



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

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

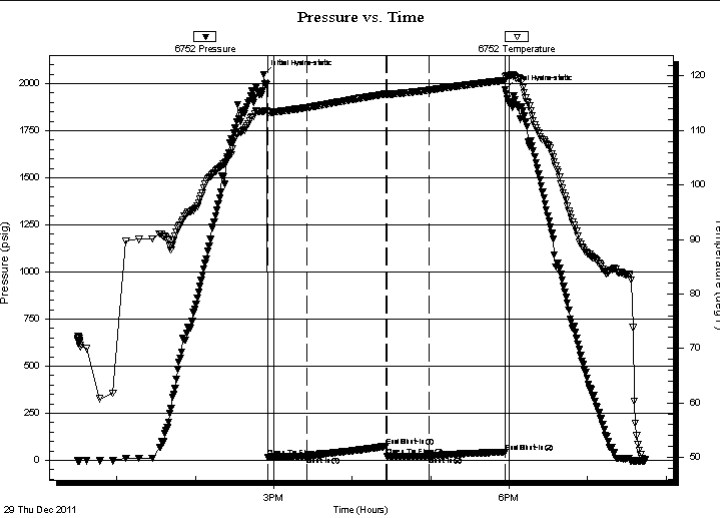
**9 5 33w Rawlins Ks.**  
**Ruda A #1-9**  
Job Ticket: 042956      **DST#: 1**  
Test Start: 2011.12.29 @ 12:30:00

## GENERAL INFORMATION:

Formation: **Tor-LKC-A**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 14:55:30  
 Tester: Chuck Kreuzer Jr.  
 Time Test Ended: 19:44:00  
 Unit No: 36  
 Interval: **4000.00 ft (KB) To 4060.00 ft (KB) (TVD)**  
 Reference Elevations: 3102.00 ft (KB)  
 Total Depth: 4060.00 ft (KB) (TVD)      3097.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 5.00 ft

**Serial #: 6752      Inside**  
 Press @ Run Depth: 23.52 psig @ 4001.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2011.12.29      End Date: 2011.12.29      Last Calib.: 2011.12.29  
 Start Time: 12:30:05      End Time: 19:43:59      Time On Btm: 2011.12.29 @ 14:52:30  
 Time Off Btm: 2011.12.29 @ 17:57:00

**TEST COMMENT:** IF: Weak blow, Died in 10 mins.  
 IS: No blow back over 60 mins.  
 FF: No blow over 30 mins.  
 FS: No blow back over 60 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2048.98	113.46	Initial Hydro-static
3	17.71	113.37	Open To Flow (1)
33	21.14	114.21	Shut-In(1)
94	75.95	116.69	End Shut-In(1)
94	21.46	116.68	Open To Flow (2)
126	23.52	117.40	Shut-In(2)
184	44.52	119.19	End Shut-In(2)
185	1966.63	119.87	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud-100%	0.05

## Gas Rates

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



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Murfin Drilling Co.

**9 5 33w Rawlins Ks.**

250 N. Water Ste. 300  
Wichita Ks. 67202

**Ruda A #1-9**

Job Ticket: 042956

**DST#: 1**

ATTN: Steve Miller

Test Start: 2011.12.29 @ 12:30:00

## 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: 6.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3100.00 ppm

Filter Cake: 2.00 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:

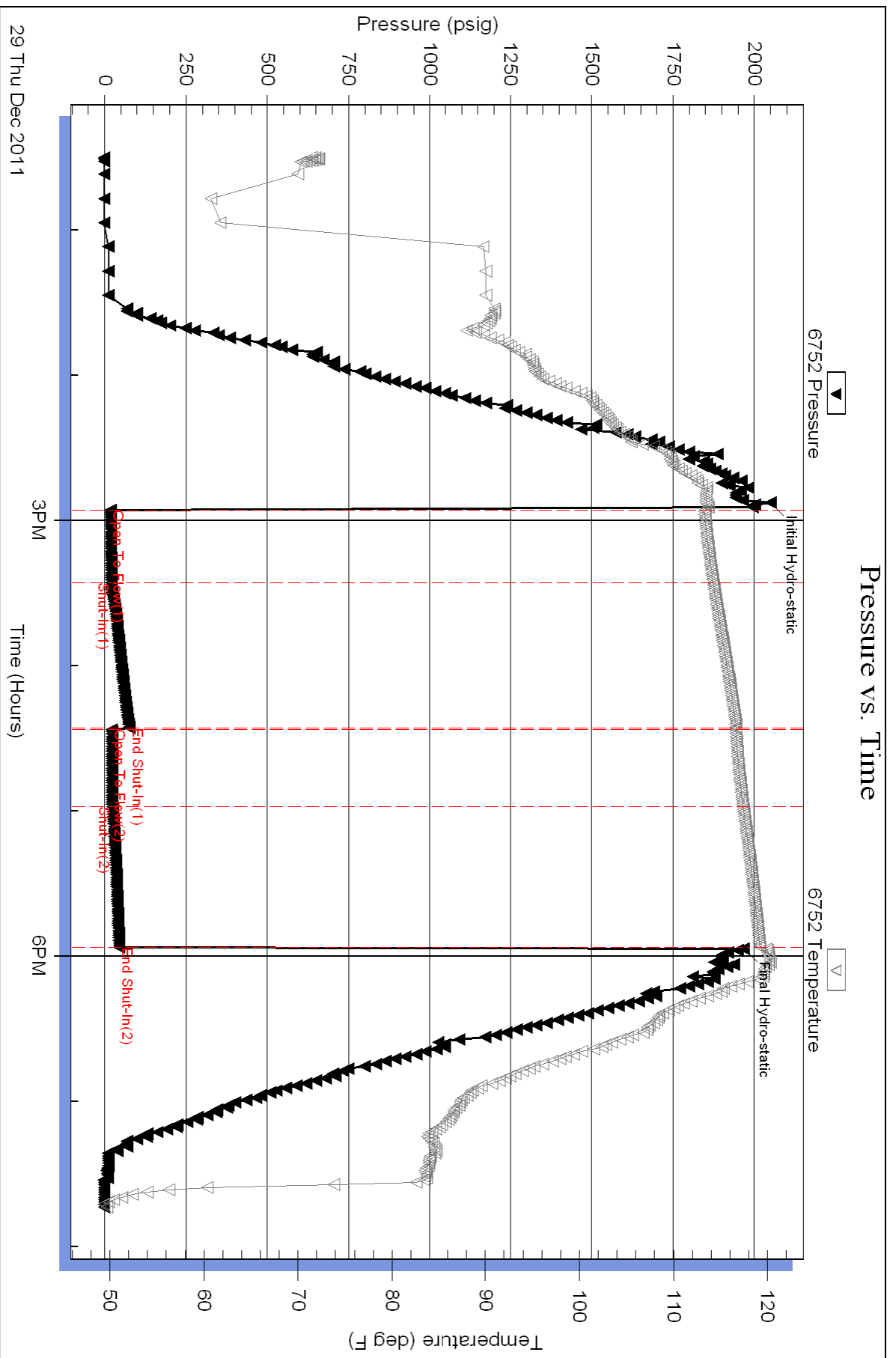
Serial #: 6752

Inside

Murfin Drilling Co.

Ruda A #1-9

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 042956

Printed: 2011.12.30 @ 08:36:49



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# DRILL STEM TEST REPORT

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

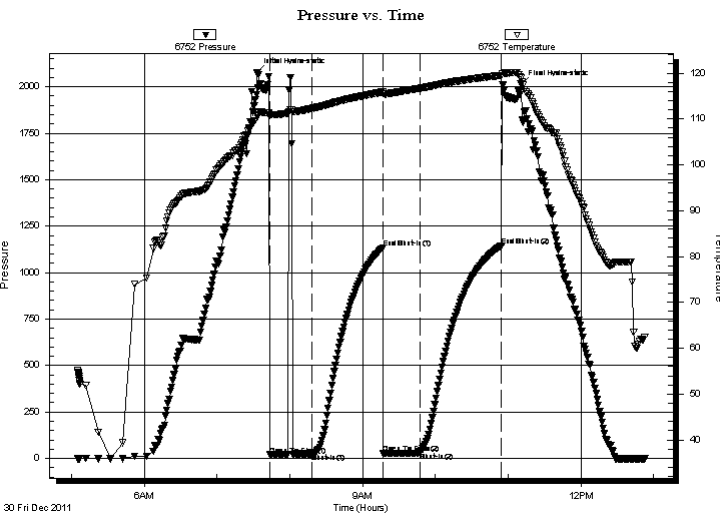
**9 5 33w Rawlins Ks.**  
**Ruda A #1-9**  
Job Ticket: 042957      **DST#: 2**  
Test Start: 2011.12.30 @ 05:05:00

## GENERAL INFORMATION:

Formation: **LKC-B**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 07:43:30  
Time Test Ended: 12:52:30  
Interval: **4056.00 ft (KB) To 4102.00 ft (KB) (TVD)**  
Total Depth: 4102.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Chuck Kreuzer Jr.  
Unit No: 36  
Reference Elevations: 3102.00 ft (KB)  
3097.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6752      Inside**  
Press @ Run Depth: 34.74 psig @ 4057.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.12.30      End Date: 2011.12.30      Last Calib.: 2011.12.30  
Start Time: 05:05:05      End Time: 12:52:29      Time On Btm: 2011.12.30 @ 07:33:00  
Time Off Btm: 2011.12.30 @ 11:10:30

**TEST COMMENT:** IF: Tool opened just a few bubbles, Flushed tool, a few bubbles and then dead.  
IS: No blow over 60 mins.  
FF: No blow over 30 mins.  
FS: No blow back over 60 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2077.22	110.85	Initial Hydro-static
11	19.54	110.88	Open To Flow (1)
45	25.07	112.28	Shut-In(1)
104	1134.21	115.86	End Shut-In(1)
104	25.76	115.58	Open To Flow (2)
134	34.74	116.67	Shut-In(2)
202	1145.56	119.52	End Shut-In(2)
218	2013.83	118.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud w ith oil specs	0.02

\* 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.

**9 5 33w Rawlins Ks.**

250 N. Water Ste. 300  
Wichita Ks. 67202

**Ruda A #1-9**

Job Ticket: 042957

**DST#: 2**

ATTN: Steve Miller

Test Start: 2011.12.30 @ 05:05:00

### 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3100.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud w ith oil specs	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

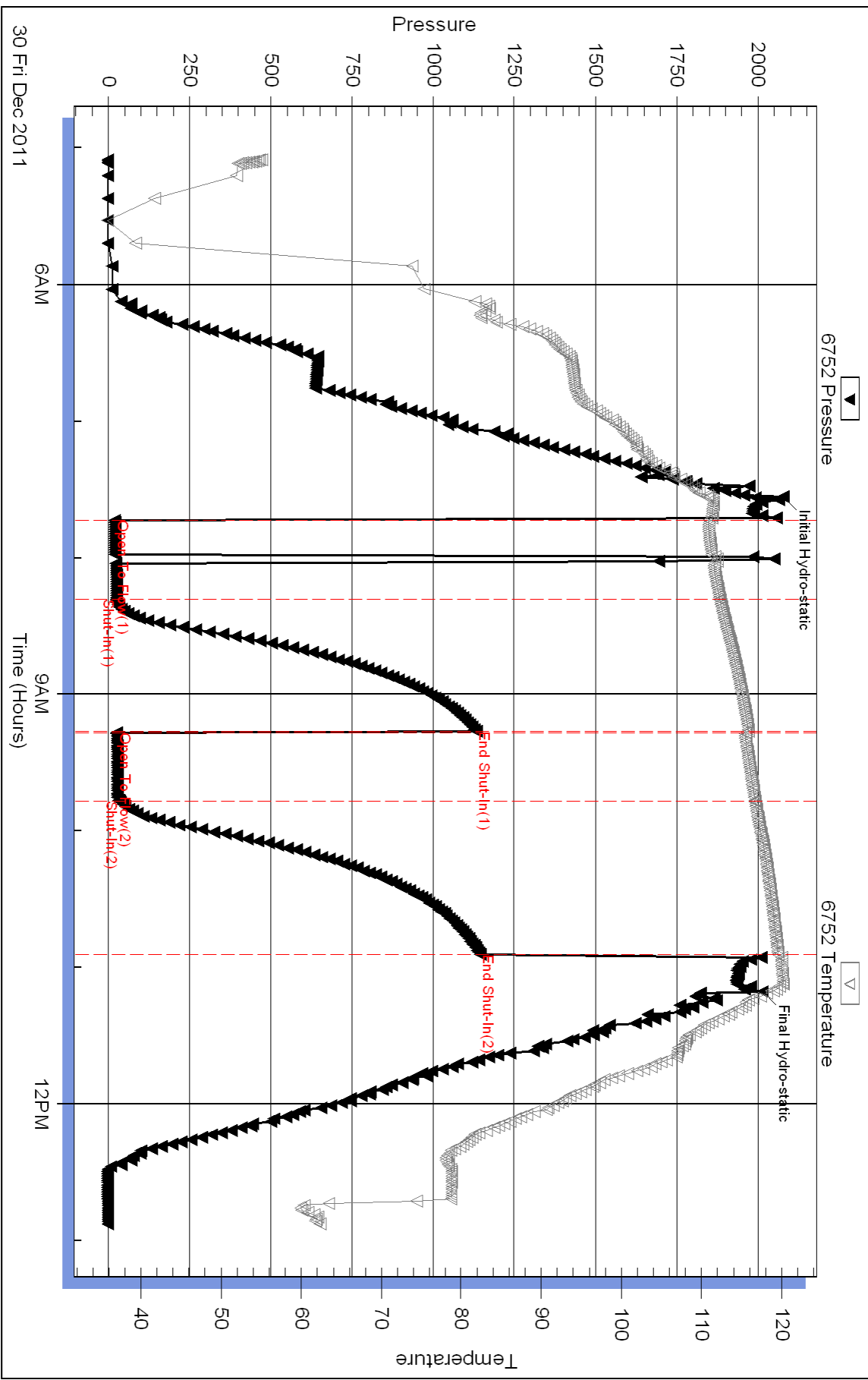
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

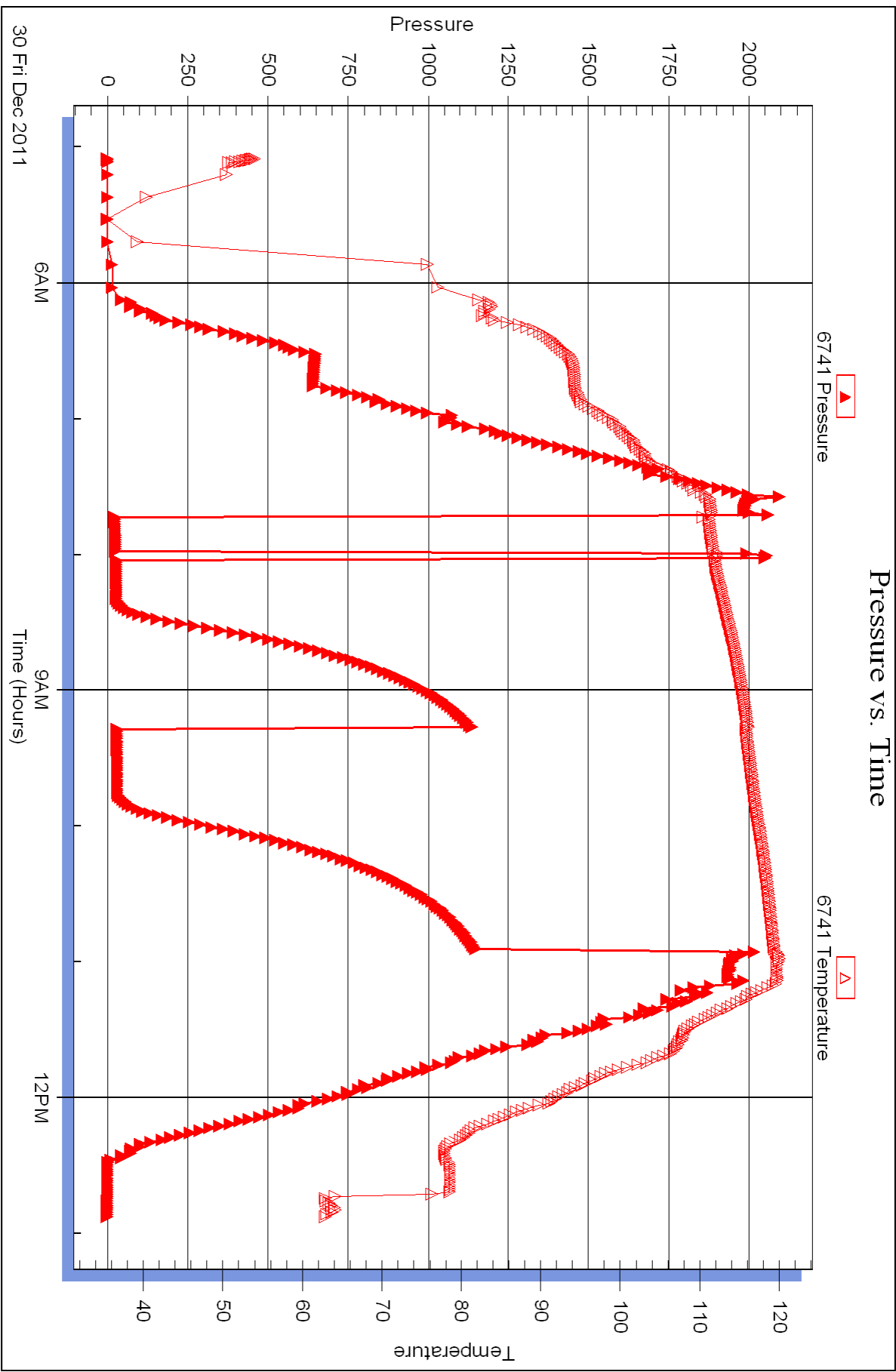


Serial #: 6741

Outside Murfin Drilling Co.

Ruda A #1-9

DST Test Number: 2







**TRILOBITE  
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# DRILL STEM TEST REPORT

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

**9 5 33w Rawlins Ks.**  
**Ruda A #1-9**  
Job Ticket: 042958      **DST#: 3**  
Test Start: 2011.12.30 @ 21:30:00

## GENERAL INFORMATION:

Formation: **LKC-E,F,G**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 23:51:30  
 Tester: Chuck Kreuzer Jr.  
 Time Test Ended: 06:13:00  
 Unit No: 36  
 Interval: **4104.00 ft (KB) To 4150.00 ft (KB) (TVD)**  
 Reference Elevations: 3102.00 ft (KB)  
 Total Depth: 4150.00 ft (KB) (TVD) 3097.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

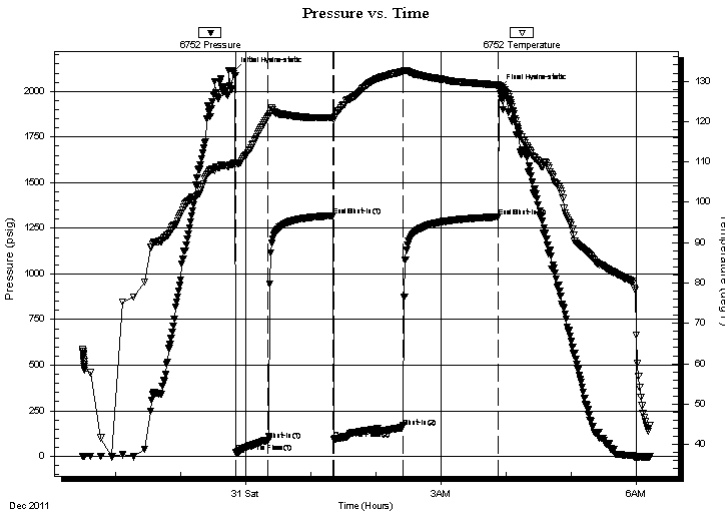
## Serial #: 6752

Inside

Press @ Run Depth: 158.71 psig @ 4105.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.12.30 End Date: 2011.12.31 Last Calib.: 2011.12.31  
 Start Time: 21:30:05 End Time: 06:13:00 Time On Btm: 2011.12.30 @ 23:49:00  
 Time Off Btm: 2011.12.31 @ 03:54:00

**TEST COMMENT:** IF: Fair blow, Built to 5 in. over 30 mins.  
 IS: Blow back after 5 mins. Built to 1/8 in. over 60 mins.  
 FF: Fair blow, Built to B.O.B over 60 mins.  
 FS: No blow back over 90 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2108.33	109.57	Initial Hydro-static
3	20.85	109.55	Open To Flow (1)
32	88.91	121.21	Shut-In(1)
92	1319.35	120.90	End Shut-In(1)
93	94.20	120.53	Open To Flow (2)
156	158.71	132.43	Shut-In(2)
244	1312.12	129.05	End Shut-In(2)
245	2014.45	128.99	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	mcw -10% m90% w	0.59
61.00	mcw -25% m75% w	0.30
62.00	w cm-50% w 50% m	0.87
62.00	mud-100%	0.87
0.00	1. @50* =8500	0.00

\* Recovery from multiple tests

## Gas Rates

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





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**FLUID SUMMARY**

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**9 5 33w Rawlins Ks.**

250 N. Water Ste. 300  
Wichita Ks. 67202

**Ruda A #1-9**

Job Ticket: 042958

**DST#: 3**

ATTN: Steve Miller

Test Start: 2011.12.30 @ 21:30:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

8500 ppm

Viscosity: 7.20 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	mcw -10%m90%w	0.590
61.00	mcw -25%m75%w	0.300
62.00	w cm-50%w 50%m	0.870
62.00	mud-100%	0.870
0.00	1. @50*=8500	0.000

Total Length: 305.00 ft

Total Volume: 2.630 bbl

Num Fluid Samples: 0

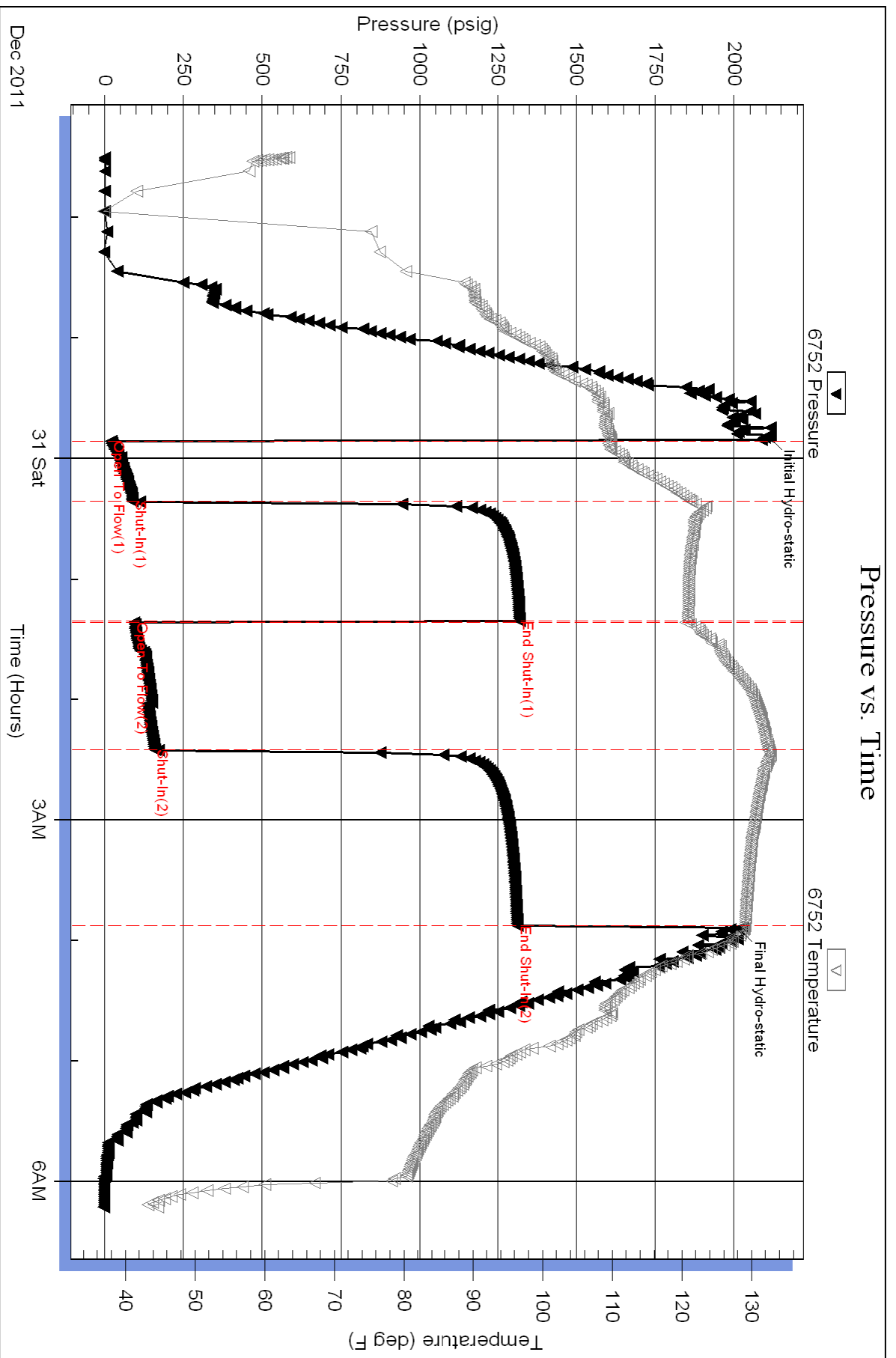
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

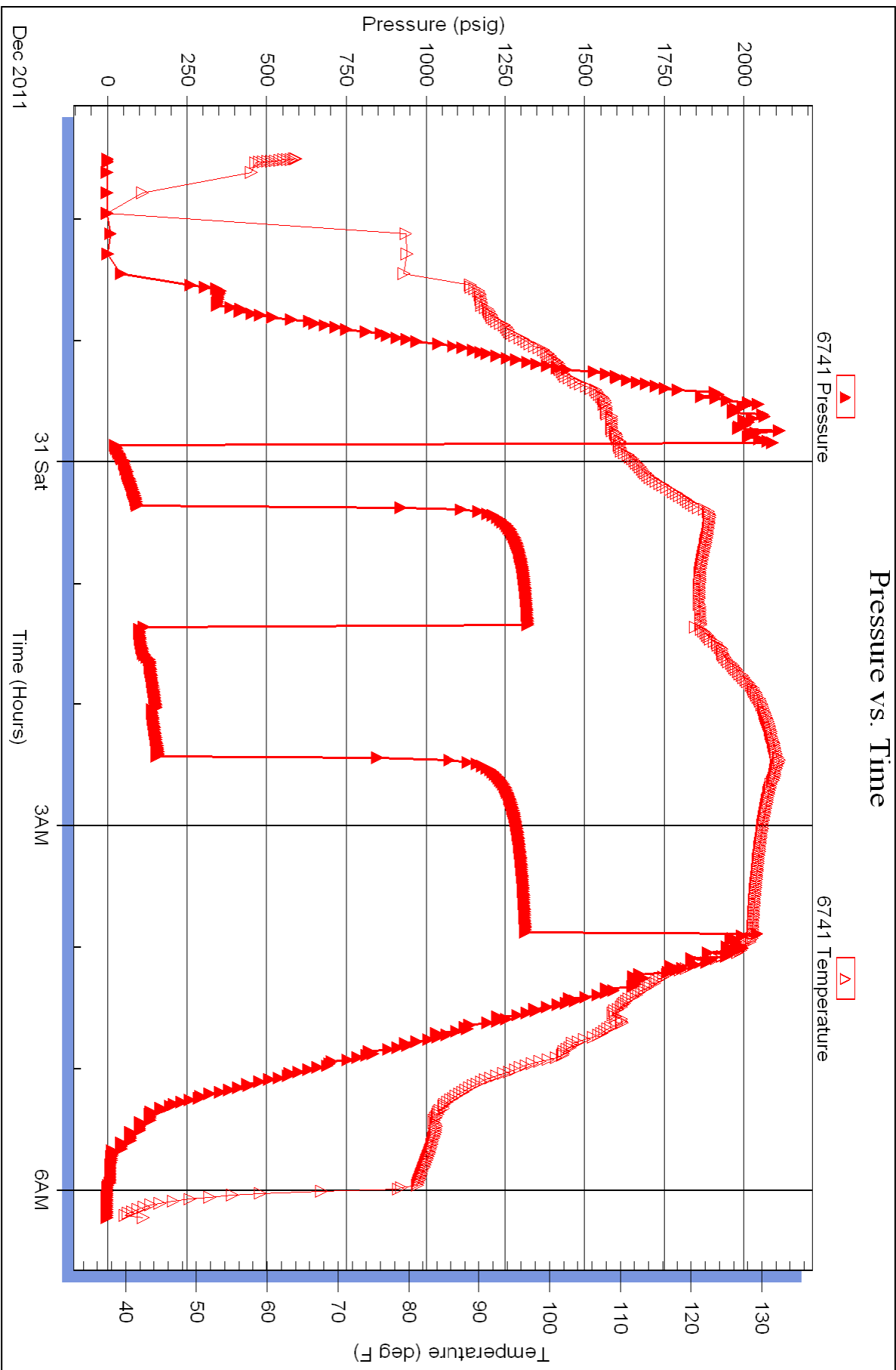


Serial #: 6741

Outside Murfin Drilling Co.

Ruda A #1-9

DST Test Number: 3





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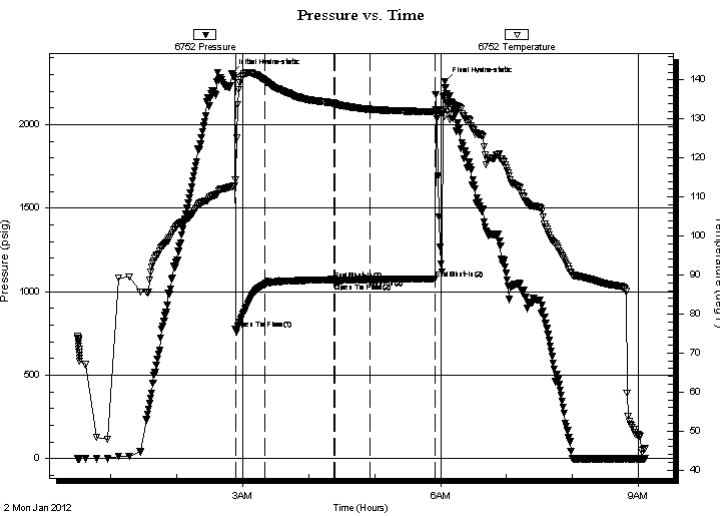
**9 5 33w Rawlins Ks.**  
**Ruda A #1-9**  
Job Ticket: 042959      **DST#: 4**  
Test Start: 2012.01.02 @ 00:30:00

## GENERAL INFORMATION:

Formation: **Pawnee, Fort scott,**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 02:53:30  
Time Test Ended: 09:05:30  
Interval: **4429.00 ft (KB) To 4543.00 ft (KB) (TVD)**  
Total Depth: 4543.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Chuck Kreuzer Jr.  
Unit No: 36  
Reference Elevations: 3102.00 ft (KB)  
3097.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6752      Inside**  
Press @ Run Depth: 1072.71 psig @ 4430.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2012.01.02      End Date: 2012.01.02      Last Calib.: 2012.01.02  
Start Time: 00:30:05      End Time: 09:05:30      Time On Btm: 2012.01.02 @ 02:50:30  
Time Off Btm: 2012.01.02 @ 06:04:00

**TEST COMMENT:** IF: Strong blow , Built to B.O.B in 30 sec.  
IS: No blow back over 60 mins.  
FF: Fair blow , Built to B.O.B in 5 mins.  
FS: No blow back over 60 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2307.35	112.67	Initial Hydro-static
3	773.83	114.50	Open To Flow (1)
30	1042.44	139.77	Shut-In(1)
93	1071.46	134.02	End Shut-In(1)
93	1054.49	134.00	Open To Flow (2)
125	1072.71	132.46	Shut-In(2)
184	1076.03	131.85	End Shut-In(2)
194	2258.46	132.31	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2028.00	water-100%w	26.80
186.00	w cm-50%w 50%m	2.61
186.00	mud-100%m	2.61
0.00	.8@56.3*=9500 chlorides	0.00

\* Recovery from multiple tests

## Gas Rates

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



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**9 5 33w Rawlins Ks.**

250 N. Water Ste. 300  
Wichita Ks. 67202

**Ruda A #1-9**

Job Ticket: 042959

**DST#: 4**

ATTN: Steve Miller

Test Start: 2012.01.02 @ 00:30:00

## 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:

9500 ppm

Viscosity: 76.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2028.00	water-100%w	26.799
186.00	w cm-50%w 50%m	2.609
186.00	mud-100%m	2.609
0.00	.8@56.3*=9500 chlorides	0.000

Total Length: 2400.00 ft

Total Volume: 32.017 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

