

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

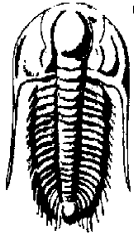
Start Date: 2013.10.29 @ 15:05:00

End Date: 2013.10.29 @ 22:09:30

Job Ticket #: 55541                      DST #: 1

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

Printed: 2013.11.06 @ 13:53:43



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 55541

**DST#: 1**

Test Start: 2013.10.29 @ 15:05:00

## GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:48:40

Time Test Ended: 22:09:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

**Interval: 4220.00 ft (KB) To 4251.00 ft (KB) (TVD)**

Reference Elevations: 2728.00 ft (KB)

Total Depth: 4251.00 ft (KB) (TVD)

2723.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6741**

**Inside**

Press @ Run Depth: 316.62 psig @ 4248.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.10.29

End Date:

2013.10.29

Last Calib.:

2013.10.29

Start Time: 15:05:02

End Time:

22:09:30

Time On Btm:

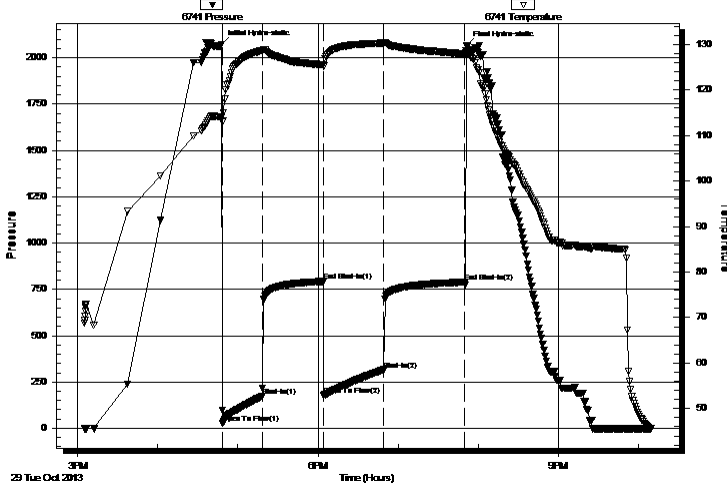
2013.10.29 @ 16:47:40

Time Off Btm:

2013.10.29 @ 19:51:30

**TEST COMMENT:** B.O.B. @ 9 1/2 min.  
1 1/2" Return.  
B.O.B. @ 14 min.  
2" Return.

Pressure vs. Time



PRESSURE SUMMARY

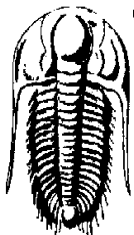
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2071.67	114.01	Initial Hydro-static
1	25.85	113.16	Open To Flow (1)
31	174.11	128.70	Shut-In(1)
77	793.16	125.53	End Shut-In(1)
77	177.95	125.23	Open To Flow (2)
122	316.62	130.31	Shut-In(2)
183	788.76	127.93	End Shut-In(2)
184	2066.48	127.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	RW: .157 @ 40 Degrees F = 88000 PPM	0.00
369.00	OSMW 5m 95w	4.07
124.00	OSMW 15m 85w	1.74
109.00	OSMW 50m 50w	1.53
61.00	CGO 40g 60o	0.86
0.00	170' Weak GIP	0.00

Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 55541

**DST#: 1**

Test Start: 2013.10.29 @ 15:05:00

## GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:48:40

Time Test Ended: 22:09:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

**Interval: 4220.00 ft (KB) To 4251.00 ft (KB) (TVD)**

Reference Elevations: 2728.00 ft (KB)

Total Depth: 4251.00 ft (KB) (TVD)

2723.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 6751 Outside**

Press @ Run Depth: psig @ 4248.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.10.29

End Date:

2013.10.29

Last Calib.:

2013.10.29

Start Time: 15:05:02

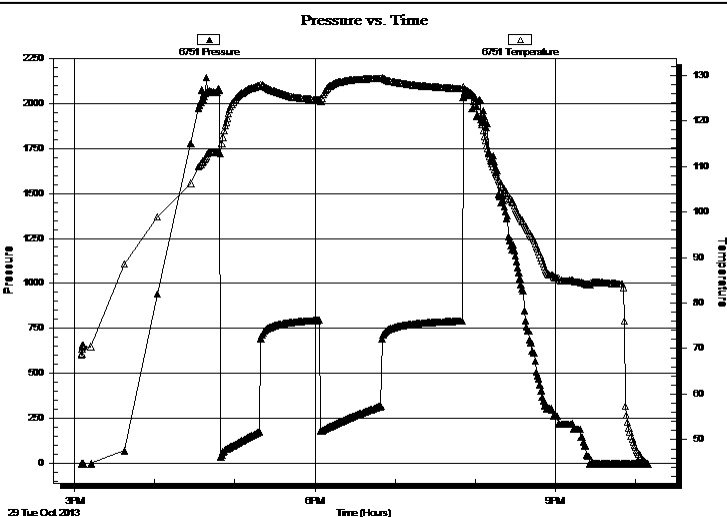
End Time:

22:09:40

Time On Btm:

Time Off Btm:

**TEST COMMENT:** B.O.B. @ 9 1/2 min.  
1 1/2" Return.  
B.O.B. @ 14 min.  
2" Return.



## PRESSURE SUMMARY

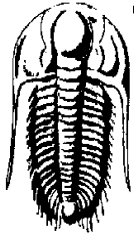
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	RW: .157 @ 40 Degrees F = 88000 PPM	0.00
369.00	OSMW 5m 95w	4.07
124.00	OSMW 15m 85w	1.74
109.00	OSMW 50m 50w	1.53
61.00	CGO 40g 60o	0.86
0.00	170' Weak GIP	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 55541

**DST#: 1**

ATTN: Mike Engelbrecht

Test Start: 2013.10.29 @ 15:05:00

## Tool Information

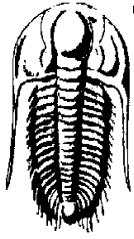
Drill Pipe:	Length: 4105.00 ft	Diameter: 3.80 inches	Volume: 57.58 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 58.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.50 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4220.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	58.50 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			4193.50	
Shut In Tool	5.00			4198.50	
Hydraulic tool	5.00			4203.50	
Jars	5.00			4208.50	
Safety Joint	2.50			4211.00	
Packer	5.00			4216.00	27.50 Bottom Of Top Packer
Packer	4.00			4220.00	
Stubb	1.00			4221.00	
Perforations	27.00			4248.00	
Recorder	0.00	6741	Inside	4248.00	
Recorder	0.00	6751	Outside	4248.00	
Bullnose	3.00			4251.00	31.00 Bottom Packers & Anchor

**Total Tool Length: 58.50**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 55541

**DST#: 1**

ATTN: Mike Engelbrecht

Test Start: 2013.10.29 @ 15:05:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

88000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.33 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	RW: .157 @ 40 Degrees F = 88000 PPM	0.000
369.00	OSMW 5m 95w	4.074
124.00	OSMW 15m 85w	1.739
109.00	OSMW 50m 50w	1.529
61.00	CGO 40g 60o	0.856
0.00	170' Weak GIP	0.000

Total Length: 663.00 ft      Total Volume: 8.198 bbl

Num Fluid Samples: 0

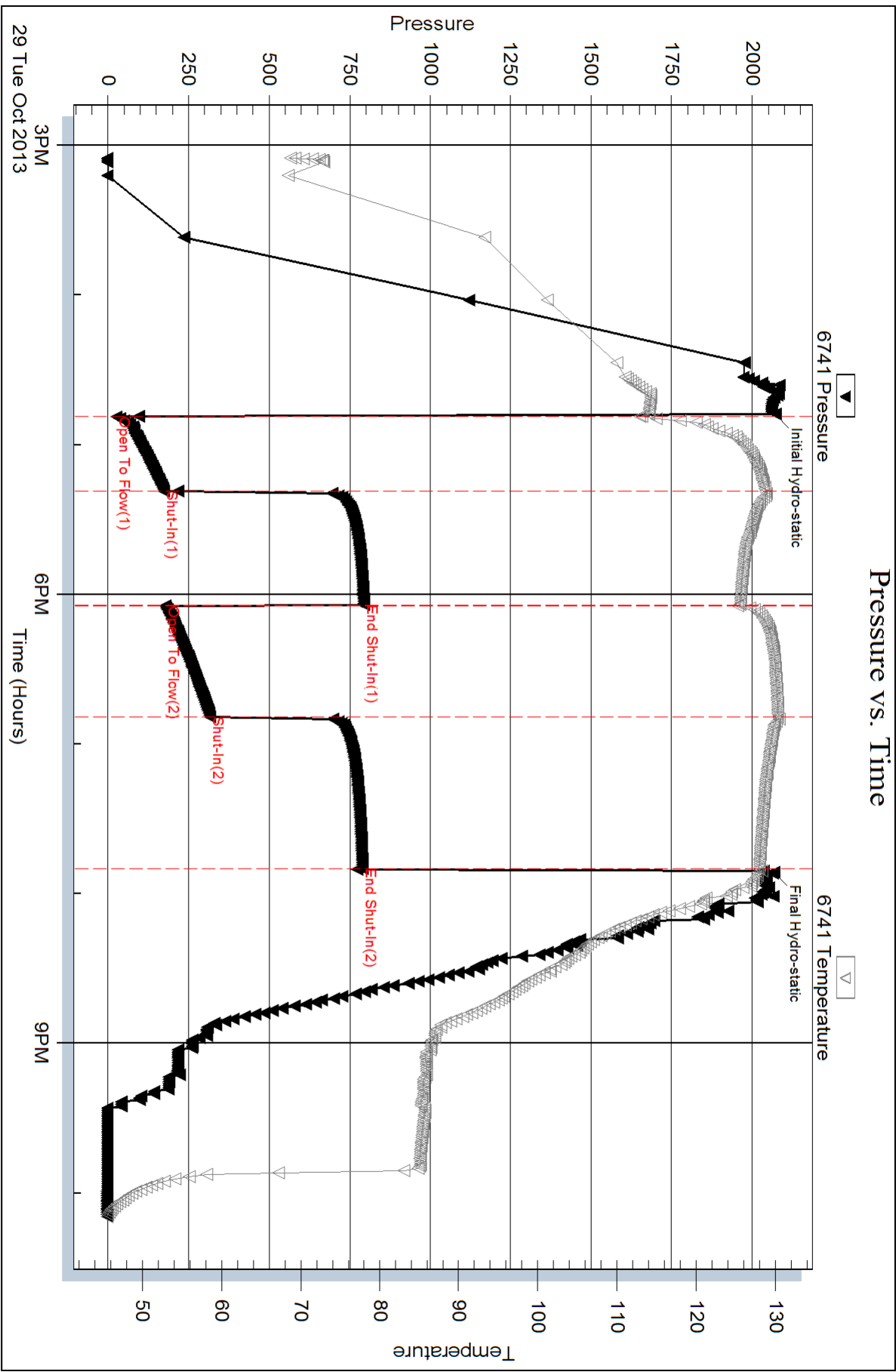
Num Gas Bombs: 0

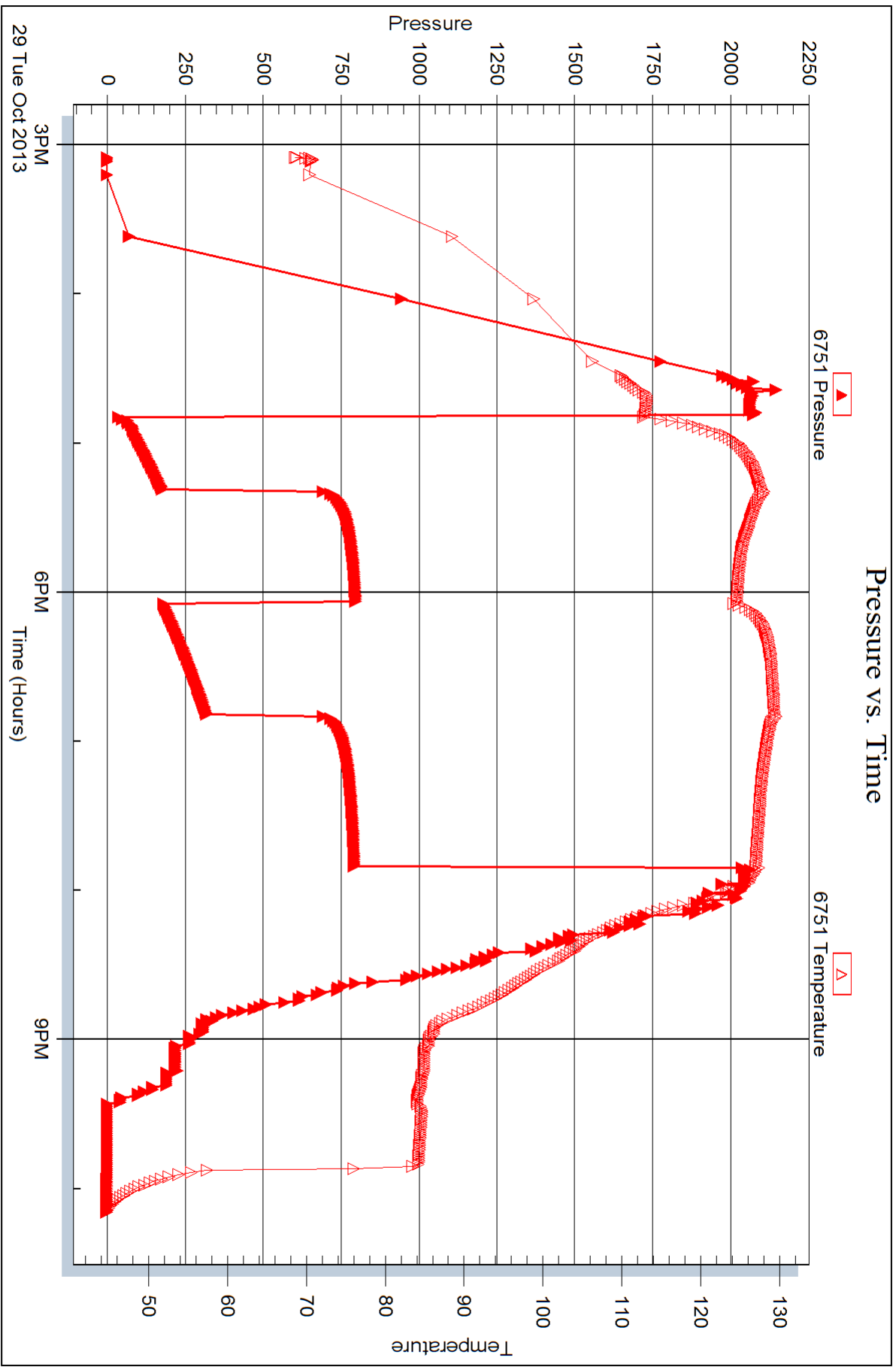
Serial #:

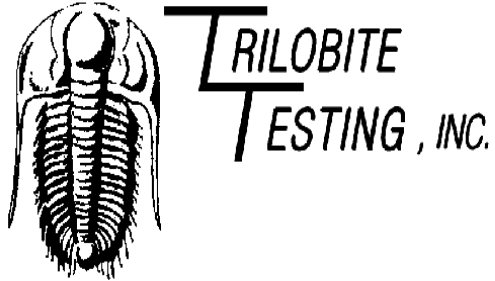
Laboratory Name:

Laboratory Location:

Recovery Comments: API: 35 @ 50 Degrees F = 36.







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

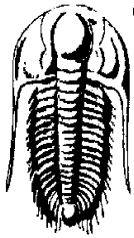
Start Date: 2013.10.30 @ 05:16:00

End Date: 2013.10.30 @ 13:51:00

Job Ticket #: 54529                      DST #: 2

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

Printed: 2013.11.06 @ 13:53:03



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 54529

**DST#: 2**

Test Start: 2013.10.30 @ 05:16:00

## GENERAL INFORMATION:

Formation: **LKC "K"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:42:50  
 Time Test Ended: 13:51:00  
 Interval: **4256.00 ft (KB) To 4282.00 ft (KB) (TVD)**  
 Total Depth: 4282.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cornelio Landa III (  
 Unit No: 62  
 Reference Elevations: 2728.00 ft (KB)  
 2723.00 ft (CF)  
 KB to GR/CF: 5.00 ft

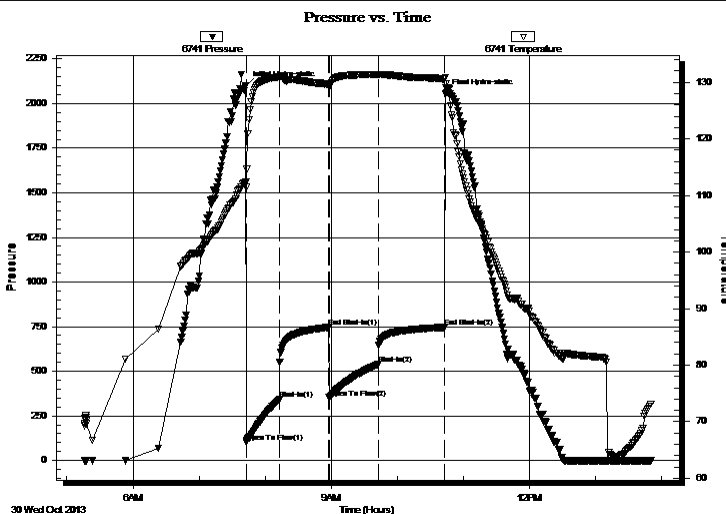
## Serial #: 6741

Inside

Press @ Run Depth: 539.17 psig @ 4259.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.10.30 End Date: 2013.10.30 Last Calib.: 2013.10.30  
 Start Time: 05:16:02 End Time: 13:51:00 Time On Btm: 2013.10.30 @ 07:42:40  
 Time Off Btm: 2013.10.30 @ 10:43:50

TEST COMMENT: IF: BOB. in 2 mins.  
 IS: Bled off in 2 mins. - BOB in 38 mins.  
 FF: BIOB. Immediately  
 FS: Bled off in 2 mins. - BOB. in 26 mins.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2098.32	112.41	Initial Hydro-static
1	103.79	111.44	Open To Flow (1)
31	341.65	130.97	Shut-In(1)
76	745.26	129.63	End Shut-In(1)
76	351.12	129.37	Open To Flow (2)
121	539.17	131.33	Shut-In(2)
181	746.03	130.59	End Shut-In(2)
182	2053.92	130.89	Final Hydro-static

## Recovery

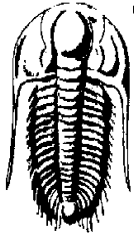
Length (ft)	Description	Volume (bbl)
121.00	Mw 40m 60w	0.60
126.00	Gw 20g 80w	1.77
126.00	Gocw 30g 30o 40w	1.77
126.00	Mcgw 5m 10g 85w	1.77
126.00	Gmco 20g 30m50o	1.77
471.00	Cgo 25g 75o	6.61

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54529

**DST#: 2**

ATTN: Mike Engelbrecht

Test Start: 2013.10.30 @ 05:16:00

## Tool Information

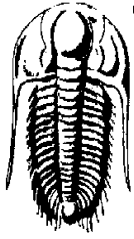
Drill Pipe:	Length: 4137.00 ft	Diameter: 3.80 inches	Volume: 58.03 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.63 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4256.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4237.00	
Shut In Tool	5.00			4242.00	
Hydraulic tool	5.00			4247.00	
Packer	5.00			4252.00	20.00 Bottom Of Top Packer
Packer	4.00			4256.00	
Stubb	1.00			4257.00	
Perforations	2.00			4259.00	
Recorder	0.00	6741	Inside	4259.00	
Recorder	0.00	6751	Outside	4259.00	
Perforations	20.00			4279.00	
Bullnose	3.00			4282.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 46.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54529

**DST#: 2**

ATTN: Mike Engelbrecht

Test Start: 2013.10.30 @ 05:16:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

90000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.32 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
121.00	Mw 40m 60w	0.595
126.00	Gw 20g 80w	1.767
126.00	Gocw 30g 30o 40w	1.767
126.00	Mcgw 5m 10g 85w	1.767
126.00	Gmco 20g 30m50o	1.767
471.00	Cgo 25g 75o	6.607

Total Length: 1096.00 ft      Total Volume: 14.270 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

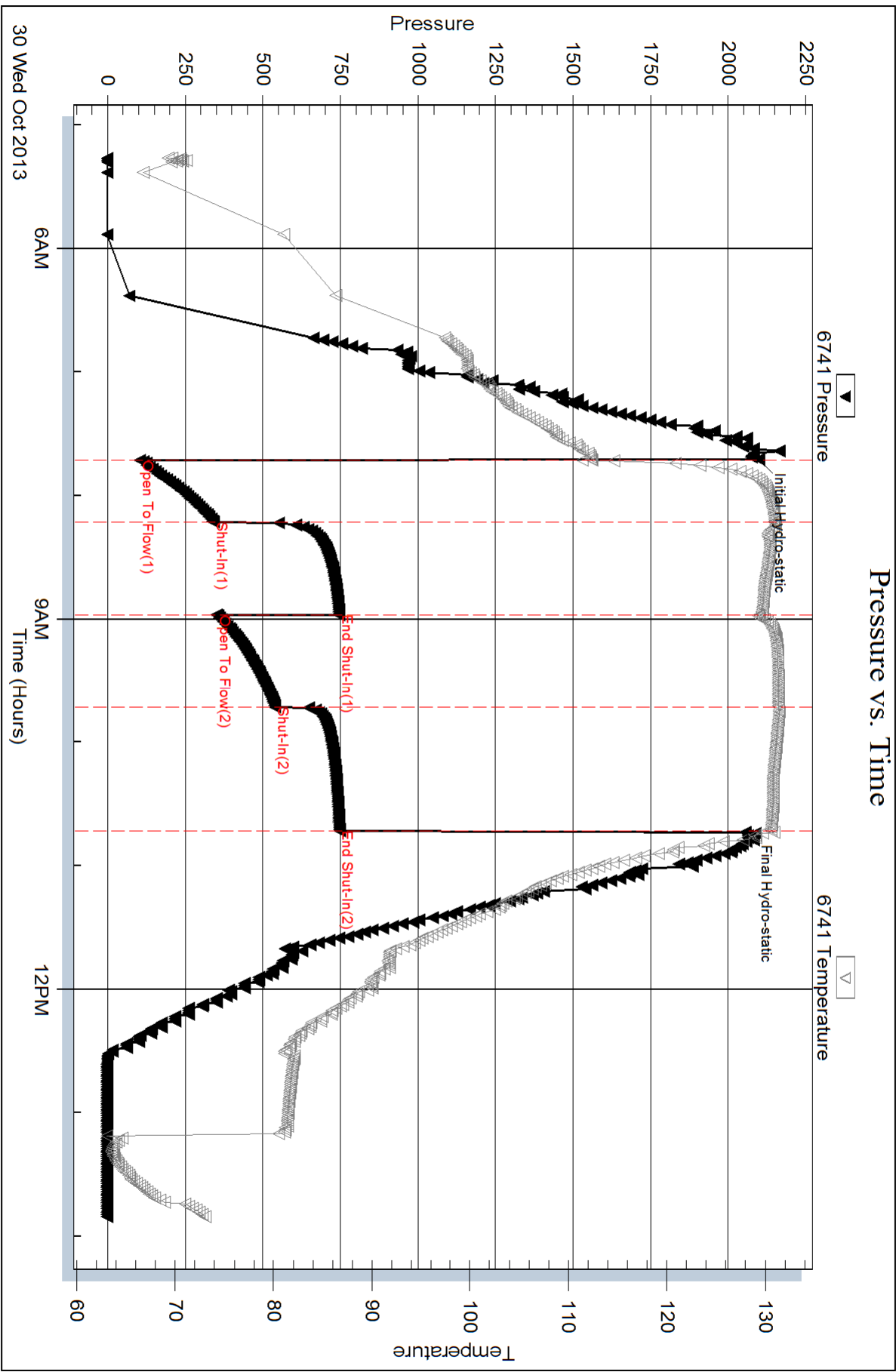
Laboratory Name:

Laboratory Location:

Recovery Comments: GIP=1605

Rw .130@49=90000

Gravity=36

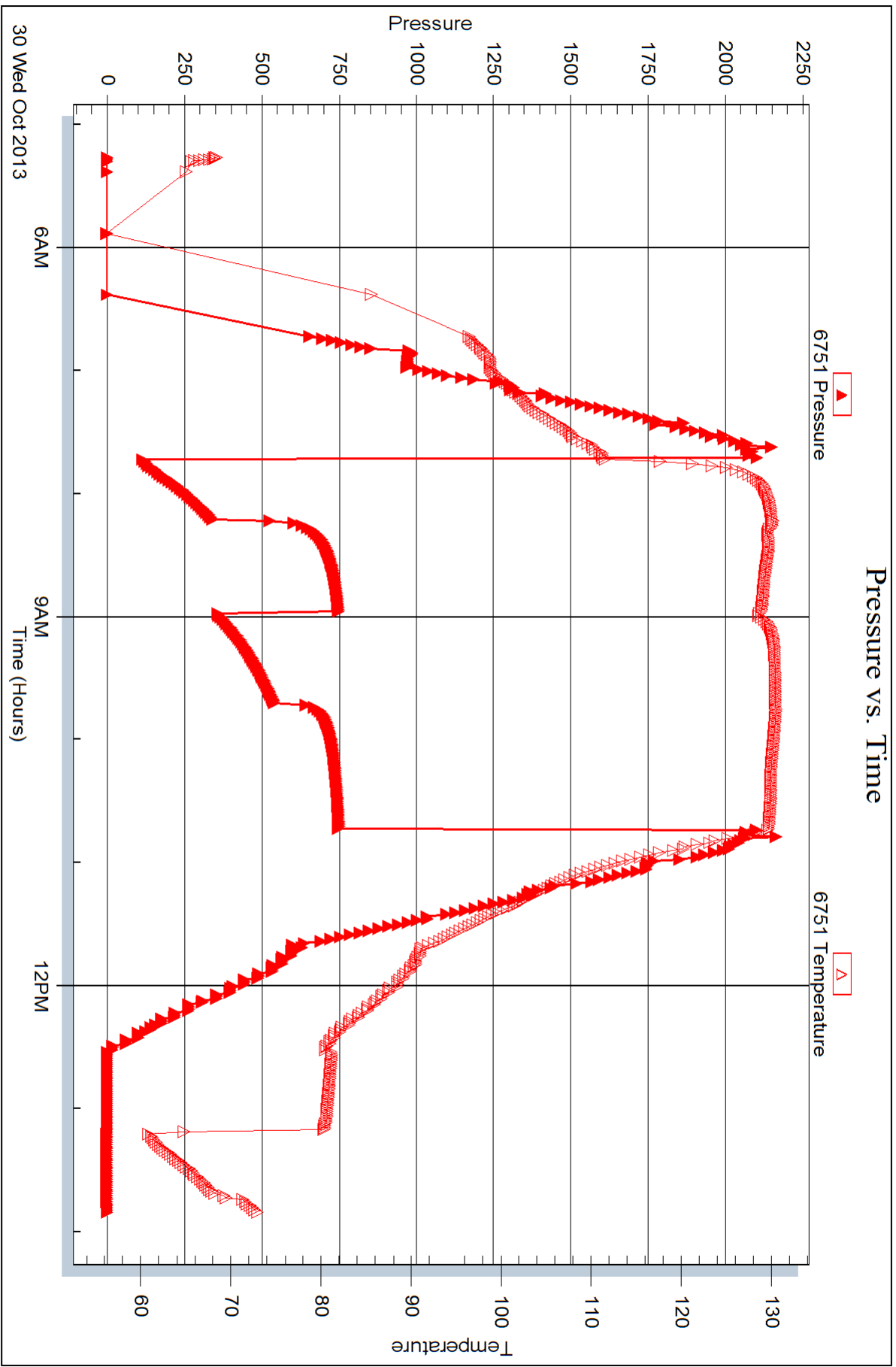


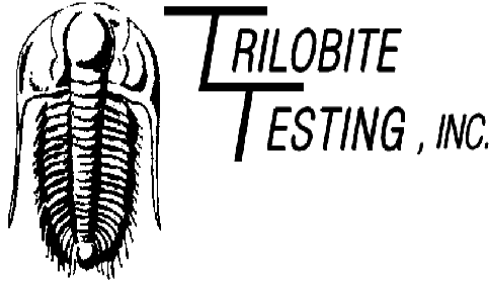
Serial #: 6751

Outside Ritchie Exploration Inc.

Hammeke 13C #1

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

Start Date: 2013.10.30 @ 19:55:00

End Date: 2013.10.31 @ 02:57:00

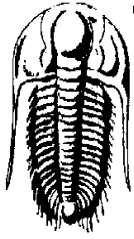
Job Ticket #: 54530                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.06 @ 13:52:35



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54530

**DST#: 3**

ATTN: Mike Engelbrecht

Test Start: 2013.10.30 @ 19:55:00

## GENERAL INFORMATION:

Formation: **Mid-Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:55:10

Time Test Ended: 02:57:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III (

Unit No: 62

**Interval: 4287.00 ft (KB) To 4302.00 ft (KB) (TVD)**

Total Depth: 4302.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2728.00 ft (KB)

2723.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 6741**

**Inside**

Press @ Run Depth: 54.98 psig @ 4289.00 ft (KB)

Start Date: 2013.10.30

End Date:

2013.10.31

Start Time: 19:55:02

End Time:

02:57:00

Capacity: 8000.00 psig

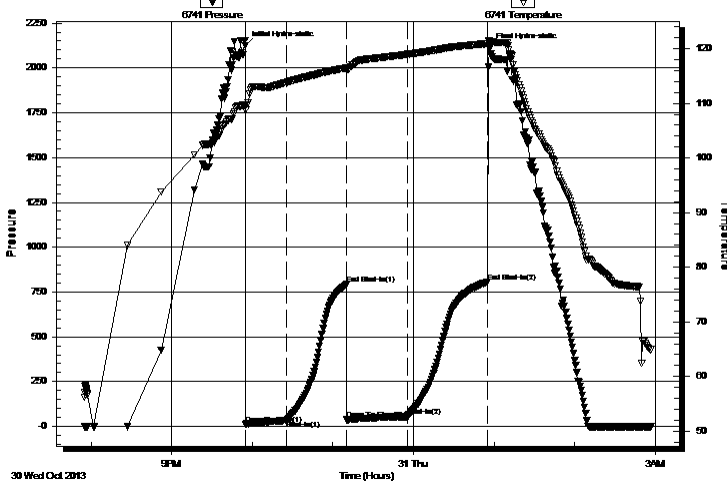
Last Calib.: 2013.10.31

Time On Btm: 2013.10.30 @ 21:55:00

Time Off Btm: 2013.10.31 @ 00:56:20

**TEST COMMENT:** IF: 6 1/4" of Blow  
IS: Bled off in 2 min.- No return  
FF: 8 1/2". of Blow  
FS: Bled off in 1 1/2 min.- No return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.05	109.77	Initial Hydro-static
1	12.42	108.84	Open To Flow (1)
31	33.43	113.81	Shut-In(1)
76	792.59	116.46	End Shut-In(1)
76	39.86	116.12	Open To Flow (2)
121	54.98	118.96	Shut-In(2)
181	806.18	120.94	End Shut-In(2)
182	2116.08	121.53	Final Hydro-static

Recovery

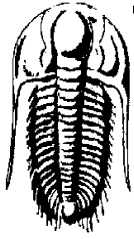
Length (ft)	Description	Volume (bbl)
60.00	Gocm 20g 30o 50m	0.30
62.00	Cgo 50g 50o	0.31
0.00	62 Gjp	0.00
0.00	Gravity=36	0.00

Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54530

**DST#: 3**

ATTN: Mike Engelbrecht

Test Start: 2013.10.30 @ 19:55:00

## Tool Information

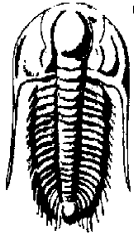
Drill Pipe:	Length: 4169.00 ft	Diameter: 3.80 inches	Volume: 58.48 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 59.08 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	4287.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	15.00 ft				
Tool Length:	35.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4268.00	
Shut In Tool	5.00			4273.00	
Hydraulic tool	5.00			4278.00	
Packer	5.00			4283.00	20.00 Bottom Of Top Packer
Packer	4.00			4287.00	
Stubb	1.00			4288.00	
Perforations	1.00			4289.00	
Recorder	0.00	6741	Inside	4289.00	
Recorder	0.00	6751	Outside	4289.00	
Perforations	10.00			4299.00	
Bullnose	3.00			4302.00	15.00 Bottom Packers & Anchor

**Total Tool Length: 35.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54530

**DST#: 3**

ATTN: Mike Engelbrecht

Test Start: 2013.10.30 @ 19:55:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	Gocm 20g 30o 50m	0.295
62.00	Cgo 50g 50o	0.314
0.00	62 Gip	0.000
0.00	Gravity=36	0.000

Total Length: 122.00 ft

Total Volume: 0.609 bbl

Num Fluid Samples: 0

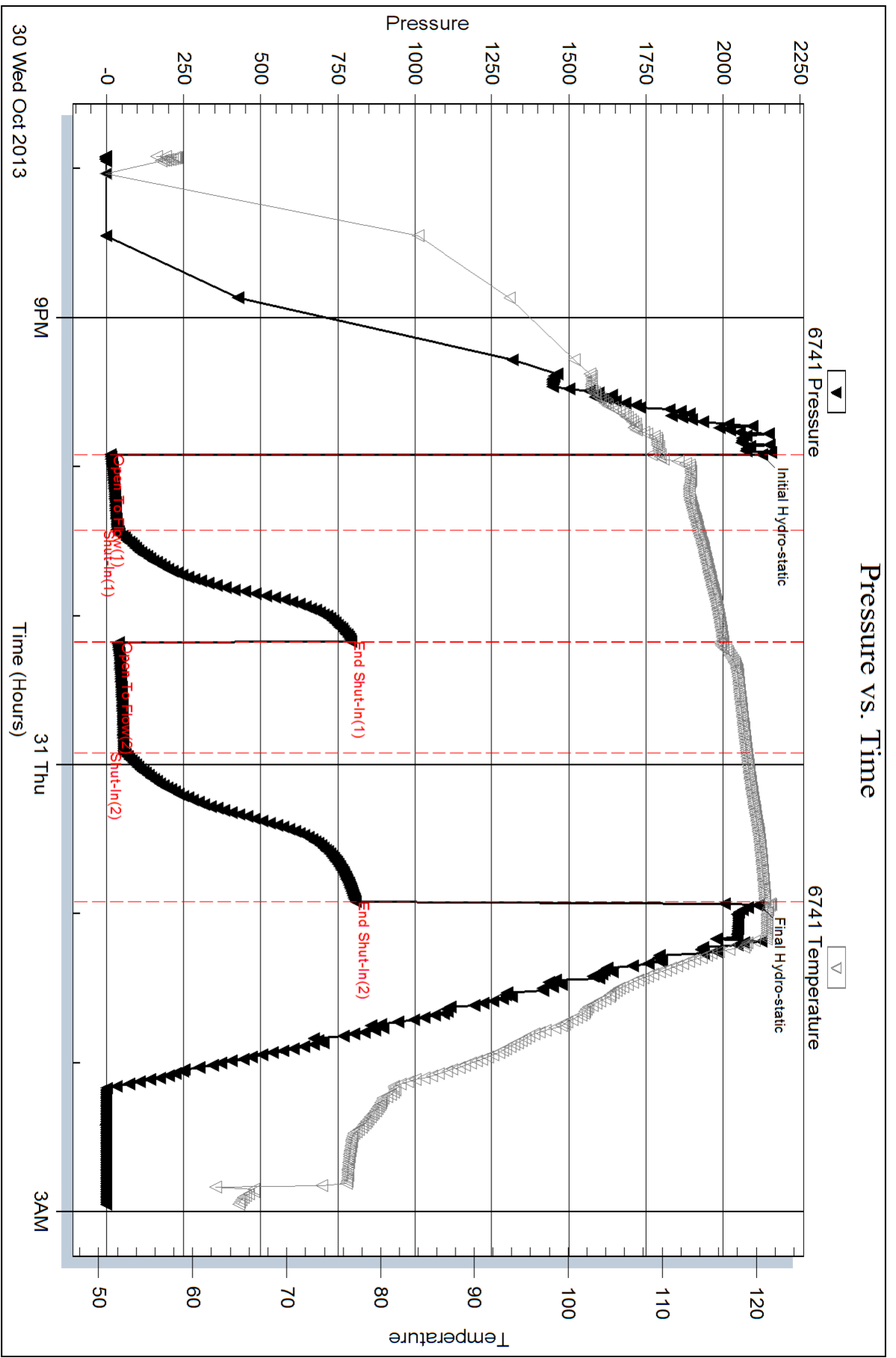
Num Gas Bombs: 0

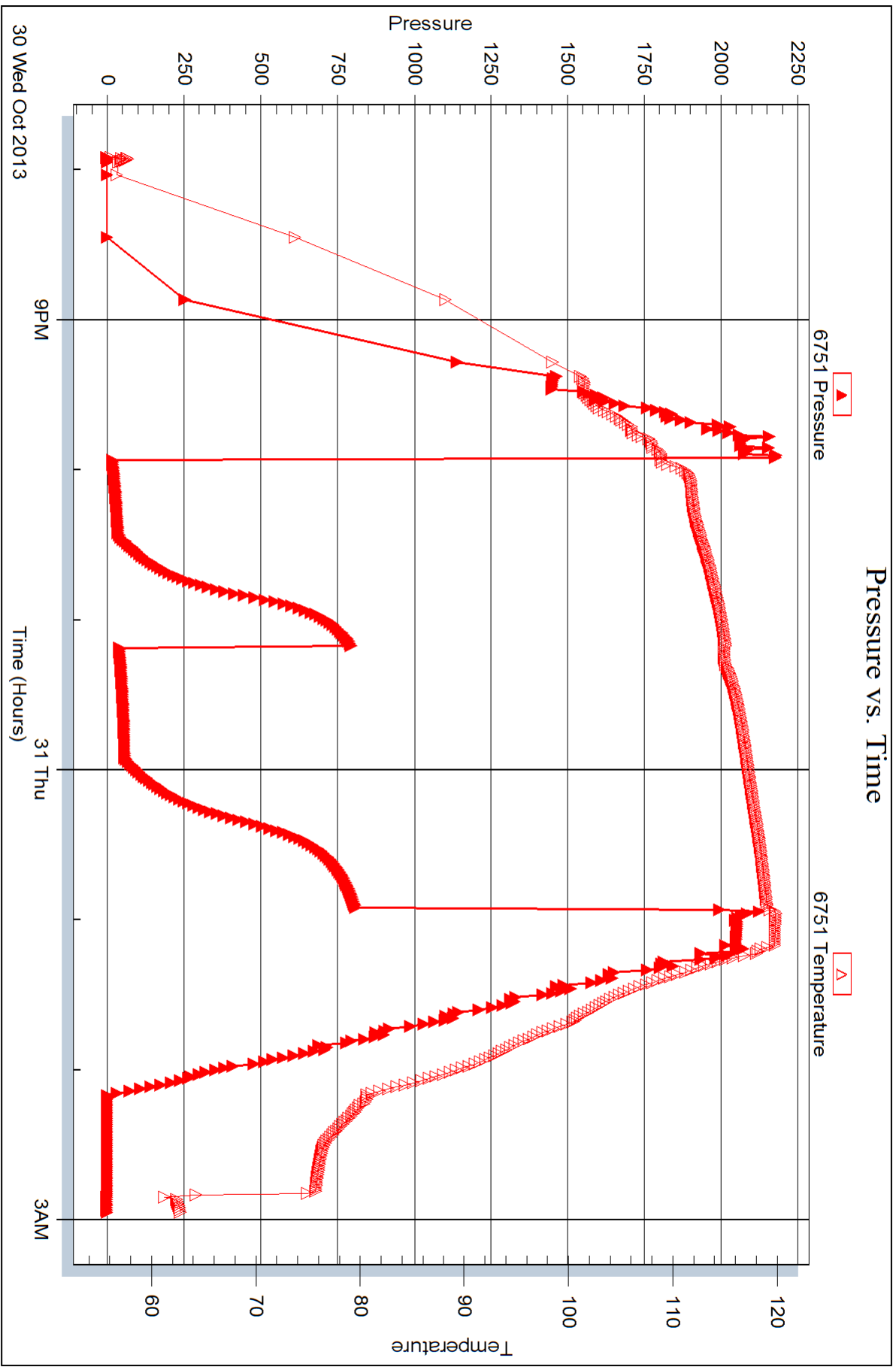
Serial #:

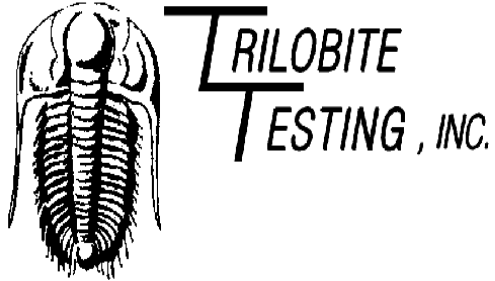
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

Start Date: 2013.10.31 @ 10:00:00

End Date: 2013.10.31 @ 17:14:09

Job Ticket #: 54531                      DST #: 4

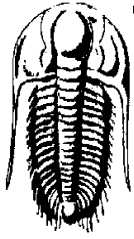
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.06 @ 13:52:04

Ritchie Exploration Inc.  
13-18s-28w Lane,KS  
Hammeke 13C #1  
DST # 4  
KC "L"  
2013.10.31



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 54531

**DST#: 4**

Test Start: 2013.10.31 @ 10:00:00

## GENERAL INFORMATION:

Formation: **KC "L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:10:30

Time Test Ended: 17:14:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III (

Unit No: 62

**Interval: 4306.00 ft (KB) To 4320.00 ft (KB) (TVD)**

Reference Elevations: 2728.00 ft (KB)

Total Depth: 4320.00 ft (KB) (TVD)

2723.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6741**

**Inside**

Press @ Run Depth: 85.93 psig @ 4307.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.10.31

End Date:

2013.10.31

Last Calib.:

2013.10.31

Start Time:

10:00:02

End Time:

17:14:10

Time On Btm:

2013.10.31 @ 12:10:20

Time Off Btm:

2013.10.31 @ 15:11:00

## TEST COMMENT:

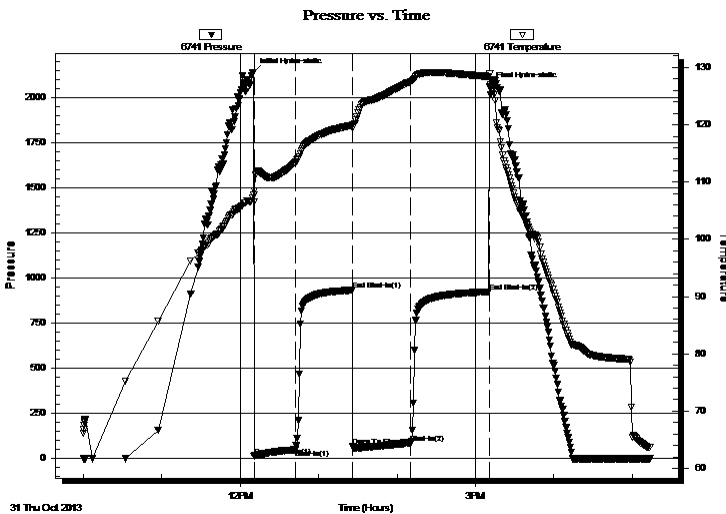
IF: BOB. in 11 1/2 mins.

IS: Bled off in 3 min.- 2 1/2" of Blow back

FF: 3". immediately-BOB in 8 min.

FS: Bled off in 2 min.-5 1/2" of Blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2137.03	107.73	Initial Hydro-static
1	10.74	106.51	Open To Flow (1)
32	48.18	113.41	Shut-In(1)
76	932.08	119.90	End Shut-In(1)
76	68.21	119.42	Open To Flow (2)
121	85.93	127.56	Shut-In(2)
181	922.88	128.41	End Shut-In(2)
181	2057.00	128.82	Final Hydro-static

## Recovery

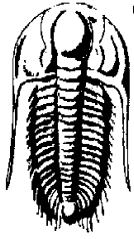
Length (ft)	Description	Volume (bbl)
31.00	GOCM 20g 30o 50m	0.15
216.00	GO 30g 70o	2.21
0.00	630 GIP	0.00
0.00	Gravity=35	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54531

**DST#: 4**

ATTN: Mike Engelbrecht

Test Start: 2013.10.31 @ 10:00:00

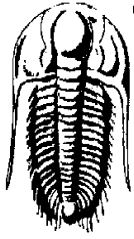
## Tool Information

Drill Pipe:	Length: 4170.00 ft	Diameter: 3.80 inches	Volume: 58.49 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4306.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	14.00 ft				
Tool Length:	34.00 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			4287.00	
Shut In Tool	5.00			4292.00	
Hydraulic tool	5.00			4297.00	
Packer	5.00			4302.00	20.00 Bottom Of Top Packer
Packer	4.00			4306.00	
Stubb	1.00			4307.00	
Recorder	0.00	6741	Inside	4307.00	
Recorder	0.00	6751	Outside	4307.00	
Perforations	10.00			4317.00	
Bullnose	3.00			4320.00	14.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>34.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54531

**DST#: 4**

ATTN: Mike Engelbrecht

Test Start: 2013.10.31 @ 10:00:00

## 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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
31.00	GOCM 20g 30o 50m	0.152
216.00	GO 30g 70o	2.210
0.00	630 GIP	0.000
0.00	Gravity=35	0.000

Total Length: 247.00 ft

Total Volume: 2.362 bbl

Num Fluid Samples: 0

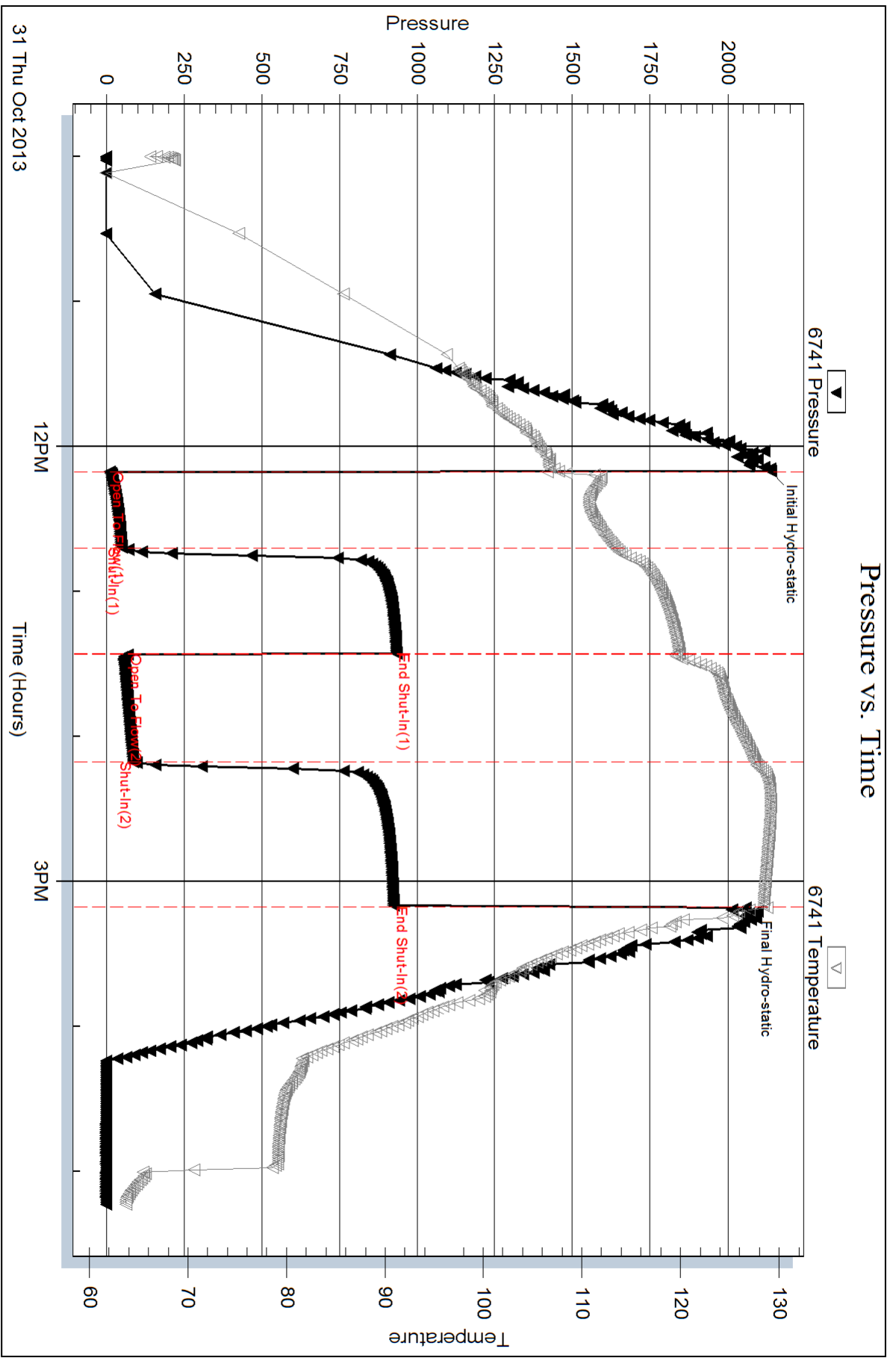
Num Gas Bombs: 0

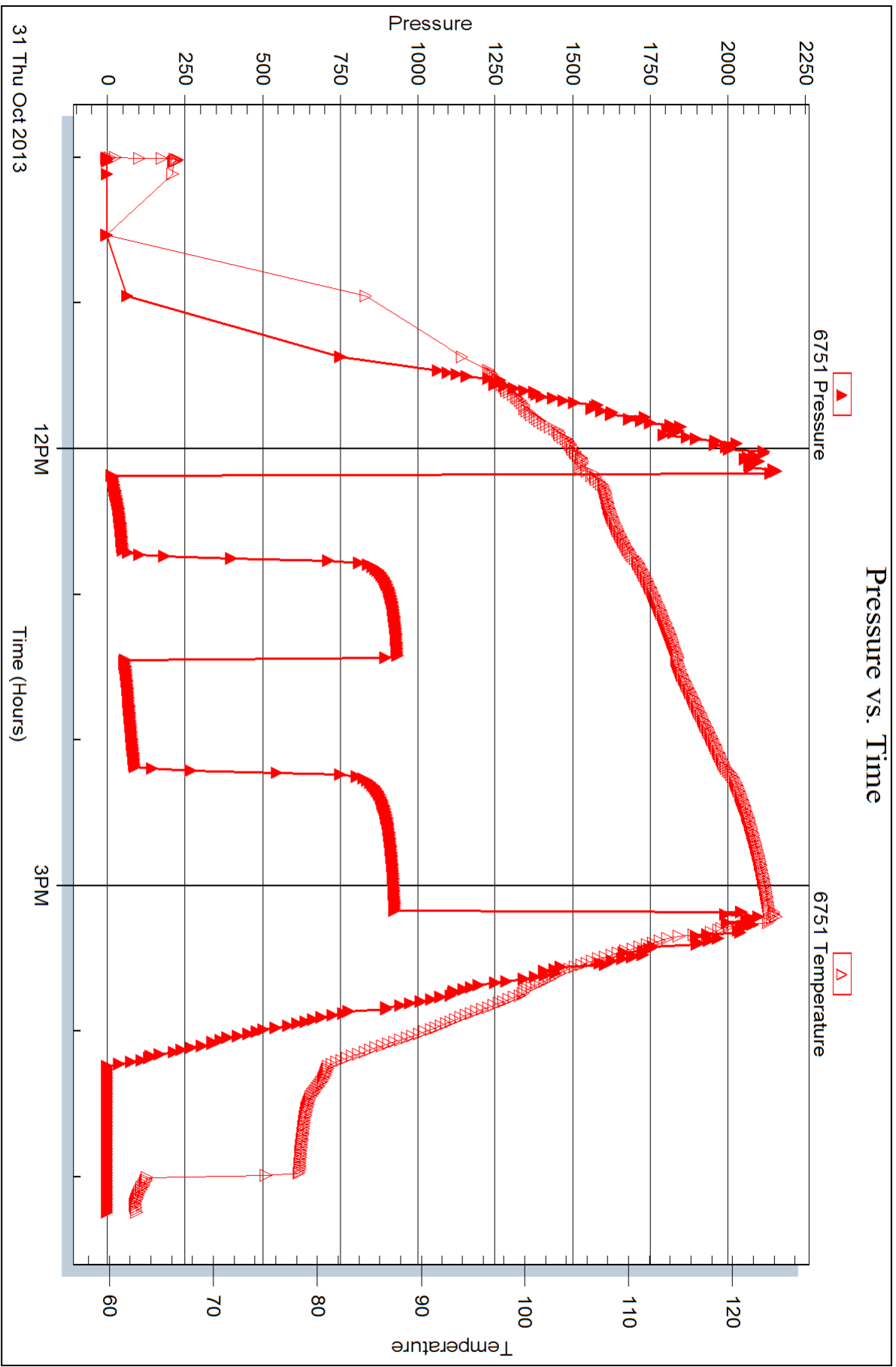
Serial #:

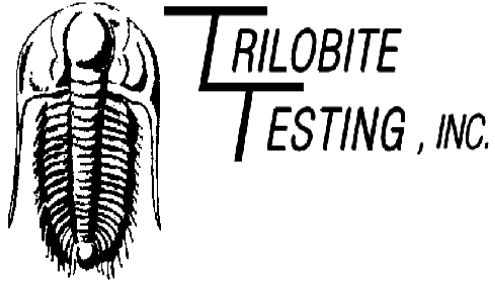
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

Start Date: 2013.11.01 @ 05:52:00

End Date: 2013.11.01 @ 11:33:30

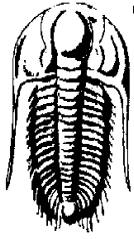
Job Ticket #: 54532                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.06 @ 13:47:24



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 54532

**DST#: 5**

Test Start: 2013.11.01 @ 05:52:00

## GENERAL INFORMATION:

Formation: **Marmaton-Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:58:10

Time Test Ended: 11:33:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III (

Unit No: 62

**Interval: 4326.00 ft (KB) To 4430.00 ft (KB) (TVD)**

Total Depth: 4430.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2728.00 ft (KB)

2723.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 6741 Inside**

Press @ Run Depth: 17.59 psig @ 4329.00 ft (KB)

Start Date: 2013.11.01

End Date: 2013.11.01

Start Time: 05:52:02

End Time: 11:33:30

Capacity: 8000.00 psig

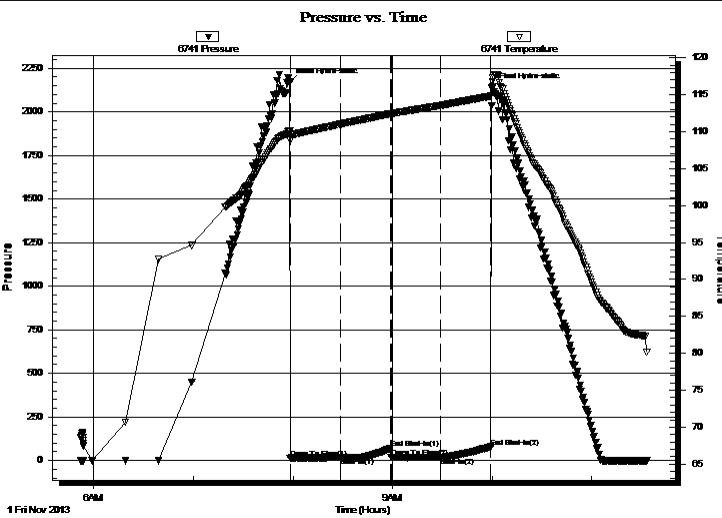
Last Calib.: 2013.11.01

Time On Btm: 2013.11.01 @ 07:58:00

Time Off Btm: 2013.11.01 @ 10:00:00

**TEST COMMENT:** IF: 1/2" blow -Died in 25 min.  
IS: No return  
FF: No blow -Flushed tool-good surge  
FS: No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2167.87	110.08	Initial Hydro-static
1	14.18	108.85	Open To Flow (1)
31	16.82	111.04	Shut-In(1)
61	68.55	112.45	End Shut-In(1)
61	16.65	112.44	Open To Flow (2)
91	17.59	113.56	Shut-In(2)
121	78.80	114.80	End Shut-In(2)
122	2138.30	116.83	Final Hydro-static

## Recovery

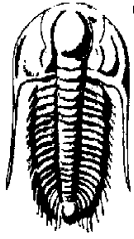
Length (ft)	Description	Volume (bbl)
3.00	Mud w/ trace of oil	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54532

**DST#: 5**

ATTN: Mike Engelbrecht

Test Start: 2013.11.01 @ 05:52:00

## Tool Information

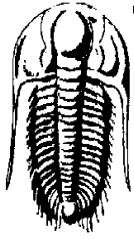
Drill Pipe:	Length: 4200.00 ft	Diameter: 3.80 inches	Volume: 58.91 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 59.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4326.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	104.00 ft			
Tool Length:	124.00 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			4307.00	
Shut In Tool	5.00			4312.00	
Hydraulic tool	5.00			4317.00	
Packer	5.00			4322.00	20.00 Bottom Of Top Packer
Packer	4.00			4326.00	
Stubb	1.00			4327.00	
Perforations	2.00			4329.00	
Recorder	0.00	6741	Inside	4329.00	
Recorder	0.00	6751	Outside	4329.00	
Change Over Sub	1.00			4330.00	
Drill Pipe	96.00			4426.00	
Change Over Sub	1.00			4427.00	
Bullnose	3.00			4430.00	104.00 Bottom Packers & Anchor

**Total Tool Length: 124.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54532

**DST#: 5**

ATTN: Mike Engelbrecht

Test Start: 2013.11.01 @ 05:52:00

## 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:

bbbl

Water Loss: 6.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mud w/ trace of oil	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

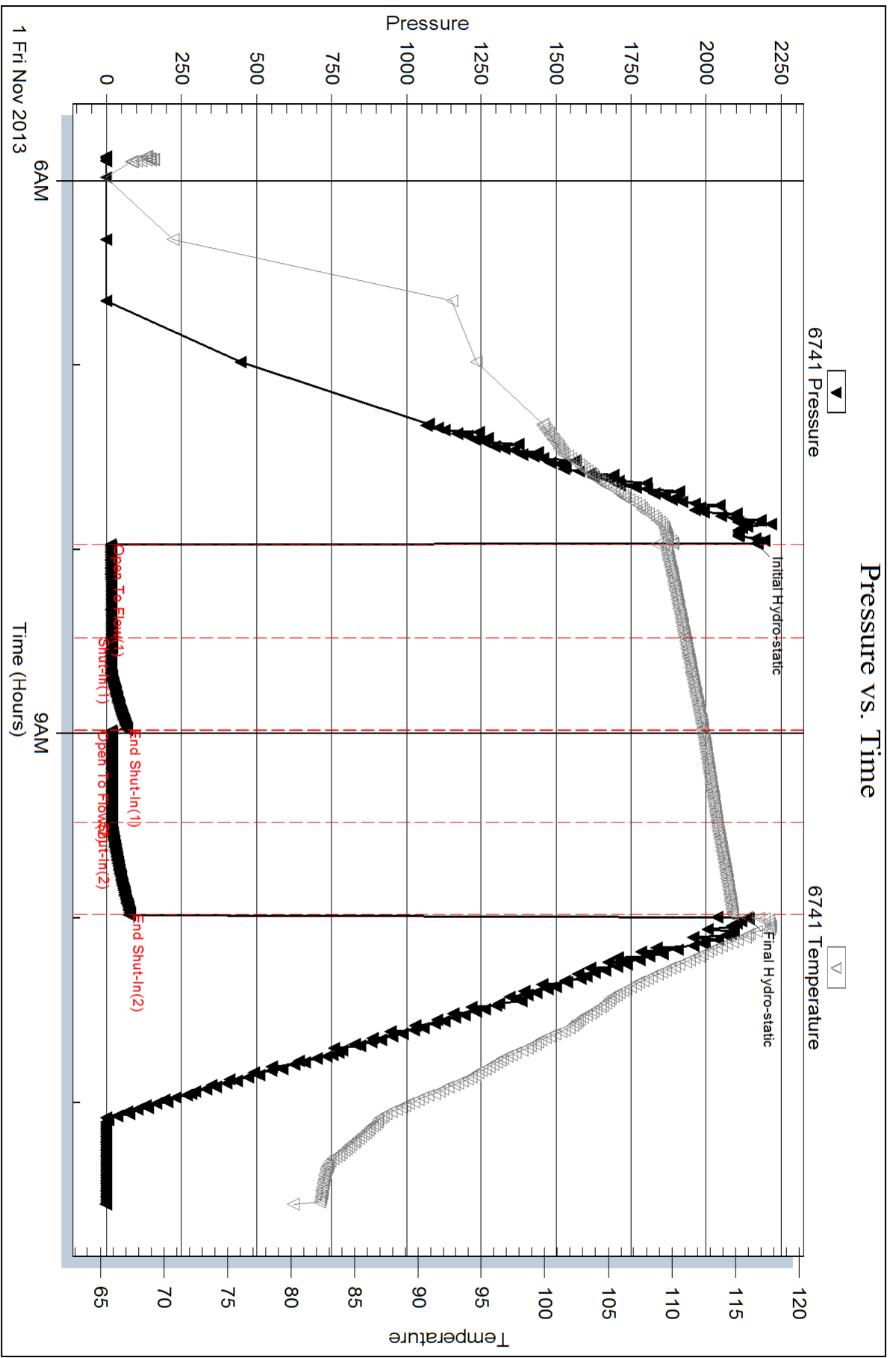
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

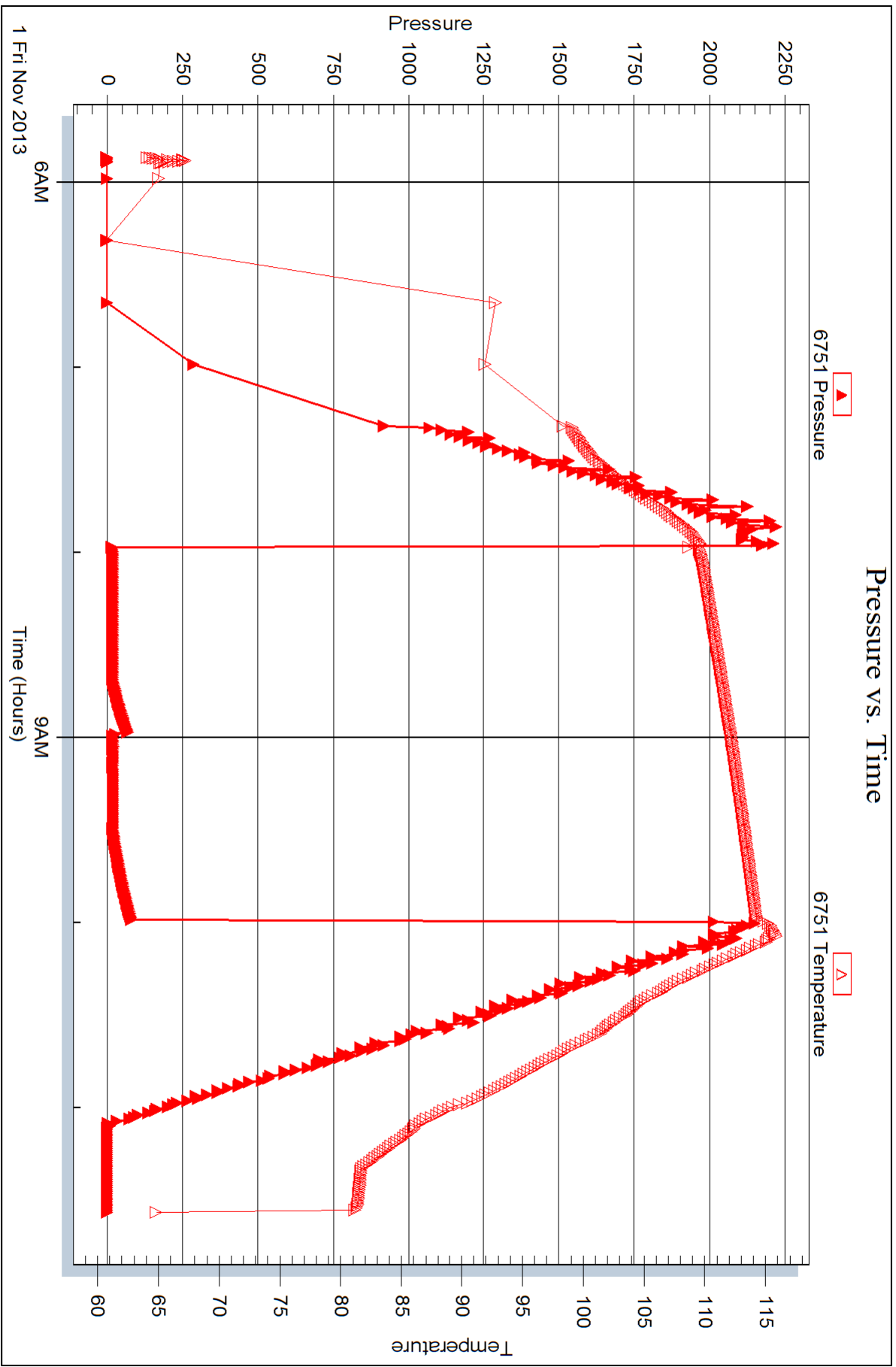


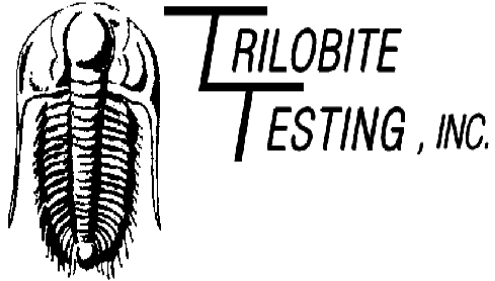
Serial #: 6751

Outside Ritchie Exploration Inc.

Hammeke 13C #1

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

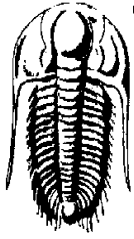
Start Date: 2013.11.02 @ 02:49:00

End Date: 2013.11.02 @ 10:18:20

Job Ticket #: 54533                      DST #: 6

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

Printed: 2013.11.06 @ 13:46:44



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 54533

**DST#: 6**

Test Start: 2013.11.02 @ 02:49:00

## GENERAL INFORMATION:

Formation: **Ft. Scott-Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:22:10

Time Test Ended: 10:18:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III (

Unit No: 62

**Interval: 4498.00 ft (KB) To 4550.00 ft (KB) (TVD)**

Reference Elevations: 2728.00 ft (KB)

Total Depth: 4550.00 ft (KB) (TVD)

2723.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6741**

**Inside**

Press @ Run Depth: 26.19 psig @ 4504.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.02 End Date: 2013.11.02

Last Calib.: 2013.11.02

Start Time: 02:49:02 End Time: 10:18:19

Time On Btm: 2013.11.02 @ 05:21:50

Time Off Btm: 2013.11.02 @ 08:23:00

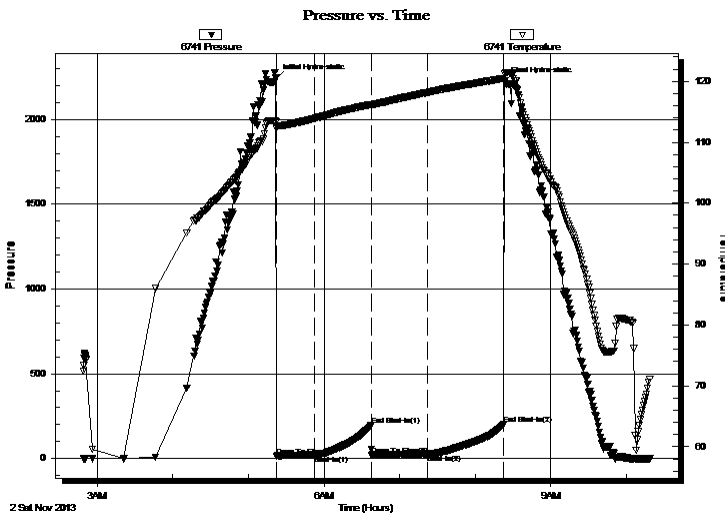
**TEST COMMENT:** IF: 2" of Blow

IS: Bled off in 2 min.- Surface blow back- Died in 15 min.

FF: 1" immediately- Built to 4"

FS: Bled off in 2 min.- Surface blow back-Died in 15 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2243.51	113.29	Initial Hydro-static
1	14.10	112.29	Open To Flow (1)
31	20.31	113.88	Shut-In(1)
76	196.42	116.21	End Shut-In(1)
76	20.48	116.14	Open To Flow (2)
120	26.19	118.16	Shut-In(2)
181	200.05	120.49	End Shut-In(2)
182	2224.88	121.20	Final Hydro-static

## Recovery

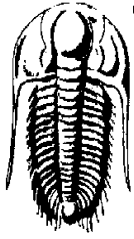
Length (ft)	Description	Volume (bbl)
61.00	GOCM 5g 25o 70m	0.30
0.00	123 GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54533

**DST#: 6**

ATTN: Mike Engelbrecht

Test Start: 2013.11.02 @ 02:49:00

## Tool Information

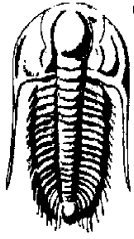
Drill Pipe:	Length: 4390.00 ft	Diameter: 3.80 inches	Volume: 61.58 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 62.18 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	4498.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	52.00 ft				
Tool Length:	72.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			4479.00	
Shut In Tool	5.00			4484.00	
Hydraulic tool	5.00			4489.00	
Packer	5.00			4494.00	20.00 Bottom Of Top Packer
Packer	4.00			4498.00	
Stubb	1.00			4499.00	
Perforations	5.00			4504.00	
Recorder	0.00	6741	Inside	4504.00	
Recorder	0.00	6751	Outside	4504.00	
Perforations	10.00			4514.00	
Change Over Sub	1.00			4515.00	
Drill Pipe	31.00			4546.00	
Change Over Sub	1.00			4547.00	
Bullnose	3.00			4550.00	52.00 Bottom Packers & Anchor

**Total Tool Length: 72.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54533

**DST#: 6**

ATTN: Mike Engelbrecht

Test Start: 2013.11.02 @ 02:49:00

## 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:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
61.00	GOCM 5g 25o 70m	0.300
0.00	123 GIP	0.000

Total Length: 61.00 ft      Total Volume: 0.300 bbl

Num Fluid Samples: 0

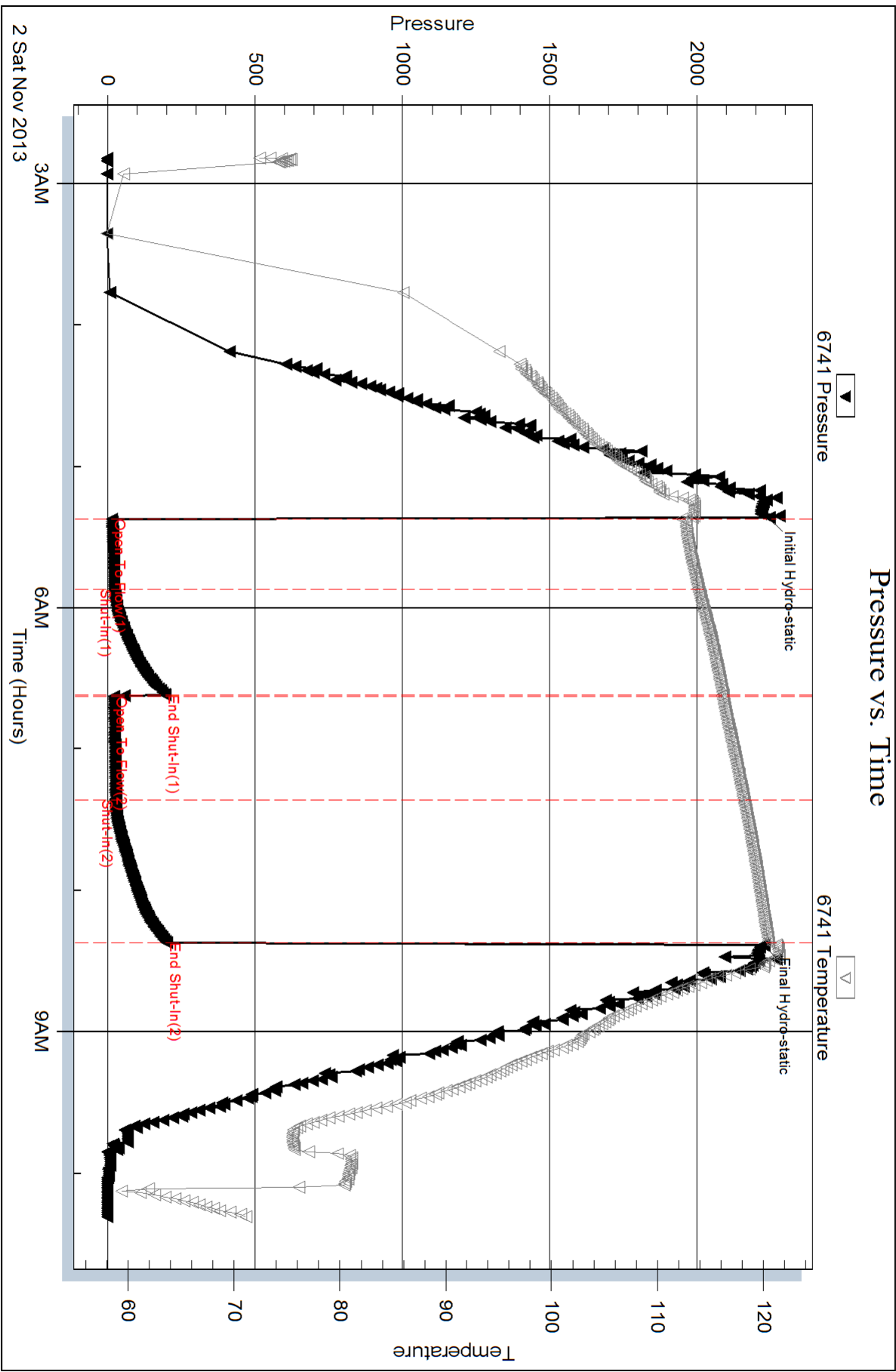
Num Gas Bombs: 0

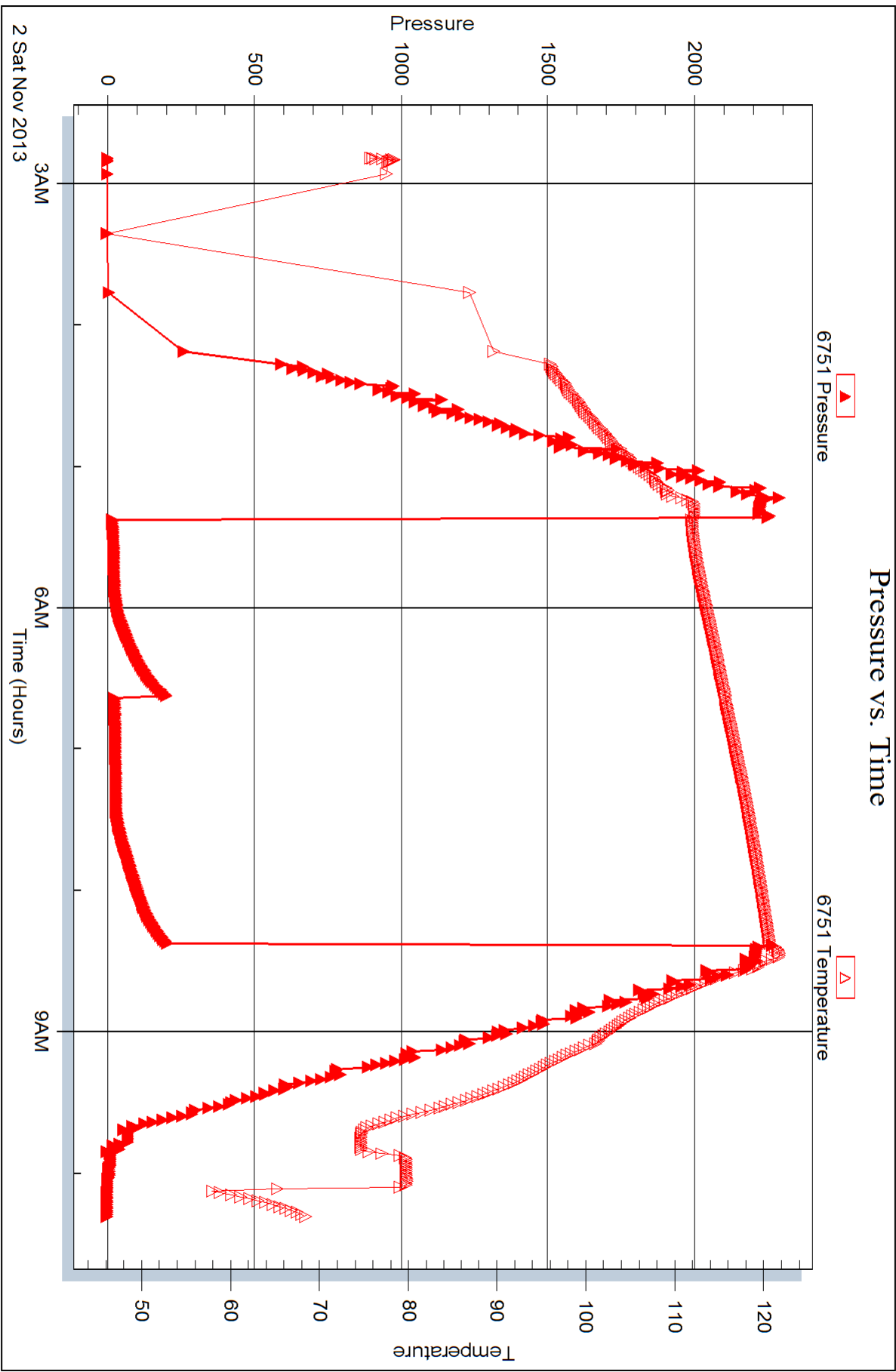
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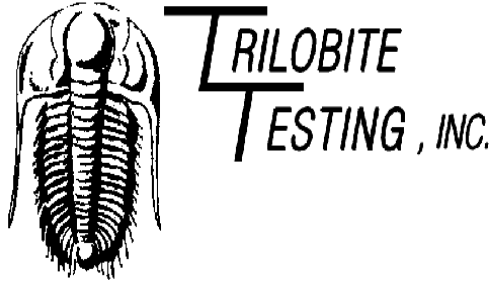
Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc.**

PO Box 783188  
Wichita, KS 67278

ATTN: Mike Engelbrecht

### **Hammeke 13C #1**

### **13-18s-28w Lane,KS**

Start Date: 2013.11.02 @ 20:26:00

End Date: 2013.11.03 @ 03:41:50

Job Ticket #: 54534                      DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.06 @ 13:44:54

Ritchie Exploration Inc.

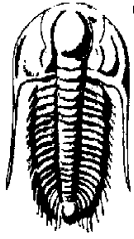
13-18s-28w Lane,KS

Hammeke 13C #1

DST # 7

Sands-Mississippi

2013.11.02



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

ATTN: Mike Engelbrecht

Job Ticket: 54534

**DST#: 7**

Test Start: 2013.11.02 @ 20:26:00

## GENERAL INFORMATION:

Formation: **Sands-Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:39:10

Time Test Ended: 03:41:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III (

Unit No: 62

**Interval: 4548.00 ft (KB) To 4615.00 ft (KB) (TVD)**

Reference Elevations: 2728.00 ft (KB)

Total Depth: 4615.00 ft (KB) (TVD)

2723.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6741 Inside**

Press @ Run Depth: 29.16 psig @ 4554.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.02

End Date:

2013.11.03

Last Calib.: 2013.11.03

Start Time: 20:26:02

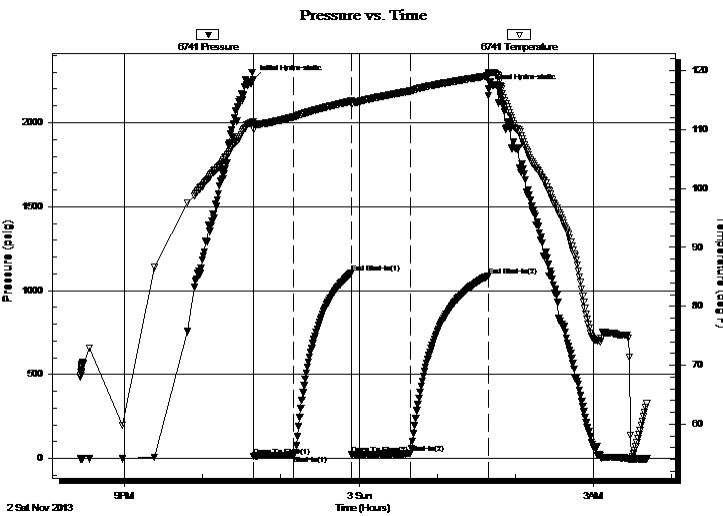
End Time:

03:41:49

Time On Btm: 2013.11.02 @ 22:39:00

Time Off Btm: 2013.11.03 @ 01:39:50

**TEST COMMENT:** IF: 1 1/4" Blow  
IS: Bled in 1 1/2" No return  
FF: Steady Surface blow throughout open  
FS: Bled off in 1 min.-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2255.90	111.40	Initial Hydro-static
1	14.63	110.09	Open To Flow (1)
31	20.72	112.13	Shut-In(1)
76	1104.56	114.84	End Shut-In(1)
76	22.69	114.33	Open To Flow (2)
121	29.16	116.56	Shut-In(2)
181	1088.09	119.12	End Shut-In(2)
181	2200.68	119.49	Final Hydro-static

## Recovery

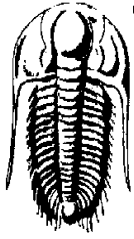
Length (ft)	Description	Volume (bbl)
30.00	Mud 100m w/oil specs	0.15

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration Inc.

**13-18s-28w Lane,KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54534

**DST#: 7**

ATTN: Mike Engelbrecht

Test Start: 2013.11.02 @ 20:26:00

## Tool Information

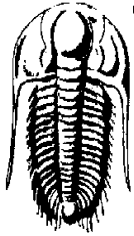
Drill Pipe:	Length: 4422.00 ft	Diameter: 3.80 inches	Volume: 62.03 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 62.63 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4548.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.00 ft			
Tool Length:	87.00 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			4529.00	
Shut In Tool	5.00			4534.00	
Hydraulic tool	5.00			4539.00	
Packer	5.00			4544.00	20.00 Bottom Of Top Packer
Packer	4.00			4548.00	
Stubb	1.00			4549.00	
Perforations	5.00			4554.00	
Recorder	0.00	6741	Inside	4554.00	
Recorder	0.00	6751	Outside	4554.00	
Perforations	25.00			4579.00	
Change Over Sub	1.00			4580.00	
Drill Pipe	31.00			4611.00	
Change Over Sub	1.00			4612.00	
Bullnose	3.00			4615.00	67.00 Bottom Packers & Anchor

**Total Tool Length: 87.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**13-18s-28w Lane, KS**

PO Box 783188  
Wichita, KS 67278

**Hammeke 13C #1**

Job Ticket: 54534

**DST#: 7**

ATTN: Mike Engelbrecht

Test Start: 2013.11.02 @ 20:26:00

## 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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud 100m w/oil specs	0.148

Total Length: 30.00 ft      Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

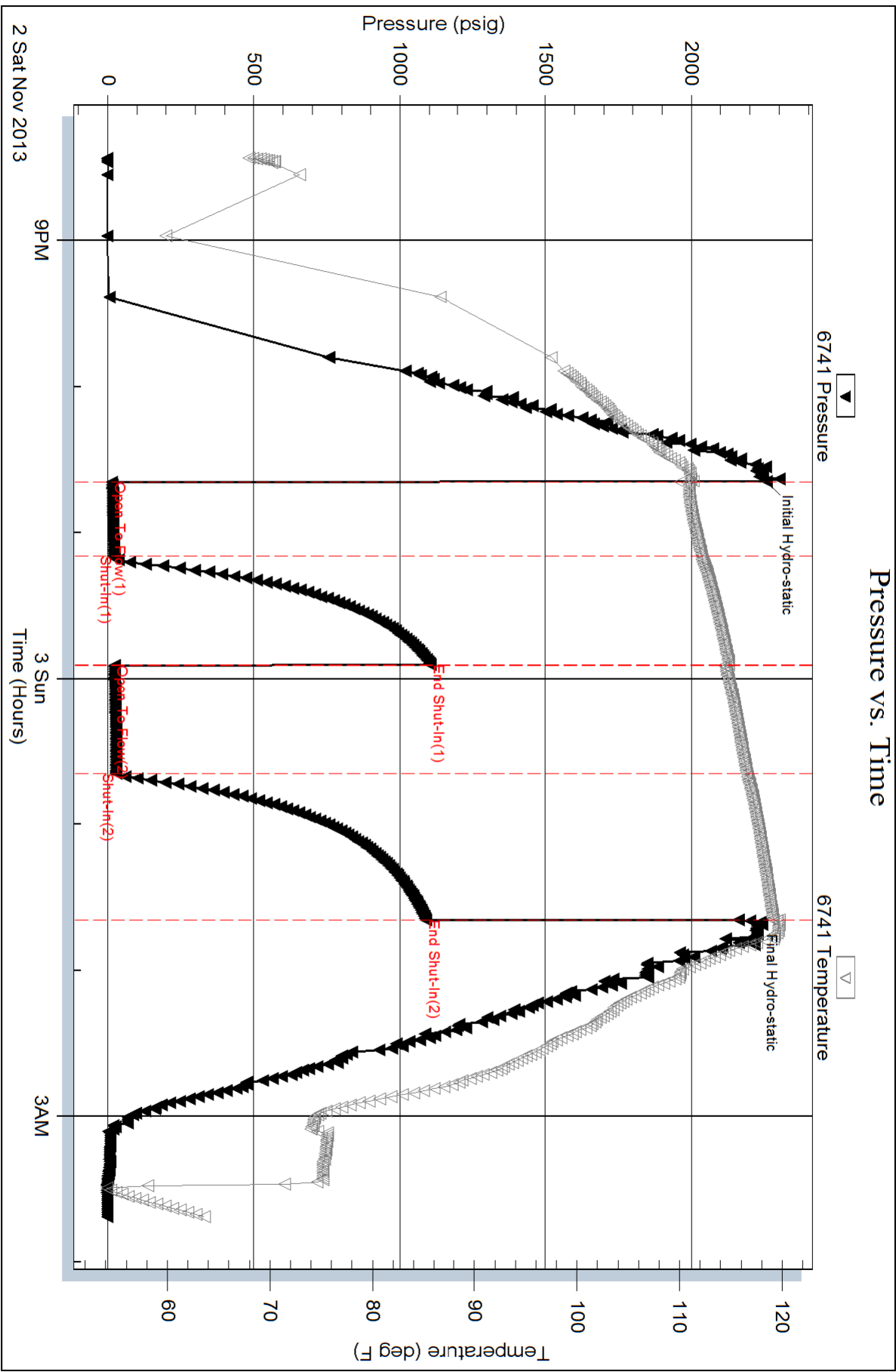
Serial #: 6741

Inside

Ritchie Exploration Inc.

Hammcke 13C #1

DST Test Number: 7

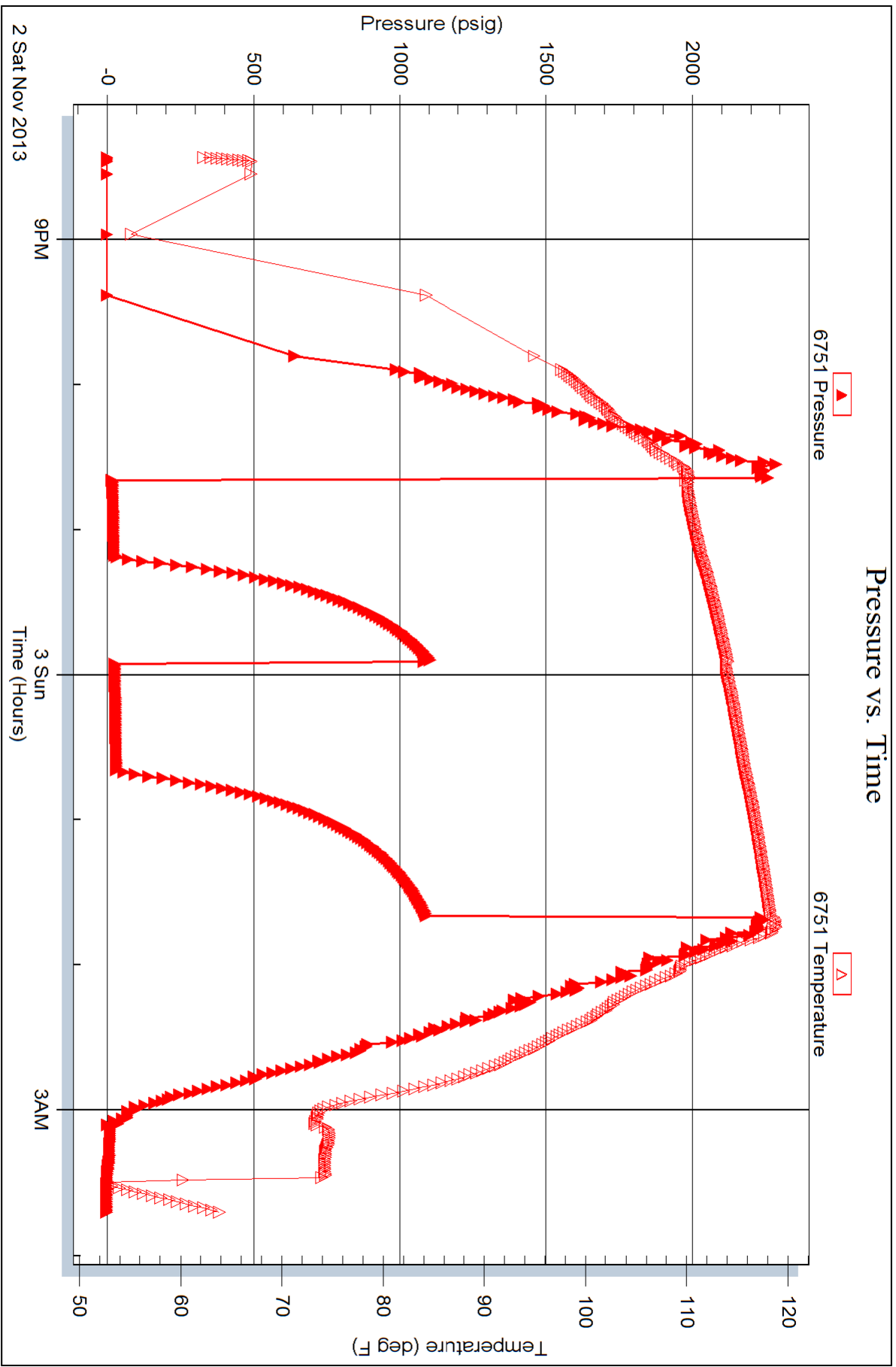


Serial #: 6751

Outside Ritchie Exploration Inc.

Hammeke 13C #1

DST Test Number: 7





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **55541**

Well Name & No. #1 Hammeke 13C Test No. 1 Date 10-29-13  
 Company Ritchie Exploration Inc. Elevation 2728 KB 2723 GL  
 Address POB 783188 Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW#2  
 Location: Sec. 13 Twp. 18 S Rge. 28W Co. Lane State KS

Interval Tested 4220-4251 Zone Tested LKC'S'  
 Anchor Length 31 Drill Pipe Run 4105 Mud Wt. 9.2  
 Top Packer Depth 4216 Drill Collars Run 121 Vis 58  
 Bottom Packer Depth 4220 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4251 Chlorides 2000 ppm System LCM 1 1/2"  
 Blow Description B.O.B. @ 9 1/2 min.  
1 1/2" Return.  
B.O.B. @ 14 min.  
2" Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>46</u>	<u>CGO</u>	<u>40</u>	<u>60</u>		
<u>124</u>	<u>GOCMW</u>	<u>5</u>	<u>10</u>	<u>45</u>	<u>40</u>
<u>124</u>	<u>OSMW</u>			<u>85</u>	<u>15</u>
<u>369</u>	<u>OSMW</u>			<u>95</u>	<u>5</u>
	<u>170' Wank GIP</u>				

Rec Total 663 BHT 128 Gravity 36 API RW .157 @ 40 °F Chlorides 88,000 ppm

(A) Initial Hydrostatic 2072  Test 1250 T-On Location 14:15  
 (B) First Initial Flow 26  Jars 250 T-Started 15:05  
 (C) First Final Flow 174  Safety Joint 75 T-Open 16:49  
 (D) Initial Shut-In 793  Circ Sub NIC T-Pulled 19:50  
 (E) Second Initial Flow 178  Hourly Standby \_\_\_\_\_ T-Out 22:10  
 (F) Second Final Flow 317  Mileage 61RT 94.55 Comments \_\_\_\_\_  
 (G) Final Shut-In 789  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2066  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60

Sub Total 1669.55

Approved By Mike Engelbrecht Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54529

Well Name & No. Hammeke-13C-#1 Test No. 2 Date 10-30-13  
 Company Ritchie Exploration Inc. Elevation 2728 KB 2723 GL  
 Address 8100 E 22nd St. N#700 - Wichita KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW#2  
 Location: Sec. 13 Twp. 18s Rge. 28w Co. Lane State Ks

Interval Tested 4256 - 4282 Zone Tested LKC "K"  
 Anchor Length 26' Drill Pipe Run 4137 Mud Wt. 9.2  
 Top Packer Depth 4252 Drill Collars Run 121 Vis 52  
 Bottom Packer Depth 4256 Wt. Pipe Run Ø WL 6.4  
 Total Depth 4282 Chlorides 2,000 ppm System LCM +2

Blow Description IF: B.o.b in 2mins.  
ISI: Bled off in 2mins - B.o.b in 38mins.  
FF: B.o.b immediately  
FSI: Bled off in 2mins - B.o.b in 26mins.

Rec	Feet of	CGO	%gas	%oil	%water	%mud
121	MW	47'	25%	75%	60%	40%
126	GW	1605'	20%	80%	80%	20%
126	90CW	30%	30%	40%	40%	20%
126	mcGW	10%	85%	5%	85%	5%
126	Gmco	20%	50%	30%	50%	30%

Rec Total 1096 BHT 130 Gravity 36 API RW .130 @ 49 °F Chlorides 90,000 ppm

(A) Initial Hydrostatic 2098  Test 1250 T-On Location 05:07  
 (B) First Initial Flow 103  Jars \_\_\_\_\_ T-Started 05:16  
 (C) First Final Flow 341  Safety Joint \_\_\_\_\_ T-Open 07:43  
 (D) Initial Shut-In 745  Circ Sub NIC T-Pulled 10:43  
 (E) Second Initial Flow 351  Hourly Standby \_\_\_\_\_ T-Out 13:52  
 (F) Second Final Flow 539  Mileage 94.55 Comments \_\_\_\_\_  
 (G) Final Shut-In 746  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2053  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Initial Open 30  Extra Copies \_\_\_\_\_  
 Initial Shut-In 45 Sub Total 0  
 Final Flow 45 Total 1344.55  
 Final Shut-In 60 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1344.55

Approved By Mike Engelbrecht Our Representative Cliff

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. 54530

Well Name & No. #1 Hammeke-13C Test No. 023 Date 10-30-13  
 Company Ritchie Exploration Inc Elevation 2728 KB 2723 GL  
 Address 8100 E 22nd St. #700 - Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW#2  
 Location: Sec. 13 Twp. 18S Rge. 28W Co. Lane State KS

Interval Tested 4287-4302 Zone Tested Mid-Creek  
 Anchor Length 15' Drill Pipe Run 4169 Mud Wt. 9.2  
 Top Packer Depth 4283 Drill Collars Run 121 Vis 5.7  
 Bottom Packer Depth 4287 Wt. Pipe Run Ø WL 6.0  
 Total Depth 4302 Chlorides 2600 ppm System LCM #2

Blow Description IF: 6 1/4 in. of Blow  
ISI: Bled off in 2 mins - No Return  
FF: 8 1/2 in. of Blow  
FSI: Bled off in 1/2 min. - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>90cm</u>	<u>20</u>	<u>30</u>	<u>50</u>	
<u>62</u>	<u>CGO</u>	<u>50</u>	<u>50</u>		
	<u>62 GIP</u>				

Rec Total 122 BHT 121 Gravity 36 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2125  Test 1250 T-On Location 19:33  
 (B) First Initial Flow 12  Jars — T-Started 19:55  
 (C) First Final Flow 33  Safety Joint — T-Open 21:55  
 (D) Initial Shut-In 792  Circ Sub — T-Pulled 00:55  
 (E) Second Initial Flow 39  Hourly Standby — T-Out 02:57  
 (F) Second Final Flow 54  Mileage 94.55 Comments —  
 (G) Final Shut-In 806  Sampler —  
 (H) Final Hydrostatic 2116  Straddle —  Ruined Shale Packer —  
 Shale Packer —  Ruined Packer —  
 Extra Packer —  Extra Copies —  
 Extra Recorder — Sub Total 0  
 Day Standby — Total 1344.55  
 Accessibility — MP/DST Disc't —  
 Sub Total 1344.55

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60

Approved By Mike Engelbrecht 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. 54531

Well Name & No. #1 Hammeke-13c Test No. 4 Date 10-31-13  
 Company Ritchie Exploration Inc. Elevation 2728 KB 2723 GL  
 Address 8100 E 22nd St N #700- Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW #2  
 Location: Sec. 13 Twp. 18s Rge. 28W Co. Lane State KS

Interval Tested 4306-4320 Zone Tested 2" KC "2"  
 Anchor Length 14' Drill Pipe Run 4170 Mud Wt. 9.3  
 Top Packer Depth 4302 Drill Collars Run 121 Vis 47  
 Bottom Packer Depth 4306 Wt. Pipe Run 8 WL 7.0  
 Total Depth 4320 Chlorides 2800 ppm System LCM #1 1/2

Blow Description IF Bob in 1 1/2 mins.  
ISI: Bled off in 3 mins. - 2 1/2 in. of Blowback  
FP: 3 in. Immediately - B.O.B. in 8 mins.  
FSD: Bled off in 3 mins. - 5 1/2 in. of Blowback

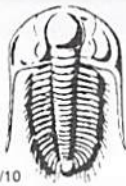
Rec	Feet of	%gas	%oil	%water	%mud
<u>630</u>	<u>GIP</u>				
<u>216</u>	<u>G10</u>	<u>30</u>	<u>70</u>		
<u>31</u>	<u>90cm</u>	<u>20</u>	<u>30</u>		<u>50</u>

Rec Total 247 BHT 128 Gravity 35 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2137  Test 1250 T-On Location 09:49  
 (B) First Initial Flow 10  Jars \_\_\_\_\_ T-Started 10:00  
 (C) First Final Flow 48  Safety Joint \_\_\_\_\_ T-Open 12:09  
 (D) Initial Shut-In 932  Circ Sub NIC T-Pulled 15:09  
 (E) Second Initial Flow 68  Hourly Standby \_\_\_\_\_ T-Out 17:13  
 (F) Second Final Flow 85  Mileage 94.55 Comments \_\_\_\_\_  
 (G) Final Shut-In 922  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2057  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1344.55  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1344.55

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60  
 Approved By Mike Engelbrecht Our Representative Mike Engelbrecht

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54532

Well Name & No. #1 Hammeke-13c Test No. 5 Date 11-1-13  
 Company Ritchie Exploration Inc. Elevation 2728 KB 2723 GL  
 Address 8100 E. 22nd St. North #700 - Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW #2  
 Location: Sec. 13 Twp. 18-s Rge. 28-w Co. Lane State KS

Interval Tested 4326-4430 Zone Tested Marmaton - Attamont  
 Anchor Length 104' Drill Pipe Run 4200 Mud Wt. 9.3  
 Top Packer Depth 4322 Drill Collars Run 121 Vis 55  
 Bottom Packer Depth 4326 Wt. Pipe Run Ø WL 7.0  
 Total Depth 4430 Chlorides 2800 ppm System LCM 41.5

Blow Description IF: 1/2 Blow - Dried in 25 mins.  
ISF: No Return  
FF: NE Blow - Pushed tool - Good surge.  
FSE: No Return

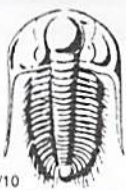
Rec	Feet of	%gas	%oil	%water	%mud
<u>3</u>	<u>Mud w/ a trace of oil</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 3 BHT 116 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2167</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>05:35</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars	T-Started <u>05:52</u>
(C) First Final Flow <u>16</u>	<input type="checkbox"/> Safety Joint	T-Open <u>07:59</u>
(D) Initial Shut-In <u>68</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>09:59</u>
(E) Second Initial Flow <u>16</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:34</u>
(F) Second Final Flow <u>17</u>	<input checked="" type="checkbox"/> Mileage <u>94.55</u>	Comments
(G) Final Shut-In <u>78</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2138</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Recorder	
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	Total <u>1344.55</u>
	Sub Total <u>1344.55</u>	MP/DST Disc't

Approved By Mike Engelbrecht Our Representative C. Adams

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54533

Well Name & No. #1 Hammeke-13C Test No. 4 Date 11-2-13  
 Company Rotchie Exploration Inc. Elevation 2728 KB 2723 GL  
 Address 800 E 22nd St. North #700-Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW#2  
 Location: Sec. 13 Twp. 18s Rge. 28w Co. Lane State KS

Interval Tested 4498-4550 Zone Tested Ft. Scott - Cherokee  
 Anchor Length 52' Drill Pipe Run 4390 Mud Wt. 9.4  
 Top Packer Depth 4494 Drill Collars Run 121 Vis 9.52  
 Bottom Packer Depth 4498 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4550 Chlorides 2800 ppm System LCM #2

Blow Description IF: 2 in. of Blow  
ISI: Bled off in 2 mins. - surface Blowback - died in 15 mins.  
FF: 1 in. Immediately - Built to 4 in.  
F.S.I: Bled off in 2 mins. - surface Blowback - Died in 15 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>61</u>	<u>60cm</u>	<u>5</u>	<u>25</u>	<u>70</u>	
<u>123</u>	<u>GIP</u>				

Rec Total 61 BHT 121 Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2243</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>02:32</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars	T-Started <u>02:49</u>
(C) First Final Flow <u>20</u>	<input type="checkbox"/> Safety Joint	T-Open <u>05:20</u>
(D) Initial Shut-In <u>196</u>	<input checked="" type="checkbox"/> Circ Sub <u>WIC</u>	T-Pulled <u>08:20</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>10:16</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>94.55</u>	Comments
(G) Final Shut-In <u>200</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2224</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	
	<input type="checkbox"/> Extra Packer	
	<input type="checkbox"/> Extra Recorder	
	<input type="checkbox"/> Day Standby	
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1344.55</u>	

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60  
 Approved By Mike Engelbrecht 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. 54534

Well Name & No. #1 - Hammeke - 13C Test No. 7 Date \_\_\_\_\_  
 Company Ritchie Exploration Inc. Elevation 2728 KB 2723 GL \_\_\_\_\_  
 Address 8100 E. 22nd St. North #700 - Wichita, KS 67278  
 Co. Rep / Geo. Mike Engelbrecht Rig WW #2  
 Location: Sec. 13 Twp. 18-S Rge. 28-W Co. Lane State Ks

Interval Tested 4548 - 4615 Zone Tested Sand & Mississippi  
 Anchor Length 67 Drill Pipe Run 4420 Mud Wt. 9.2  
 Top Packer Depth 4544 Drill Collars Run 121 Vis 57  
 Bottom Packer Depth 4548 Wt. Pipe Run 0 WL 64  
 Total Depth 4615 Chlorides 2500 ppm System LCM #2

Blow Description IF 1/4 in blow  
ISI: Bled off in 1/2 min. - No Return  
FE: Steady surface blow throughout - Open.  
FSL: Bled off in 1 min - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud w/ oil specs</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 119 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2255  Test 1250 T-On Location 20:11  
 (B) First Initial Flow 14  Jars \_\_\_\_\_ T-Started 20:26  
 (C) First Final Flow 20  Safety Joint \_\_\_\_\_ T-Open 22:39  
 (D) Initial Shut-In 1104  Circ Sub NLC T-Pulled 01:39  
 (E) Second Initial Flow 22  Hourly Standby \_\_\_\_\_ T-Out 03:42  
 (F) Second Final Flow 29  Mileage 94.55 Comments \_\_\_\_\_  
 (G) Final Shut-In 1088  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2200  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 60  Day Standby \_\_\_\_\_ Total 1344.55  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1344.55

Approved By Mike Engelbrecht Our Representative [Signature]

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