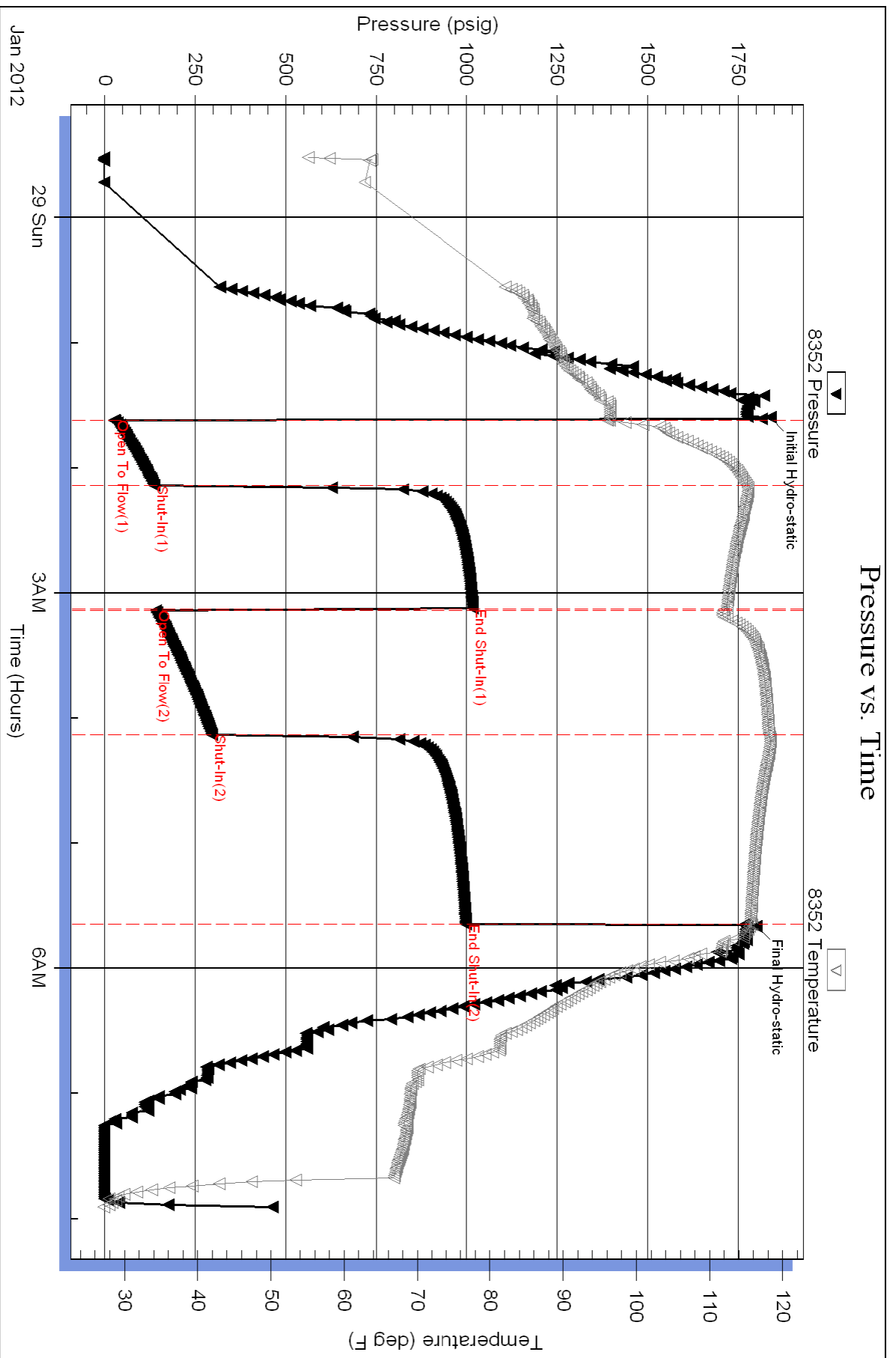
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Resistivity- .20 @ 26 deg. = 100000





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45679

**DST#: 4**

Test Start: 2012.01.29 @ 22:52:05

## GENERAL INFORMATION:

Formation: **LKC"H,I,J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:53:20

Time Test Ended: 09:34:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3760.00 ft (KB) To 3828.00 ft (KB) (TVD)**

Reference Elevations: 2293.00 ft (KB)

Total Depth: 3828.00 ft (KB) (TVD)

2288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8352 Outside**

Press @ Run Depth: 1216.78 psig @ 3764.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.29

End Date: 2012.01.30

Last Calib.: 2012.01.30

Start Time: 22:52:05

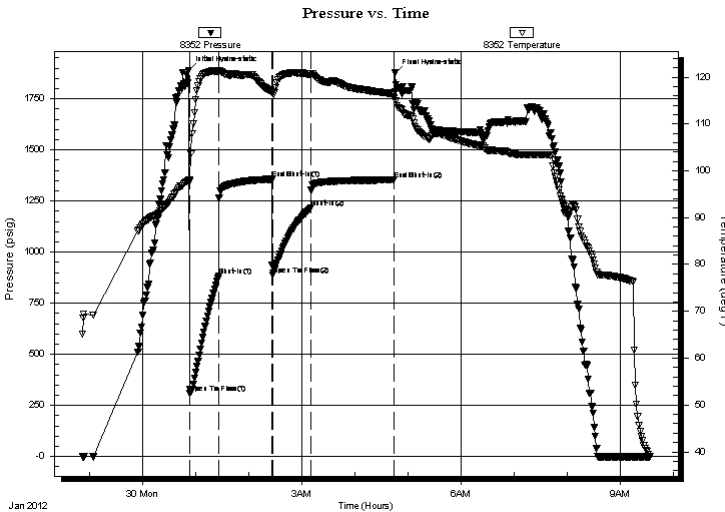
End Time: 09:34:00

Time On Btm: 2012.01.30 @ 00:51:50

Time Off Btm: 2012.01.30 @ 04:45:09

**TEST COMMENT:** IF:(30min) BOB 1 min.  
IS:(60min) Return blow, BOB 10min. Gas to surface 20 min.  
FF:(45min) BOB immediately. Gas TSTM.  
FS:(90min) BOB 1 min after bleed off.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1889.10	98.02	Initial Hydro-static
2	310.15	98.10	Open To Flow (1)
34	882.50	121.30	Shut-In(1)
95	1356.48	116.86	End Shut-In(1)
95	888.04	116.62	Open To Flow (2)
139	1216.78	120.61	Shut-In(2)
232	1352.96	116.45	End Shut-In(2)
234	1875.15	116.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM g=10% o=10% m=80%	0.57
60.00	GOCM g=10% o=70% m=70%	0.84
3430.00	CGO g=20% o=80%	48.11
0.00	GIP= To Surface	0.00

\* Recovery from multiple tests

## Gas Rates

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



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**FLUID SUMMARY**

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45679

**DST#: 4**

Test Start: 2012.01.29 @ 22:52:05

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 52.00 sec/qt

Water Loss: 6.80 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 3300.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOCM g=10% o=10% m=80%	0.573
60.00	GOCM g=10% o=70% m=70%	0.842
3430.00	CGO g=20% o=80%	48.114
0.00	GIP= To Surface	0.000

Total Length: 3550.00 ft      Total Volume: 49.529 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

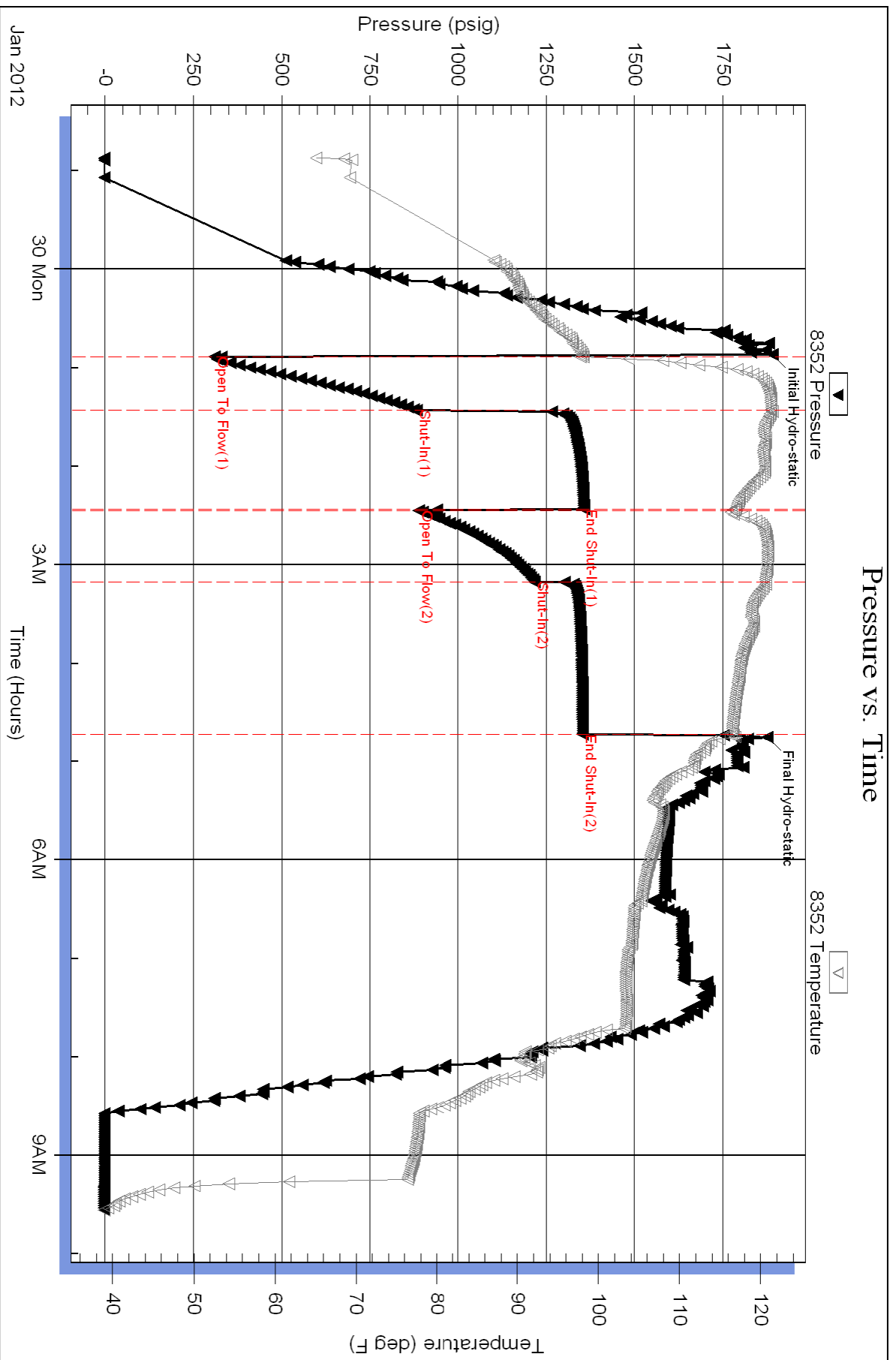
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45680

**DST#: 5**

Test Start: 2012.01.30 @ 16:30:05

## GENERAL INFORMATION:

Formation: **LKC"K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:33:30

Time Test Ended: 00:49:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Andy Carreira

Unit No: 39

**Interval: 3828.00 ft (KB) To 3850.00 ft (KB) (TVD)**

Reference Elevations: 2293.00 ft (KB)

Total Depth: 3850.00 ft (KB) (TVD)

2288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8352 Outside**

Press @ Run Depth: 81.84 psig @ 3829.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.01.30

End Date: 2012.01.31

Last Calib.: 2012.01.31

Start Time: 16:30:05

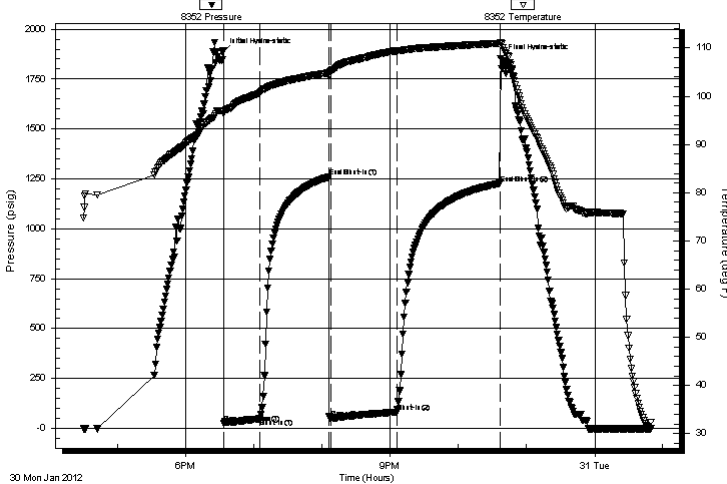
End Time: 00:49:20

Time On Btm: 2012.01.30 @ 18:32:30

Time Off Btm: 2012.01.30 @ 22:37:09

**TEST COMMENT:** IF:(30min) 7" in 3 min. BOB in 8 min.  
ISl:(60min) Return blow 1" after bleed off, 3" after 27 min. & throughout.  
FF:(60min) BOB, 6 min.  
FSl:(90min) Return Blow 1" in 6 min. 5" in 23 min. & throughout

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1883.30	97.03	Initial Hydro-static
1	23.85	96.35	Open To Flow (1)
33	48.71	100.78	Shut-In(1)
94	1259.94	104.87	End Shut-In(1)
95	51.91	105.14	Open To Flow (2)
154	81.84	109.38	Shut-In(2)
244	1227.60	110.98	End Shut-In(2)
245	1853.99	111.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	HOCGM g=20% o=30% m=50%	1.41
50.00	CGO g=20% o=80%	0.70
0.00	GIP= 800ft	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co.

**1-11s-24w Trego**

250 N. Water  
STE 300  
Wichita Ks.  
ATTN: Mike Monte

**Ruder A #1-1**

Job Ticket: 45680

**DST#: 5**

Test Start: 2012.01.30 @ 16:30:05

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 8300.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	HOCGM g=20% o=30% m=50%	1.415
50.00	CGO g=20% o=80%	0.701
0.00	GIP= 800ft	0.000

Total Length: 170.00 ft      Total Volume: 2.116 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

