



## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.25 @ 08:00:00

End Date: 2014.08.25 @ 13:49:15

Job Ticket #: 57454                      DST #: 1

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

Printed: 2014.09.04 @ 08:35:40



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57454

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2014.08.25 @ 08:00:00

## GENERAL INFORMATION:

Formation: **LKC E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:16:15

Time Test Ended: 13:49:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Justin Harris

Unit No: 65

**Interval: 4026.00 ft (KB) To 4047.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4047.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: 45.98 psig @ 4042.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.25

End Date:

2014.08.25

Last Calib.:

2014.08.25

Start Time: 08:00:15

End Time:

13:49:15

Time On Btm:

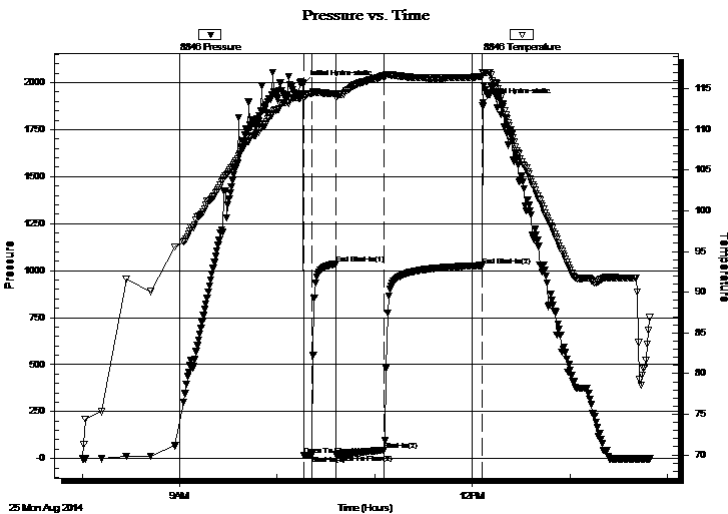
2014.08.25 @ 10:16:00

Time Off Btm:

2014.08.25 @ 12:06:30

**TEST COMMENT:** 05: Weak Surface blow .  
15: No Return.  
30: Weak Surface blow .  
60: No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1991.13	114.37	Initial Hydro-static
1	16.56	113.91	Open To Flow (1)
5	19.05	114.39	Shut-In(1)
20	1036.21	114.36	End Shut-In(1)
21	21.25	113.97	Open To Flow (2)
50	45.98	116.51	Shut-In(2)
110	1027.40	116.52	End Shut-In(2)
111	1893.51	116.78	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	clean oil	0.02
63.00	gocm 5%g 5%o 90%m	0.31

## Gas Rates

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



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## DRILL STEM TEST REPORT

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**16-18s-29w Lane,KS**

562 W State RD4  
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Job Ticket: 57454

**DST#: 1**

ATTN: Vern Schrag

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Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:16:15

Time Test Ended: 13:49:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Justin Harris

Unit No: 65

**Interval: 4026.00 ft (KB) To 4047.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4047.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4042.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.25

End Date: 2014.08.25

Last Calib.: 2014.08.25

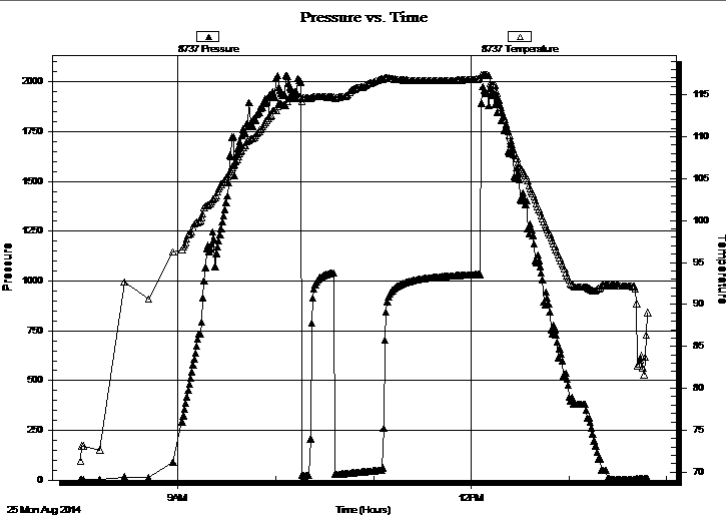
Start Time: 08:00:15

End Time: 13:48:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 05: Weak Surface blow .  
15: No Return.  
30: Weak Surface blow .  
60: No Return.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	clean oil	0.02
63.00	gocm 5%g 5%o 90%m	0.31

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57454

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2014.08.25 @ 08:00:00

## Tool Information

Drill Pipe:	Length: 3887.00 ft	Diameter: 3.80 inches	Volume: 54.52 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	55000.00 lb
Drill Pipe Above KB:	12.00 ft			Final	56000.00 lb
Depth to Top Packer:	4026.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	49.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3999.00	
Shut In Tool	5.00			4004.00	
Hydraulic tool	5.00			4009.00	
Jars	5.00			4014.00	
Safety Joint	3.00			4017.00	
Packer	5.00			4022.00	28.00 Bottom Of Top Packer
Packer	4.00			4026.00	
Stubb	1.00			4027.00	
Perforations	15.00			4042.00	
Recorder	0.00	8846	Inside	4042.00	
Recorder	0.00	8737	Outside	4042.00	
Bullnose	5.00			4047.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57454

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2014.08.25 @ 08:00:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.32 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	clean oil	0.025
63.00	gocm 5%g 5%o 90%m	0.310

Total Length: 68.00 ft

Total Volume: 0.335 bbl

Num Fluid Samples: 0

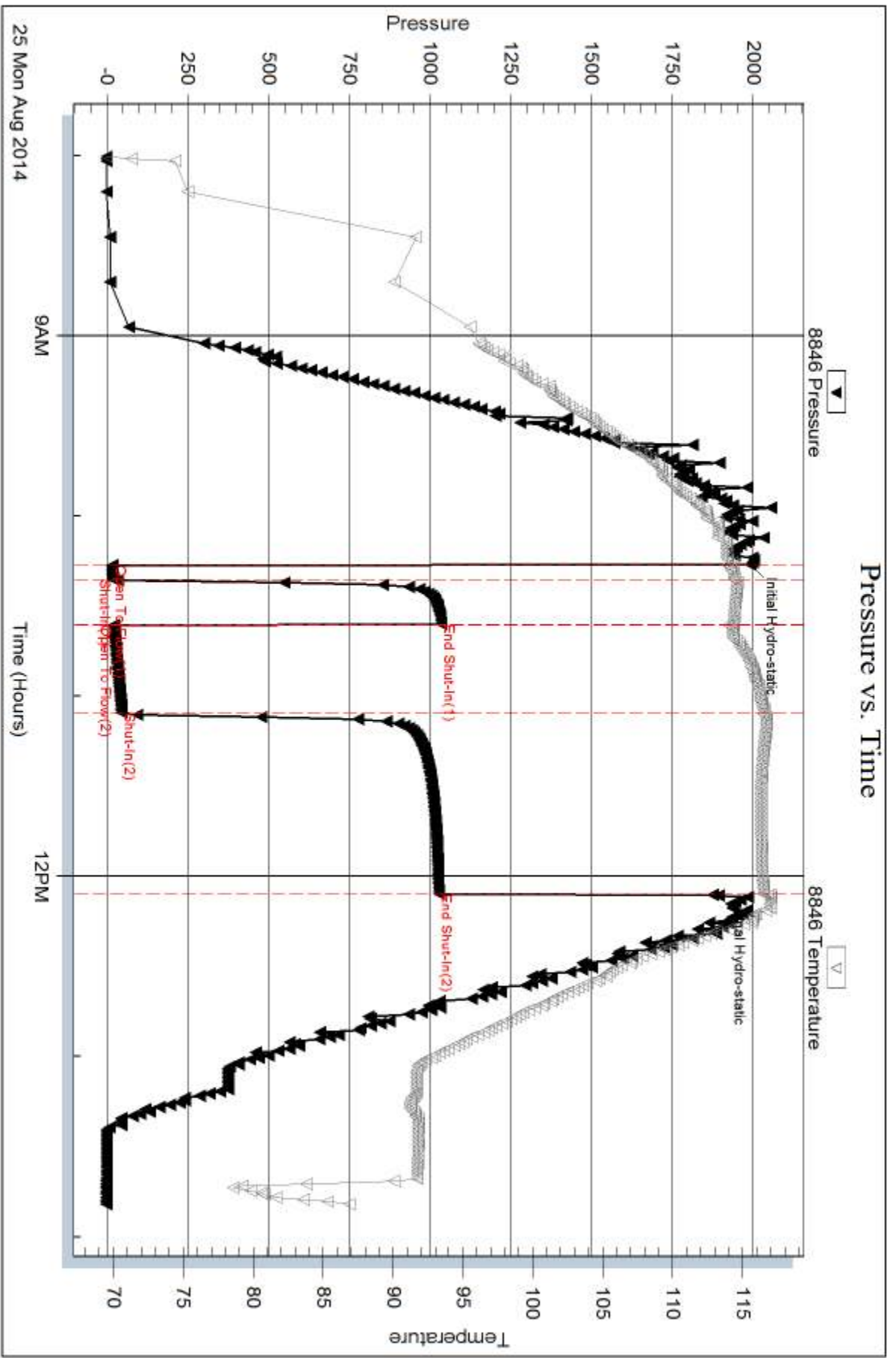
Num Gas Bombs: 0

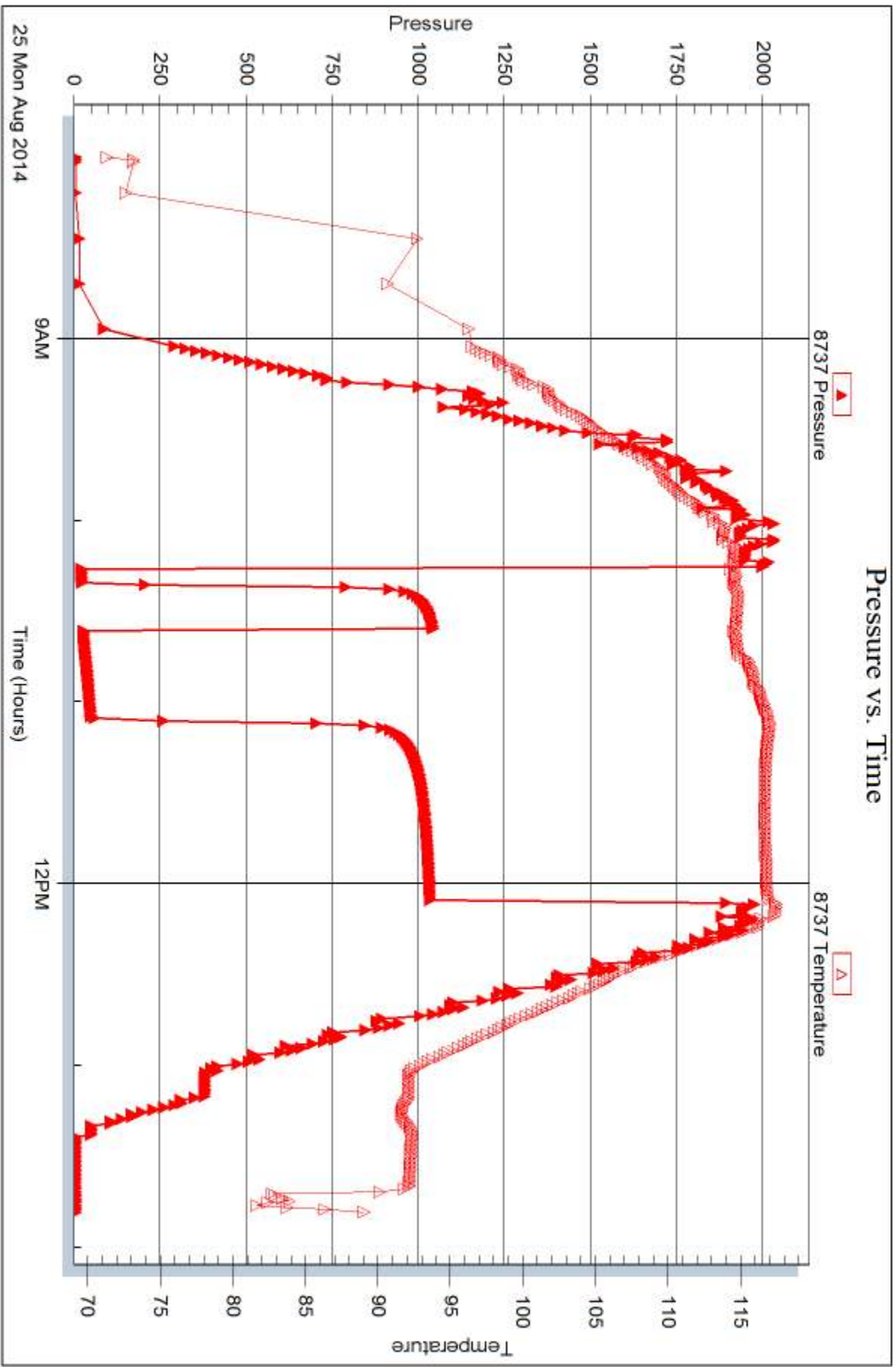
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.26 @ 06:48:00

End Date: 2014.08.26 @ 12:13:45

Job Ticket #: 57455                      DST #: 2

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

Printed: 2014.09.04 @ 08:34:57





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57455

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 06:48:00

## GENERAL INFORMATION:

Formation: **LKC I**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:42:45  
 Time Test Ended: 12:13:45  
 Interval: **4155.00 ft (KB) To 4190.00 ft (KB) (TVD)**  
 Total Depth: 4190.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Justin Harris  
 Unit No: 65  
 Reference Elevations: 2820.00 ft (KB)  
 2814.00 ft (CF)  
 KB to GR/CF: 6.00 ft

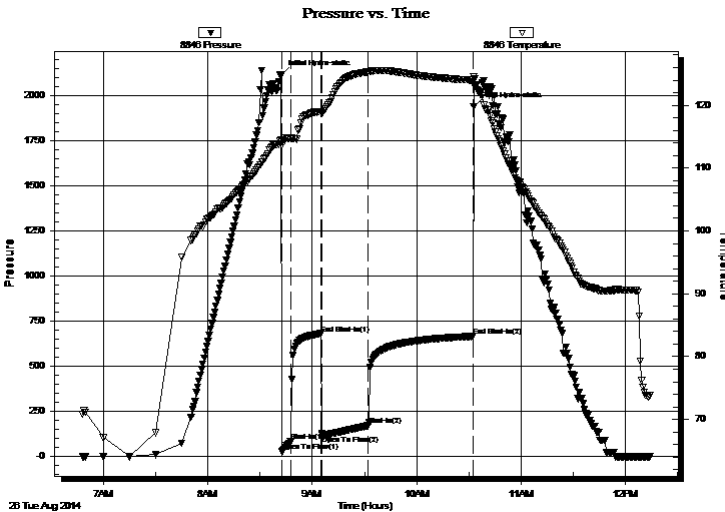
## Serial #: 8846

Inside

Press@RunDepth: 172.64 psig @ 4185.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.26 End Date: 2014.08.26 Last Calib.: 2014.08.26  
 Start Time: 06:48:15 End Time: 12:13:45 Time On Btm: 2014.08.26 @ 08:42:30  
 Time Off Btm: 2014.08.26 @ 10:32:45

TEST COMMENT: 05: Weak surface blow build to 5 1/2".  
 15: No Return.  
 30: B.O.B in 18 min.  
 60: No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2116.80	114.57	Initial Hydro-static
1	26.91	113.68	Open To Flow (1)
6	83.18	114.61	Shut-In(1)
23	681.51	118.96	End Shut-In(1)
24	120.84	118.84	Open To Flow (2)
50	172.64	125.33	Shut-In(2)
110	667.12	124.00	End Shut-In(2)
111	1940.82	124.55	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
315.00	mcw 40% m 60% w with oil spots	3.30

\* Recovery from multiple tests

## Gas Rates

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



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# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57455

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 06:48:00

## GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:42:45

Time Test Ended: 12:13:45

**Interval: 4155.00 ft (KB) To 4190.00 ft (KB) (TVD)**

Total Depth: 4190.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Test Type: Conventional Bottom Hole (Reset)

Tester: Justin Harris

Unit No: 65

Reference Elevations: 2820.00 ft (KB)

2814.00 ft (CF)

KB to GR/CF: 6.00 ft

**Serial #: 8737** Outside

Press@RunDepth: psig @ 4185.00 ft (KB)

Start Date: 2014.08.26

End Date:

2014.08.26

Start Time: 06:48:15

End Time:

12:14:15

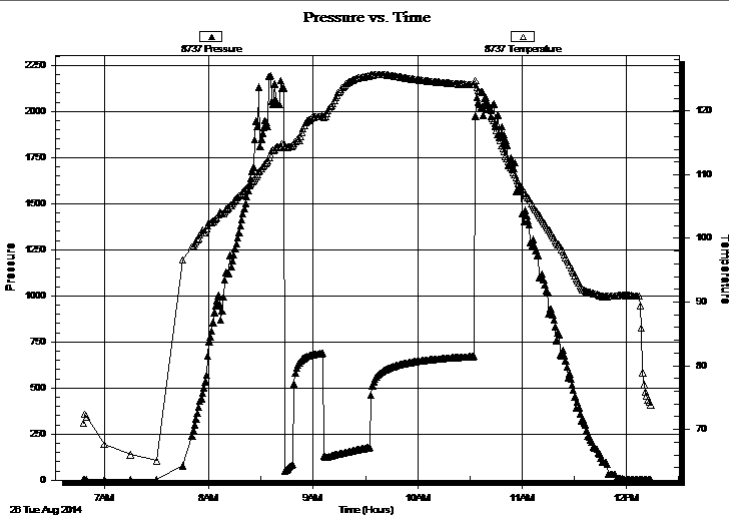
Capacity: 8000.00 psig

Last Calib.: 2014.08.26

Time On Btm:

Time Off Btm:

TEST COMMENT: 05: Weak surface blow build to 5 1/2".  
15: No Return.  
30: B.O.B in 18 min.  
60: No Return.



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
315.00	mcw 40% m 60% w with oil spots	3.30

## Gas Rates

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

\* Recovery from multiple tests



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57455

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 06:48:00

## Tool Information

Drill Pipe:	Length: 4013.00 ft	Diameter: 3.80 inches	Volume: 56.29 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 56.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4155.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	63.00 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			4128.00	
Shut In Tool	5.00			4133.00	
Hydraulic tool	5.00			4138.00	
Jars	5.00			4143.00	
Safety Joint	3.00			4146.00	
Packer	5.00			4151.00	28.00 Bottom Of Top Packer
Packer	4.00			4155.00	
Stubb	1.00			4156.00	
Perforations	29.00			4185.00	
Recorder	0.00	8846	Inside	4185.00	
Recorder	0.00	8737	Outside	4185.00	
Bullnose	5.00			4190.00	35.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57455

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 06:48:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

13000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.33 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
315.00	mcw 40% m 60% w with oil spots	3.298

Total Length: 315.00 ft      Total Volume: 3.298 bbf

Num Fluid Samples: 0

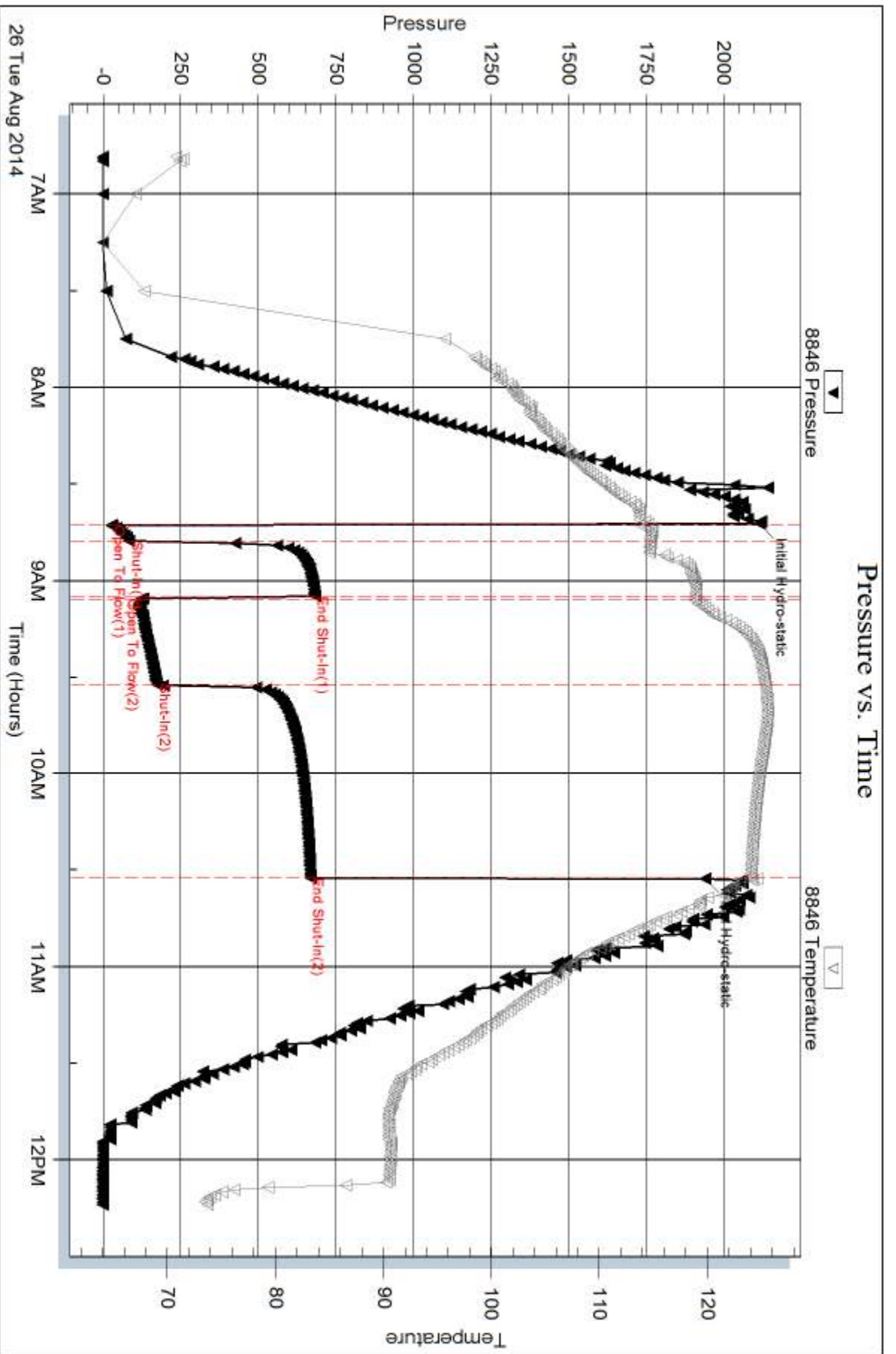
Num Gas Bombs: 0

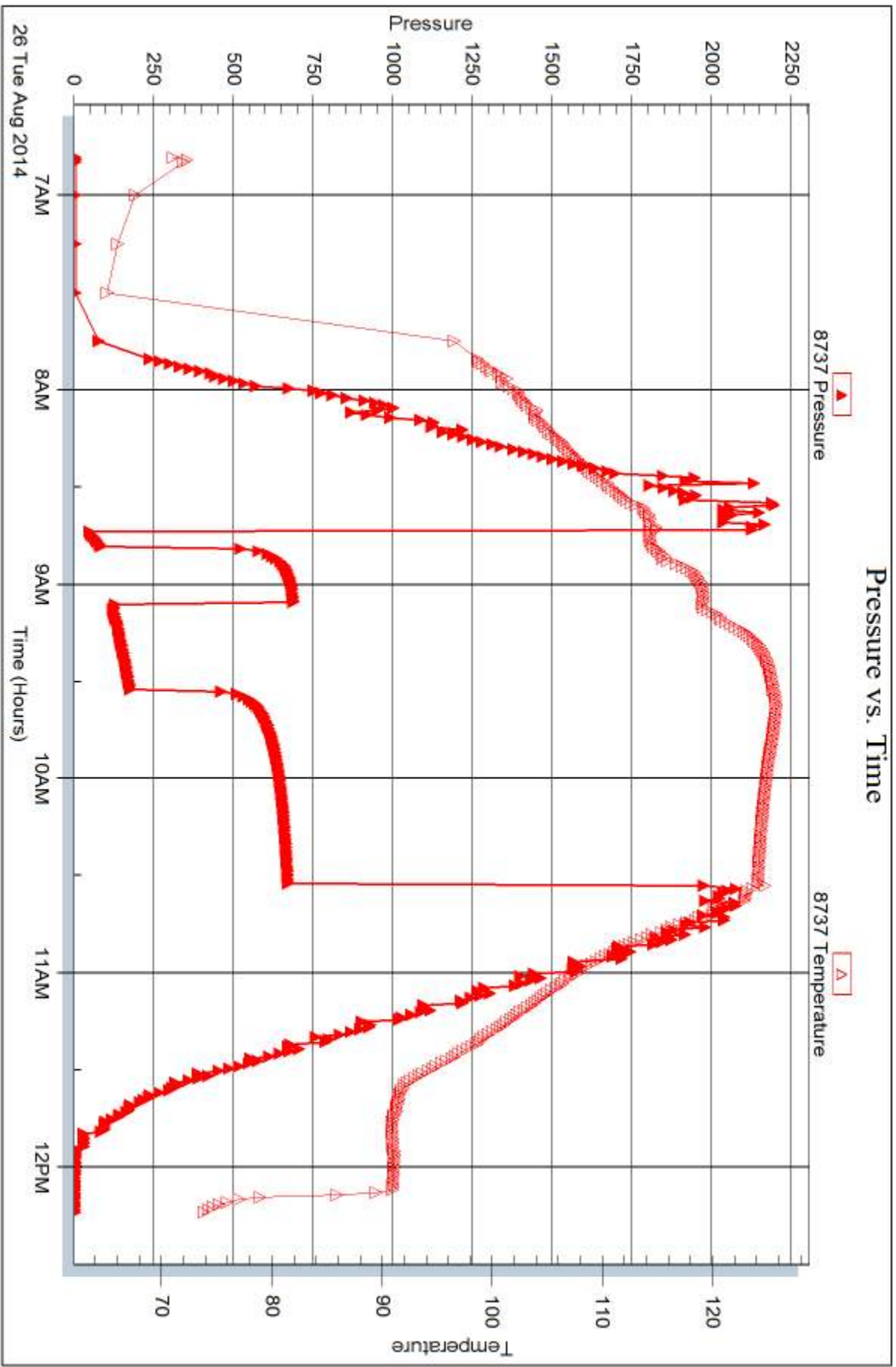
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Api Rw .45 @ 83 temp =13000







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.26 @ 20:04:00

End Date: 2014.08.27 @ 01:04:00

Job Ticket #: 57456                      DST #: 3

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

Printed: 2014.09.04 @ 08:33:10



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57456

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 20:04:00

## GENERAL INFORMATION:

Formation: **LKC J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:52:15

Time Test Ended: 01:04:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Justin Harris

Unit No: 65

**Interval: 4194.00 ft (KB) To 4201.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4201.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: 539.89 psig @ 4196.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.26

End Date:

2014.08.27

Last Calib.:

2014.08.27

Start Time: 20:04:15

End Time:

01:04:00

Time On Btm:

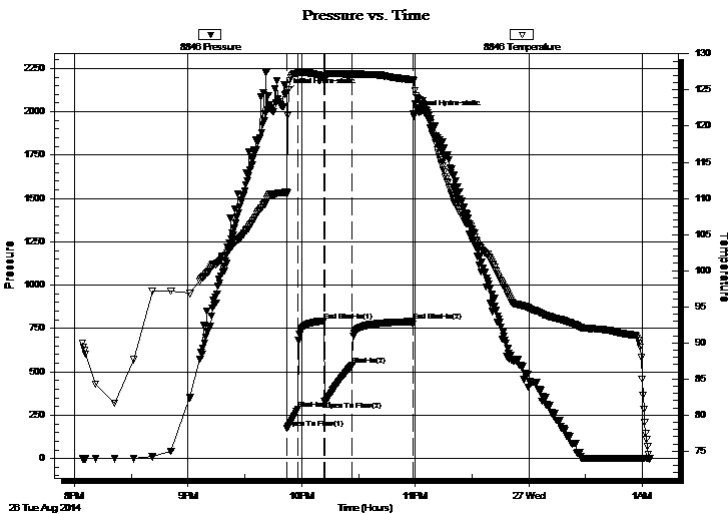
2014.08.26 @ 21:52:00

Time Off Btm:

2014.08.26 @ 22:59:00

**TEST COMMENT:** 05: B.O.B in 2 min.  
15: No Return.  
15: B.O.B in 2 min.  
30: No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2109.05	110.84	Initial Hydro-static
1	172.71	110.68	Open To Flow (1)
6	282.60	127.33	Shut-In(1)
20	793.94	126.57	End Shut-In(1)
20	331.65	126.33	Open To Flow (2)
35	539.89	127.16	Shut-In(2)
67	790.68	126.42	End Shut-In(2)
67	1986.19	126.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mcw 5%m 95%w	0.02
1008.00	mcw 10%m 90%w	13.06
126.00	mcw 30%m 70%w	1.77

## Gas Rates

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

\* Recovery from multiple tests





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# DRILL STEM TEST REPORT

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Olmitz KS 67564

**Rhonda #1-16**

ATTN: Vern Schrag

Job Ticket: 57456

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Tester: Justin Harris

Unit No: 65

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Reference Elevations: 2820.00 ft (KB)

Total Depth: 4201.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4196.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.26

End Date: 2014.08.27

Last Calib.: 2014.08.27

Start Time: 20:04:15

End Time: 01:04:15

Time On Btm:

Time Off Btm:

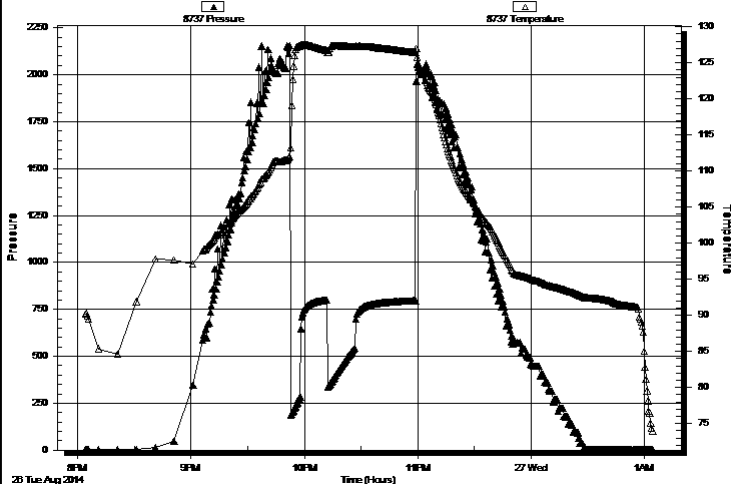
TEST COMMENT: 05: B.O.B in 2 min.

15: No Return.

15: B.O.B in 2 min.

30: No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mcw 5% m 95% w	0.02
1008.00	mcw 10% m 90% w	13.06
126.00	mcw 30% m 70% w	1.77

Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57456

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 20:04:00

## Tool Information

Drill Pipe:	Length: 4075.00 ft	Diameter: 3.80 inches	Volume: 57.16 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4194.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	35.00 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			4167.00	
Shut In Tool	5.00			4172.00	
Hydraulic tool	5.00			4177.00	
Jars	5.00			4182.00	
Safety Joint	3.00			4185.00	
Packer	5.00			4190.00	28.00 Bottom Of Top Packer
Packer	4.00			4194.00	
Stubb	1.00			4195.00	
Perforations	1.00			4196.00	
Recorder	0.00	8846	Inside	4196.00	
Recorder	0.00	8737	Outside	4196.00	
Bullnose	5.00			4201.00	7.00 Bottom Packers & Anchor

**Total Tool Length: 35.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane,KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57456

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.08.26 @ 20:04:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.92 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mcw 5%m 95%w	0.025
1008.00	mcw 10%m 90%w	13.065
126.00	mcw 30%m 70%w	1.767

Total Length: 1139.00 ft      Total Volume: 14.857 bbl

Num Fluid Samples: 0

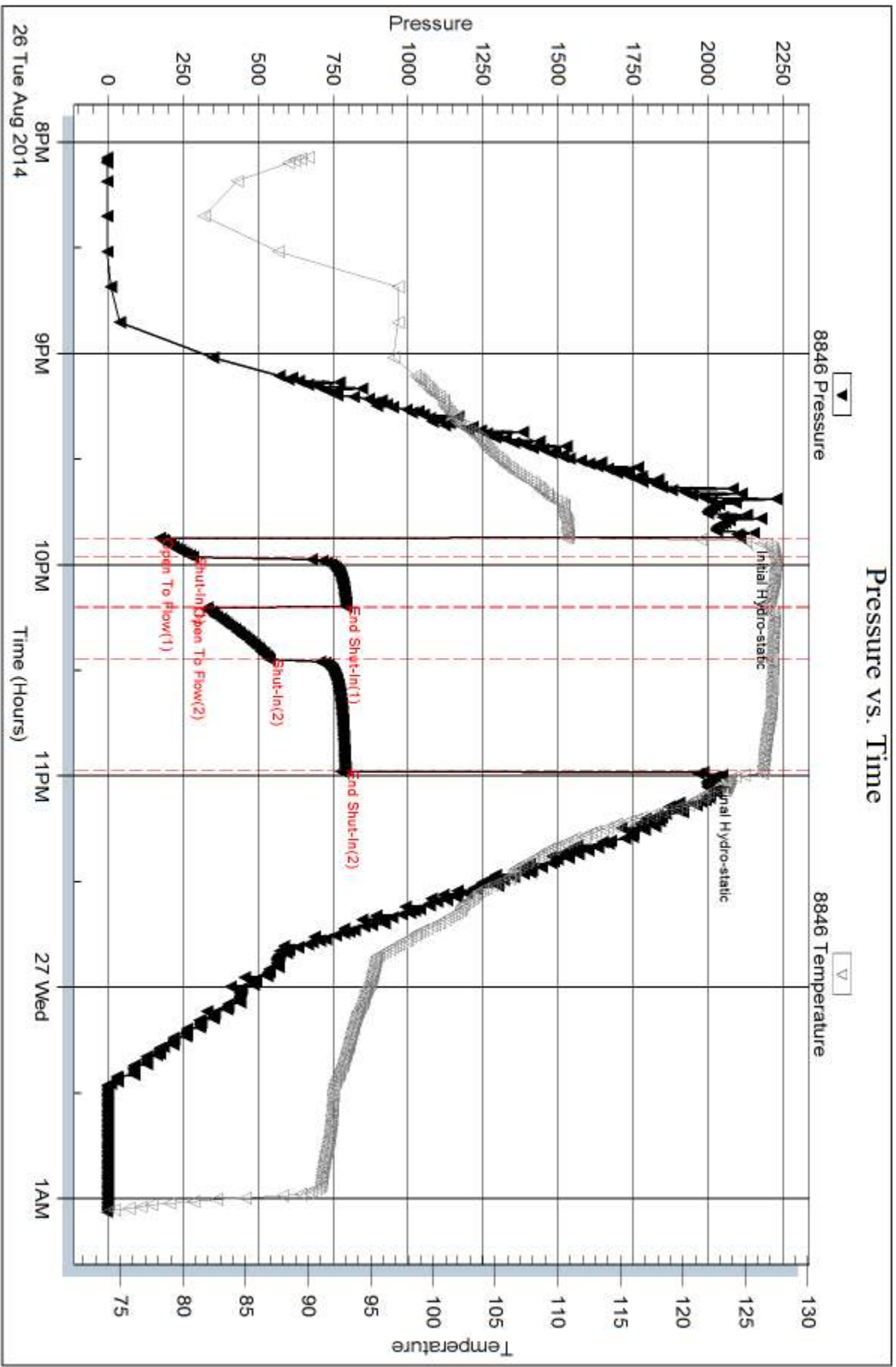
Num Gas Bombs: 0

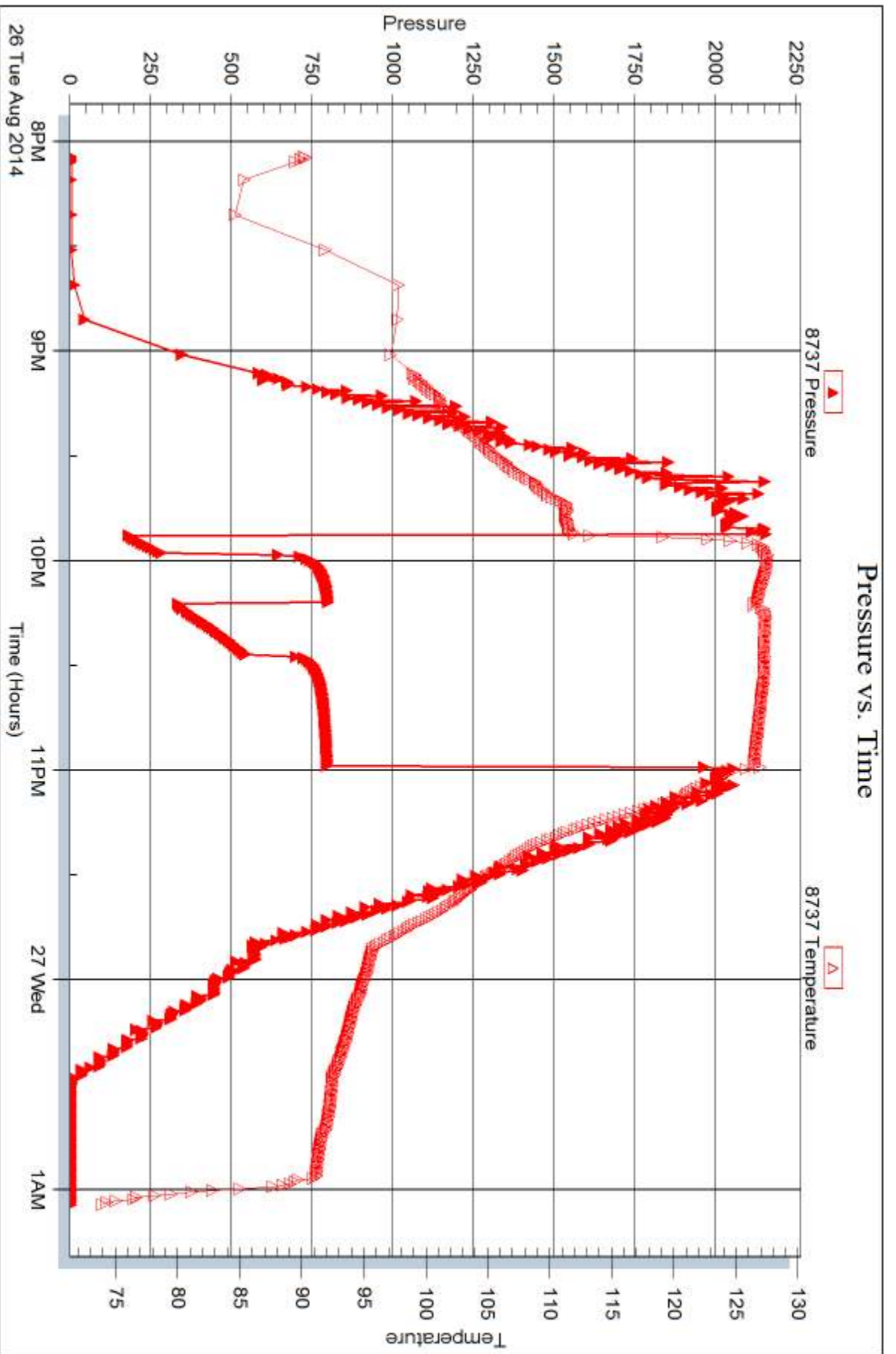
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API RW .37 @ 72 temp =19000







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.27 @ 10:34:00

End Date: 2014.08.27 @ 15:57:15

Job Ticket #: 57457                      DST #: 4

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

Printed: 2014.09.04 @ 08:32:42



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57457

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.08.27 @ 10:34:00

## GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:22:00

Time Test Ended: 15:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Justin Harris

Unit No: 65

**Interval: 4217.00 ft (KB) To 4233.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4233.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: 81.11 psig @ 4228.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.27

End Date:

2014.08.27

Last Calib.:

2014.08.27

Start Time:

10:34:15

End Time:

15:57:15

Time On Btm:

2014.08.27 @ 12:21:30

Time Off Btm:

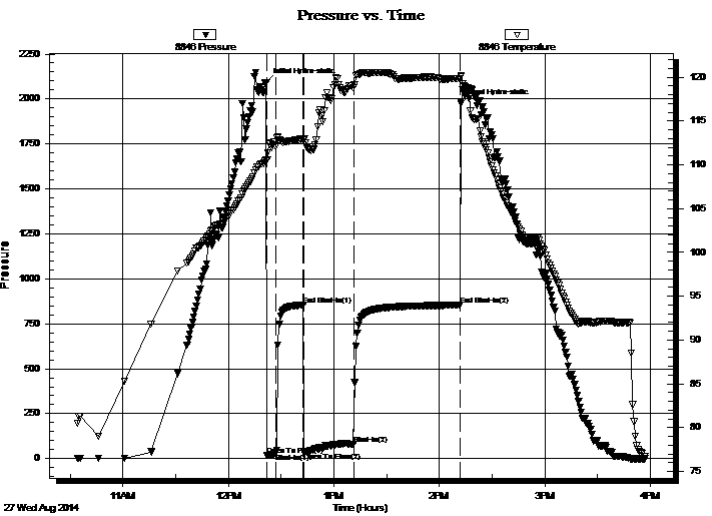
2014.08.27 @ 14:12:15

TEST COMMENT: 05: Weak blow build to 1".

15: No Return.

15: Weak blow build to 1 1/2".

30: No Return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2090.31	110.62	Initial Hydro-static
1	16.94	110.57	Open To Flow (1)
6	29.46	112.10	Shut-In(1)
21	854.97	113.01	End Shut-In(1)
22	33.07	112.82	Open To Flow (2)
50	81.11	118.83	Shut-In(2)
111	854.07	119.85	End Shut-In(2)
111	1972.95	120.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
151.00	mcw 40% m 60% w	1.00

\* Recovery from multiple tests

## Gas Rates

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



# DRILL STEM TEST REPORT

Larson Engineering, INC.

16-18s-29w Lane, KS

562 W State RD4  
Olmitz KS 67564

Rhonda #1-16

Job Ticket: 57457

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.08.27 @ 10:34:00

## GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:22:00

Time Test Ended: 15:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Justin Harris

Unit No: 65

Interval: **4217.00 ft (KB) To 4233.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4233.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4228.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.27

End Date: 2014.08.27

Last Calib.: 2014.08.27

Start Time: 10:34:15

End Time: 15:57:30

Time On Btm:

Time Off Btm:

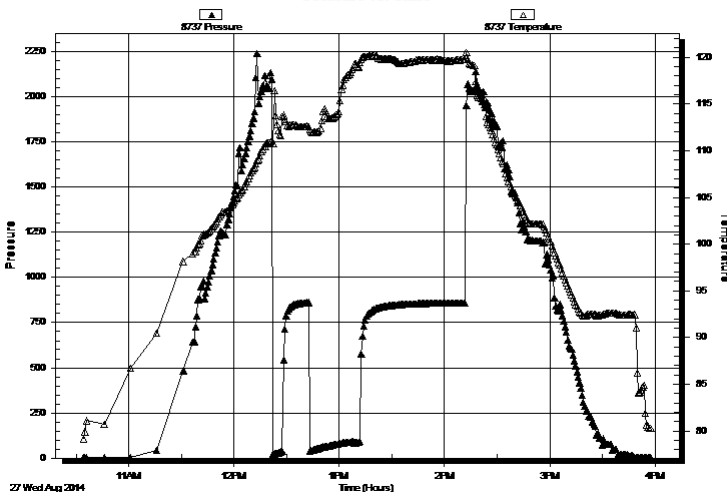
TEST COMMENT: 05: Weak blow build to 1".

15: No Return.

15: Weak blow build to 1 1/2".

30: No Return.

Pressure vs. Time



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
151.00	mcw 40% m 60% w	1.00

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57457

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.08.27 @ 10:34:00

## Tool Information

Drill Pipe:	Length: 4076.00 ft	Diameter: 3.80 inches	Volume: 57.18 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.78 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4217.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	44.00 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			4190.00	
Shut In Tool	5.00			4195.00	
Hydraulic tool	5.00			4200.00	
Jars	5.00			4205.00	
Safety Joint	3.00			4208.00	
Packer	5.00			4213.00	28.00 Bottom Of Top Packer
Packer	4.00			4217.00	
Stubb	1.00			4218.00	
Perforations	10.00			4228.00	
Recorder	0.00	8846	Inside	4228.00	
Recorder	0.00	8737	Outside	4228.00	
Bullnose	5.00			4233.00	16.00 Bottom Packers & Anchor

**Total Tool Length: 44.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 57457

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.08.27 @ 10:34:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

16000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.93 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
151.00	mcw 40%m 60%w	0.998

Total Length: 151.00 ft

Total Volume: 0.998 bbl

Num Fluid Samples: 0

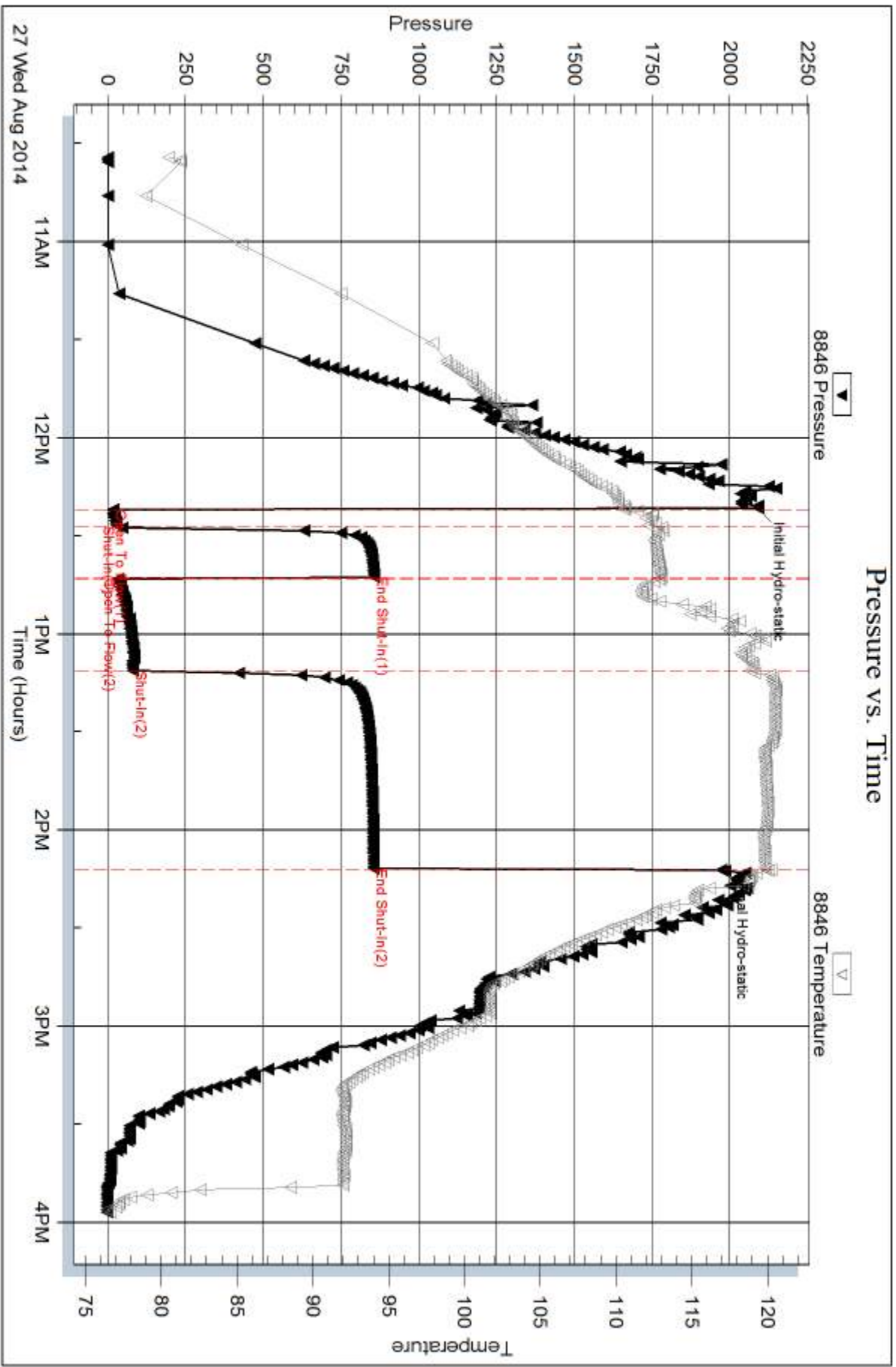
Num Gas Bombs: 0

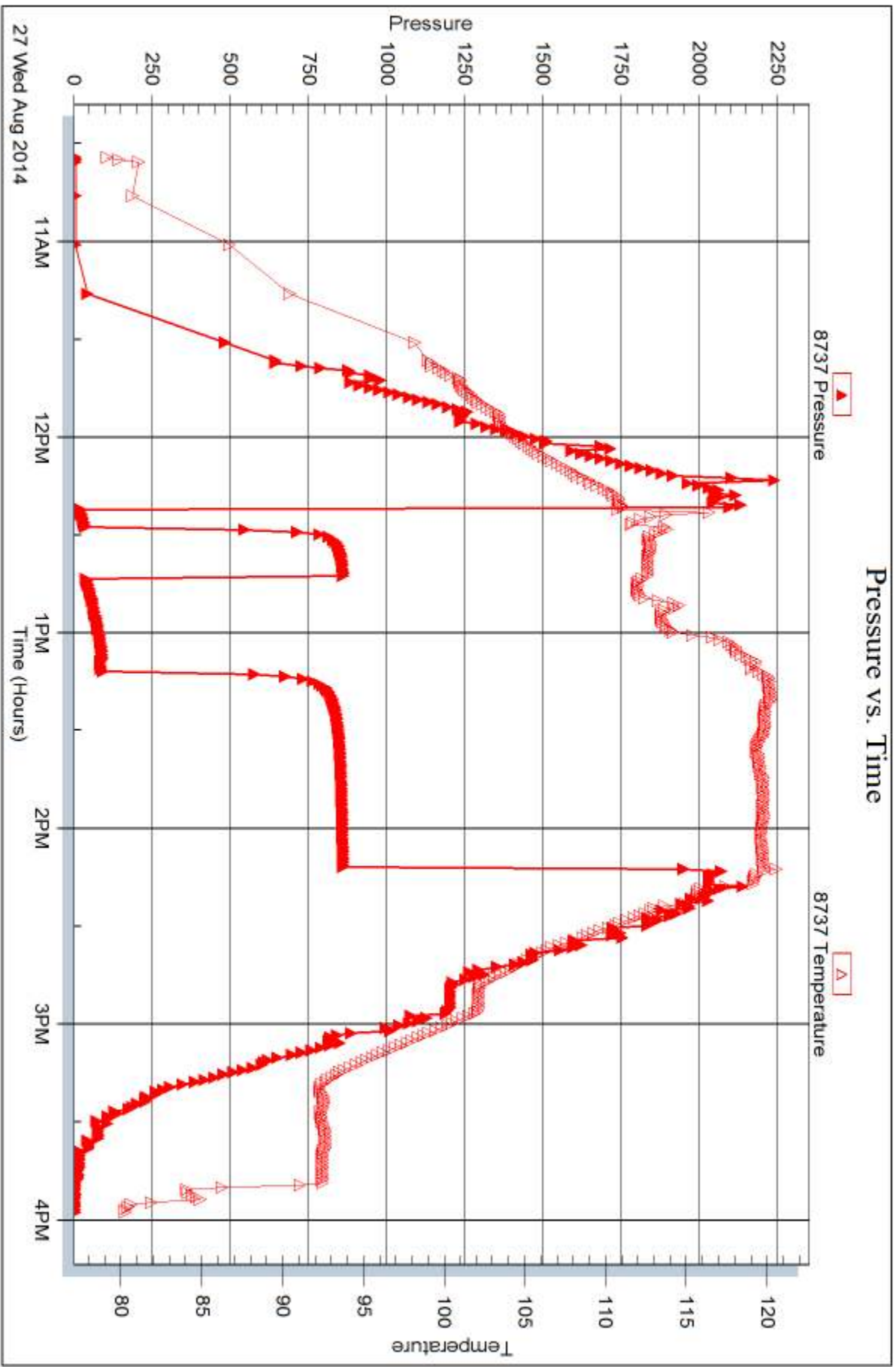
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.28 @ 04:25:00

End Date: 2014.08.28 @ 09:06:15

Job Ticket #: 59120                      DST #: 5

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

Printed: 2014.09.04 @ 08:32:12



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 04:25:00

## GENERAL INFORMATION:

Formation: **LKC L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:24:45

Time Test Ended: 09:06:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4257.00 ft (KB) To 4275.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4275.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846 Inside**

Press@RunDepth: 15.84 psig @ 4270.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.28

End Date:

2014.08.28

Last Calib.:

2014.08.28

Start Time: 04:25:15

End Time:

09:06:15

Time On Btm:

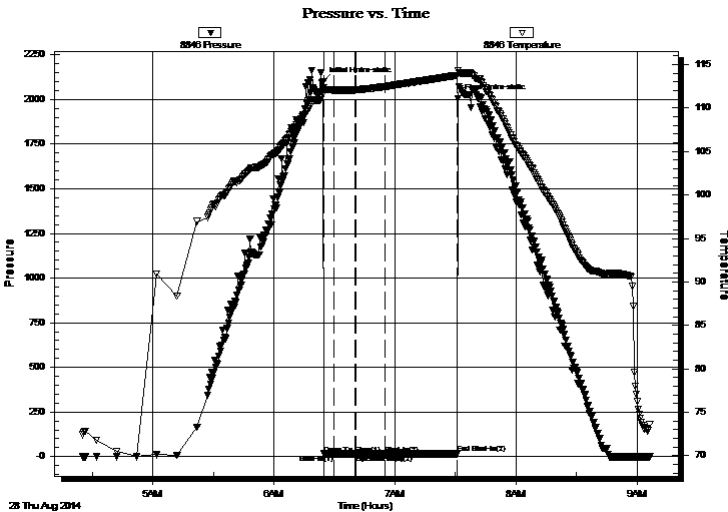
2014.08.28 @ 06:24:30

Time Off Btm:

2014.08.28 @ 07:31:15

TEST COMMENT: 05: Weak surface blow .  
15: No Return.  
15: No Blow .  
30: No Return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2100.07	112.27	Initial Hydro-static
1	15.08	111.74	Open To Flow (1)
6	15.38	112.07	Shut-In(1)
16	15.60	112.08	End Shut-In(1)
16	15.61	112.09	Open To Flow (2)
31	15.84	112.47	Shut-In(2)
67	16.50	113.78	End Shut-In(2)
67	2006.83	114.33	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 04:25:00

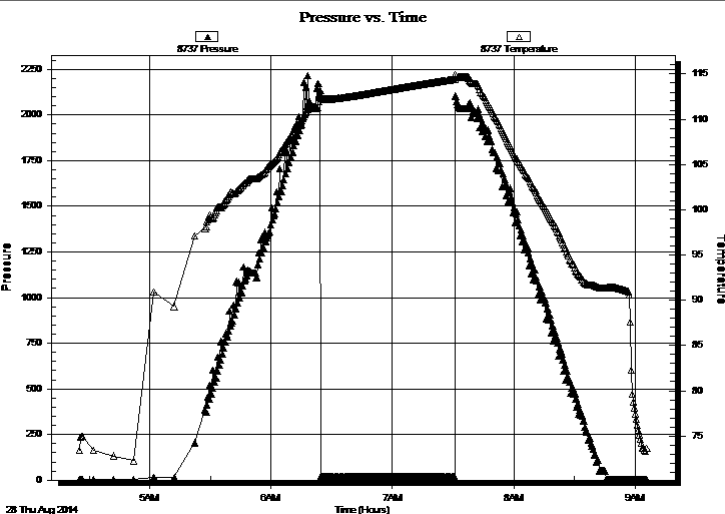
## GENERAL INFORMATION:

Formation: <b>LKC L</b>		
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 06:24:45		Tester: Mike Roberts
Time Test Ended: 09:06:15		Unit No: 65
<b>Interval: 4257.00 ft (KB) To 4275.00 ft (KB) (TVD)</b>		Reference Elevations: 2820.00 ft (KB)
Total Depth: 4275.00 ft (KB) (TVD)		2814.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Poor	KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4270.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.08.28	End Date: 2014.08.28
Start Time: 04:25:15	End Time: 09:06:00
	Last Calib.: 2014.08.28
	Time On Btm:
	Time Off Btm:

TEST COMMENT: 05: Weak surface blow .  
15: No Return.  
15: No Blow .  
30: No Return.



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 04:25:00

## Tool Information

Drill Pipe:	Length: 4110.00 ft	Diameter: 3.80 inches	Volume: 57.65 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial	54000.00 lb
Depth to Top Packer:	4257.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	46.00 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			4230.00	
Shut In Tool	5.00			4235.00	
Hydraulic tool	5.00			4240.00	
Jars	5.00			4245.00	
Safety Joint	3.00			4248.00	
Packer	5.00			4253.00	28.00 Bottom Of Top Packer
Packer	4.00			4257.00	
Stubb	1.00			4258.00	
Perforations	12.00			4270.00	
Recorder	0.00	8846	Inside	4270.00	
Recorder	0.00	8737	Outside	4270.00	
Bullnose	5.00			4275.00	18.00 Bottom Packers & Anchor

**Total Tool Length: 46.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 04:25:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.32 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

#### Recovery Table

Length ft	Description	Volume bbl
1.00	mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl

Num Fluid Samples: 0

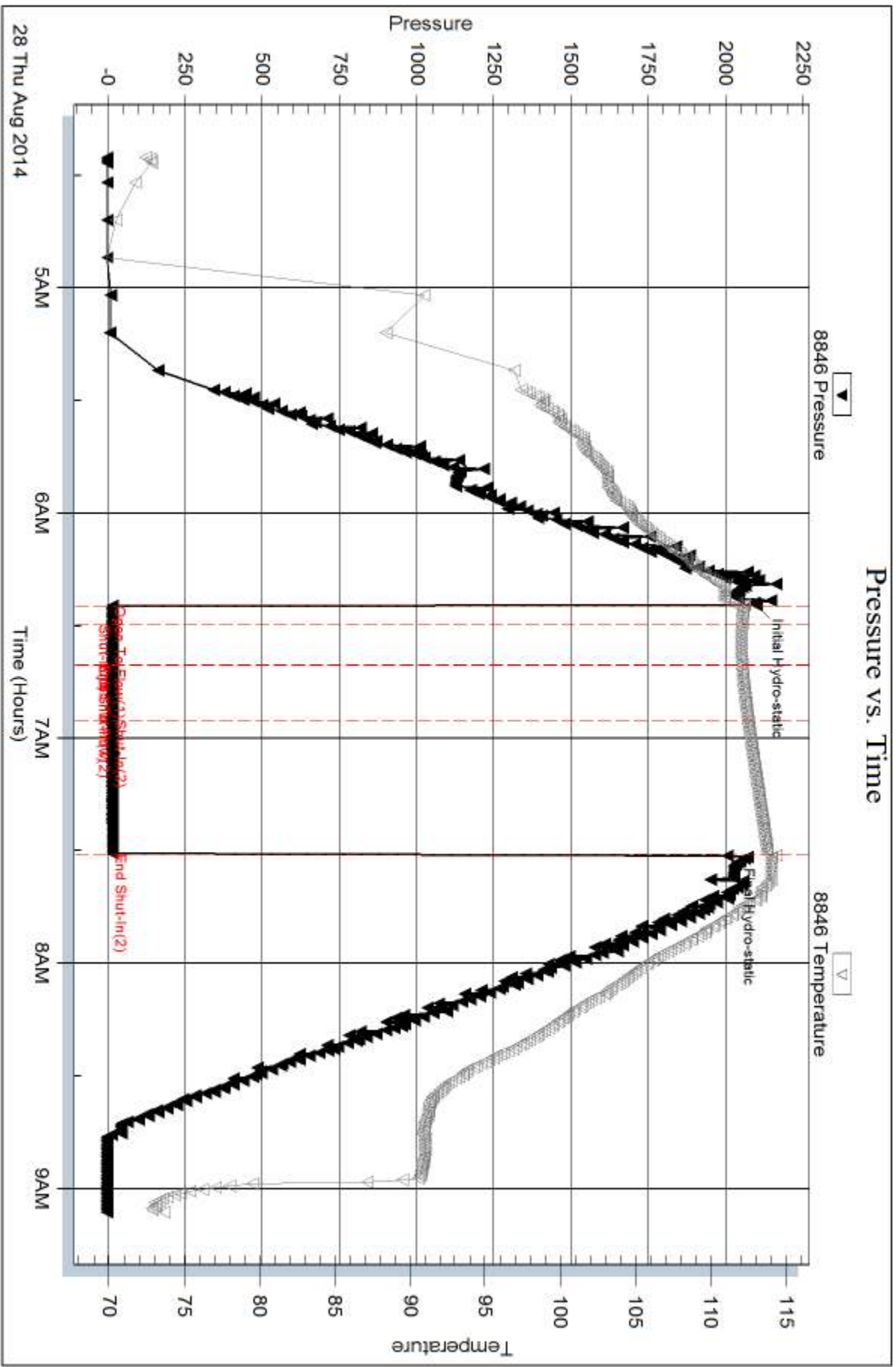
Num Gas Bombs: 0

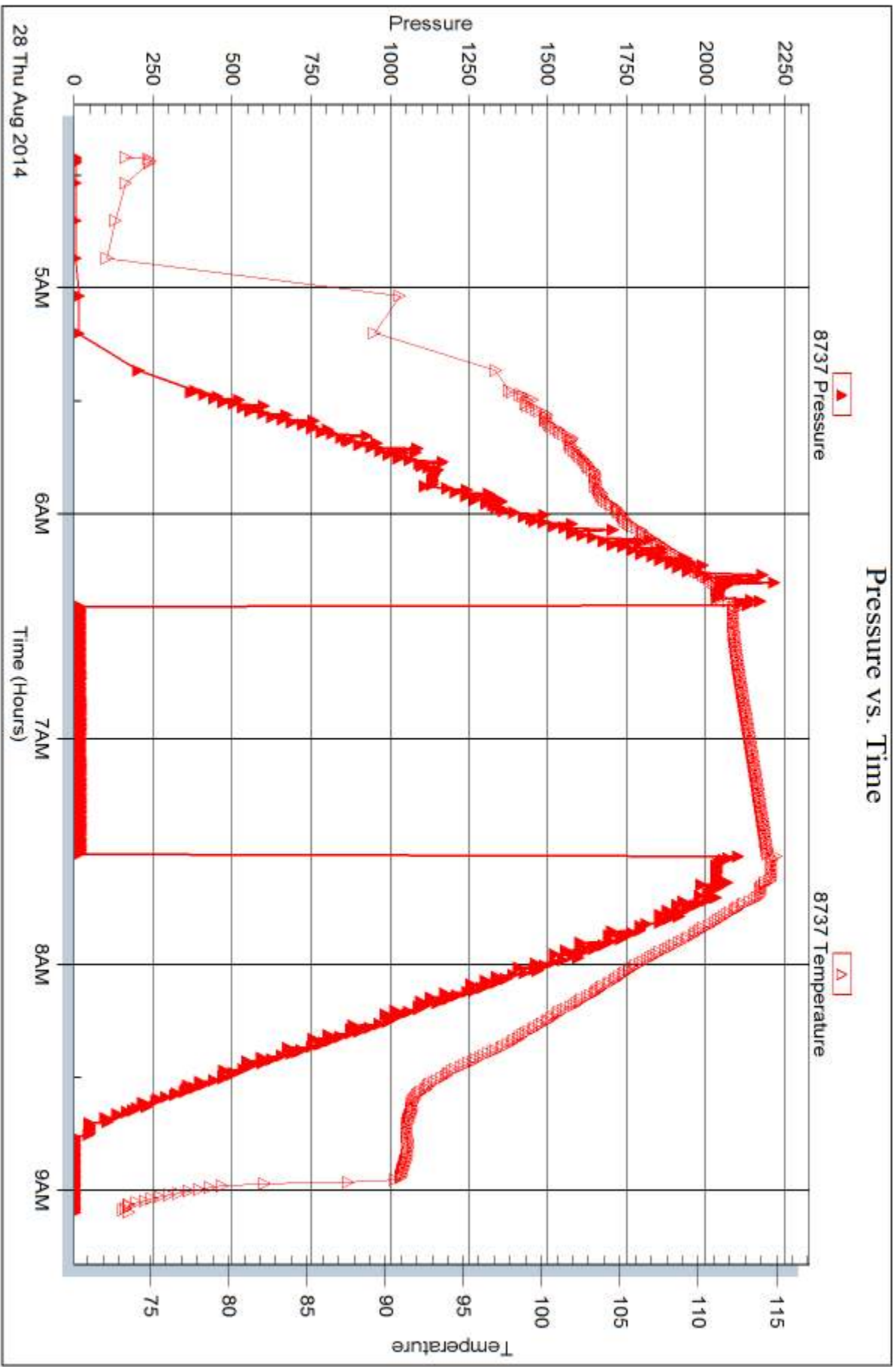
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.28 @ 00:10:15

End Date: 2014.08.28 @ 06:28:15

Job Ticket #: 59120                      DST #: 6

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

Printed: 2014.09.04 @ 08:31:47



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 00:10:15

## GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:30:00

Time Test Ended: 06:28:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4300.00 ft (KB) To 4342.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4342.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846 Inside**

Press@RunDepth: 61.00 psig @ 4304.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.28

End Date: 2014.08.28

Last Calib.: 2014.08.29

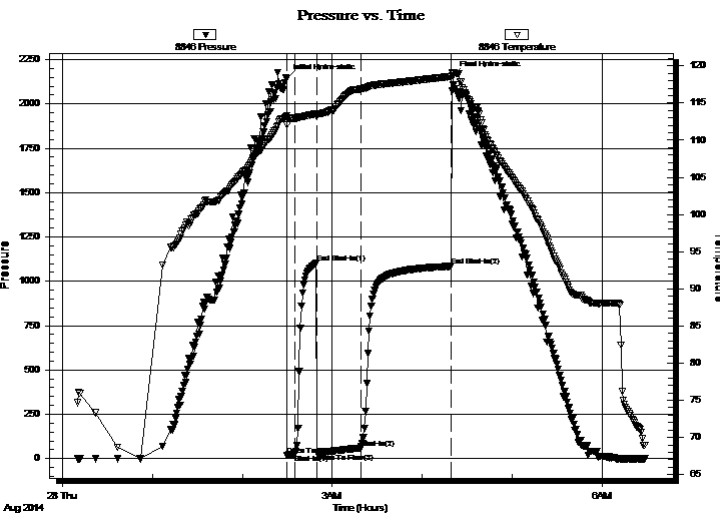
Start Time: 00:10:15

End Time: 06:28:15

Time On Btm: 2014.08.28 @ 02:29:45

Time Off Btm: 2014.08.28 @ 04:20:15

TEST COMMENT: IF: Built to 1/2" blow  
IS: No return blow  
FF: Built to 4" blow  
FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2143.28	113.27	Initial Hydro-static
1	19.59	112.06	Open To Flow (1)
6	27.07	112.96	Shut-In(1)
20	1100.86	113.62	End Shut-In(1)
20	31.74	113.17	Open To Flow (2)
50	61.00	116.87	Shut-In(2)
110	1085.04	118.59	End Shut-In(2)
111	2157.76	119.13	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
40.00	free oil	0.20
32.00	ocm 10%o 90%m	0.16

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

**DRILL STEM TEST REPORT**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 00:10:15

**GENERAL INFORMATION:**

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:30:00

Time Test Ended: 06:28:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4300.00 ft (KB) To 4342.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4342.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4304.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.28

End Date: 2014.08.28

Last Calib.: 1899.12.30

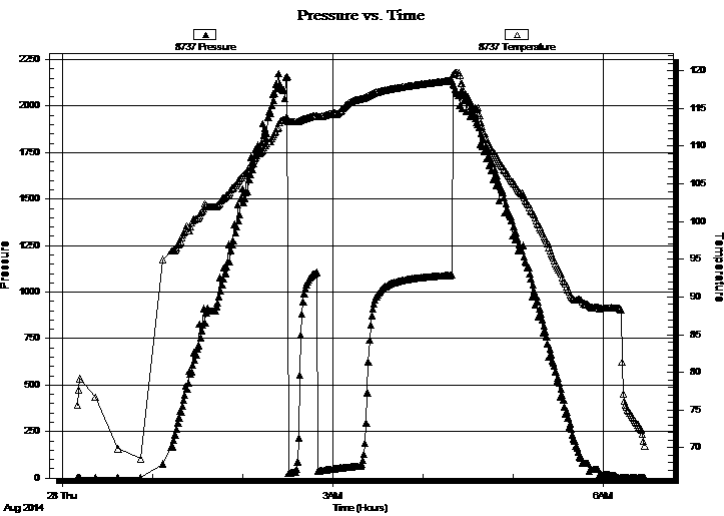
Start Time: 00:10:15

End Time: 06:28:00

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF:Built to 1/2" blow  
IS:No return blow  
FF:Built to 4" blow  
FS:No return blow



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
40.00	free oil	0.20
32.00	ocm 10%o 90%m	0.16

**Gas Rates**

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 00:10:15

## Tool Information

Drill Pipe:	Length: 4170.00 ft	Diameter: 3.80 inches	Volume: 58.49 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4300.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	42.00 ft				
Tool Length:	70.00 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			4273.00	
Shut In Tool	5.00			4278.00	
Hydraulic tool	5.00			4283.00	
Jars	5.00			4288.00	
Safety Joint	3.00			4291.00	
Packer	5.00			4296.00	28.00 Bottom Of Top Packer
Packer	4.00			4300.00	
Stubb	1.00			4301.00	
Perforations	3.00			4304.00	
Recorder	0.00	8846	Inside	4304.00	
Recorder	0.00	8737	Outside	4304.00	
Change Over Sub	1.00			4305.00	
Blank Spacing	31.00			4336.00	
Change Over Sub	1.00			4337.00	
Bullnose	5.00			4342.00	42.00 Bottom Packers & Anchor

**Total Tool Length: 70.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59120

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.08.28 @ 00:10:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
40.00	free oil	0.197
32.00	ocm 10%o 90%m	0.157

Total Length: 72.00 ft      Total Volume: 0.354 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

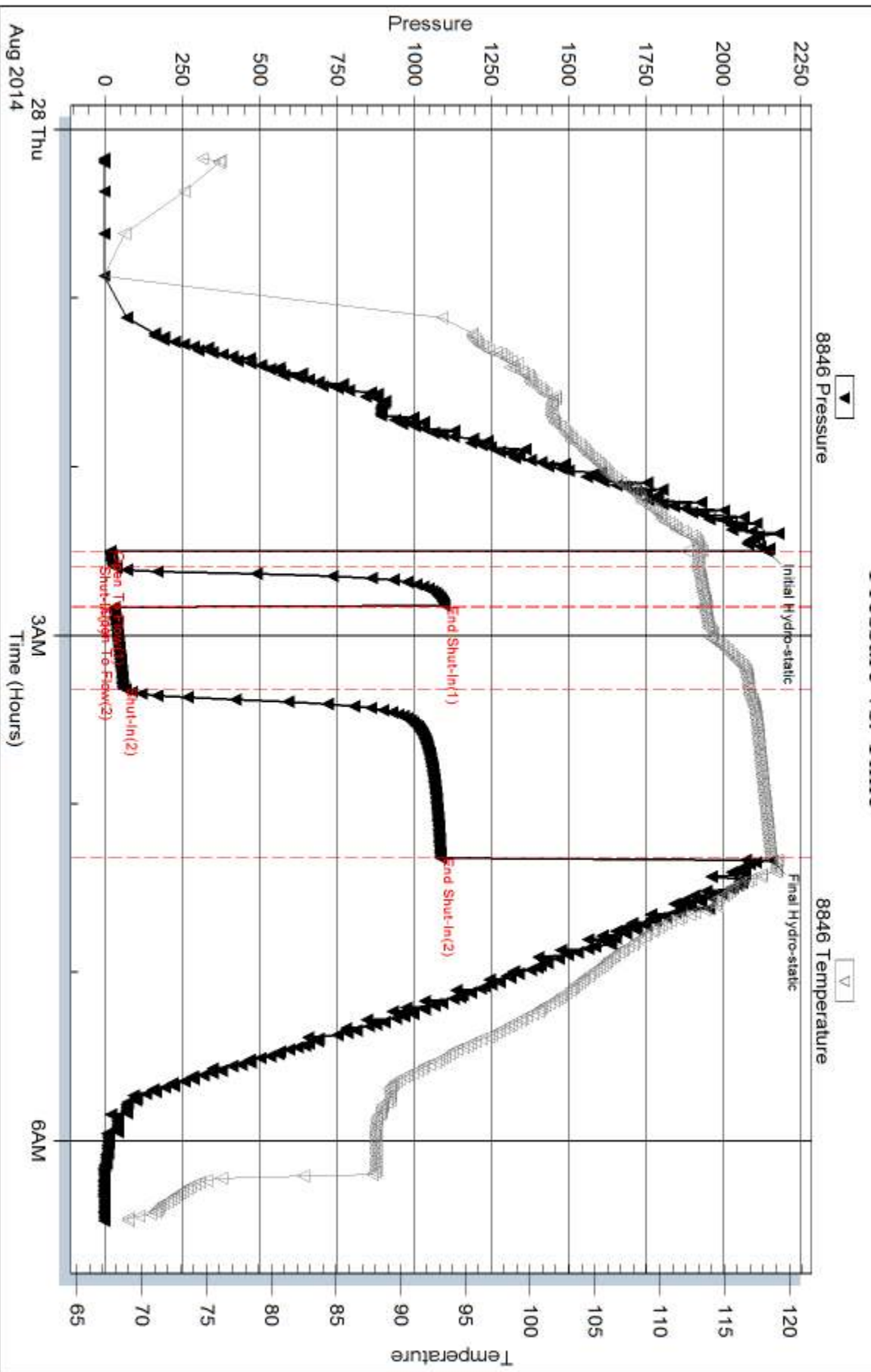
Laboratory Name:

Laboratory Location:

Recovery Comments: API= 33@80 corrected to 31 @ 60



### Pressure vs. Time

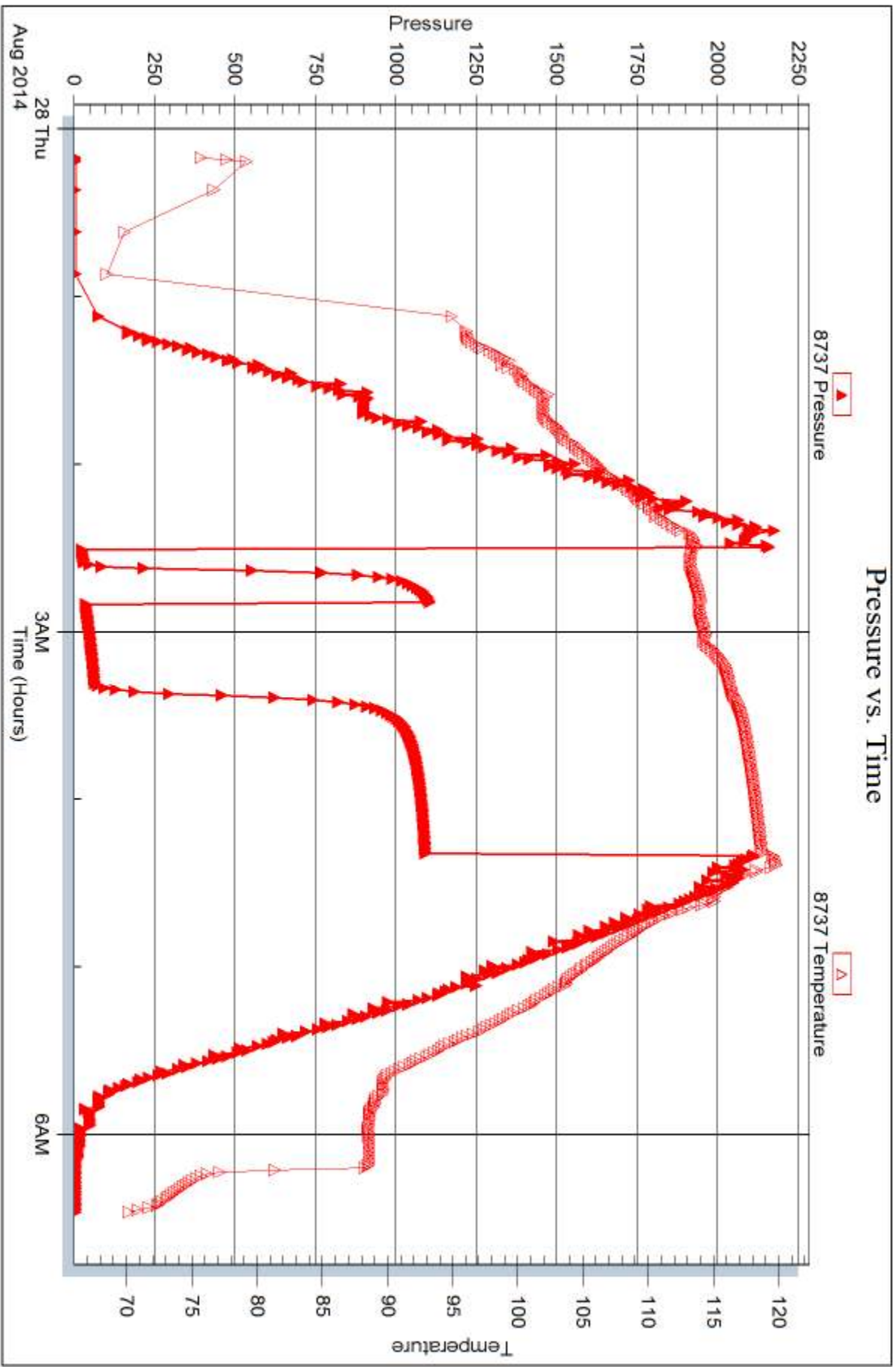


Serial #: 8737

Outside Larson Engineering, INC.

Rhonda #1-16

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 59120

Printed: 2014.09.04 @ 08:31:48



## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.29 @ 17:09:15

End Date: 2014.08.29 @ 21:05:00

Job Ticket #: 59121                      DST #: 7

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

Printed: 2014.09.04 @ 08:31:23



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59121

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 17:09:15

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 21:05:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4341.00 ft (KB) To 4390.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846** Inside

Press@RunDepth: psig @ 4352.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.29

End Date:

2014.08.29

Last Calib.:

2014.08.29

Start Time: 17:09:15

End Time:

21:05:00

Time On Btm:

2014.08.29 @ 18:51:45

Time Off Btm:

2014.08.29 @ 19:01:00

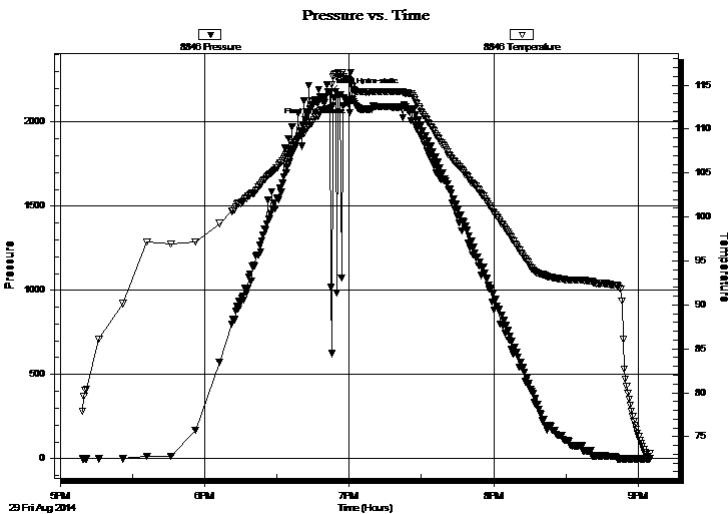
TEST COMMENT: IF:PACKER FAILURE

IS:

FF:

FS:

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2177.51	112.20	Initial Hydro-static
10	2136.19	114.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
339.00	mud 100 % m	3.63

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59121

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 17:09:15

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 21:05:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4341.00 ft (KB) To 4390.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4352.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.29

End Date:

2014.08.29

Last Calib.:

2014.08.29

Start Time:

17:09:15

End Time:

21:04:45

Time On Btm:

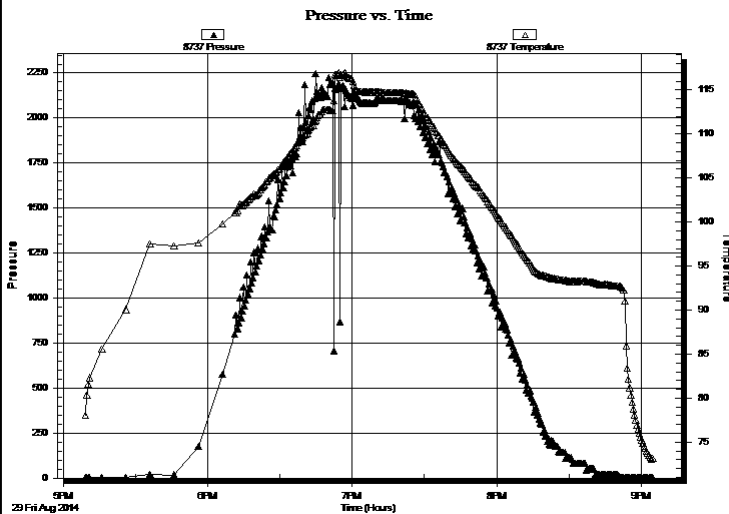
Time Off Btm:

TEST COMMENT: IF:PACKER FAILURE

IS:

FF:

FS:



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
339.00	mud 100 % m	3.63

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59121

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 17:09:15

## Tool Information

Drill Pipe:	Length: 4202.00 ft	Diameter: 3.80 inches	Volume: 58.94 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 59.54 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	lb
Depth to Top Packer:	4341.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	73.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4318.00	
Shut In Tool	5.00			4323.00	
Hydraulic tool	5.00			4328.00	
Jars	5.00			4333.00	
Safety Joint	3.00			4336.00	
Packer	5.00			4341.00	24.00 Bottom Of Top Packer
Packer - Shale	0.00			4341.00	
Stubb	1.00			4342.00	
Perforations	10.00			4352.00	
Recorder	0.00	8846	Inside	4352.00	
Recorder	0.00	8737	Outside	4352.00	
Change Over Sub	1.00			4353.00	
Blank Spacing	31.00			4384.00	
Change Over Sub	1.00			4385.00	
Bullnose	5.00			4390.00	49.00 Anchor Tool

**Total Tool Length: 73.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59121

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 17:09:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
339.00	mud 100 % m	3.635

Total Length: 339.00 ft      Total Volume: 3.635 bbl

Num Fluid Samples: 0

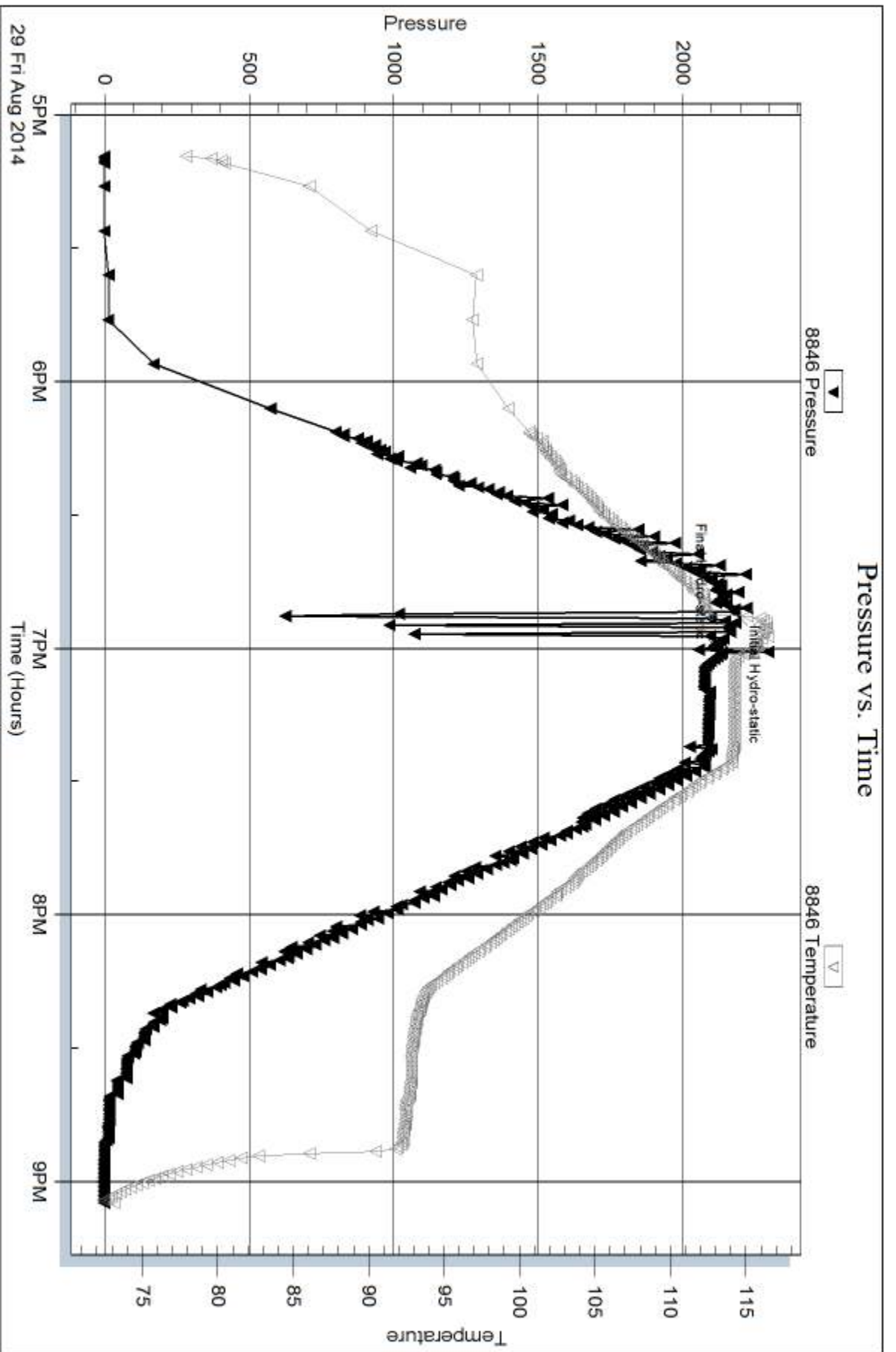
Num Gas Bombs: 0

Serial #:

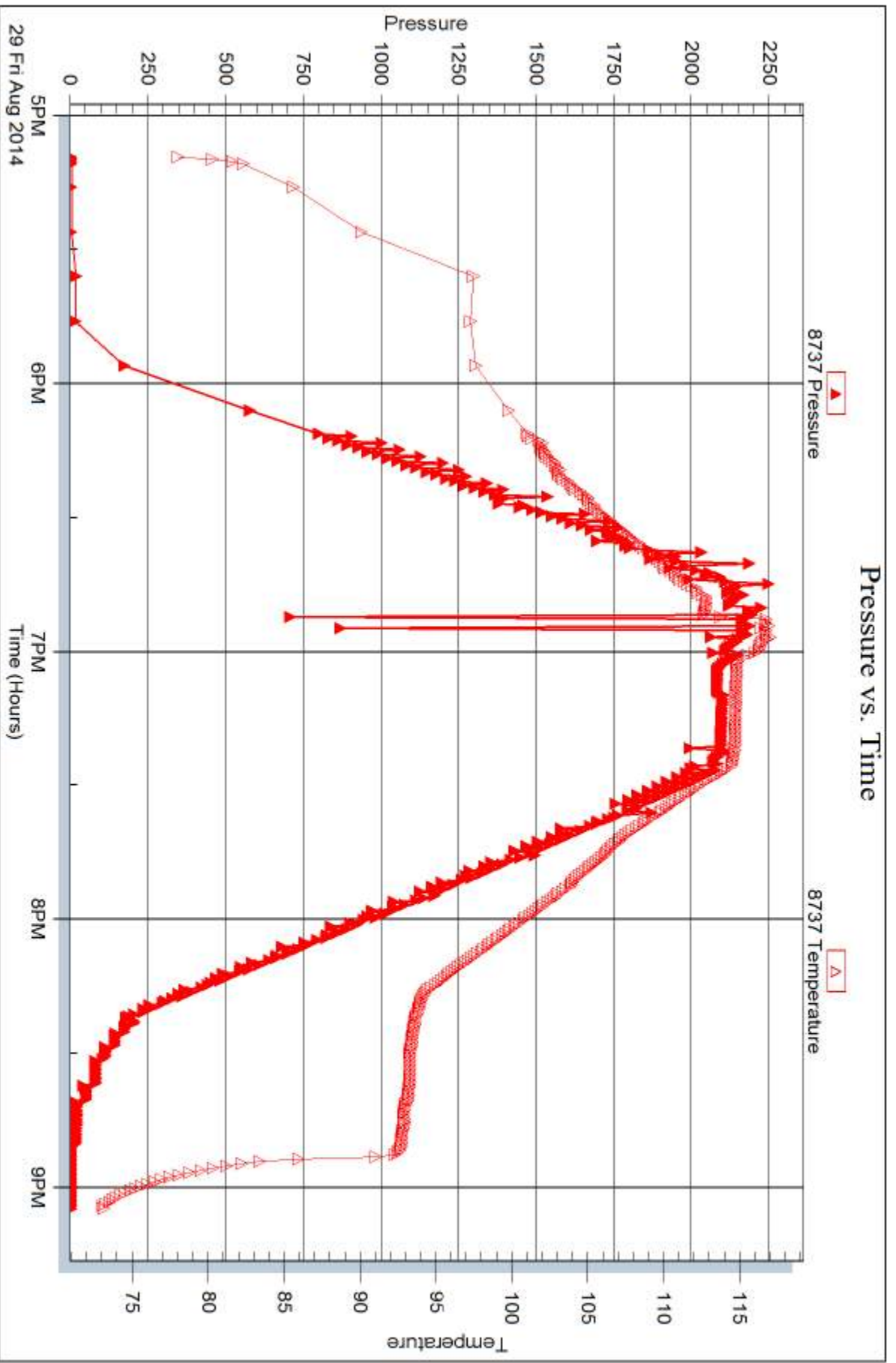
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.29 @ 21:41:15

End Date: 2014.08.30 @ 02:49:45

Job Ticket #: 59122                      DST #: 8

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

Printed: 2014.09.04 @ 08:30:52



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59122

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 21:41:15

## GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:15:15

Time Test Ended: 02:49:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4302.00 ft (KB) To 4390.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: 96.35 psig @ 4305.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.29

End Date: 2014.08.30

Last Calib.: 2014.08.30

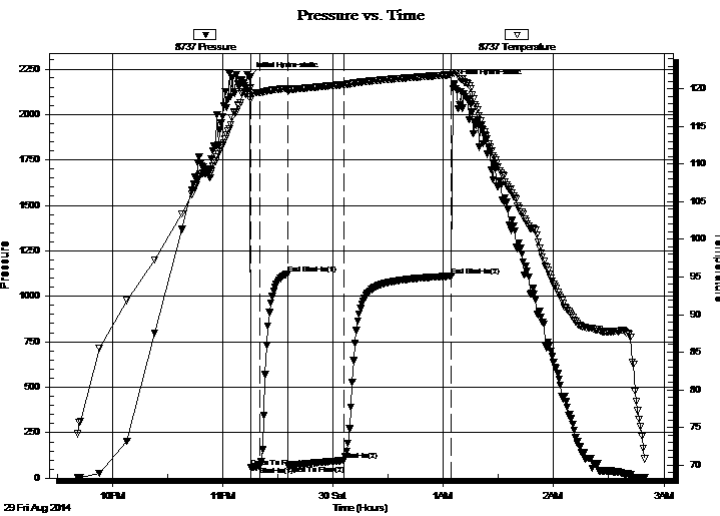
Start Time: 21:41:15

End Time: 02:49:45

Time On Btm: 2014.08.29 @ 23:15:00

Time Off Btm: 2014.08.30 @ 01:05:45

TEST COMMENT: IF: Built to 1/2" blow  
IS: No return blow  
FF: Built to 4 1/2" blow  
FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2205.86	120.10	Initial Hydro-static
1	56.79	118.52	Open To Flow (1)
5	64.28	119.49	Shut-In(1)
21	1123.59	120.06	End Shut-In(1)
21	68.93	119.67	Open To Flow (2)
51	96.35	120.54	Shut-In(2)
110	1111.46	121.86	End Shut-In(2)
111	2170.20	122.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
40.00	free oil	0.20
40.00	ocm 5%o 95%m	0.20

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59122

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 21:41:15

## Tool Information

Drill Pipe:	Length: 4171.00 ft	Diameter: 3.80 inches	Volume: 58.51 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 59.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4302.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	112.00 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			4279.00	
Shut In Tool	5.00			4284.00	
Hydraulic tool	5.00			4289.00	
Jars	5.00			4294.00	
Safety Joint	3.00			4297.00	
Packer	5.00			4302.00	24.00 Bottom Of Top Packer
Packer - Shale	0.00			4302.00	
Stubb	1.00			4303.00	
Perforations	2.00			4305.00	
Recorder	0.00	8846	Inside	4305.00	
Recorder	0.00	8737	Outside	4305.00	
Change Over Sub	1.00			4306.00	
Blank Spacing	63.00			4369.00	
Change Over Sub	1.00			4370.00	
Perforations	15.00			4385.00	
Bullnose	5.00			4390.00	88.00 Anchor Tool
<b>Total Tool Length:</b>	<b>112.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59122

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.08.29 @ 21:41:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

31 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
40.00	free oil	0.197
40.00	ocm 5%o 95%m	0.197

Total Length: 80.00 ft      Total Volume: 0.394 bbl

Num Fluid Samples: 0

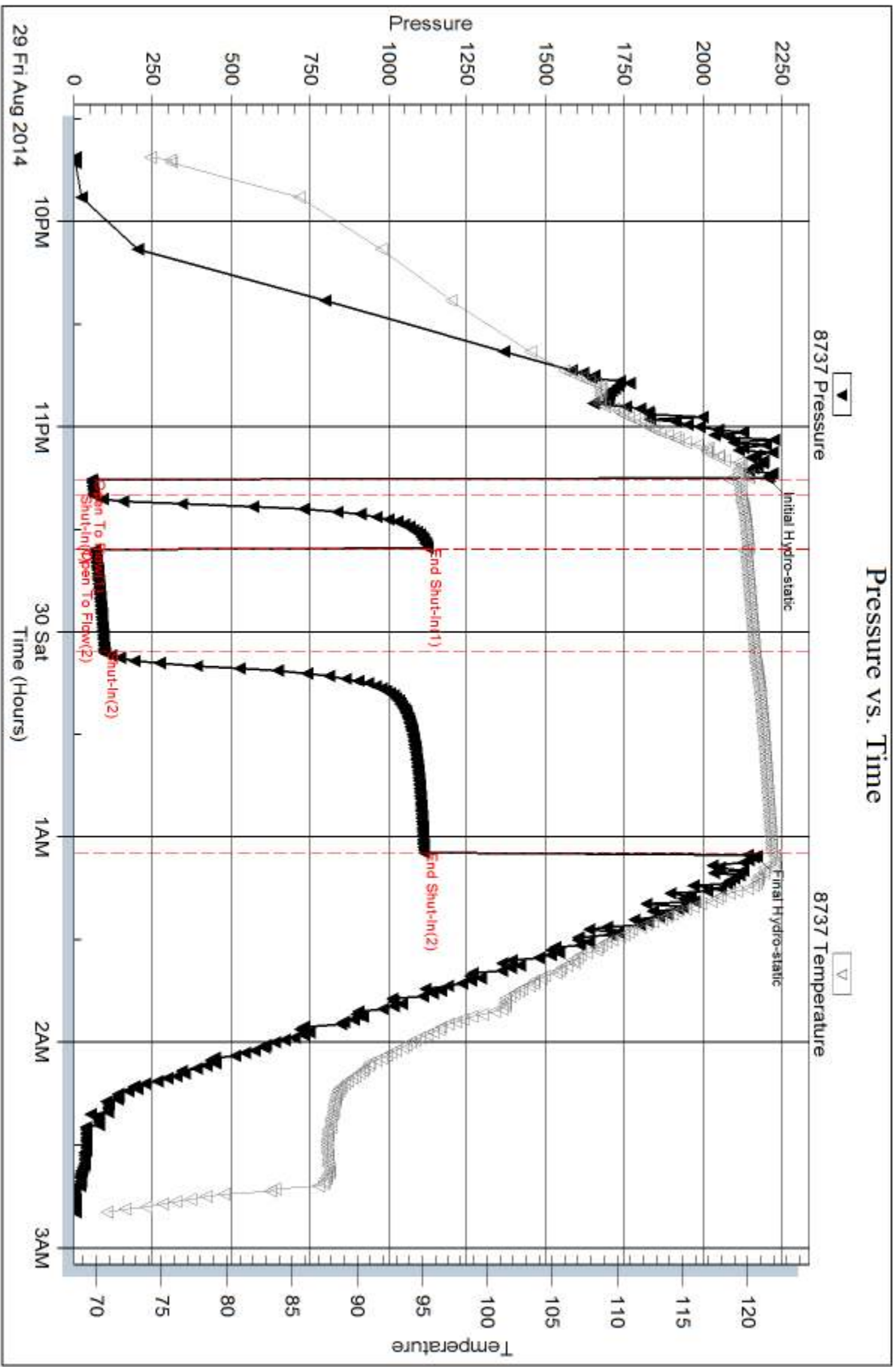
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API= 33@80 corrected to 31 @ 60





## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.30 @ 21:51:15

End Date: 2014.08.31 @ 01:03:30

Job Ticket #: 59123                      DST #: 9

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

Printed: 2014.09.04 @ 08:30:10



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59123

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.08.30 @ 21:51:15

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 01:03:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4435.00 ft (KB) To 4549.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4047.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846 Inside**

Press@RunDepth: psig @ 4438.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.30

End Date:

2014.08.31

Last Calib.: 2014.08.31

Start Time: 21:51:15

End Time:

01:03:30

Time On Btm: 2014.08.30 @ 23:22:15

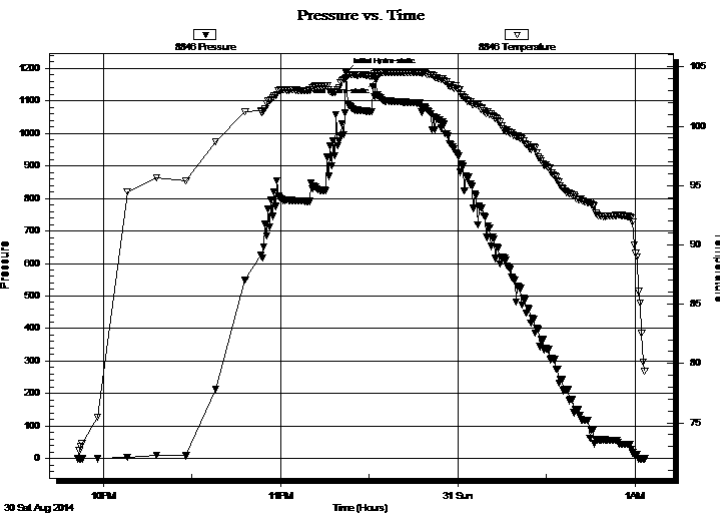
Time Off Btm: 2014.08.30 @ 23:32:15

TEST COMMENT: IF: LOOSE PIPE IN DERRICK

IS:

FF:

FS:



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1187.75	104.11	Initial Hydro-static
10	1164.36	104.51	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59123

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.08.30 @ 21:51:15

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 01:03:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4435.00 ft (KB) To 4549.00 ft (KB) (TVD)**

Total Depth: 4047.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2820.00 ft (KB)

2814.00 ft (CF)

KB to GR/CF: 6.00 ft

**Serial #: 8737** **Outside**

Press@RunDepth: psig @ 4438.00 ft (KB)

Start Date: 2014.08.30

End Date:

2014.08.31

Start Time: 21:51:15

End Time:

01:03:30

Capacity: 8000.00 psig

Last Calib.:

2014.08.31

Time On Btm:

Time Off Btm:

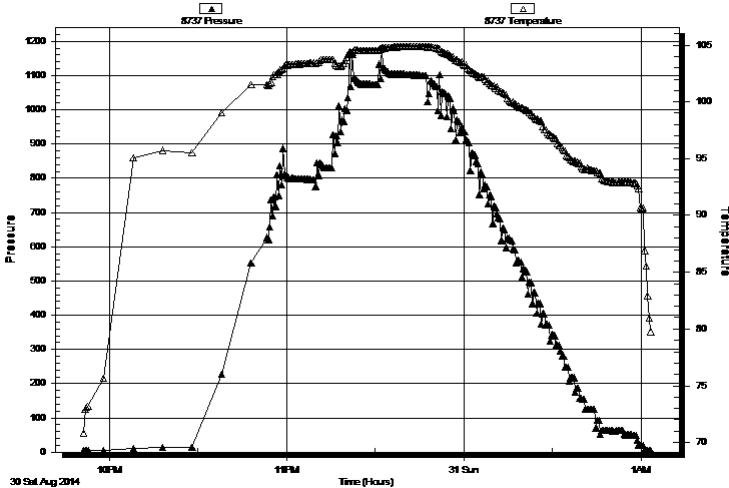
TEST COMMENT: IF: LOOSE PIPE IN DERRICK

IS:

FF:

FS:

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane,KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59123

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.08.30 @ 21:51:15

## Tool Information

Drill Pipe:	Length: 4296.00 ft	Diameter: 3.80 inches	Volume: 60.26 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 60.86 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	lb
Depth to Top Packer:	4435.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	114.00 ft				
Tool Length:	142.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Came out of hole on stand 42 derrick hand noticed that stands in the derrick was loose and didnt know if any was loose that was in the hole already due to crew change at 11 pm

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4408.00	
Shut In Tool	5.00			4413.00	
Hydraulic tool	5.00			4418.00	
Jars	5.00			4423.00	
Safety Joint	3.00			4426.00	
Packer	5.00			4431.00	28.00 Bottom Of Top Packer
Packer	4.00			4435.00	
Stubb	1.00			4436.00	
Perforations	2.00			4438.00	
Recorder	0.00	8846	Inside	4438.00	
Recorder	0.00	8737	Outside	4438.00	
Change Over Sub	1.00			4439.00	
Blank Spacing	94.00			4533.00	
Change Over Sub	1.00			4534.00	
Perforations	10.00			4544.00	
Bullnose	5.00			4549.00	114.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>142.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59123

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.08.30 @ 21:51:15

## 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: bbl

Water Loss: 7.33 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

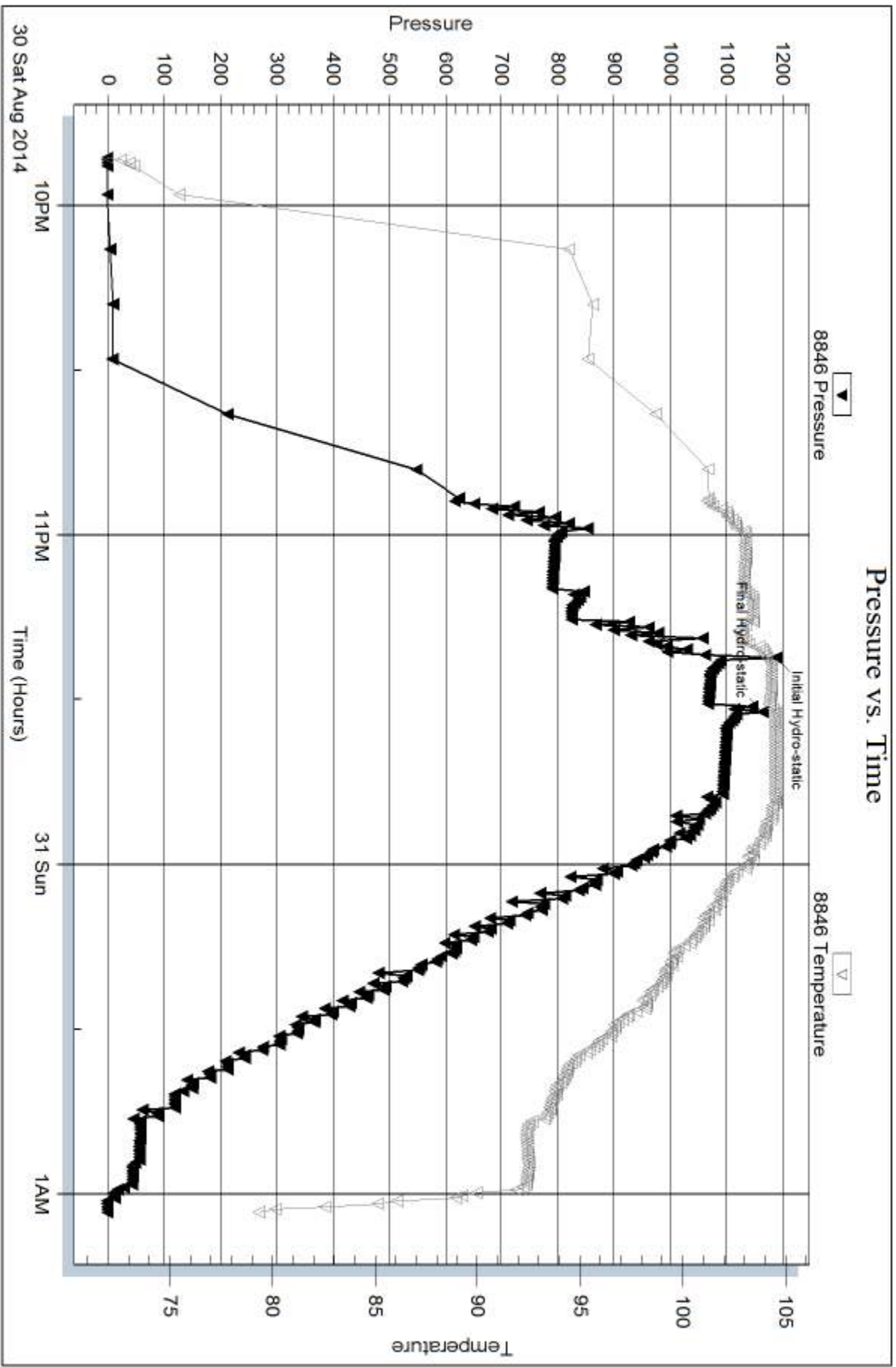
Length ft	Description	Volume bbl

Total Length: ft      Total Volume: bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments:

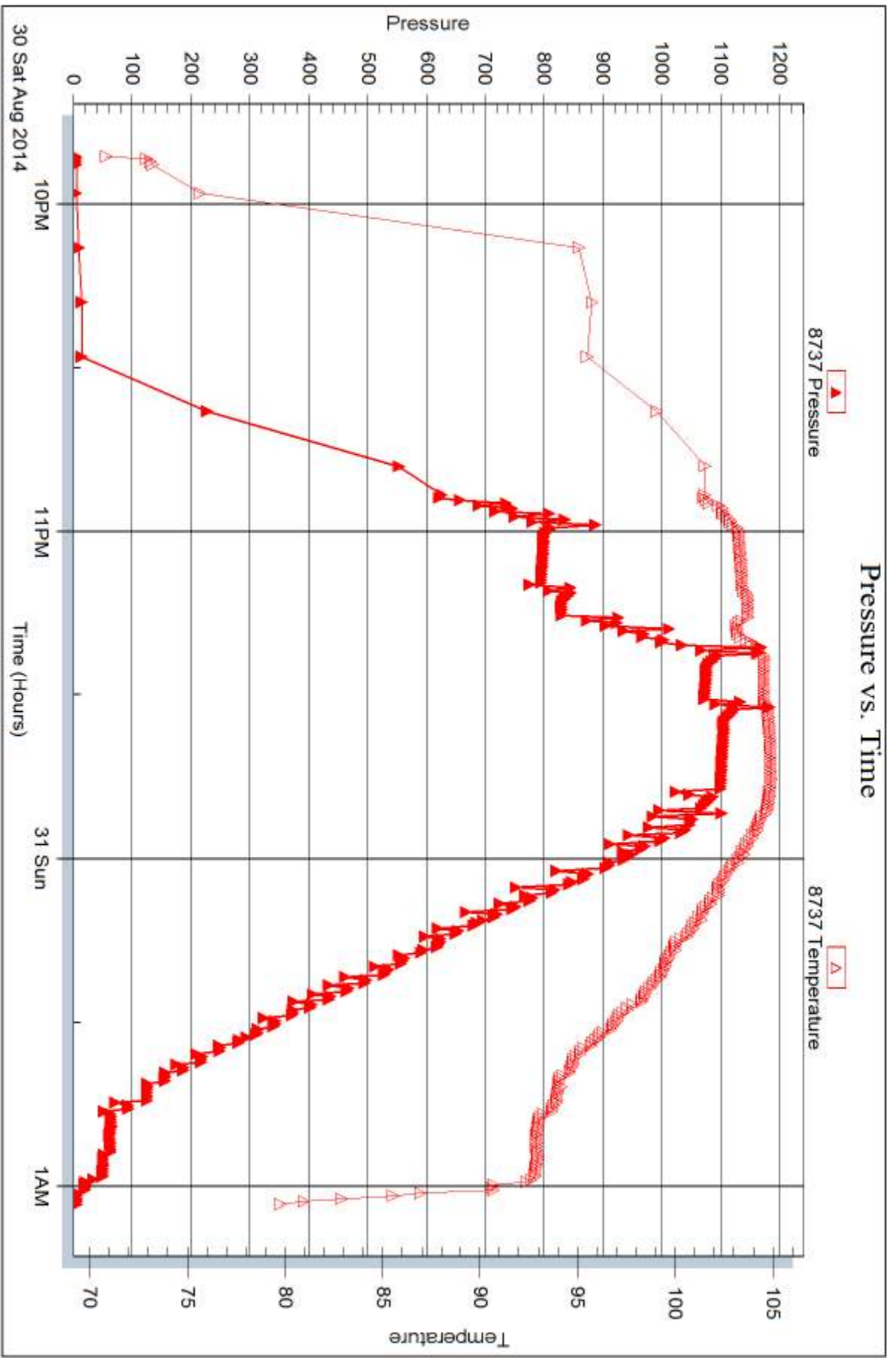


Serial #: 8737

Outside Larson Engineering, INC.

Rhonda #1-16

DST Test Number: 9



Trilobite Testing, Inc

Ref. No: 59123

Printed: 2014.09.04 @ 08:30:11



## DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, INC.**

562 W State RD4  
Olmitz KS 67564

ATTN: Vern Schrag

### **Rhonda #1-16**

#### **16-18s-29w Lane,KS**

Start Date: 2014.08.31 @ 01:17:15

End Date: 2014.08.31 @ 07:36:30

Job Ticket #: 59124                      DST #: 10

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

Printed: 2014.09.04 @ 08:29:37



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59124

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.08.31 @ 01:17:15

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:43:30

Time Test Ended: 07:36:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

**Interval: 4435.00 ft (KB) To 4549.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4539.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8846**

**Inside**

Press@RunDepth: 88.79 psig @ 4451.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.31

End Date:

2014.08.31

Last Calib.: 2014.08.31

Start Time: 01:17:15

End Time:

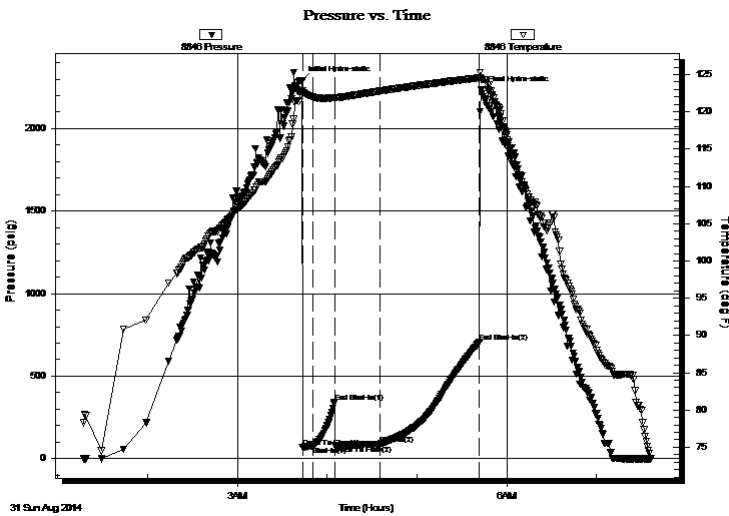
07:36:30

Time On Btm: 2014.08.31 @ 03:43:15

Time Off Btm: 2014.08.31 @ 05:42:45

TEST COMMENT: IF: Built to 1" blow  
IS: No return blow  
FF: Built to 1 1/2" blow  
FS: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2292.60	122.87	Initial Hydro-static
1	68.38	122.42	Open To Flow (1)
7	75.63	122.00	Shut-In(1)
22	342.04	121.93	End Shut-In(1)
22	81.07	121.80	Open To Flow (2)
52	88.79	122.79	Shut-In(2)
119	707.02	124.55	End Shut-In(2)
120	2233.28	124.40	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 30%o 70%m	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59124

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.08.31 @ 01:17:15

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:43:30

Time Test Ended: 07:36:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 65

Interval: **4435.00 ft (KB) To 4549.00 ft (KB) (TVD)**

Reference Elevations: 2820.00 ft (KB)

Total Depth: 4539.00 ft (KB) (TVD)

2814.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 6.00 ft

**Serial #: 8737 Outside**

Press@RunDepth: psig @ 4451.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.31

End Date: 2014.08.31

Last Calib.: 2014.08.31

Start Time: 01:17:15

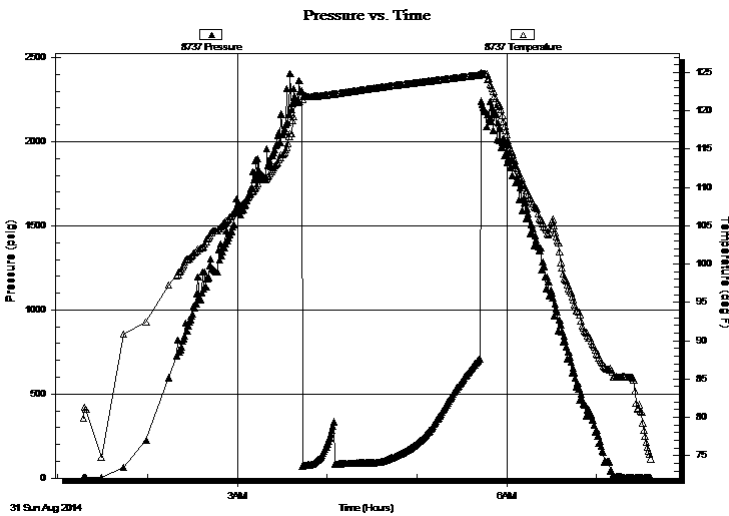
End Time: 07:36:30

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 1" blow  
IS: No return blow  
FF: Built to 1 1/2" blow  
FS: No return blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 30%o 70%m	0.02

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59124

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.08.31 @ 01:17:15

## Tool Information

Drill Pipe:	Length: 4296.00 ft	Diameter: 3.80 inches	Volume: 60.26 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 123.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.86 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4435.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	49.00 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			4408.00	
Shut In Tool	5.00			4413.00	
Hydraulic tool	5.00			4418.00	
Jars	5.00			4423.00	
Safety Joint	3.00			4426.00	
Packer	5.00			4431.00	28.00 Bottom Of Top Packer
Packer	4.00			4435.00	
Stubb	1.00			4436.00	
Perforations	15.00			4451.00	
Recorder	0.00	8846	Inside	4451.00	
Recorder	0.00	8737	Outside	4451.00	
Bullnose	5.00			4456.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, INC.

**16-18s-29w Lane, KS**

562 W State RD4  
Olmitz KS 67564

**Rhonda #1-16**

Job Ticket: 59124

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.08.31 @ 01:17:15

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.32 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	ocm 30%o 70%m	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

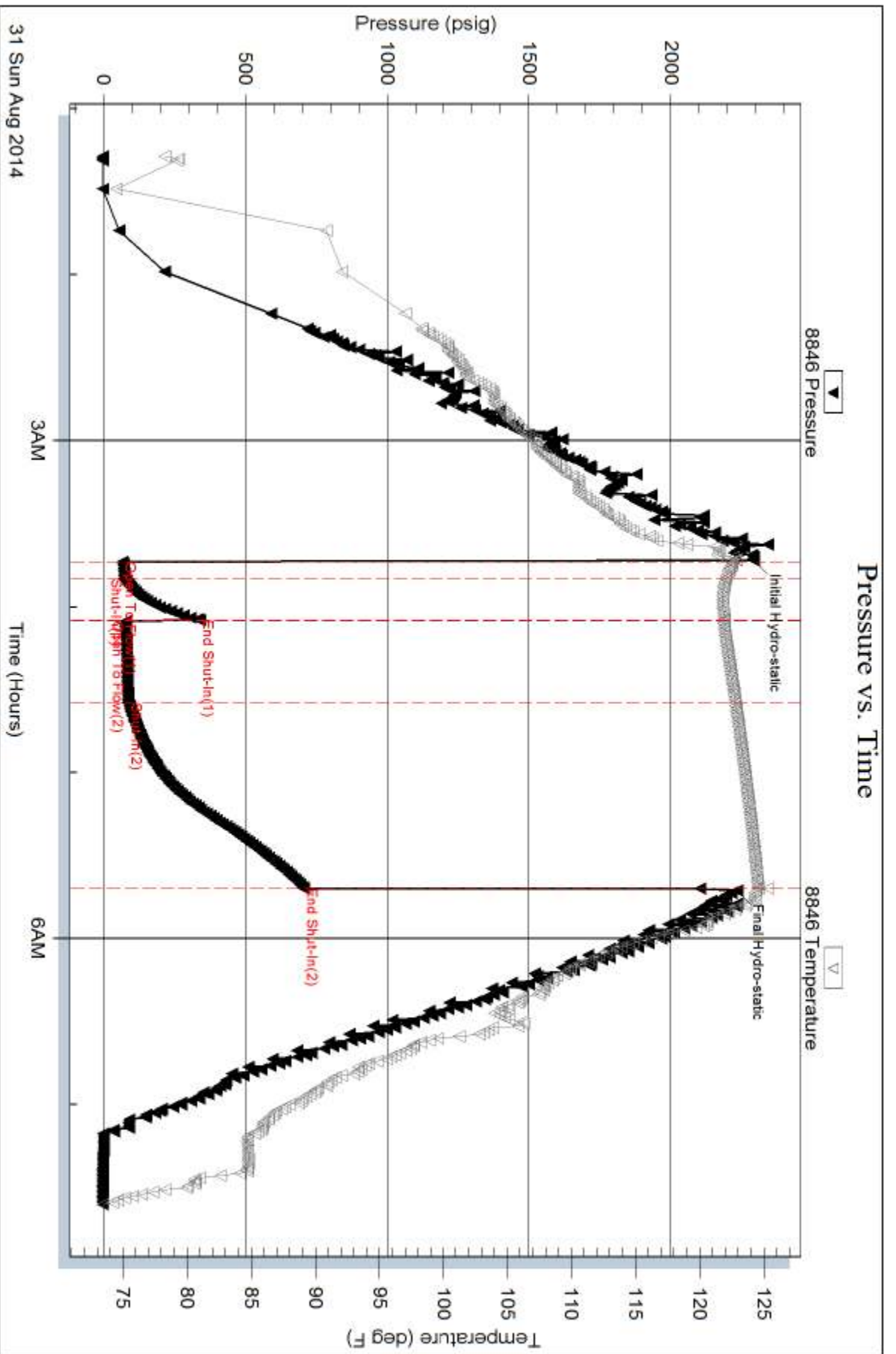
Num Gas Bombs: 0

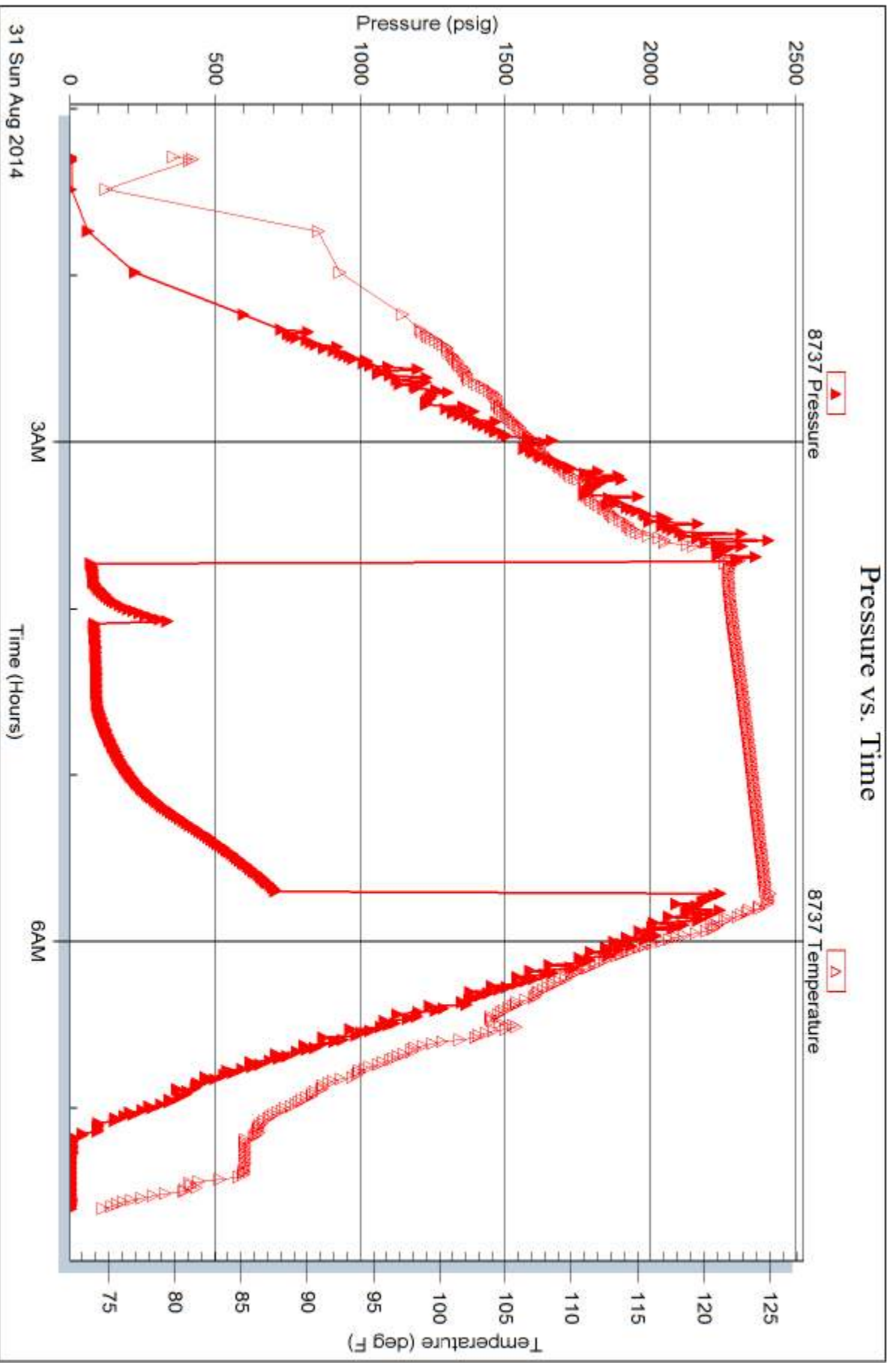
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57454

4/10

Well Name & No. Rhonda # 1-16 Test No. 1 Date 8-25-14  
 Company Larson Engineering, Inc Elevation 2820 KB 2814 GL  
 Address 542 W state RD 4 Olathe KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD #3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. Jane State KS

Interval Tested 4024 4047 Zone Tested Earsing E  
 Anchor Length 21 Drill Pipe Run 3887 Mud Wt. 9.0  
 Top Packer Depth 4021 Drill Collars Run 123 Vis 55  
 Bottom Packer Depth 4024 Wt. Pipe Run Ø WL 7.6  
 Total Depth 4047 Chlorides 2700 ppm System LCM 2  
 Blow Description 5 Weak surface Blow  
15 NO Return  
30 Weak surface Blow  
60 NO Return

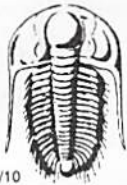
Rec	Feet of	%gas	%oil	%water	%mud
<u>63</u>	<u>gocm</u>	<u>5</u>	<u>5</u>	<u>90</u>	
<u>5</u>	<u>clean oil</u>		<u>100</u>		

Rec Total 68 BHT 117 Gravity 26 API RW 30 @ 100 ° F Chlorides — ppm

(A) Initial Hydrostatic <u>1991</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:00</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>8:00</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:15</u>
(D) Initial Shut-In <u>1036</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>12:05</u>
(E) Second Initial Flow <u>21</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1349</u>
(F) Second Final Flow <u>46</u>	<input checked="" type="checkbox"/> Mileage <u>44RT</u> 68.20	Comments
(G) Final Shut-In <u>1627</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1893</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>5</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1643.20</u>
Final Shut-In <u>40</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1643.20</u>	

Approved By Vern C Schrag Our Representative

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. 57455

Well Name & No. Rhonda # 1-16 Test No. 2 Date 8-26-14  
 Company Larson Engineering, Inc. Elevation 2820 KB 2814 GL  
 Address 562 W State RD 4 Olmitz KS, 67564  
 Co. Rep / Geo. Vern Schrag Rig HD #3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. lane State KS

Interval Tested 4155 4190 Zone Tested Leasing J  
 Anchor Length 35 Drill Pipe Run 4073 Mud Wt. 9.0  
 Top Packer Depth 4150 Drill Collars Run 123 Vis 55  
 Bottom Packer Depth 4155 Wt. Pipe Run Ø WL 7.4  
 Total Depth 4190 Chlorides 2100 ppm System LCM 2

Blow Description 5 weak surface blow build to 5 1/2"  
15 No Return  
30 ~~NO RETURN~~ B.O.B in 18 min  
60 No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>315</u>	<u>new with oil spot</u>	<u>1</u>	<u>59</u>	<u>40</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 315 ~~315~~ BHT 124 Gravity — API RW 415 @ 83 °F Chlorides 13000 ppm  
 Test 1250 T-On Location 6:25  
 Jars 250 T-Started 6:48  
 Safety Joint 75 T-Open 8:40  
 Circ Sub N/C T-Pulled 10:30  
 Hourly Standby T-Out 12:13  
 Mileage 44 RT 68.20  
 Sampler  
 Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 1643.20

Approved By Vern Schrag Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57456

Well Name & No. Rhonda # 1-16 Test No. 3 Date 8-26-14  
 Company Larson Engineering, Inc. Elevation 2820 KB 2814 GL  
 Address 562 W State RD4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD #3  
 Location: Sec. 14 Twp. 18S Rge. 29W Co. lane State KS

Interval Tested 4194 4201 Zone Tested Lansing J  
 Anchor Length 7 Drill Pipe Run 4075 Mud Wt. 9.2  
 Top Packer Depth 4189 Drill Collars Run 123 Vis 50  
 Bottom Packer Depth 4194 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4201 Chlorides 3000 ppm System LCM 2

Blow Description 5 B.O.B in 2 min  
15 No Return  
15 B.O.B in 2 min.  
30 No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mcw</u>		<u>95</u>	<u>5</u>	
<u>1008</u>	<u>mcw</u>		<u>90</u>	<u>10</u>	
<u>126</u>	<u>mcw</u>		<u>70</u>	<u>30</u>	

Rec Total 1142 BHT 124 Gravity — API RW 37 @ 72 °F Chlorides 19000 ppm

(A) Initial Hydrostatic <u>2109</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>20:00</u>
(B) First Initial Flow <u>173</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>20:04</u>
(C) First Final Flow <u>283</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>21:50</u>
(D) Initial Shut-In <u>794</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>22:55</u>
(E) Second Initial Flow <u>332</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1:04</u>
(F) Second Final Flow <u>540</u>	<input checked="" type="checkbox"/> Mileage <u>44 RT</u> 68.20	Comments
(G) Final Shut-In <u>791</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1986</u>	<input type="checkbox"/> Straddle	

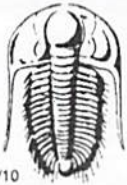
Initial Open 5  
 Initial Shut-In 15  
 Final Flow 15  
 Final Shut-In 30

Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1643.20  
 MP/DST Disc't

Sub Total 1643.20

Approved By Vern Schrag 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. 57457

4/10

Well Name & No. Rhonda # 1-16 Test No. 4 Date 8-27-14  
 Company Larson Engineering, Inc Elevation 2820 KB 2814 GL  
 Address 562 W State RD4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HO #3  
 Location: Sec. 14 Twp. 18S Rge. 29W Co. lane State ks

Interval Tested 4217 4233 Zone Tested Lansing K  
 Anchor Length 14 Drill Pipe Run 4076 Mud Wt. 9.2  
 Top Packer Depth 4212 Drill Collars Run 123 Vis 51  
 Bottom Packer Depth 4217 Wt. Pipe Run 8 WL 8  
 Total Depth 4233 Chlorides 3200 ppm System LCM 2

Blow Description 5 weak Blow Build to 1"  
15 No Return.  
30 weak Blow Build to 1 1/2"  
40 No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>151</u>	<u>new</u>		<u>60</u>		<u>40</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

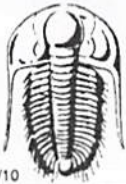
Rec Total 151 BHT 120 Gravity — API RW 38 @ 81 °F Chlorides 14000 ppm  
 (A) Initial Hydrostatic 2090  Test 1250 T-On Location 10:00  
 (B) First Initial Flow 17  Jars 250 T-Started 10:39  
 (C) First Final Flow 29  Safety Joint 75 T-Open 12:20  
 (D) Initial Shut-In 855  Circ Sub N/C T-Pulled 14:10  
 (E) Second Initial Flow 33  Hourly Standby \_\_\_\_\_ T-Out 15:57  
 (F) Second Final Flow 81  Mileage 44RT 68.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 854  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1973  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1643.20  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1643.20

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60

Approved By Vern Schrag Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57458

4/10

Well Name & No. Rhonda # 1-16 Test No. 5 Date 8-28-14  
 Company Iarson Engineering, Inc. Elevation 2820 KB 2814 GL  
 Address 562 W State RD 4 Olmitz KS, 67564  
 Co. Rep / Geo. Vern Schrag Rig #0 #3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. Iane State KS

Interval Tested 4257 4275 Zone Tested Iansing L  
 Anchor Length 18 Drill Pipe Run 4110 Mud Wt. 9.0  
 Top Packer Depth 4252 Drill Collars Run 123 Vis 51  
 Bottom Packer Depth 4257 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4275 Chlorides 3200 ppm System LCM 2

Blow Description 5 Weak surface Blow  
15 No Return  
15 No Blow  
30 No Return

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

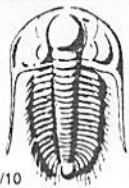
Rec Total 1 BHT 114 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2100  Test 1250 T-On Location 4:15  
 (B) First Initial Flow 15  Jars 250 T-Started 4:25  
 (C) First Final Flow 15  Safety Joint 75 T-Open 6:21  
 (D) Initial Shut-In 16  Circ Sub N/C T-Pulled 7:24  
 (E) Second Initial Flow 14  Hourly Standby \_\_\_\_\_ T-Out 9:06  
 (F) Second Final Flow 14  Mileage 44 RT 68.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 17  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2007  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1643.20  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 15  
 Final Shut-In 30  
 Sub Total 1643.20

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59120

Well Name & No. Rhonda #1-16 Test No. 6 Date 8-28-14  
 Company Larson Engineering Inc. Elevation 2820 KB 2814 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD 3  
 Location: Sec. 16 Twp. 98s Rge. 29W Co. LENE State KS

Interval Tested 4300-4342 Zone Tested Pleasanton  
 Anchor Length 42 Drill Pipe Run 4170 Mud Wt. 9.0  
 Top Packer Depth 4295 Drill Collars Run 123 Vis 57  
 Bottom Packer Depth 4300 Wt. Pipe Run Ø WL 6.8  
 Total Depth 4342 Chlorides 2500 ppm System LCM 2

Blow Description IF: Built to 1/2" Blow  
IS: No Return Blow  
FF: Built to 4" Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>Free Oil</u>	<u>100</u>			
<u>32</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	

Rec Total 72 BHT 119 Gravity 31 API RW — @ — ° F Chlorides — ppm

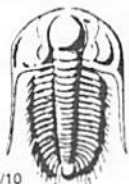
(A) Initial Hydrostatic 2143  Test 120.00 T-On Location 22:30  
 (B) First Initial Flow 19  Jars 250.00 T-Started 00:10  
 (C) First Final Flow 27  Safety Joint 75.00 T-Open 02:30  
 (D) Initial Shut-In 1100  Circ Sub NC T-Pulled 04:20  
 (E) Second Initial Flow 31  Hourly Standby \_\_\_\_\_ T-Out 06:28  
 (F) Second Final Flow 61  Mileage 44 RT 68.20 Comments \_\_\_\_\_  
 (G) Final Shut-In 1085  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2157  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60

Sub Total 1643.20  
 Total 1643.20  
 MP/DST Disc't \_\_\_\_\_

Approved By Vern Schrag Our Representative Mike Roberts

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. 59121

Well Name & No. Rhonda #1-16 Test No. 7 Date 8-29-14  
 Company Larson Engineering Inc. Elevation 2820 KB 2814 GL  
 Address 562 W. State Rd. 9 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD#3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. LANE State KS

Interval Tested 4341-4390 Zone Tested Marmaton  
 Anchor Length 49' Drill Pipe Run 4202 Mud Wt. 9.0  
 Top Packer Depth 4336 Drill Collars Run 123 Vis 52  
 Bottom Packer Depth 4341 Wt. Pipe Run Ø WL 7.6  
 Total Depth 4390 Chlorides 2600 ppm System LCM 2

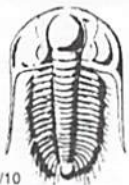
Blow Description IF!  
IS!  
FF!  
FS!  
Packer Failure

Rec	Feet of	%gas	%oil	%water	%mud
<u>339</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 Total 339 BHT 2127 Gravity 1050 API RW 1250.09 @ 16:00 °F Chlorides 16:00 ppm  
 (A) Initial Hydrostatic 2127  Test 1250.09 T-On Location 16:00  
 (B) First Initial Flow /  Jars 250.09 T-Started 17:09  
 (C) First Final Flow /  Safety Joint 75.09 T-Open 18:20  
 (D) Initial Shut-In /  Circ Sub \_\_\_\_\_ T-Pulled 21:05  
 (E) Second Initial Flow /  Hourly Standby \_\_\_\_\_ T-Out \_\_\_\_\_  
 (F) Second Final Flow /  Mileage 44RT 68.20 Comments \_\_\_\_\_  
 (G) Final Shut-In /  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2136  Straddle \_\_\_\_\_  
 Shale Packer 250.09  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open \_\_\_\_\_  
 Initial Shut-In \_\_\_\_\_  
 Final Flow \_\_\_\_\_  
 Final Shut-In \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility 1693.20 Sub Total 0  
 Sub Total 1693.20 Total 1693.20 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1893.20/-

Approved By \_\_\_\_\_ Our Representative Mike Robert

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59122

Well Name & No. Rhonda #1-16 Test No. 8 Date 8-29-14  
 Company Larson Engineering Inc. Elevation 2820 KB 2814 GL  
 Address 562 W. State Rd. 4 Olathe KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD#3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. LANE State KS

Interval Tested 4302-4390 Zone Tested Marmaton  
 Anchor Length 88 Drill Pipe Run 4171 Mud Wt. 9.0  
 Top Packer Depth 4297 Drill Collars Run 123 Vis 52  
 Bottom Packer Depth 4302 Wt. Pipe Run 0 WL 7.4  
 Total Depth 4390 Chlorides 2600 ppm System LCM 2

Blow Description IF: Built to 1/2" Blow  
IS: No Return Blow  
FF: Built to 4 1/2" Blow  
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>Free oil</u>	<u>100</u>			
<u>40</u>	<u>OCM</u>	<u>5</u>		<u>95</u>	

Rec Total 80 BHT 122 Gravity 31 API RW @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2205</u>	<input checked="" type="checkbox"/> Test <u>1250.00</u>	T-On Location <u>20:15</u>
(B) First Initial Flow <u>56</u>	<input checked="" type="checkbox"/> Jars <u>250.00</u>	T-Started <u>21:41</u>
(C) First Final Flow <u>64</u>	<input checked="" type="checkbox"/> Safety Joint <u>75.00</u>	T-Open <u>23:15</u>
(D) Initial Shut-In <u>1123</u>	<input type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>01:05</u>
(E) Second Initial Flow <u>68</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>02:49</u>
(F) Second Final Flow <u>96</u>	<input checked="" type="checkbox"/> Mileage <u>4425 68.29</u>	Comments _____
(G) Final Shut-In <u>1111</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2120</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer <u>250.00</u>	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1825.00</u>
	<input type="checkbox"/> Accessibility <u>1825</u>	MP/DST Disc't _____
	Sub Total <u>1893.20</u>	

Approved By Jarrod Ady Our Representative Mike Rohrer

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **59123**

Well Name & No. Rhonda #1-16 Test No. 9 Date 8-30-14  
 Company Larson Engineering Inc Elevation 2820 KB 2814 GL  
 Address 562 W. State Rd. 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD#3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. Lane State KS

Interval Tested 4435-4549 Zone Tested Cherokee  
 Anchor Length 114 Drill Pipe Run 4296 Mud Wt. 9.0  
 Top Packer Depth 4431 Drill Collars Run 123 Vis 52  
 Bottom Packer Depth 4436 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4549 Chlorides 2700 ppm System LCM 2

Blow Description IF: Came out with tool on stand 42  
IS: Derrick Hand Noticed Stands In Derrick  
FF: WAS LOOSE, Didn't know if any stands  
FS: In Hole WAS LOOSE due to crew change.

Rec	Feet of	%gas	%oil	%water	%mud

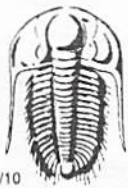
Rec Total 0 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1187  Test 1250.00 T-On Location 21:00  
 (B) First Initial Flow \_\_\_\_\_  Jars 250.00 T-Started 21:51  
 (C) First Final Flow \_\_\_\_\_  Safety Joint 75.00 T-Open \_\_\_\_\_  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled \_\_\_\_\_  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 01:07  
 (F) Second Final Flow \_\_\_\_\_  Mileage 44 RT 68.20/- Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1164  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open \_\_\_\_\_  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In \_\_\_\_\_  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow \_\_\_\_\_  Day Standby \_\_\_\_\_ Total 1443.20  
 Final Shut-In \_\_\_\_\_  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1443.20 11643.20/-

Approved By \_\_\_\_\_ Our Representative Mike Roberts

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59124

Well Name & No. Rhonda #1-16 Test No. 10 Date 8-31-14  
 Company Larson Engineering Inc Elevation 2820 KB 2814 GL  
 Address 562 W. State Rd. Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HD#3  
 Location: Sec. 16 Twp. 18S Rge. 29W Co. Lane State KS

Interval Tested 4435-4549 Zone Tested Cherokee  
 Anchor Length 114 Drill Pipe Run 4296 Mud Wt. 9.0  
 Top Packer Depth 4430 Drill Collars Run 123 Vis 52  
 Bottom Packer Depth 4435 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4549 Chlorides 2700 ppm System LCM 2  
 Blow Description IF: Built to 1" Blow  
IS: NO Return Blow  
FF: Built to 1 1/2" Blow  
FS: NO Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OCM</u>	<u>30</u>		<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 125 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2292  Test 1250 T-On Location 21:00  
 (B) First Initial Flow 68  Jars 250 T-Started 01:17  
 (C) First Final Flow 75  Safety Joint 75 T-Open 03:45  
 (D) Initial Shut-In 342  Circ Sub NO T-Pulled 05:35  
 (E) Second Initial Flow 81  Hourly Standby \_\_\_\_\_ T-Out 07:36  
 (F) Second Final Flow 88  Mileage on location Comments \_\_\_\_\_  
 (G) Final Shut-In 707  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2233  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 5  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 15  Day Standby \_\_\_\_\_ Total 1575  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1575

Approved By Vern Schrag Our Representative Mike Robert  
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