



## DRILL STEM TEST REPORT

Prepared For: **Carrie Exploration and Development**

210 West 22nd  
Hays KS 67601

ATTN: Eli Felts/Jeff Burke

**Brian #C-1**

**26-20s-10w Rice,KS**

Start Date: 2014.10.14 @ 07:07:00

End Date: 2014.10.14 @ 17:15:00

Job Ticket #: 60466                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.19 @ 14:34:45



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60466

**DST#: 1**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 07:07:00

## GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:00

Time Test Ended: 17:15:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: S3

**Interval: 3097.00 ft (KB) To 3127.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3127.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 9.00 ft

**Serial #: 8524**

**Inside**

Press@RunDepth: 45.00 psig @ 3123.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.14

End Date:

2014.10.14

Last Calib.: 2014.10.14

Start Time: 07:08:00

End Time:

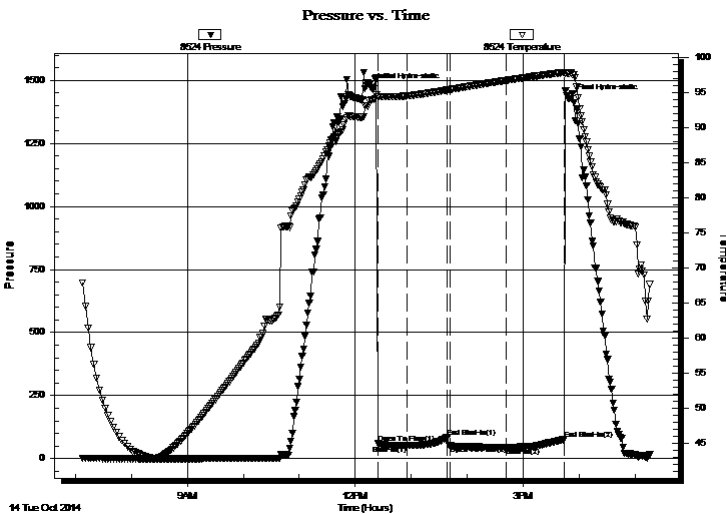
17:15:00

Time On Btm: 2014.10.14 @ 12:16:30

Time Off Btm: 2014.10.14 @ 15:49:30

**TEST COMMENT:** IFP 30 Minutes. Weak blow built to 4 "  
ISI 45 Minutes. No blow back.  
FFP 60 Minutes. Weak blow built to 6"  
FSI 60 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1472.08	93.89	Initial Hydro-static
8	59.33	94.32	Open To Flow (1)
39	52.17	94.49	Shut-In(1)
82	84.23	95.34	End Shut-In(1)
85	51.20	95.39	Open To Flow (2)
145	45.00	96.71	Shut-In(2)
207	77.47	97.84	End Shut-In(2)
213	1427.61	97.72	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	45 feet gas in pipe	
15.00	100% Mud with trace of oil.	

## Gas Rates

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



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**Brian #C-1**

Job Ticket: 60466

**DST#: 1**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 07:07:00

## GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:00

Time Test Ended: 17:15:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: S3

**Interval: 3097.00 ft (KB) To 3127.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3127.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 9.00 ft

**Serial #: 8159 Outside**

Press@RunDepth: 82.56 psig @ 3124.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.14

End Date:

2014.10.14

Last Calib.: 2014.10.14

Start Time: 07:08:00

End Time:

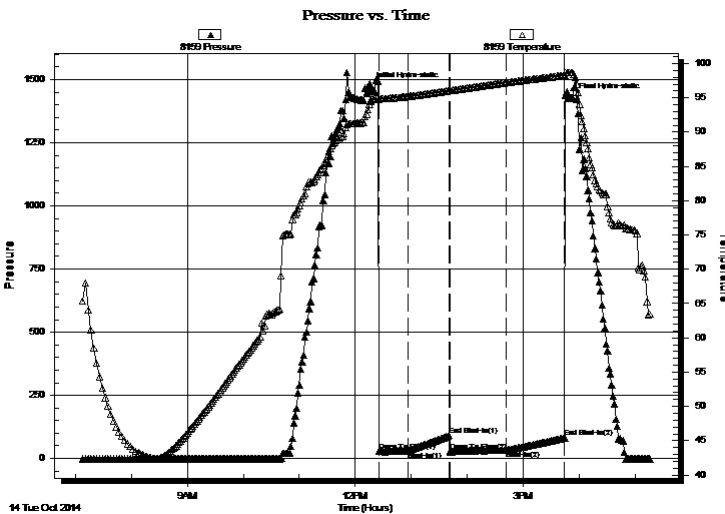
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Time On Btm: 2014.10.14 @ 12:16:00

Time Off Btm: 2014.10.14 @ 15:52:00

**TEST COMMENT:** IFP 30 Minutes. Weak blow built to 4 "  
ISI 45 Minutes. No blow back.  
FFP 60 Minutes. Weak blow built to 6"  
FSI 60 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1471.56	94.53	Initial Hydro-static
9	28.33	94.75	Open To Flow (1)
40	29.58	95.18	Shut-In(1)
85	91.00	96.03	End Shut-In(1)
86	28.25	96.03	Open To Flow (2)
145	31.76	97.19	Shut-In(2)
208	82.56	98.27	End Shut-In(2)
216	1428.16	98.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	45 feet gas in pipe	
15.00	100% Mud with trace of oil.	

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60466

**DST#: 1**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 07:07:00

## Tool Information

Drill Pipe:	Length: 3100.00 ft	Diameter: inches	Volume: 3011410 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 3011410 bbl</u>	Tool Chased	0.50 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3097.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	58.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: jburk@peterra.com, ejfelts@yahoo.com

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3074.00	
Hydraulic tool	5.00			3079.00	
Jars	6.00			3085.00	
Safety Joint	2.00			3087.00	
Top Packer	5.00			3092.00	
Packer	5.00			3097.00	28.00 Bottom Of Top Packer
Anchor	25.00			3122.00	
Recorder	1.00	8524	Inside	3123.00	
Recorder	1.00	8159	Outside	3124.00	
Bull Plug	3.00			3127.00	30.00 Anchor Tool
<b>Total Tool Length:</b>	<b>58.00</b>				



**TRILOBITE  
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# DRILL STEM TEST REPORT

## FLUID SUMMARY

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60466

**DST#: 1**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 07:07:00

### 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: 68.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	45 feet gas in pipe	
15.00	100% Mud w ith trace of oil.	

Total Length: 15.00 ft      Total Volume:                      bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

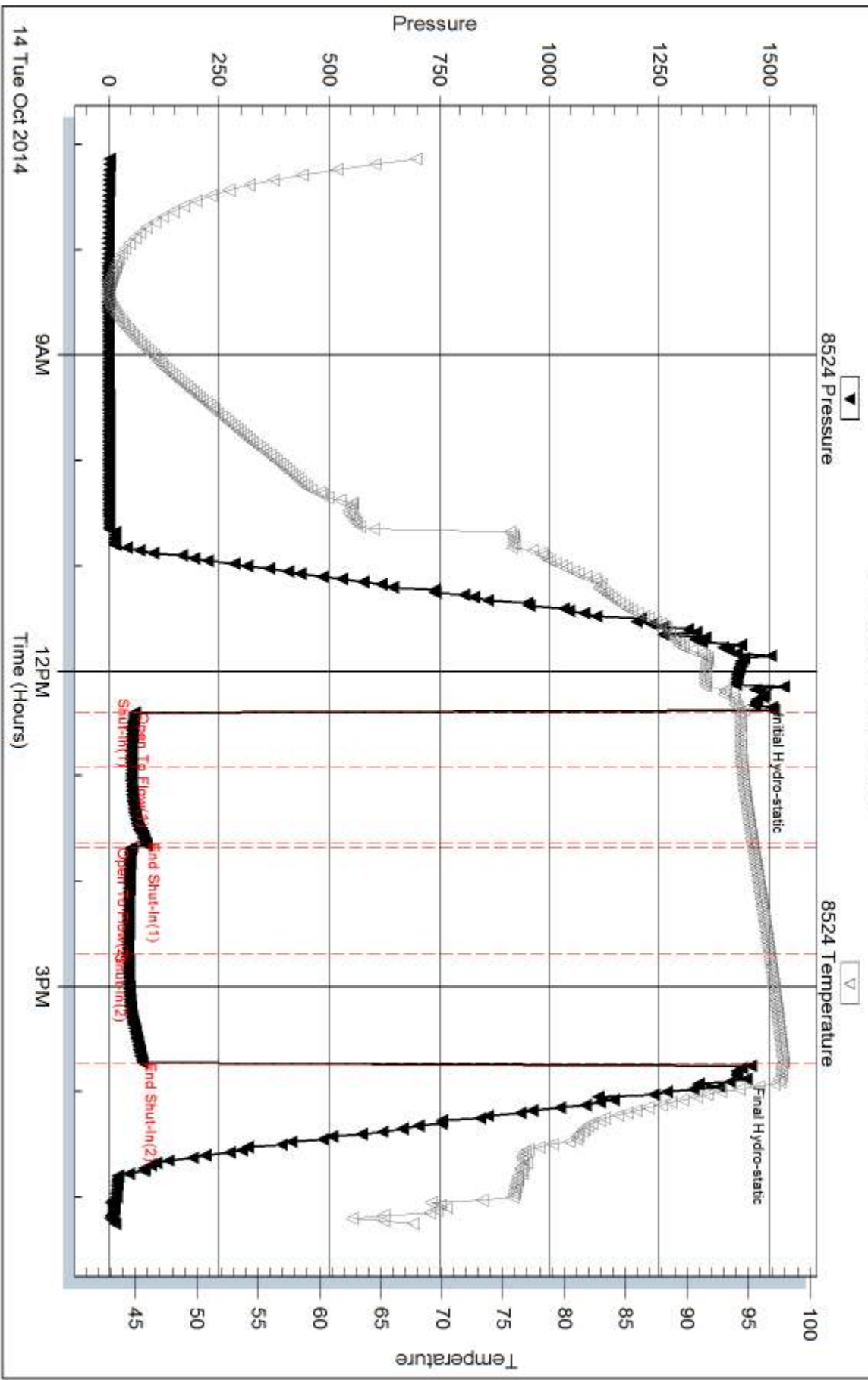
Serial #:

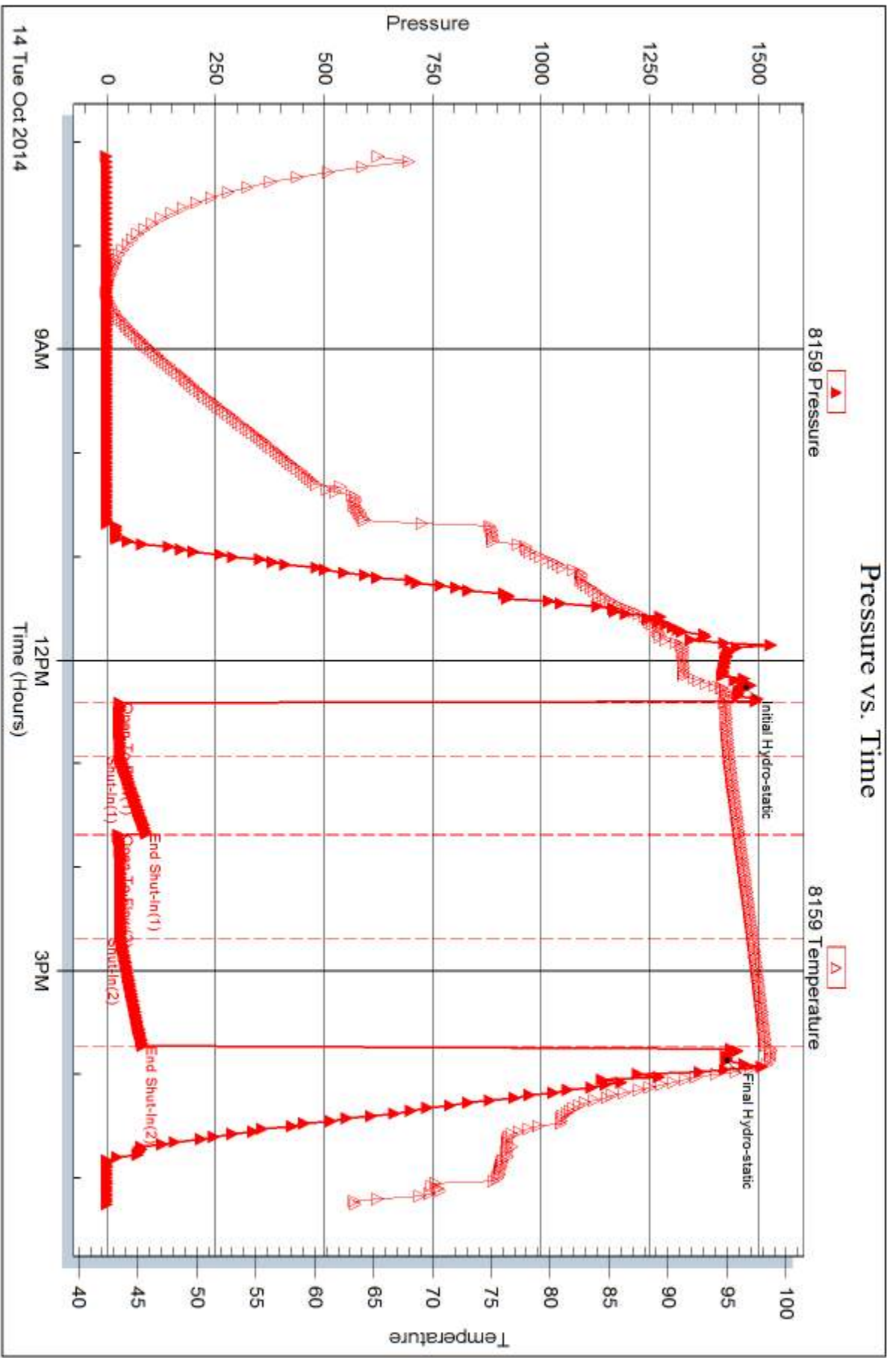
Laboratory Name:

Laboratory Location:

Recovery Comments: Company man works his own mud and does not leave sheets and he was not on location at time of test.

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Carrie Exploration and Development**

210 West 22nd  
Hays KS 67601

ATTN: Eli Felts/Jeff Burke

**Brian #C-1**

**26-20s-10w Rice,KS**

Start Date: 2014.10.14 @ 23:37:00

End Date: 2014.10.15 @ 06:25:30

Job Ticket #: 60467                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

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# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60467

**DST#: 2**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 23:37:00

## GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:27:30

Time Test Ended: 06:25:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: S3

**Interval: 3127.00 ft (KB) To 3140.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3140.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 9.00 ft

**Serial #: 8524**

**Inside**

Press@RunDepth: 31.31 psig @ 3136.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.14

End Date:

2014.10.15

Last Calib.:

2014.10.15

Start Time: 23:38:00

End Time:

06:25:30

Time On Btm:

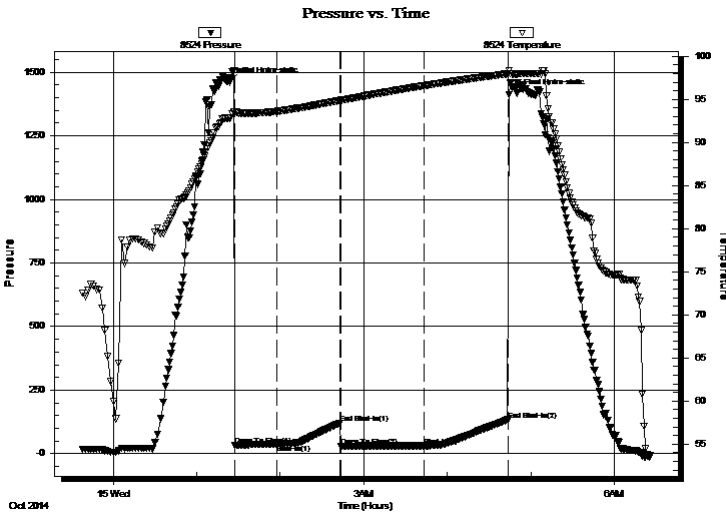
2014.10.15 @ 01:23:30

Time Off Btm:

2014.10.15 @ 04:50:00

**TEST COMMENT:** IFP 30 Minutes. Fair blow built to 10"  
ISI 45 Minutes. No blow back.  
FFP 60 Minutes. BOB in 35 minutes.  
FSI 60 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1461.60	92.81	Initial Hydro-static
4	33.78	93.56	Open To Flow (1)
34	36.78	93.60	Shut-In(1)
80	120.77	94.86	End Shut-In(1)
80	29.98	94.89	Open To Flow (2)
140	31.31	96.58	Shut-In(2)
200	133.17	97.95	End Shut-In(2)
207	1417.52	97.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	45 foot gas in pipe	0.00
15.00	SOCM 2.5%O 97.5M	0.21

## Gas Rates

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



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**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60467

**DST#: 2**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 23:37:00

## GENERAL INFORMATION:

Formation: **LKC "G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:27:30  
 Time Test Ended: 06:25:30  
 Interval: **3127.00 ft (KB) To 3140.00 ft (KB) (TVD)**  
 Total Depth: 3140.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1792.00 ft (KB)  
 1783.00 ft (CF)  
 KB to GR/CF: 9.00 ft

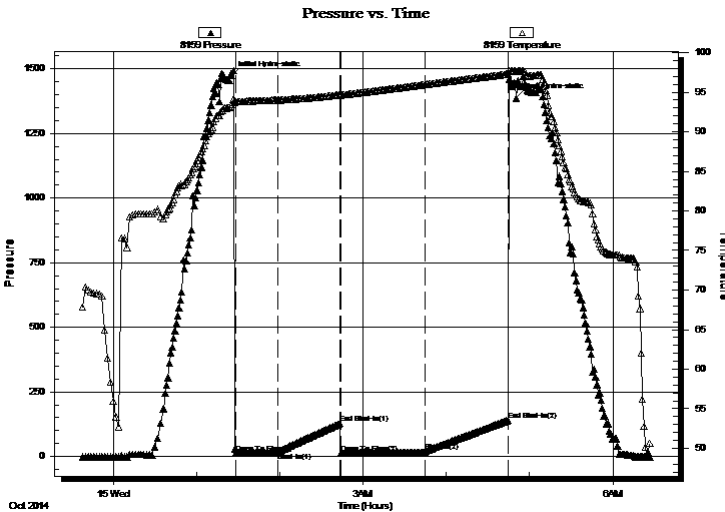
## Serial #: 8159

**Outside**

Press@RunDepth: 140.46 psig @ 3137.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.10.14 End Date: 2014.10.15 Last Calib.: 2014.10.15  
 Start Time: 23:38:00 End Time: 06:26:30 Time On Btm: 2014.10.15 @ 01:25:30  
 Time Off Btm: 2014.10.15 @ 04:50:30

**TEST COMMENT:** IFP 30 Minutes. Fair blow built to 10"  
 ISI 45 Minutes. No blow back.  
 FFP 60 Minutes. BOB in 35 minutes.  
 FSI 60 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1475.01	93.42	Initial Hydro-static
3	13.87	93.79	Open To Flow (1)
33	16.49	94.00	Shut-In(1)
78	127.87	94.67	End Shut-In(1)
79	12.43	94.65	Open To Flow (2)
139	18.67	95.96	Shut-In(2)
199	140.46	97.30	End Shut-In(2)
205	1387.23	97.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	45 foot gas in pipe	0.00
15.00	SOCM 2.5%O 97.5M	0.21

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60467

**DST#: 2**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 23:37:00

## Tool Information

Drill Pipe:	Length: 3127.00 ft	Diameter: 3.80 inches	Volume: 43.86 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 43.86 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3127.00 ft			Final	38000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	13.00 ft				
Tool Length:	33.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3112.00	
Hydraulic tool	5.00			3117.00	
Top Packer	5.00			3122.00	
Packer	5.00			3127.00	20.00 Bottom Of Top Packer
Anchor	8.00			3135.00	
Recorder	1.00	8524	Inside	3136.00	
Recorder	1.00	8159	Outside	3137.00	
Bull Plug	3.00			3140.00	13.00 Anchor Tool

**Total Tool Length: 33.00**



**TRILOBITE  
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# DRILL STEM TEST REPORT

## FLUID SUMMARY

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60467

**DST#: 2**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.14 @ 23:37:00

### 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: 54.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	45 foot gas in pipe	0.000
15.00	SOCM 2.5%O 97.5M	0.210

Total Length: 15.00 ft      Total Volume: 0.210 bbl

Num Fluid Samples: 0

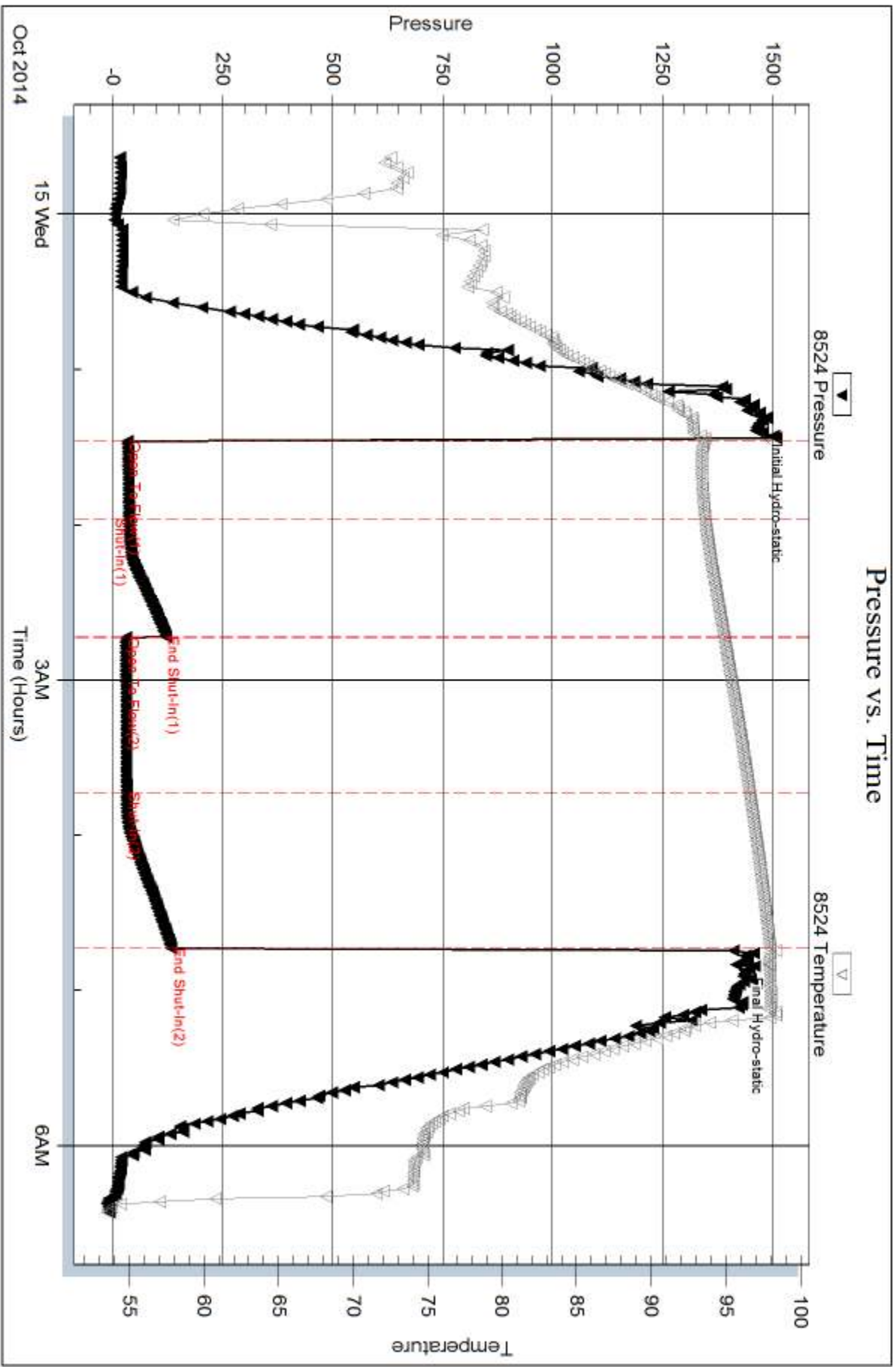
Num Gas Bombs: 0

Serial #:

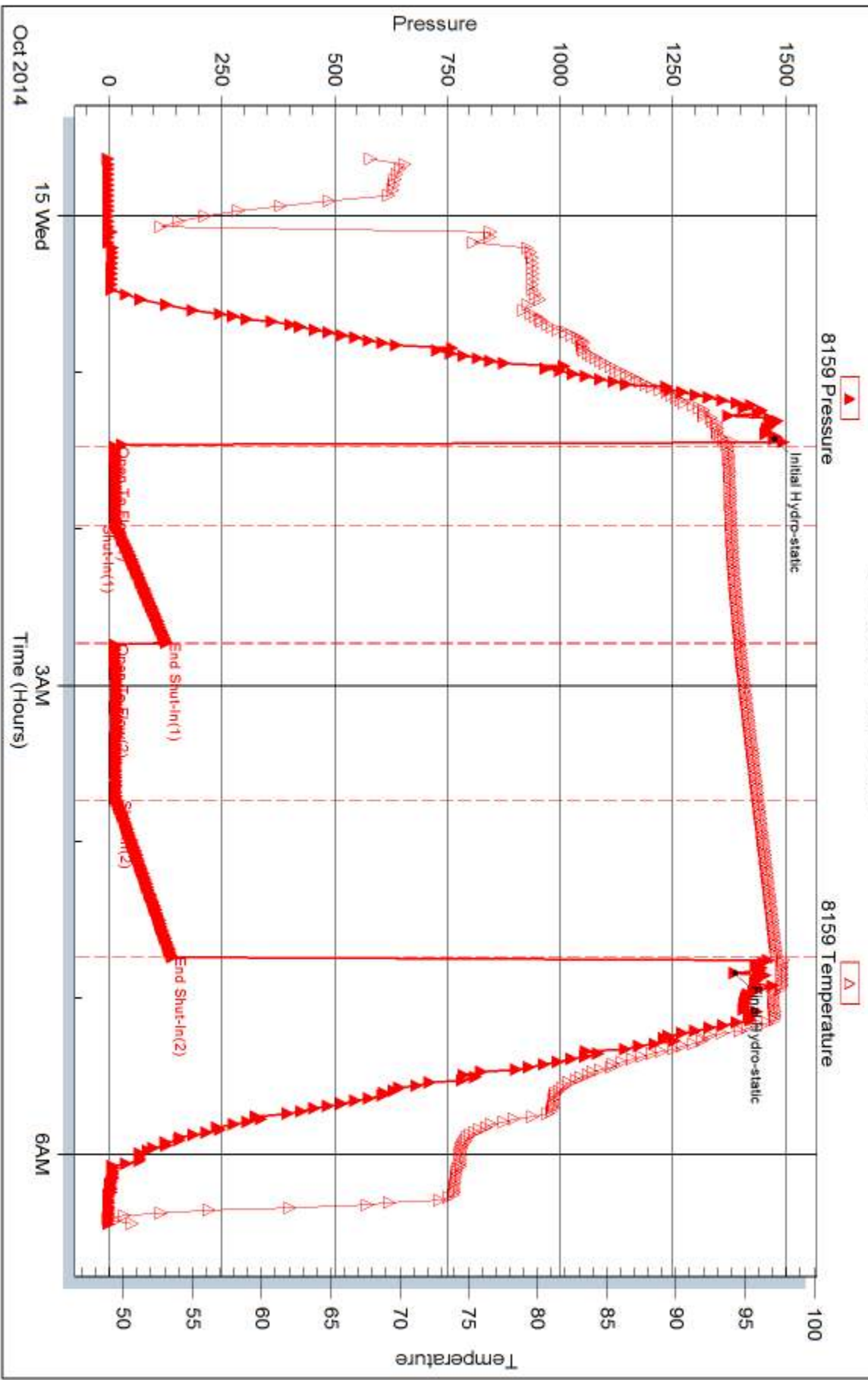
Laboratory Name:

Laboratory Location:

Recovery Comments:



### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Carrie Exploration and Development**

210 West 22nd  
Hays KS 67601

ATTN: Eli Felts/Jeff Burke

**Brian #C-1**

**26-20s-10w Rice,KS**

Start Date: 2014.10.15 @ 21:16:00

End Date: 2014.10.16 @ 02:49:30

Job Ticket #: 60468                      DST #: 3

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.19 @ 14:34:06



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60468

**DST#: 3**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.15 @ 21:16:00

## GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:57:30

Time Test Ended: 02:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S3

**Interval: 3279.00 ft (KB) To 3306.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3306.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8159 Outside**

Press@RunDepth: 28.09 psig @ 3303.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.10.15

End Date:

2014.10.16

Last Calib.:

2014.10.16

Start Time: 21:17:00

End Time:

02:49:30

Time On Btm:

2014.10.15 @ 22:56:30

Time Off Btm:

2014.10.16 @ 01:29:00

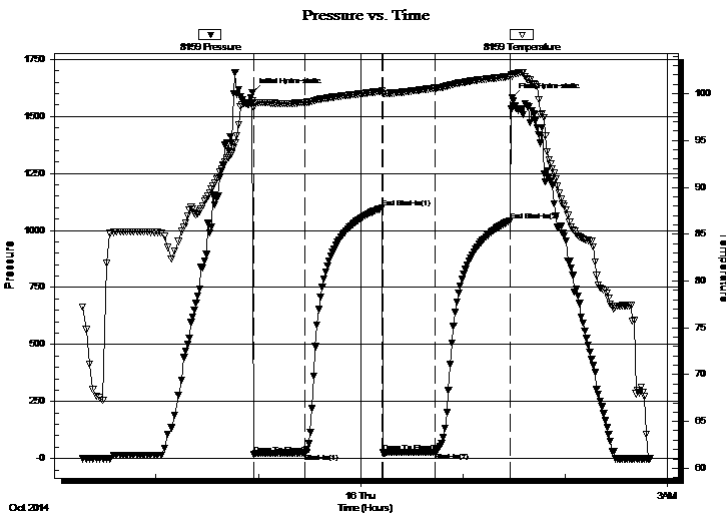
TEST COMMENT: IFP 30 Minutes Weak blow built to 1/4"

ISI 45 Minutes No blow back

FFP 30 Minutes Dead no blow /Flush tool/Weak surface blow died in 3 minutes

FSI 45 Minutes No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1603.46	99.20	Initial Hydro-static
1	19.96	98.50	Open To Flow (1)
31	24.47	99.07	Shut-In(1)
76	1098.71	100.26	End Shut-In(1)
77	25.88	100.00	Open To Flow (2)
107	28.09	100.58	Shut-In(2)
151	1042.85	101.83	End Shut-In(2)
153	1580.84	101.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100%	0.21

## Gas Rates

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





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# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60468

**DST#: 3**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.15 @ 21:16:00

## GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:57:30

Time Test Ended: 02:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S3

**Interval: 3279.00 ft (KB) To 3306.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3306.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8524**

**Inside**

Press@RunDepth: 1038.73 psig @ 3302.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.10.15

End Date:

2014.10.16

Last Calib.:

2014.10.16

Start Time: 21:17:00

End Time:

02:49:00

Time On Btm:

2014.10.15 @ 22:56:30

Time Off Btm:

2014.10.16 @ 01:28:30

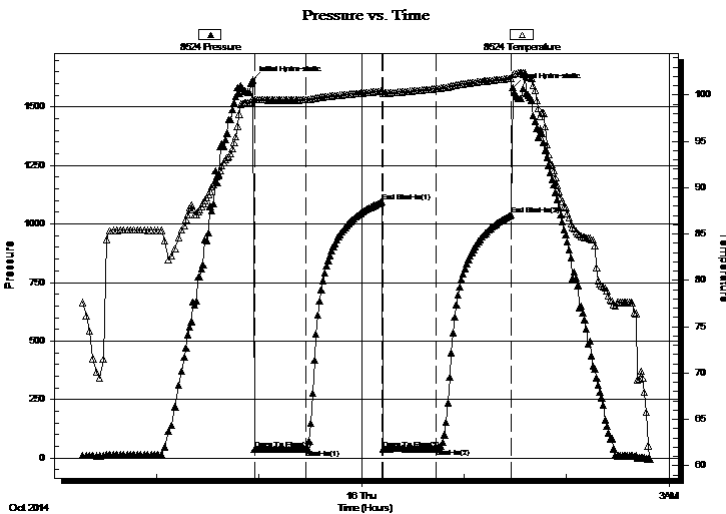
TEST COMMENT: IFP 30 Minutes Weak blow built to 1/4"

ISI 45 Minutes No blow back

FFP 30 Minutes Dead no blow /Flush tool/Weak surface blow died in 3 minutes

FSI 45 Minutes No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1614.34	99.63	Initial Hydro-static
1	39.32	99.47	Open To Flow (1)
31	39.79	99.49	Shut-In(1)
76	1093.63	100.41	End Shut-In(1)
76	39.59	100.19	Open To Flow (2)
107	40.98	100.67	Shut-In(2)
151	1038.73	101.78	End Shut-In(2)
152	1582.74	102.19	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100%	0.21

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60468

**DST#: 3**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.15 @ 21:16:00

## Tool Information

Drill Pipe:	Length: 3289.00 ft	Diameter: 3.80 inches	Volume: 46.14 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 46.14 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3279.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	47.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3264.00	
Hydraulic tool	5.00			3269.00	
Top Packer	5.00			3274.00	
Packer	5.00			3279.00	20.00 Bottom Of Top Packer
Anchor	22.00			3301.00	
Recorder	1.00	8524	Inside	3302.00	
Recorder	1.00	8159	Outside	3303.00	
Bull Plug	3.00			3306.00	27.00 Anchor Tool

**Total Tool Length: 47.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60468

**DST#: 3**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.15 @ 21:16:00

## 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: 56.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud 100%	0.210

Total Length: 15.00 ft      Total Volume: 0.210 bbl

Num Fluid Samples: 0

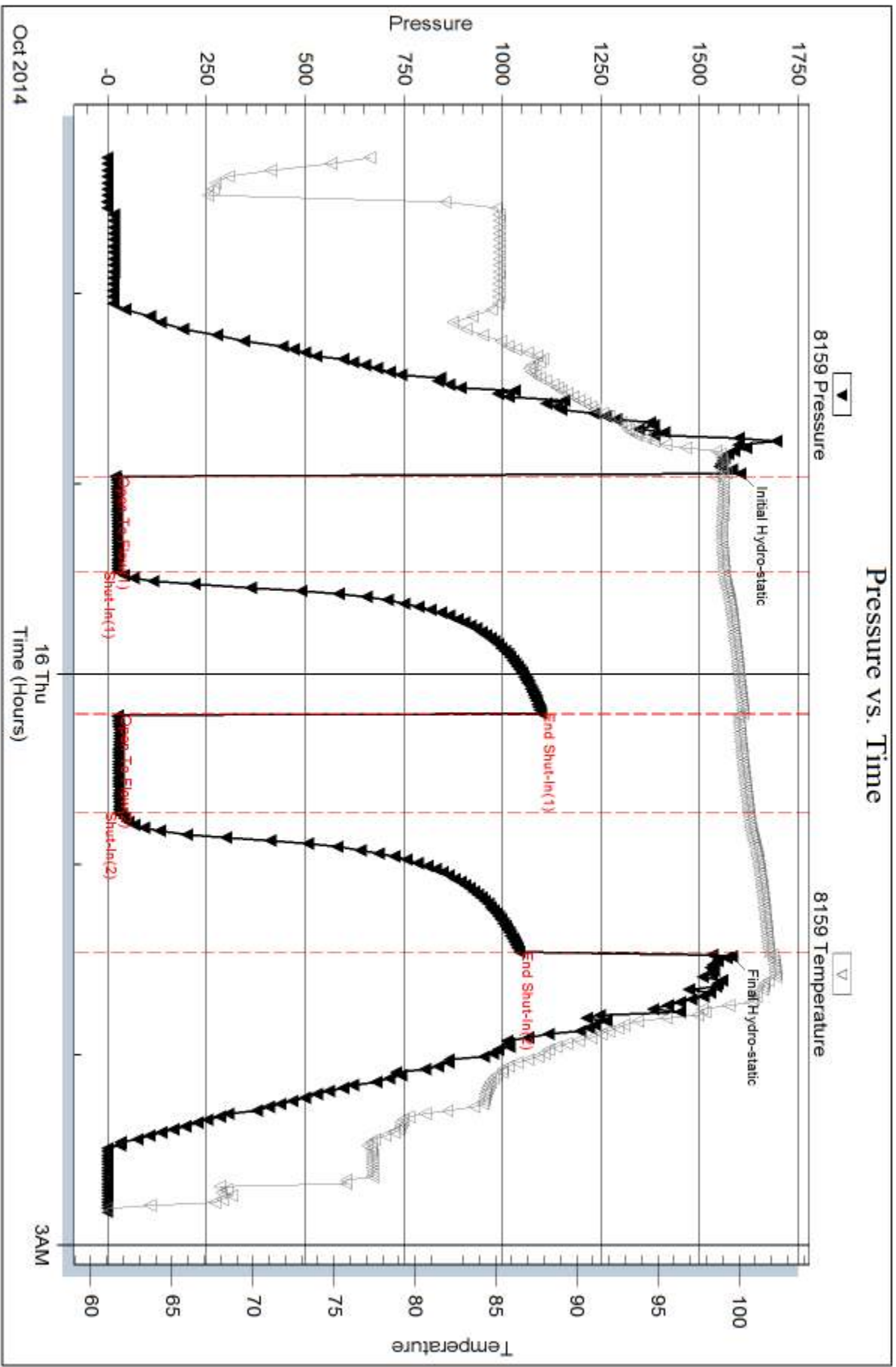
Num Gas Bombs: 0

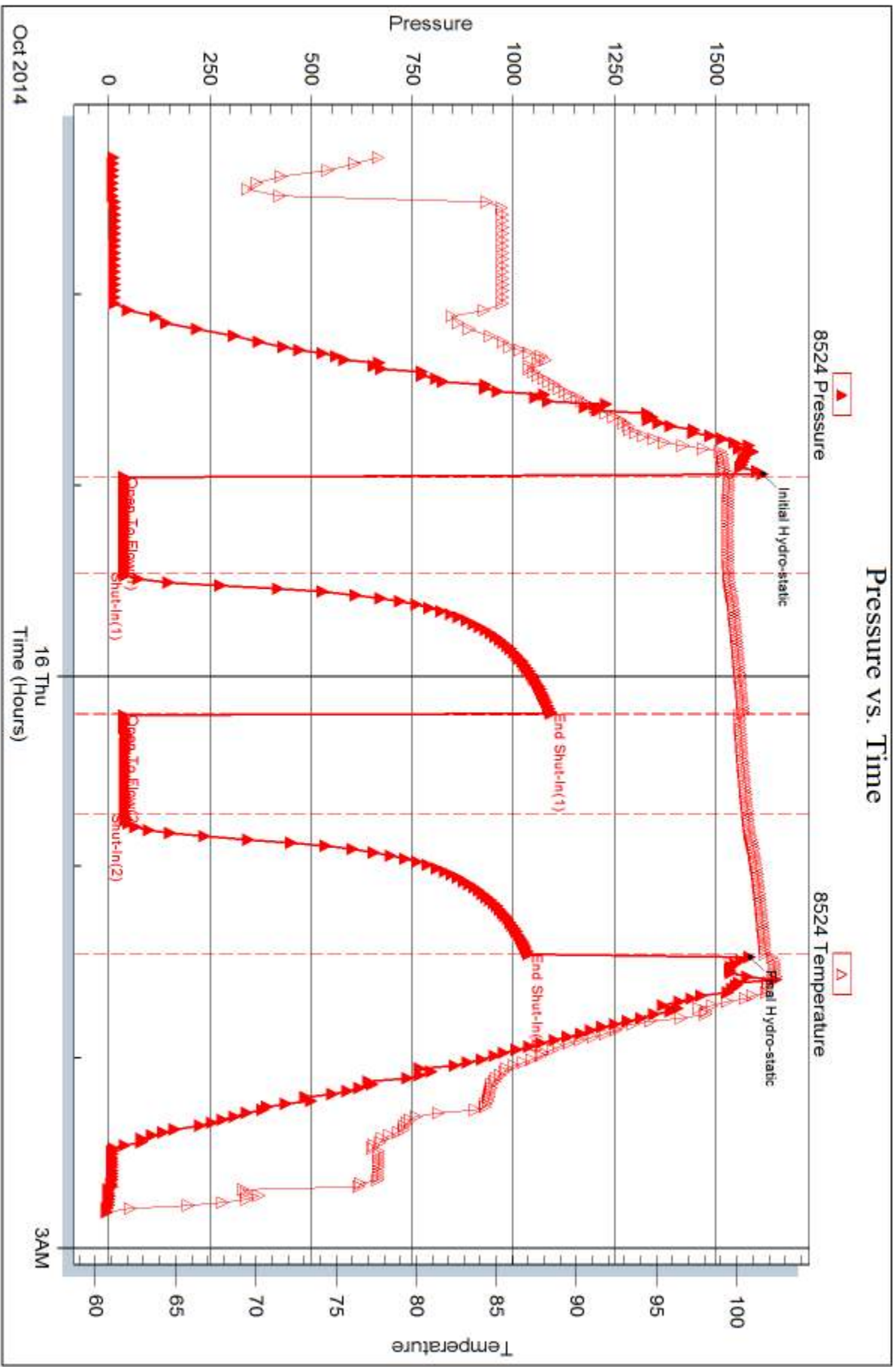
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Carrie Exploration and Development**

210 West 22nd  
Hays KS 67601

ATTN: Eli Felts/Jeff Burke

**Brian #C-1**

**26-20s-10w Rice,KS**

Start Date: 2014.10.16 @ 13:28:00

End Date: 2014.10.16 @ 19:25:00

Job Ticket #: 60469                      DST #: 4

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.19 @ 14:33:32



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60469

**DST#: 4**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.16 @ 13:28:00

## GENERAL INFORMATION:

Formation: **Simpson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:22:30

Time Test Ended: 19:25:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S3

**Interval: 3335.00 ft (KB) To 3395.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3395.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8159 Outside**

Press@RunDepth: 45.07 psig @ 3392.34 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.10.16

End Date: 2014.10.16

Last Calib.: 2014.10.16

Start Time: 13:29:00

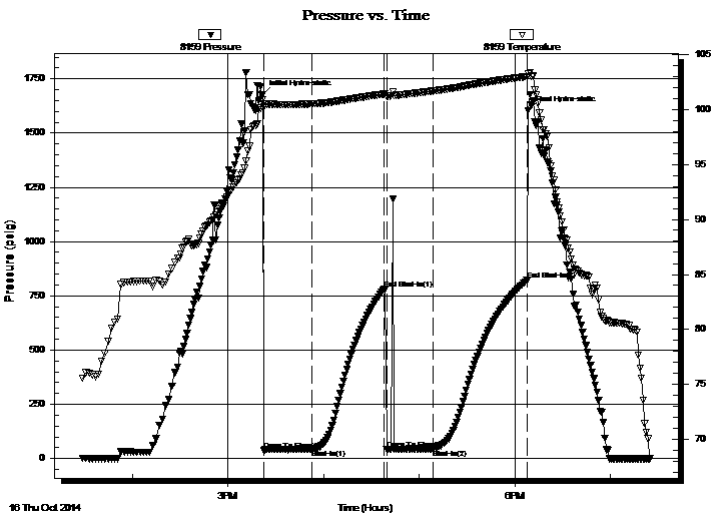
End Time: 19:25:00

Time On Btm: 2014.10.16 @ 15:22:00

Time Off Btm: 2014.10.16 @ 18:08:30

**TEST COMMENT:** IFP 30 Minutes Weak surface blow died in 7 minutes  
ISI 45 Minutes No blow back  
FFP 30 Minutes Dead no blow /Flush tool no help  
FSI 60 Minutes No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.95	100.88	Initial Hydro-static
1	39.95	100.18	Open To Flow (1)
31	41.05	100.49	Shut-In(1)
76	781.79	101.38	End Shut-In(1)
78	42.83	101.20	Open To Flow (2)
107	45.07	101.65	Shut-In(2)
166	821.39	102.96	End Shut-In(2)
167	1602.04	103.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil spotted mud/Oil 1% Mud 99%	0.07

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60469

**DST#: 4**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.16 @ 13:28:00

## GENERAL INFORMATION:

Formation: **Simpson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:22:30

Time Test Ended: 19:25:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: S3

**Interval: 3335.00 ft (KB) To 3395.00 ft (KB) (TVD)**

Reference Elevations: 1792.00 ft (KB)

Total Depth: 3395.00 ft (KB) (TVD)

1783.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

**Serial #: 8524 Inside**

Press@RunDepth: 811.78 psig @ 3391.34 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.10.16

End Date: 2014.10.16

Last Calib.: 2014.10.16

Start Time: 13:29:00

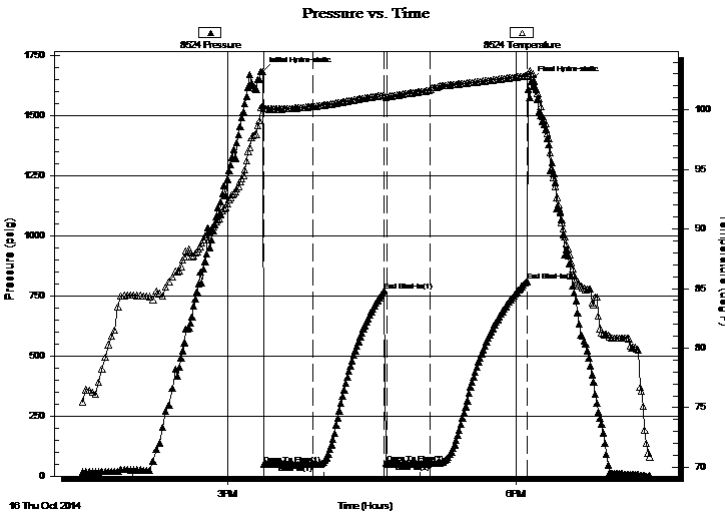
End Time: 19:24:00

Time On Btm: 2014.10.16 @ 15:21:30

Time Off Btm: 2014.10.16 @ 18:09:30

**TEST COMMENT:** IFP 30 Minutes Weak surface blow died in 7 minutes  
ISI 45 Minutes No blow back  
FFP 30 Minutes Dead no blow /Flush tool no help  
FSI 60 Minutes No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1683.23	100.40	Initial Hydro-static
1	51.41	100.12	Open To Flow (1)
32	48.91	100.27	Shut-In(1)
76	771.55	101.23	End Shut-In(1)
78	51.97	101.11	Open To Flow (2)
105	51.98	101.69	Shut-In(2)
166	811.78	102.85	End Shut-In(2)
168	1643.09	103.08	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil spotted mud/Oil 1% Mud 99%	0.07

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Carrie Exploration and Development

**26-20s-10w Rice, KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60469

**DST#: 4**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.16 @ 13:28:00

## Tool Information

Drill Pipe:	Length: 3323.00 ft	Diameter: 3.80 inches	Volume: 46.61 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: lb
			<u>Total Volume: 46.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3335.00 ft			Final lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.34 ft			
Tool Length:	80.34 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut-In Tool	5.00			3320.00	
Hydraulic tool	5.00			3325.00	
Packer	5.00			3330.00	20.00 Bottom Of Top Packer
Packer	5.00			3335.00	
Anchor	5.00			3340.00	
Change Over Sub	0.75			3340.75	
Drill Pipe	31.84			3372.59	
Change Over Sub	0.75			3373.34	
Anchor	17.00			3390.34	
Recorder	1.00	8524	Inside	3391.34	
Recorder	1.00	8159	Outside	3392.34	
Bull Plug	3.00			3395.34	60.34 Bottom Packers & Anchor

**Total Tool Length: 80.34**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Carrie Exploration and Development

**26-20s-10w Rice,KS**

210 West 22nd  
Hays KS 67601

**Brian #C-1**

Job Ticket: 60469

**DST#: 4**

ATTN: Eli Felts/Jeff Burke

Test Start: 2014.10.16 @ 13:28:00

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Oil spotted mud/Oil 1% Mud 99%	0.070

Total Length: 5.00 ft      Total Volume: 0.070 bbl

Num Fluid Samples: 0

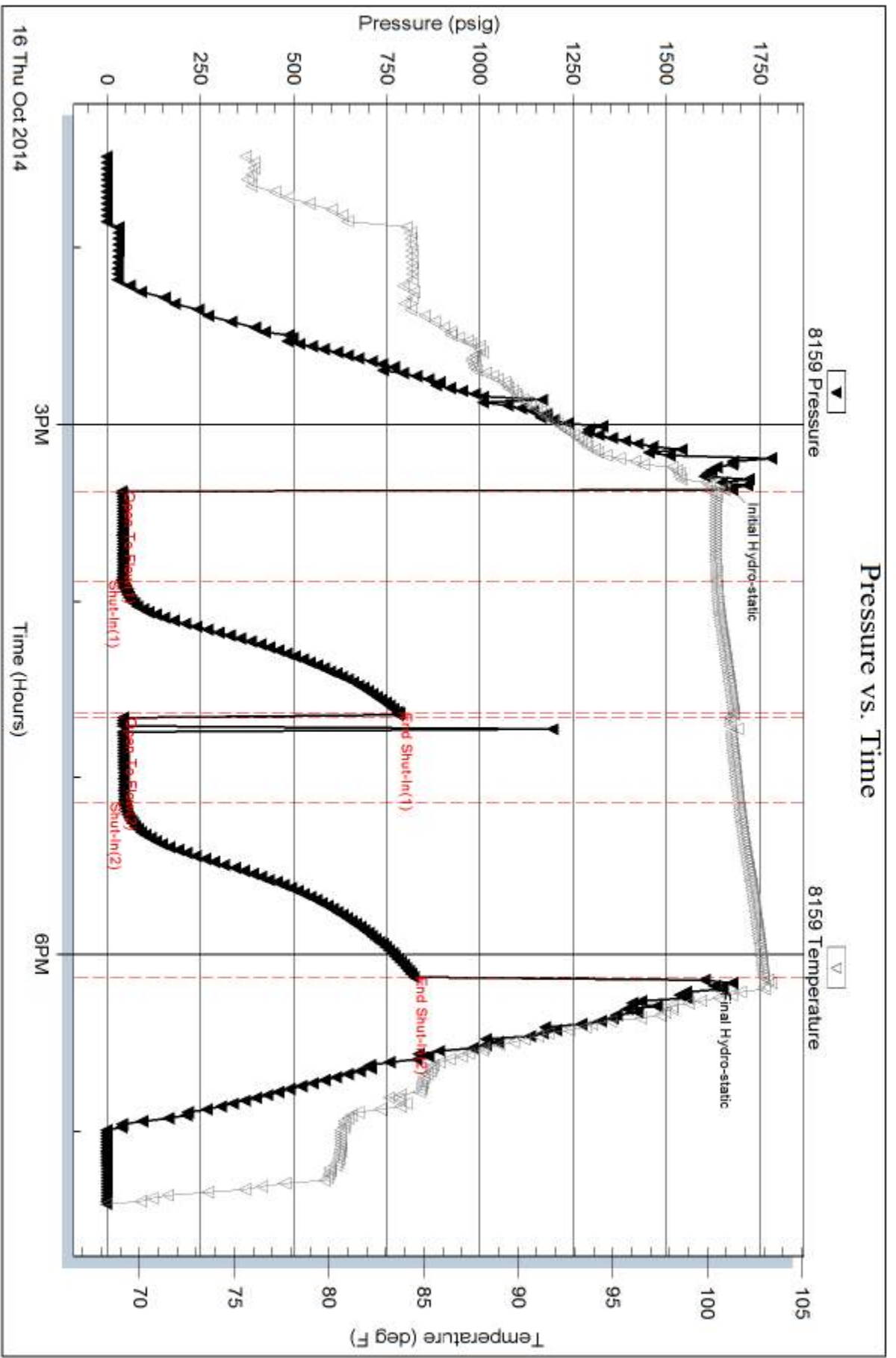
Num Gas Bombs: 0

Serial #:

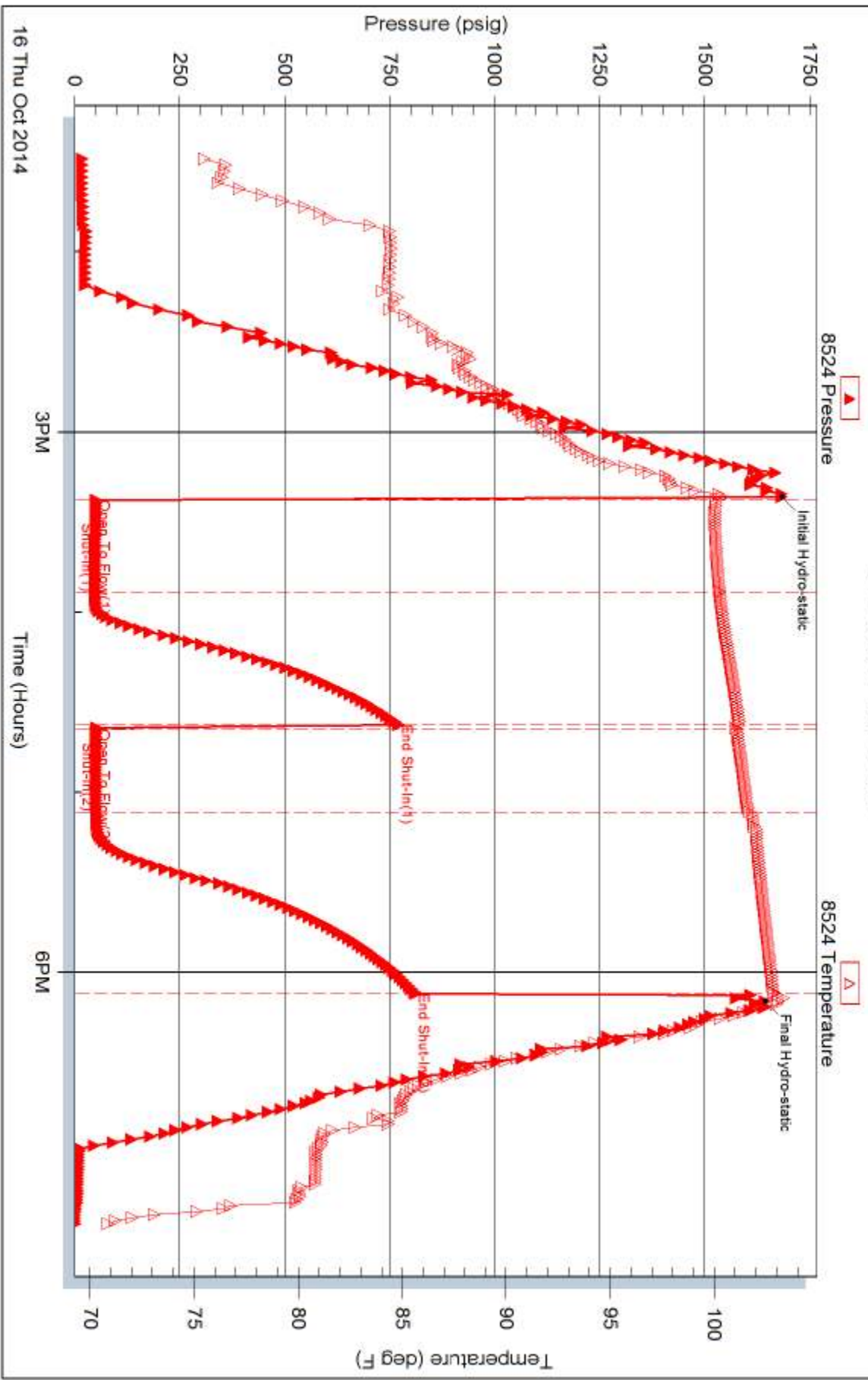
Laboratory Name:

Laboratory Location:

Recovery Comments:



### Pressure vs. Time





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60466

Well Name & No. Brian #C-1 Test No. 1 Date 10-14-14  
 Company Carrie Exploration + Development Elevation 1792 KB 1783 GL  
 Address 210 W 22<sup>nd</sup> Hays KS 67601  
 Co. Rep / Geo. Eli Felts / Jeff Burke Rig Southwind #8  
 Location: Sec. 26 Twp. 20 S Rge. 10 W Co. Rice State KS

Interval Tested 3097 - 3127 Zone Tested Lansing "F+G"  
 Anchor Length 30 Drill Pipe Run 3100 Mud Wt. 9.0  
 Top Packer Depth 3092 Drill Collars Run Ø Vis 68  
 Bottom Packer Depth 3097 Wt. Pipe Run Ø WL \_\_\_\_\_  
 Total Depth 3127 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description 1<sup>st</sup> Open - weak blow built to 4 inches into water, 1<sup>st</sup> Shut In - No blow back. 2<sup>nd</sup> open - weak blow built to 6 inches into water, 2<sup>nd</sup> Shut In - No blow back.

Rec	Feet of	%gas	%oil	%water	%muc
<u>Ø</u>	<u>45' Gas in Pipe</u>	<u>100</u>			
<u>15</u>	<u>mud w/Trace Oil</u>		<u>T</u>		<u>100</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%muc _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%muc _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%muc _____

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

(A) Initial Hydrostatic 1422  Test 1150 T-On Location 06:00  
 (B) First Initial Flow 1472 59  Jars 250 T-Started 10:30  
 (C) First Final Flow 59 52  Safety Joint 75 T-Open 12:25  
 (D) Initial Shut-In 52 84  Circ Sub \_\_\_\_\_ T-Pulled 15:50  
 (E) Second Initial Flow 51  Hourly Standby \_\_\_\_\_ T-Out 17:15  
 (F) Second Final Flow 45  Mileage 50 77.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 22  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1422  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1552.50  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1552.50

Approved By \_\_\_\_\_ Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of 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. 60467

Well Name & No. Brian #C-1 Test No. 2 Date 10-14-14  
 Company Carrie Exploration & Development Elevation 1792 KB 178.3 GL  
 Address 210 W 22<sup>nd</sup> Hays KS 67601  
 Co. Rep / Geo. Eli Felts / Jeff Burk Rig Southwind #8  
 Location: Sec. 26 Twp. 20S Rge. 10W Co. Rice State KS

Interval Tested +78 3127-3140 Zone Tested Lansing "G"  
 Anchor Length 3140 13 Drill Pipe Run 3127 Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3122 Drill Collars Run Ø Vis \_\_\_\_\_  
 Bottom Packer Depth 3127 Wt. Pipe Run Ø WL \_\_\_\_\_  
 Total Depth 3140 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description 1<sup>st</sup> open - fair blow built to 10 inches into water, 1<sup>st</sup> shut in - No blow back, 2<sup>nd</sup> open - fair blow to bottom of 5 gallon bucket in 35 min, 2<sup>nd</sup> shut in - No blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>—</u>	<u>45 foot gas in pipe</u>	<u>100</u>			
<u>15</u>	<u>oil cut mud</u>		<u>2.5</u>		<u>97.5</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

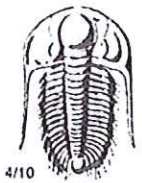
Rec Total 15 BHT 97 Gravity \ API RW \ @ \ °F Chlorides \ ppm

(A) Initial Hydrostatic 1461  Test 1150 T-On Location 23:10  
 (B) First Initial Flow 33  Jars \_\_\_\_\_ T-Started 00:30  
 (C) First Final Flow 36  Safety Joint \_\_\_\_\_ T-Open 01:30  
 (D) Initial Shut-In 120  Circ Sub \_\_\_\_\_ T-Pulled 04:45  
 (E) Second Initial Flow 29  Hourly Standby \_\_\_\_\_ T-Out 06:20  
 (F) Second Final Flow 31  Mileage 50 77.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 133  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1417  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 60  Day Standby \_\_\_\_\_ Total 1227.50  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1227.50

Approved By \_\_\_\_\_ Our Representative Shane Zep

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. **60468**

Well Name & No. Brian #C-1 Test No. 3 Date 15 Oct 14  
 Company Carrie Exploration and Development Elevation 1792 KB 1783 GL  
 Address 710 W 22nd Hays Kansas 67601  
 Co. Rep / Geo. Eli Felts / Jeff Burk Rig Southwind Rig #8  
 Location: Sec. 26 Twp. 20S Rge. 10W Co. Rice State KS

Interval Tested 3279-3306 Zone Tested Lansing / Kansas City zone L  
 Anchor Length 27 Drill Pipe Run 3289 Mud Wt. 9.0  
 Top Packer Depth 3274 Drill Collars Run 0 Vis 56  
 Bottom Packer Depth 3279 Wt. Pipe Run 6 WL \_\_\_\_\_  
 Total Depth 3306 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description Weak blow / Blow built to 1/4 inch / Blow throughout  
No blow back  
Dead no blow / Flush tool / Weak surface blow died in 3 minutes  
No blow back

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

Rec Total \_\_\_\_\_ BHT 107 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1603  Test 1150 T-On Location 9:00 pm  
 (B) First Initial Flow 19  Jars \_\_\_\_\_ T-Started 9:16 pm  
 (C) First Final Flow 24  Safety Joint \_\_\_\_\_ T-Open 10:57 pm  
 (D) Initial Shut-In 1098  Circ Sub \_\_\_\_\_ T-Pulled 11:27 am  
 (E) Second Initial Flow 25  Hourly Standby \_\_\_\_\_ T-Out 2:49 am  
 (F) Second Final Flow 28  Mileage 50 77.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 1042  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1590  Straddle \_\_\_\_\_

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_  
 Final Flow 30  Day Standby \_\_\_\_\_  
 Final Shut-In 45  Accessibility \_\_\_\_\_  
 Sub Total 1227.50 MP/DST Disc't \_\_\_\_\_

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **60469**

Well Name & No. Brian HC-1 Test No. 4 Date 16 OCT 14  
 Company Carrie Exploration and Development Elevation 1792 KB 1783 GL  
 Address 210 W 22nd Hays Kansas 67601  
 Co. Rep / Geo. El. Felts / Jeff Buck Rig Southward Rig #8  
 Location: Sec. 26 Twp. 20S Rge. 10W Co. Rice State KS

Interval Tested 3335-3395 Zone Tested Simpson  
 Anchor Length 60 Drill Pipe Run 3323 Mud Wt. 9.1  
 Top Packer Depth 3330 Drill Collars Run 0 Vis 57  
 Bottom Packer Depth 3335 Wt. Pipe Run 0 WL \_\_\_\_\_  
 Total Depth 3395 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description Weak surface blow / Blow died in 7 minutes  
No blow back  
Dead no blow / Flush tool no help  
No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>85</u>	<u>oil spotted mud</u>	<u>1</u>		<u>99</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 85 BHT 103 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1675  Test 1150 T-On Location 1:15 pm  
 (B) First Initial Flow 39  Jars \_\_\_\_\_ T-Started 1:28 pm  
 (C) First Final Flow 41  Safety Joint \_\_\_\_\_ T-Open 3:22 pm  
 (D) Initial Shut-In 781  Circ Sub \_\_\_\_\_ T-Pulled 6:07 pm  
 (E) Second Initial Flow 42  Hourly Standby \_\_\_\_\_ T-Out 8:27 pm  
 (F) Second Final Flow 45  Mileage 50 155 Comments \_\_\_\_\_  
 (G) Final Shut-In 821  Sampler \_\_\_\_\_ loaded tools 10/17 am  
 (H) Final Hydrostatic 1602  Straddle \_\_\_\_\_

Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1305

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 0  
 Total 1305  
 MP/DST Disc't \_\_\_\_\_

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

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