



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1129416  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well  Re-Entry  Workover
- Oil  WSW  SWD  SIOW
- Gas  D&A  ENHR  SIGW
- OG  GSW  Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD
- Plug Back  Conv. to GSW  Conv. to Producer
- Commingled Permit #: \_\_\_\_\_
- Dual Completion Permit #: \_\_\_\_\_
- SWD Permit #: \_\_\_\_\_
- ENHR Permit #: \_\_\_\_\_
- GSW Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1129416

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6234

Date	11-30-12	Sec.	23	Twp.	11	Range	15	County	Russell	State	KS	On Location		Finish	2:30 AM
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Location: Paradise 25 2 W to 17 1/4 N 1/2 SE 1/4

Lease	Boardman	Well No.	1	Owner	Paradise 25 2 W
Contractor	Shields	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job	Surface	Charge To	Larson Engineering		
Hole Size	12 1/4	T.D.	230	Street	
Csg.	8 5/8	Depth	227	City	State
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Depth		Cement Amount Ordered	150 Com 3% CC 2% Gel
Cement Left in Csg.	20 FT	Shoe Joint	20 FT		
Meas Line		Displace	13.14 BBL		

**EQUIPMENT**

Pumptrk	5	No.		Cementer	Heath	Common	150
				Helper	Heath	Poz. Mix	
Bulktrk	8	No.		Driver	Heath	Gel.	3
				Driver	Heath	Calcium	5
Bulktrk	04	No.		Driver	Heath		

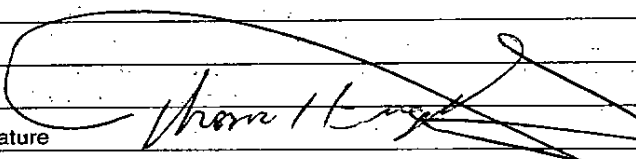
**JOB SERVICES & REMARKS**

Remarks:		Hulls	
Rat Hole	Boardman #1	Salt	
Mouse Hole		Flowseal	
Centralizers		Kol-Seal	
Baskets		Mud CLR 48	
D/V or Port Collar		CFL-117 or CD110 CAF 38	
		Sand	
		Handling	138
		Mileage	

**FLOAT EQUIPMENT**

		Guide Shoe	
		Centralizer	
		Baskets	
		AFU Inserts	
		Float Shoe	
		Latch Down	

		Pumptrk Charge	Surface
		Mileage	24

X Signature		Tax	
		Discount	
		Total Charge	

# QUALITY WELL SERVICE, INC.

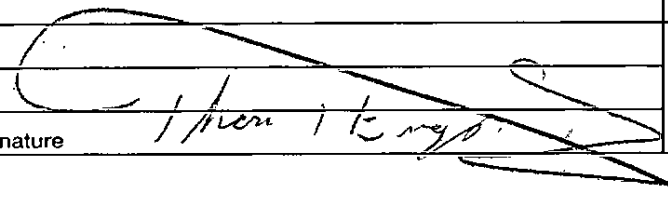
5652

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

Heath's Cell 620-727-3410  
Office / Fax 620-672-3663

Rich's Cell 620-727-3409  
Brady's Cell 620-727-6964

Date	Dec 6 <sup>th</sup> 12	Sec.	23	Twp.	11	Range	15 W	County	RUSSELL	State	K.S.	On Location	3:10	Finish	9:15	
Lease	BOARD MAN		Well No.	1-23		Location Paradise 2 south 2 west 1/4 South EAST SIDE										
Contractor	SHIELDS oil producers Inc.								Owner LARSON OPERATING COMPANY							
Type Job	Plug								To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.							
Hole Size	7 7/8		T.D.		3400											
Csg.	NA		Depth		Charge To LARSON ENGINEERING Inc											
Tbg. Size	NA		Depth		Street 562 WEST STATE ROAD 4											
Tool			Depth		City <del>OLMITZ</del> OLMITZ State K.S.											
Cement Left in Csg.			Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.											
Meas Line			Displace		Cement Amount Ordered 250 SKS 60/40 4% Gel											
<b>EQUIPMENT</b>													1/4 C.F.			
Pumptrk	6	No.	Derrick		Common 150											
Bulktrk	5	No.	SHAWMUT		Poz. Mix 100											
Bulktrk		No.			Gel. 9											
Pickup	450	No.	Rick		Calcium											
<b>JOB SERVICES &amp; REMARKS</b>													Hulls			
Rat Hole													Salt			
Mouse Hole													Flowseal 50			
Centralizers													Kol-Seal			
Baskets													Mud CLR 48			
D/V or Port Collar													CFL-117 or CD110 CAF 38			
1st plug 3317' 25 SKS													Sand			
2nd 11 950' 25 SKS													Handling 259			
3rd 11 525' 100 SKS													Mileage 20			
4th 11 280' 40 SKS													<b>FLOAT EQUIPMENT</b>			
5th 11 40' plug 10 SKS													Guide Shoe			
													Centralizer			
Rat 30 SKS													Baskets			
Mouse 20 SKS													AFU Inserts			
													Float Shoe			
													Latch Down			
													8 5/8 Wooden Plug			
													Pumptrk Charge Rotary Plug			
													Mileage 20			
													Tax			
													Discount			
													Total Charge			



## DRILL STEM TEST REPORT

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

562 W. State Road 4  
Olmitz, KS 67564

ATTN: Tom Larson

### **Boardman #1-23**

#### **23-11s-15w Russell,KS**

Start Date: 2012.12.05 @ 11:19:04

End Date: 2012.12.05 @ 16:55:34

Job Ticket #: 48746                      DST #: 1

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

Printed: 2012.12.07 @ 14:04:30



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.  
 562 W. State Road 4  
 Olmitz, KS 67564  
 ATTN: Tom Larson

**23-11s-15w Russell, KS**

**Boardman #1-23**

Job Ticket: 48746

**DST#: 1**

Test Start: 2012.12.05 @ 11:19:04

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:49:49

Time Test Ended: 16:55:34

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

**Interval: 3316.00 ft (KB) To 3347.00 ft (KB) (TVD)**

Reference Elevations: 1853.00 ft (KB)

Total Depth: 3406.00 ft (KB) (TVD)

1848.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8366**

**Inside**

Press @ Run Depth: 452.22 psig @ 3333.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.12.05

End Date:

2012.12.05

Last Calib.: 2012.12.05

Start Time: 11:19:06

End Time:

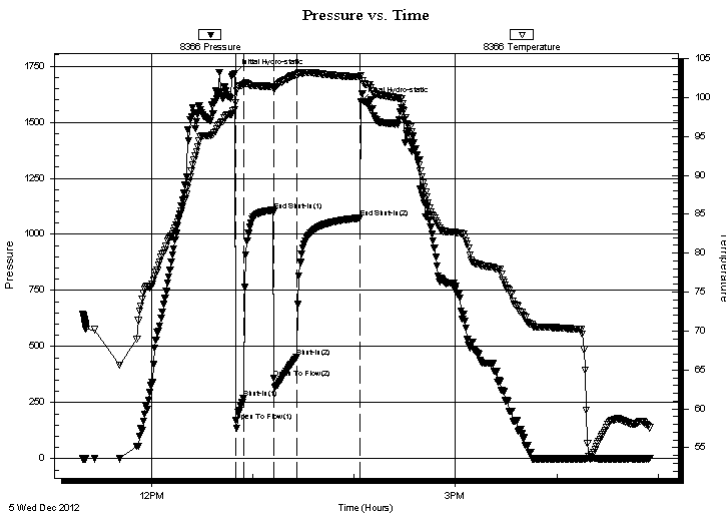
16:55:34

Time On Btm: 2012.12.05 @ 12:49:04

Time Off Btm: 2012.12.05 @ 14:04:04

**TEST COMMENT:** IFP-Strong, BOB in 1 Min  
 ISI-Dead  
 FFP-Strong, BOB in 1-1/2 Min.  
 FSI-Dead

## PRESSURE SUMMARY



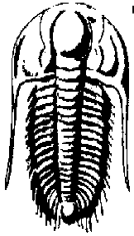
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1716.23	98.43	Initial Hydro-static
1	169.09	99.36	Open To Flow (1)
6	270.05	101.58	Shut-In(1)
23	1103.17	101.39	End Shut-In(1)
24	358.97	101.09	Open To Flow (2)
37	452.22	102.89	Shut-In(2)
75	1073.70	102.64	End Shut-In(2)
75	1592.40	102.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
760.00	Muddy Water	6.43

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48746

**DST#: 1**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 11:19:04

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:49:49

Time Test Ended: 16:55:34

**Interval: 3316.00 ft (KB) To 3347.00 ft (KB) (TVD)**

Total Depth: 3406.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

Reference Elevations: 1853.00 ft (KB)

1848.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8789 Outside**

Press @ RunDepth: psig @ 3333.00 ft (KB)

Start Date: 2012.12.05 End Date: 2012.12.05

Start Time: 11:19:06 End Time: 16:55:19

Capacity: 8000.00 psig

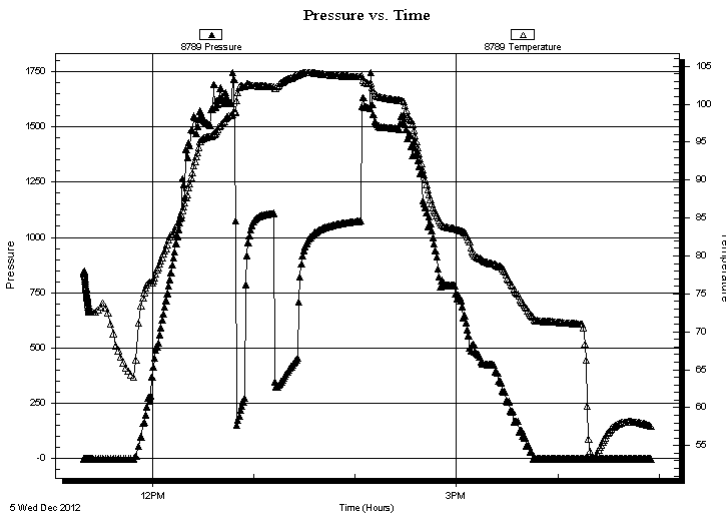
Last Calib.: 2012.12.05

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Strong, BOB in 1 Min  
ISI-Dead  
FFP-Strong, BOB in 1-1/2 Min.  
FSI-Dead

## PRESSURE SUMMARY



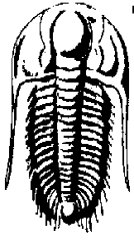
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
760.00	Muddy Water	6.43

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Larson Engineering, Inc.  
562 W. State Road 4  
Olmitz, KS 67564  
ATTN: Tom Larson

**23-11s-15w Russell,KS**

**Boardman #1-23**

Job Ticket: 48746

**DST#: 1**

Test Start: 2012.12.05 @ 11:19:04

**GENERAL INFORMATION:**

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:49:49

Time Test Ended: 16:55:34

Test Type: Conventional Straddle (Initial)

Tester: Jason McLemore

Unit No: 54

**Interval: 3316.00 ft (KB) To 3347.00 ft (KB) (TVD)**

Reference Elevations: 1853.00 ft (KB)

Total Depth: 3406.00 ft (KB) (TVD)

1848.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8289 Below (Straddle)**

Press @ Run Depth: psig @ 3370.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.12.05 End Date: 2012.12.05

Last Calib.: 2012.12.05

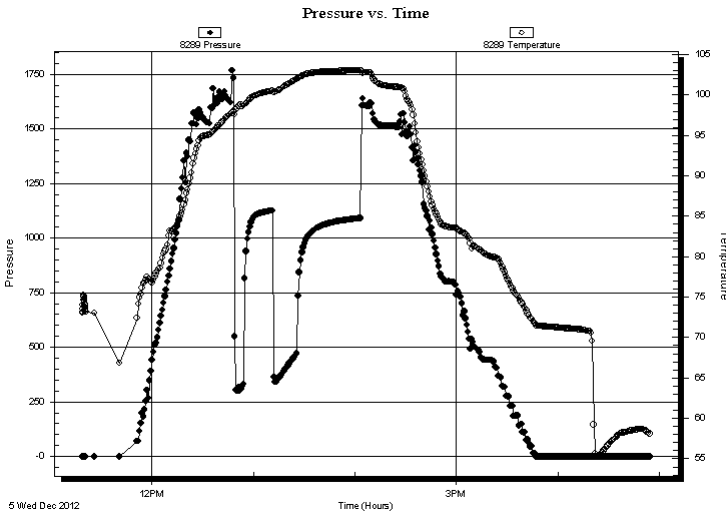
Start Time: 11:19:06 End Time: 16:54:49

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IFP-Strong, BOB in 1 Min  
ISI-Dead  
FFP-Strong, BOB in 1-1/2 Min.  
FSI-Dead

**PRESSURE SUMMARY**



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

**Recovery**

Length (ft)	Description	Volume (bbl)
760.00	Muddy Water	6.43

**Gas Rates**

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48746

**DST#: 1**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 11:19:04

## Tool Information

Drill Pipe:	Length: 2841.00 ft	Diameter: 3.80 inches	Volume: 39.85 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 464.00 ft	Diameter: 2.25 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			Total Volume: 42.13 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3316.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	3347.00 ft			
Interval between Packers:	31.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Recorder	0.00	6755	Fluid	3295.00	
Change Over Sub	1.00			3296.00	
Shut In Tool	5.00			3301.00	
Hydraulic tool	5.00			3306.00	
Packer	5.00			3311.00	21.00 Bottom Of Top Packer
Packer	5.00			3316.00	
Stubb	1.00			3317.00	
Perforations	16.00			3333.00	
Recorder	0.00	8366	Inside	3333.00	
Recorder	0.00	8789	Outside	3333.00	
Perforations	10.00			3343.00	
Blank Off Sub	1.00			3344.00	
Blank Spacing	3.00			3347.00	31.00 Tool Interval
Packer	1.00			3348.00	
Perforations	21.00			3369.00	
Change Over Sub	1.00			3370.00	
Recorder	0.00	8289	Below	3370.00	
Blank Spacing	31.00			3401.00	
Change Over Sub	1.00			3402.00	
Bullnose	3.00			3405.00	58.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>110.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48746

**DST#: 1**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 11:19:04

## 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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
760.00	Muddy Water	6.434

Total Length: 760.00 ft      Total Volume: 6.434 bbl

Num Fluid Samples: 0

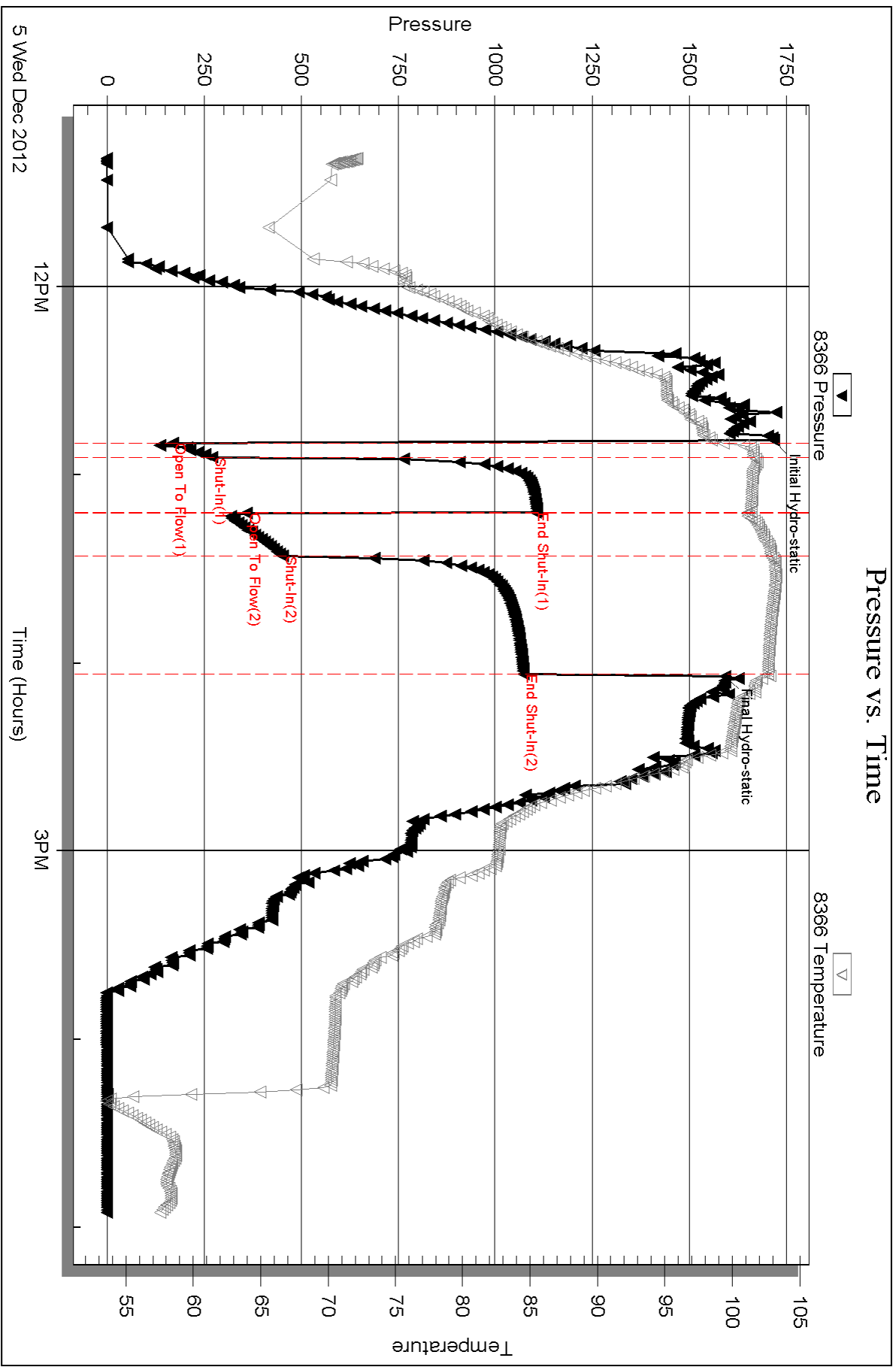
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

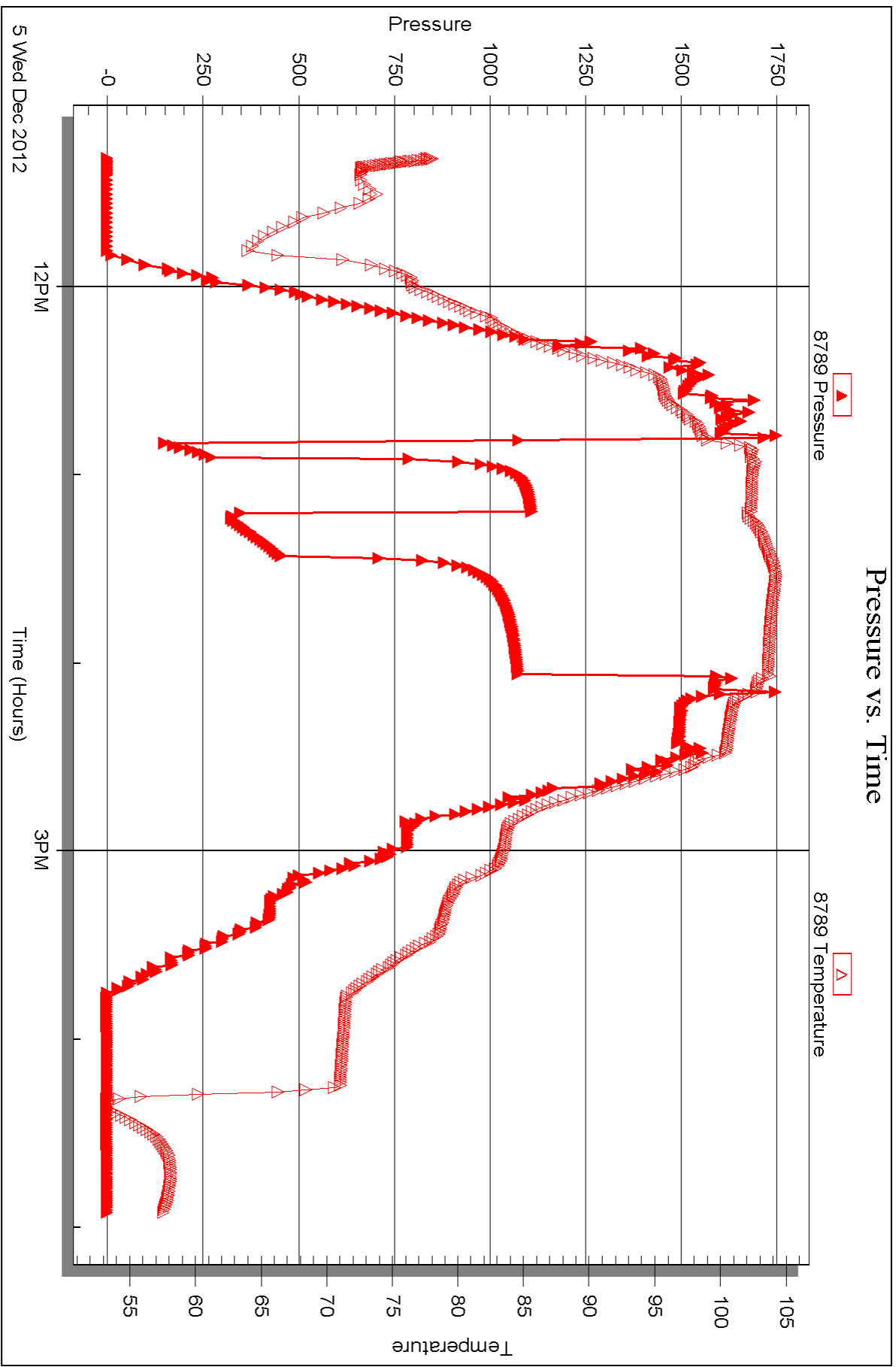


Serial #: 8789

Outside Larson Engineering, Inc.

Boardman #1-23

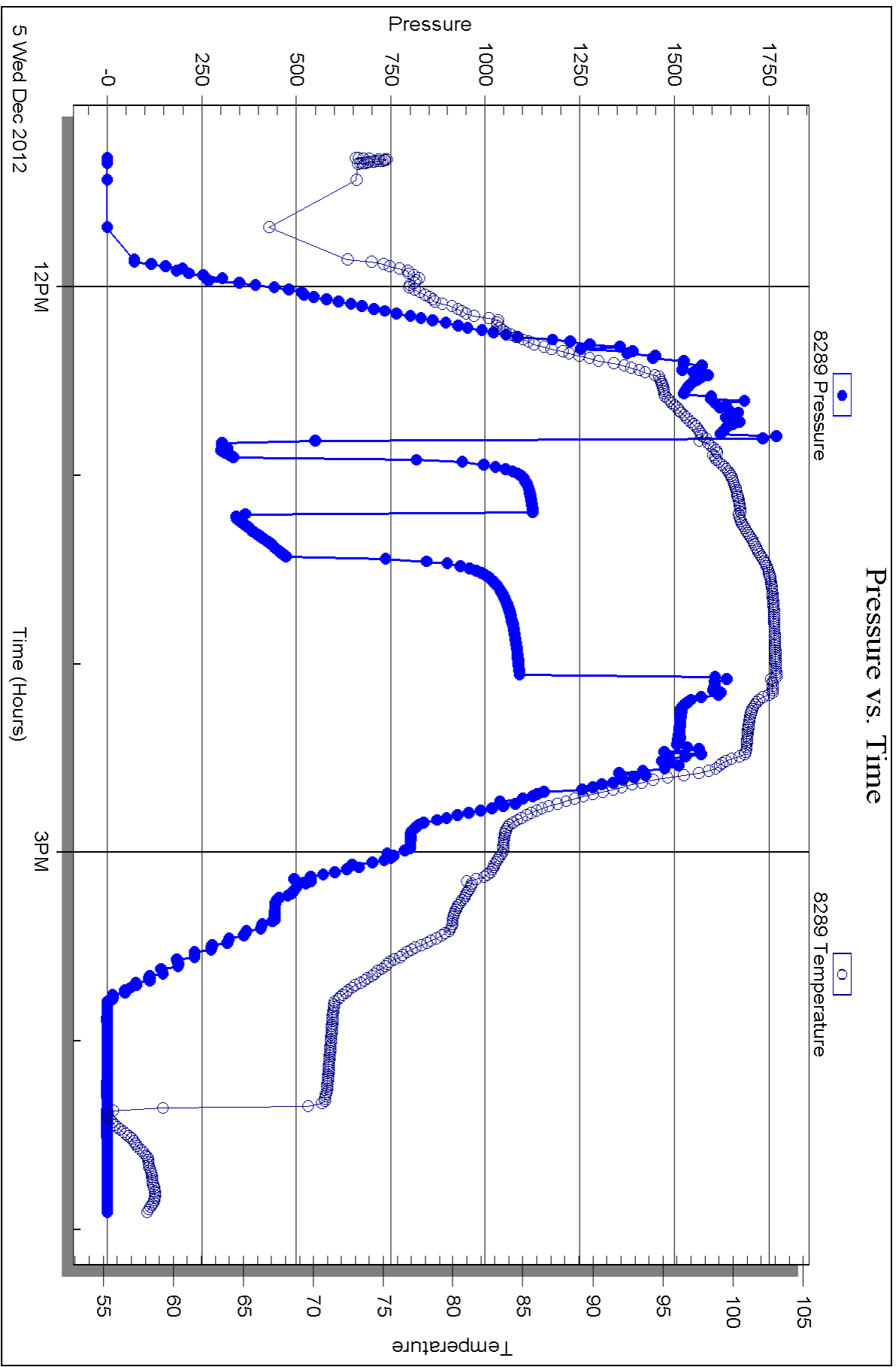
DST Test Number: 1



Triobite Testing, Inc

Ref. No: 48746

Printed: 2012.12.07 @ 14:04:35





## DRILL STEM TEST REPORT

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

562 W. State Road 4  
Olmitz, KS 67564

ATTN: Tom Larson

### **Boardman #1-23**

#### **23-11s-15w Russell,KS**

Start Date: 2012.12.05 @ 17:18:25

End Date: 2012.12.05 @ 22:28:55

Job Ticket #: 48747                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.07 @ 14:03:49



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.  
562 W. State Road 4  
Olmitz, KS 67564  
ATTN: Tom Larson

**23-11s-15w Russell, KS**

**Boardman #1-23**

Job Ticket: 48747

**DST#: 2**

Test Start: 2012.12.05 @ 17:18:25

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Straddle (Reset)  
 Time Tool Opened: 19:08:55  
 Tester: Jason McLemore  
 Time Test Ended: 22:28:55  
 Unit No: 54  
 Interval: **3316.00 ft (KB) To 3351.00 ft (KB) (TVD)**  
 Reference Elevations: 1853.00 ft (KB)  
 Total Depth: 3406.00 ft (KB) (TVD)  
 1848.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 KB to GR/CF: 5.00 ft

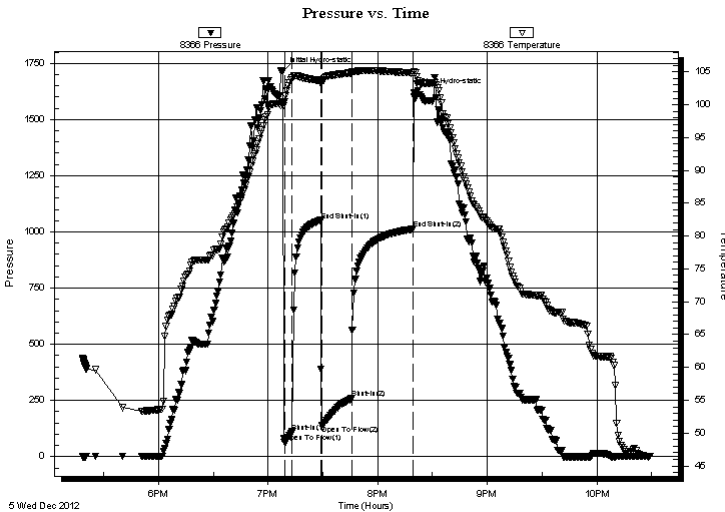
## Serial #: 8366

Inside

Press @ Run Depth: 259.29 psig @ 3337.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.12.05 End Date: 2012.12.05 Last Calib.: 2012.12.05  
 Start Time: 17:18:27 End Time: 22:28:55 Time On Btm: 2012.12.05 @ 19:08:10  
 Time Off Btm: 2012.12.05 @ 20:20:10

TEST COMMENT: IFP-Strong, BOB in 4 Min.  
 ISI-Dead  
 FFP-Strong, BOB in 5 Min.  
 FSI-Dead

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.14	100.24	Initial Hydro-static
1	64.92	100.40	Open To Flow (1)
5	110.54	104.03	Shut-In(1)
21	1051.06	103.69	End Shut-In(1)
22	137.74	103.35	Open To Flow (2)
38	259.29	104.82	Shut-In(2)
72	1012.89	104.79	End Shut-In(2)
72	1620.48	104.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
515.00	V/SOCMW-3%O-70%W-27%M	3.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Larson Engineering, Inc.  
 562 W. State Road 4  
 Olmitz, KS 67564  
 ATTN: Tom Larson

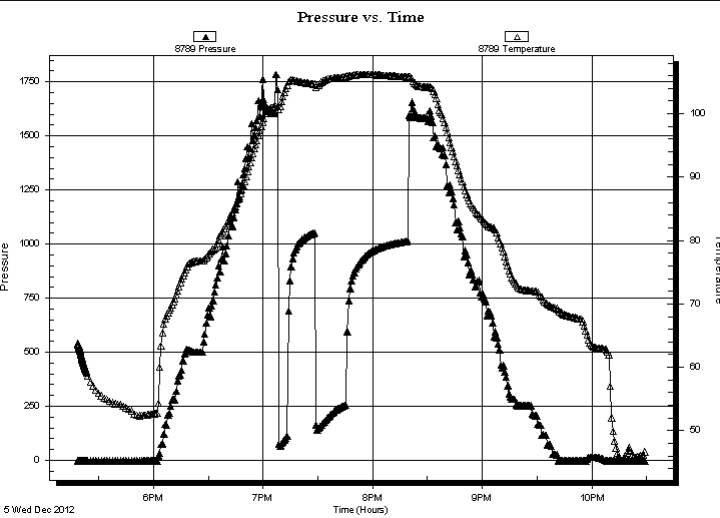
**23-11s-15w Russell, KS**  
**Boardman #1-23**  
 Job Ticket: 48747      **DST#: 2**  
 Test Start: 2012.12.05 @ 17:18:25

**GENERAL INFORMATION:**

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Straddle (Reset)  
 Time Tool Opened: 19:08:55      Tester: Jason McLemore  
 Time Test Ended: 22:28:55      Unit No: 54  
**Interval: 3316.00 ft (KB) To 3351.00 ft (KB) (TVD)**  
 Reference Elevations: 1853.00 ft (KB)  
 Total Depth: 3406.00 ft (KB) (TVD)      1848.00 ft (CF)  
 Hole Diameter: 7.88 inches      Hole Condition: Good      KB to GR/CF: 5.00 ft

**Serial #: 8789      Outside**  
 Press @ Run Depth: psig @ 3337.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.12.05      End Date: 2012.12.05      Last Calib.: 2012.12.05  
 Start Time: 17:18:27      End Time: 22:28:55      Time On Btm:  
    Time Off Btm:

**TEST COMMENT:** IFP-Strong, BOB in 4 Min.  
 ISI-Dead  
 FFP-Strong, BOB in 5 Min.  
 FSI-Dead



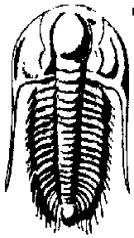
PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
515.00	VSOcMW-3%O-70%W-27%M	3.00

\* Recovery from multiple tests

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48747

**DST#: 2**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 17:18:25

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:08:55

Time Test Ended: 22:28:55

Test Type: Conventional Straddle (Reset)

Tester: Jason McLemore

Unit No: 54

**Interval: 3316.00 ft (KB) To 3351.00 ft (KB) (TVD)**

Reference Elevations: 1853.00 ft (KB)

Total Depth: 3406.00 ft (KB) (TVD)

1848.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8289 Below (Straddle)**

Press @ Run Depth: psig @ 3370.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.12.05 End Date: 2012.12.05

Last Calib.: 2012.12.05

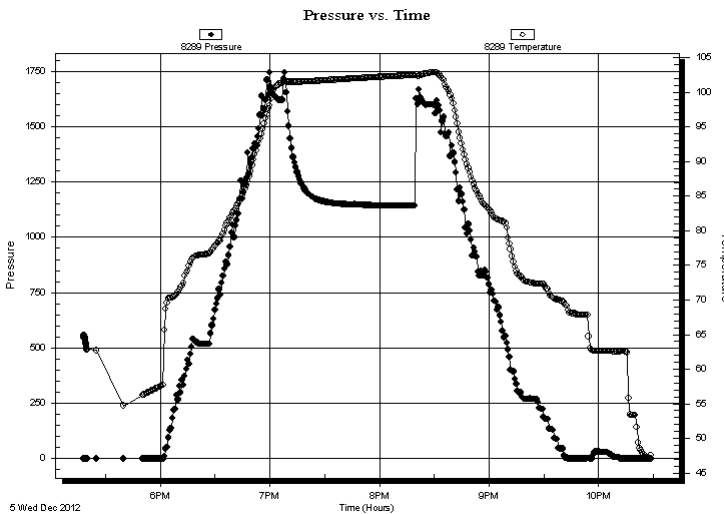
Start Time: 17:17:59 End Time: 22:28:27

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IFP-Strong, BOB in 4 Min.  
ISI-Dead  
FFP-Strong, BOB in 5 Min.  
FSI-Dead

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
515.00	V/SOCMW-3%O-70%W-27%M	3.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48747

**DST#: 2**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 17:18:25

## Tool Information

Drill Pipe:	Length: 2841.00 ft	Diameter: 3.80 inches	Volume: 39.85 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 464.00 ft	Diameter: 2.25 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 42.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3316.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	3351.00 ft			
Interval between Packers:	35.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3296.00	
Shut In Tool	5.00			3301.00	
Hydraulic tool	5.00			3306.00	
Packer	5.00			3311.00	21.00 Bottom Of Top Packer
Packer	5.00			3316.00	
Stubb	1.00			3317.00	
Perforations	20.00			3337.00	
Recorder	0.00	8366	Inside	3337.00	
Recorder	0.00	8789	Outside	3337.00	
Perforations	10.00			3347.00	
Blank Off Sub	1.00			3348.00	
Blank Spacing	3.00			3351.00	35.00 Tool Interval
Packer	1.00			3352.00	
Perforations	17.00			3369.00	
Change Over Sub	1.00			3370.00	
Recorder	0.00	8289	Below	3370.00	
Blank Spacing	31.00			3401.00	
Change Over Sub	1.00			3402.00	
Bullnose	3.00			3405.00	54.00 Bottom Packers & Anchor

**Total Tool Length: 110.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48747

**DST#: 2**

ATTN: Tom Larson

Test Start: 2012.12.05 @ 17:18:25

## 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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
515.00	VSOCMW-3%O-70%W-27%M	2.997

Total Length: 515.00 ft      Total Volume: 2.997 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

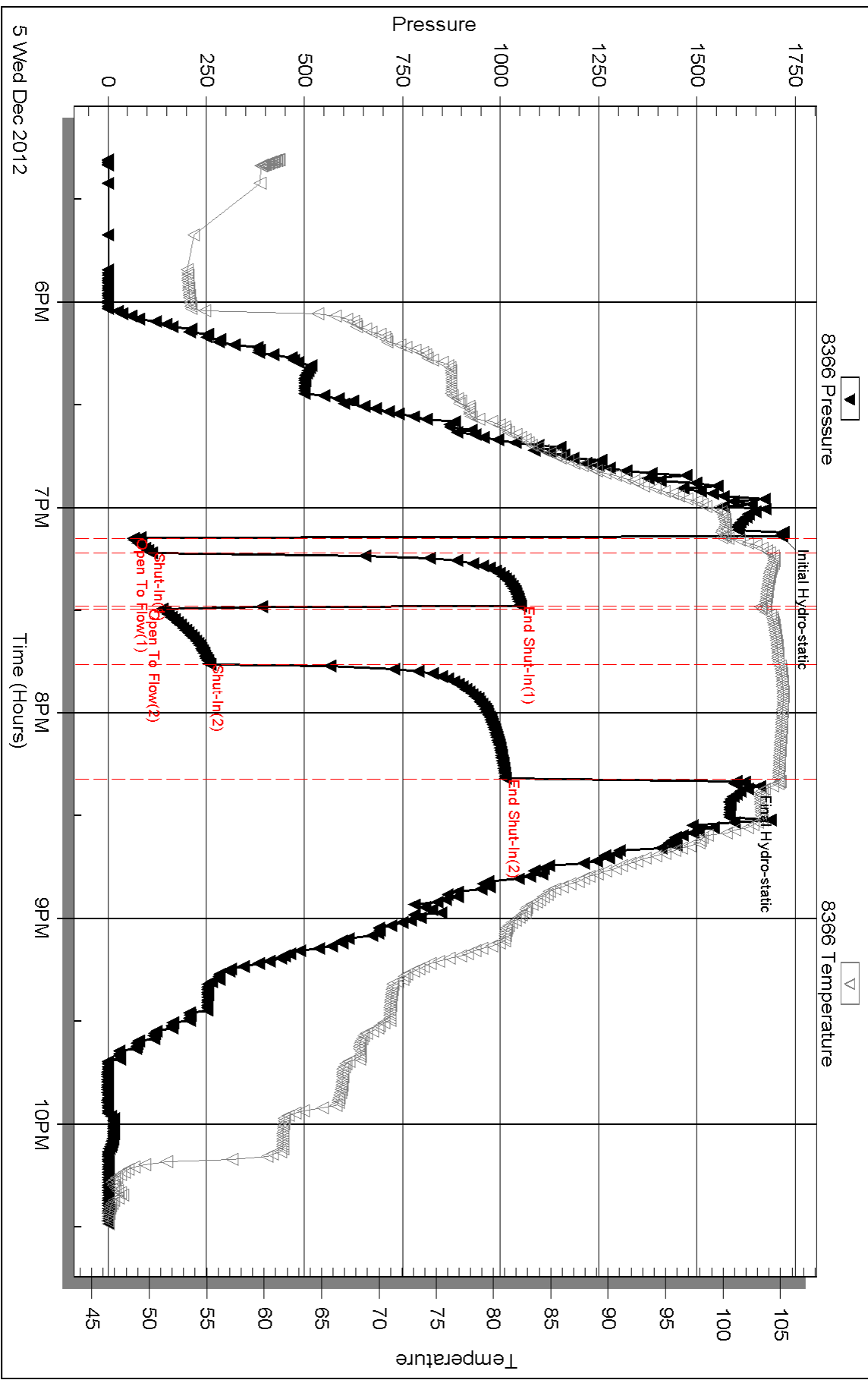
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



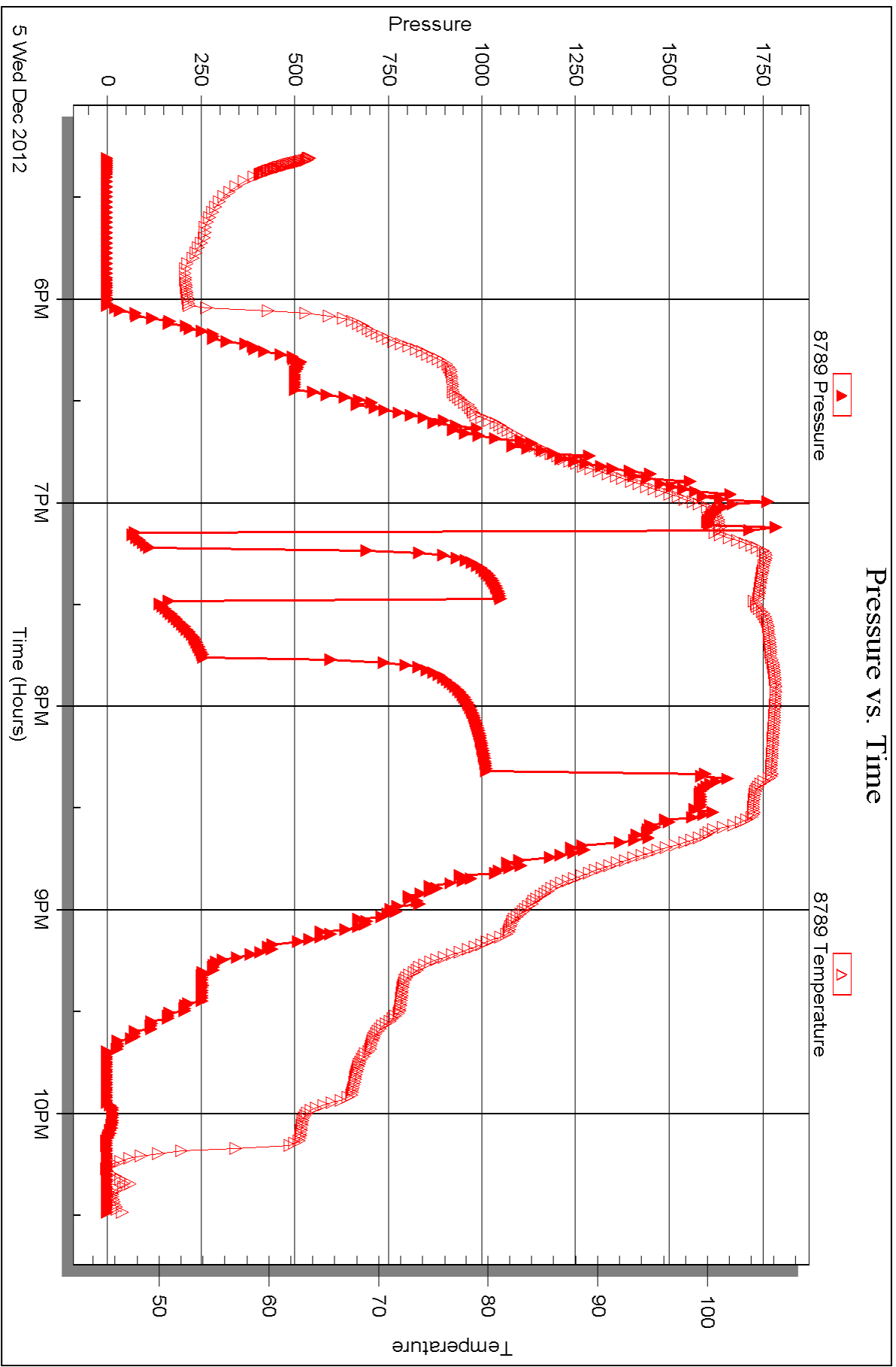
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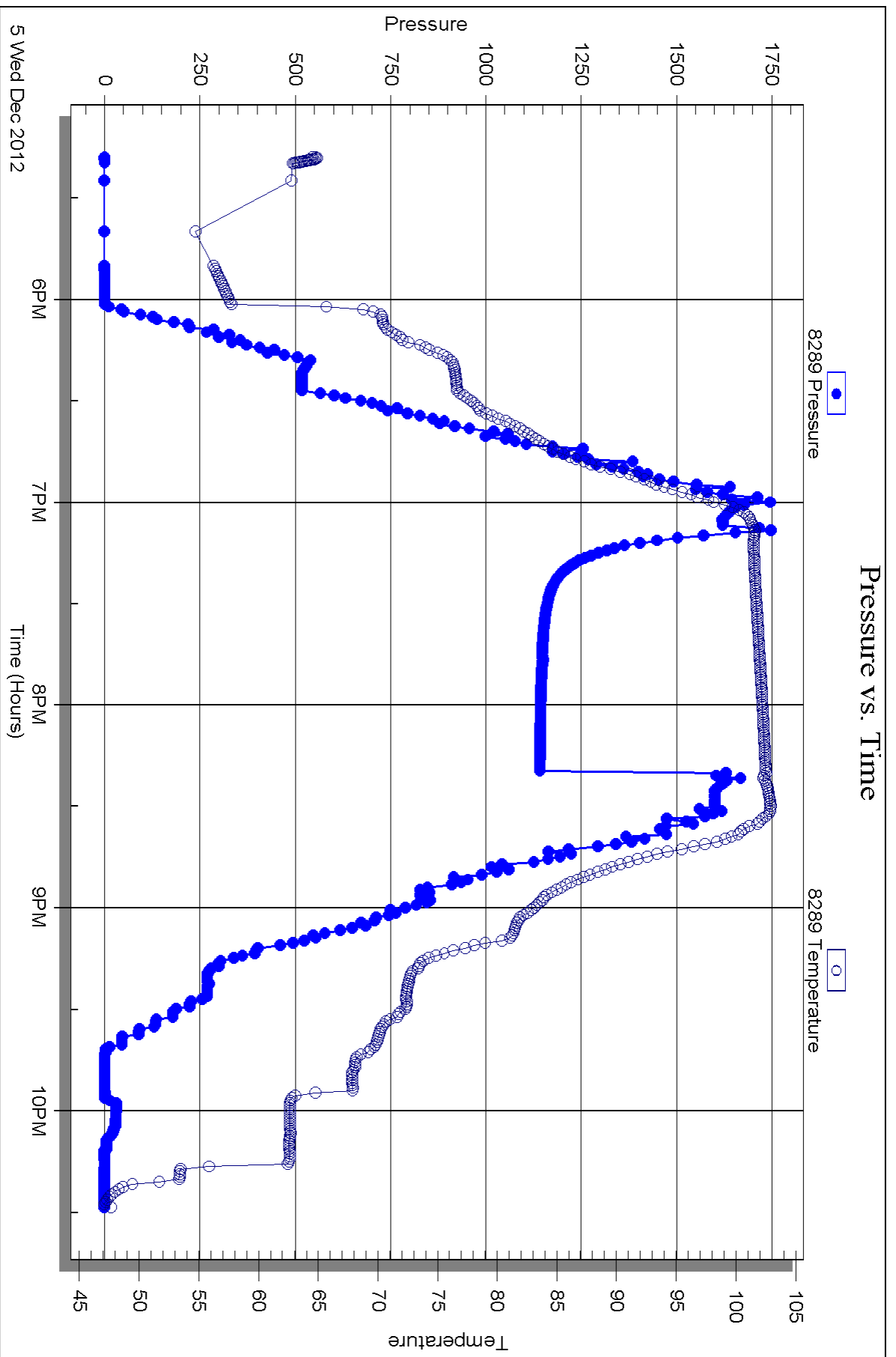
Outside

Larson Engineering, Inc.

Boardman #1-23

DST Test Number: 2







## DRILL STEM TEST REPORT

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

562 W. State Road 4  
Olmitz, KS 67564

ATTN: Tom Larson

### **Boardman #1-23**

#### **23-11s-15w Russell,KS**

Start Date: 2012.12.06 @ 05:04:57

End Date: 2012.12.06 @ 12:29:12

Job Ticket #: 48748                      DST #: 3

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

Printed: 2012.12.07 @ 14:03:04



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.  
 562 W. State Road 4  
 Olmitz, KS 67564  
 ATTN: Tom Larson

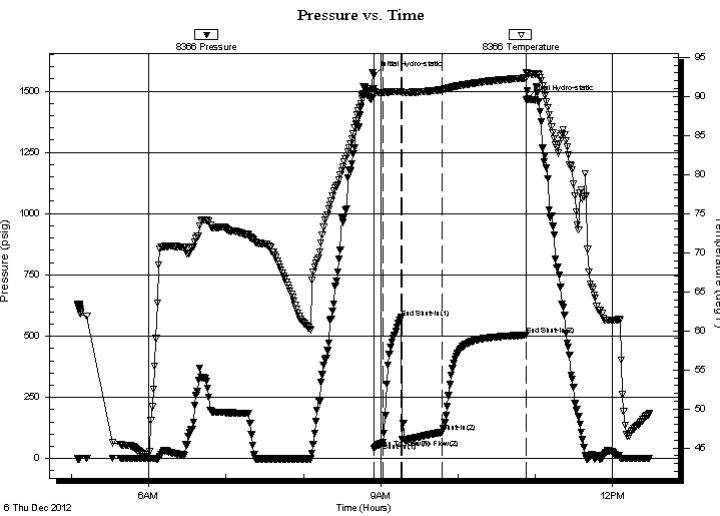
**23-11s-15w Russell, KS**  
**Boardman #1-23**  
 Job Ticket: 48748 **DST#: 3**  
 Test Start: 2012.12.06 @ 05:04:57

## GENERAL INFORMATION:

Formation: **LKC**  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Reset)  
 Time Tool Opened: 08:54:57 Tester: Jason McLemore  
 Time Test Ended: 12:29:12 Unit No: 54  
**Interval: 2987.00 ft (KB) To 3054.00 ft (KB) (TVD)** Reference Elevations: 1853.00 ft (KB)  
 Total Depth: 3406.00 ft (KB) (TVD) 1848.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

**Serial #: 8366 Inside**  
 Press @ Run Depth: 108.60 psig @ 3040.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.12.06 End Date: 2012.12.06 Last Calib.: 2012.12.06  
 Start Time: 05:04:59 End Time: 12:29:12 Time On Btm: 2012.12.06 @ 08:54:42  
 Time Off Btm: 2012.12.06 @ 10:53:12

**TEST COMMENT:** IFP-Weak Blow , Built to 3-1/2"  
 ISI-Dead  
 FFP-Weak Blow , Built to 4-1/2"  
 FSI-Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1564.55	90.97	Initial Hydro-static
1	43.09	90.35	Open To Flow (1)
7	66.77	90.44	Shut-In(1)
22	575.46	90.63	End Shut-In(1)
22	77.83	90.49	Open To Flow (2)
54	108.60	90.87	Shut-In(2)
118	504.06	92.36	End Shut-In(2)
119	1463.96	92.99	Final Hydro-static

## Recovery

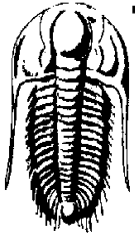
Length (ft)	Description	Volume (bbl)
125.00	GSOCM-20%G-10%O-70%M	0.61

\* Recovery from multiple tests

## Gas Rates

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





# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Larson Engineering, Inc.  
562 W. State Road 4  
Olmitz, KS 67564  
ATTN: Tom Larson

23-11s-15w Russell, KS

Boardman #1-23

Job Ticket: 48748

DST#: 3

Test Start: 2012.12.06 @ 05:04:57

### GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:54:57

Time Test Ended: 12:29:12

Test Type: Conventional Straddle (Reset)

Tester: Jason McLemore

Unit No: 54

Interval: **2987.00 ft (KB) To 3054.00 ft (KB) (TVD)**

Total Depth: 3406.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1853.00 ft (KB)

1848.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8789** Outside

Press @ Run Depth: psig @ 3040.00 ft (KB)

Start Date: 2012.12.06

End Date:

2012.12.06

Start Time: 05:04:59

End Time:

12:29:27

Capacity: 8000.00 psig

Last Calib.:

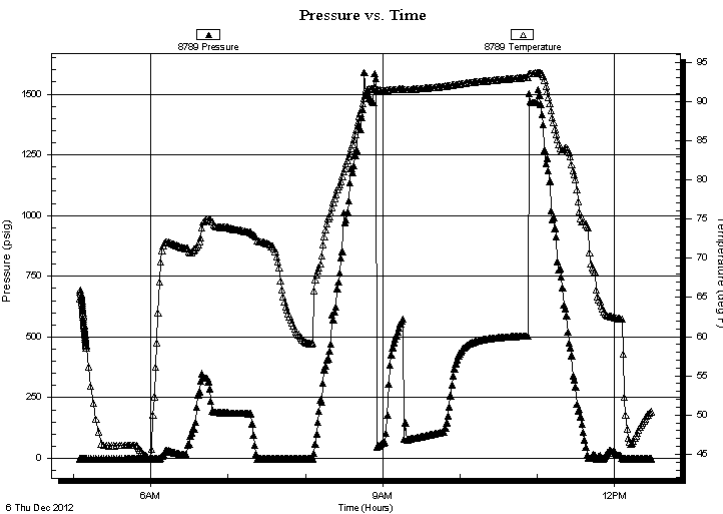
2012.12.06

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Weak Blow, Built to 3-1/2"  
ISI-Dead  
FFP-Weak Blow, Built to 4-1/2"  
FSI-Dead

### PRESSURE SUMMARY



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

### Recovery

Length (ft)	Description	Volume (bbl)
125.00	GSOCM-20%G-10%O-70%M	0.61

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48748

**DST#: 3**

ATTN: Tom Larson

Test Start: 2012.12.06 @ 05:04:57

### GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:54:57

Time Test Ended: 12:29:12

Test Type: Conventional Straddle (Reset)

Tester: Jason McLemore

Unit No: 54

**Interval: 2987.00 ft (KB) To 3054.00 ft (KB) (TVD)**

Reference Elevations: 1853.00 ft (KB)

Total Depth: 3406.00 ft (KB) (TVD)

1848.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8289 Below (Straddle)**

Press @ Run Depth: psig @ 3056.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.12.06

End Date:

2012.12.06

Last Calib.:

2012.12.06

Start Time: 05:04:29

End Time:

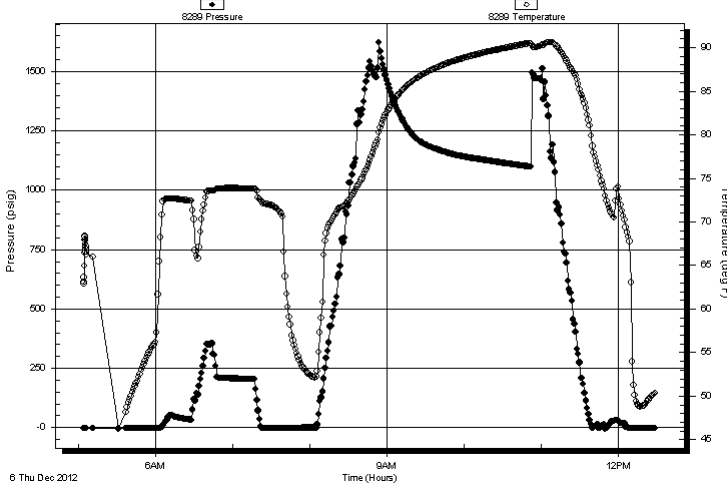
12:29:42

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Weak Blow , Built to 3-1/2"  
ISI-Dead  
FFP-Weak Blow , Built to 4-1/2"  
FSI-Dead

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

### Gas Rates

Length (ft)	Description	Volume (bbl)
125.00	GSOCM-20%G-10%O-70%M	0.61

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**23-11s-15w Russell, KS**

562 W. State Road 4  
Olmitz, KS 67564

**Boardman #1-23**

Job Ticket: 48748

**DST#: 3**

ATTN: Tom Larson

Test Start: 2012.12.06 @ 05:04:57

## Tool Information

Drill Pipe:	Length: 2526.00 ft	Diameter: 3.80 inches	Volume: 35.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 464.00 ft	Diameter: 2.25 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			Total Volume: 37.71 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	2987.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	3054.00 ft			
Interval between Packers:	67.00 ft			
Tool Length:	440.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				

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

Recorder	0.00	6755	Fluid	2966.00	
Change Over Sub	1.00			2967.00	
Shut In Tool	5.00			2972.00	
Hydraulic tool	5.00			2977.00	
Packer	5.00			2982.00	21.00 Bottom Of Top Packer
Packer	5.00			2987.00	
Stubb	1.00			2988.00	
Perforations	19.00			3007.00	
Change Over Sub	1.00			3008.00	
Blank Spacing	31.00			3039.00	
Change Over Sub	1.00			3040.00	
Recorder	0.00	8366	Inside	3040.00	
Recorder	0.00	8789	Outside	3040.00	
Perforations	10.00			3050.00	
Blank Off Sub	1.00			3051.00	
Blank Spacing	3.00			3054.00	67.00 Tool Interval
Packer	1.00			3055.00	
Change Over Sub	1.00			3056.00	
Recorder	0.00	8289	Below	3056.00	
Blank Spacing	346.00			3402.00	
Change Over Sub	1.00			3403.00	
Bullnose	3.00			3406.00	352.00 Bottom Packers & Anchor

**Total Tool Length: 440.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Larson Engineering, Inc.  
562 W. State Road 4  
Olmitz, KS 67564  
ATTN: Tom Larson

**23-11s-15w Russell, KS**  
**Boardman #1-23**  
Job Ticket: 48748      **DST#: 3**  
Test Start: 2012.12.06 @ 05:04:57

**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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3900.00 ppm			
Filter Cake: inches			

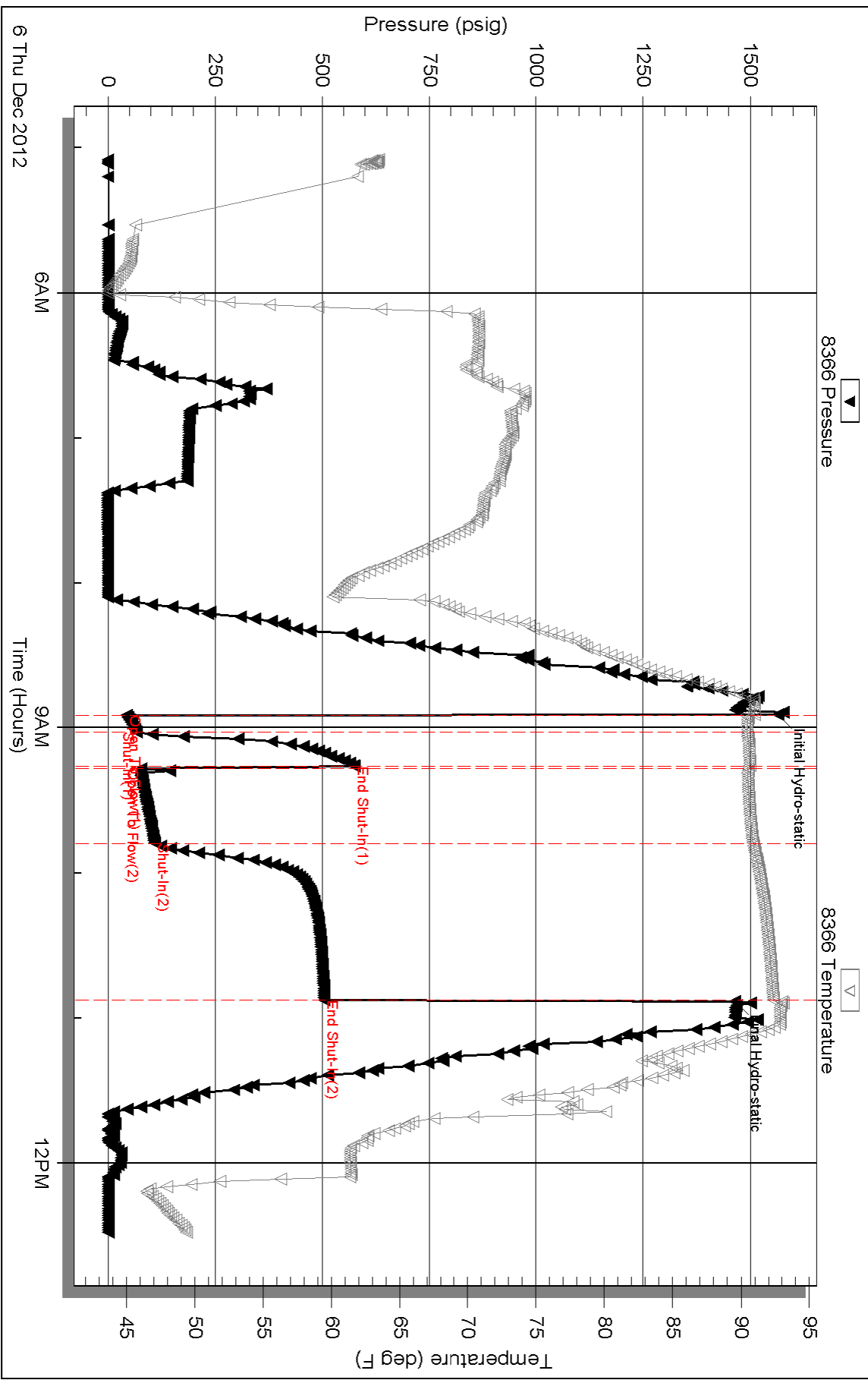
**Recovery Information**

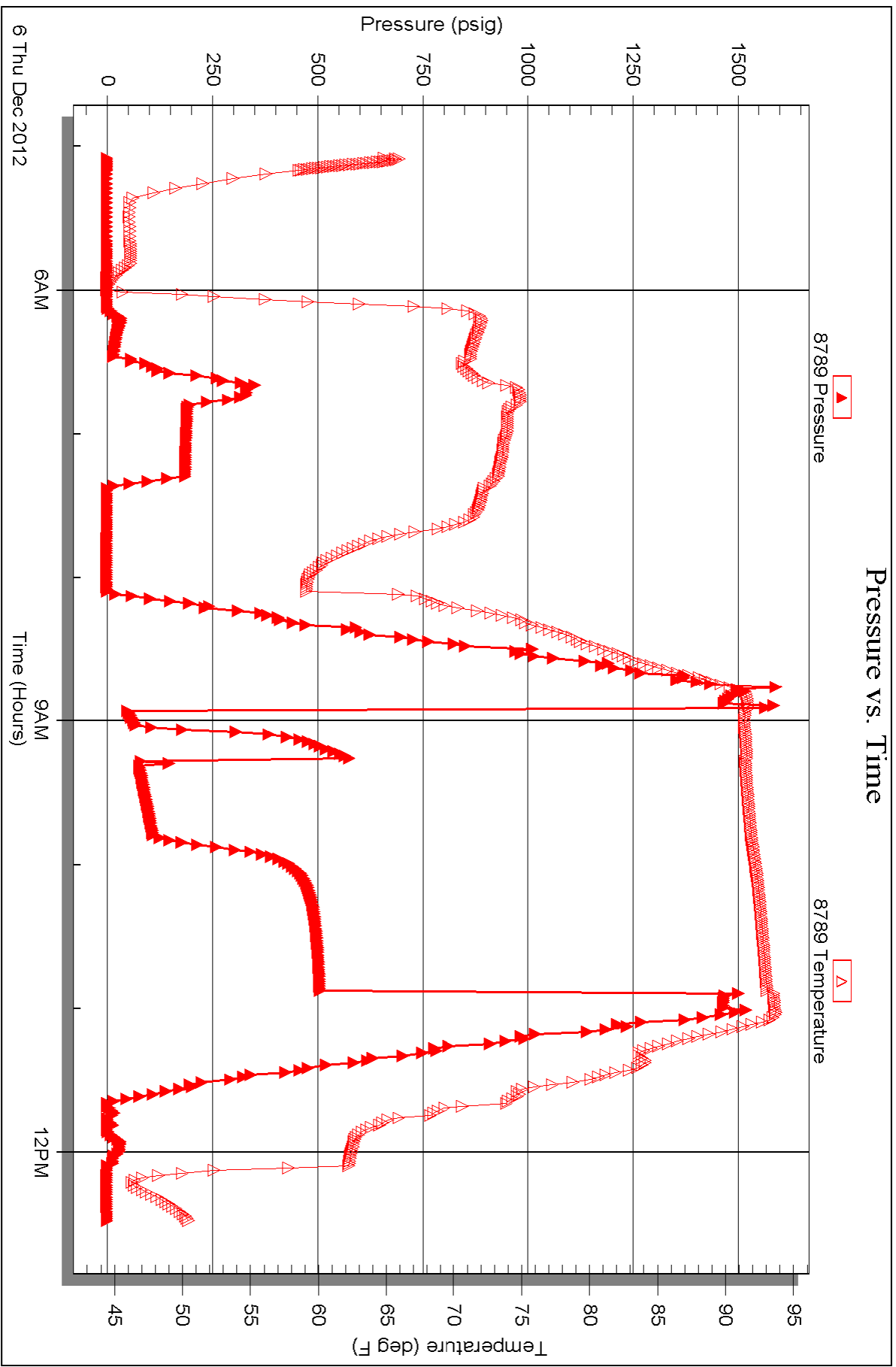
Recovery Table

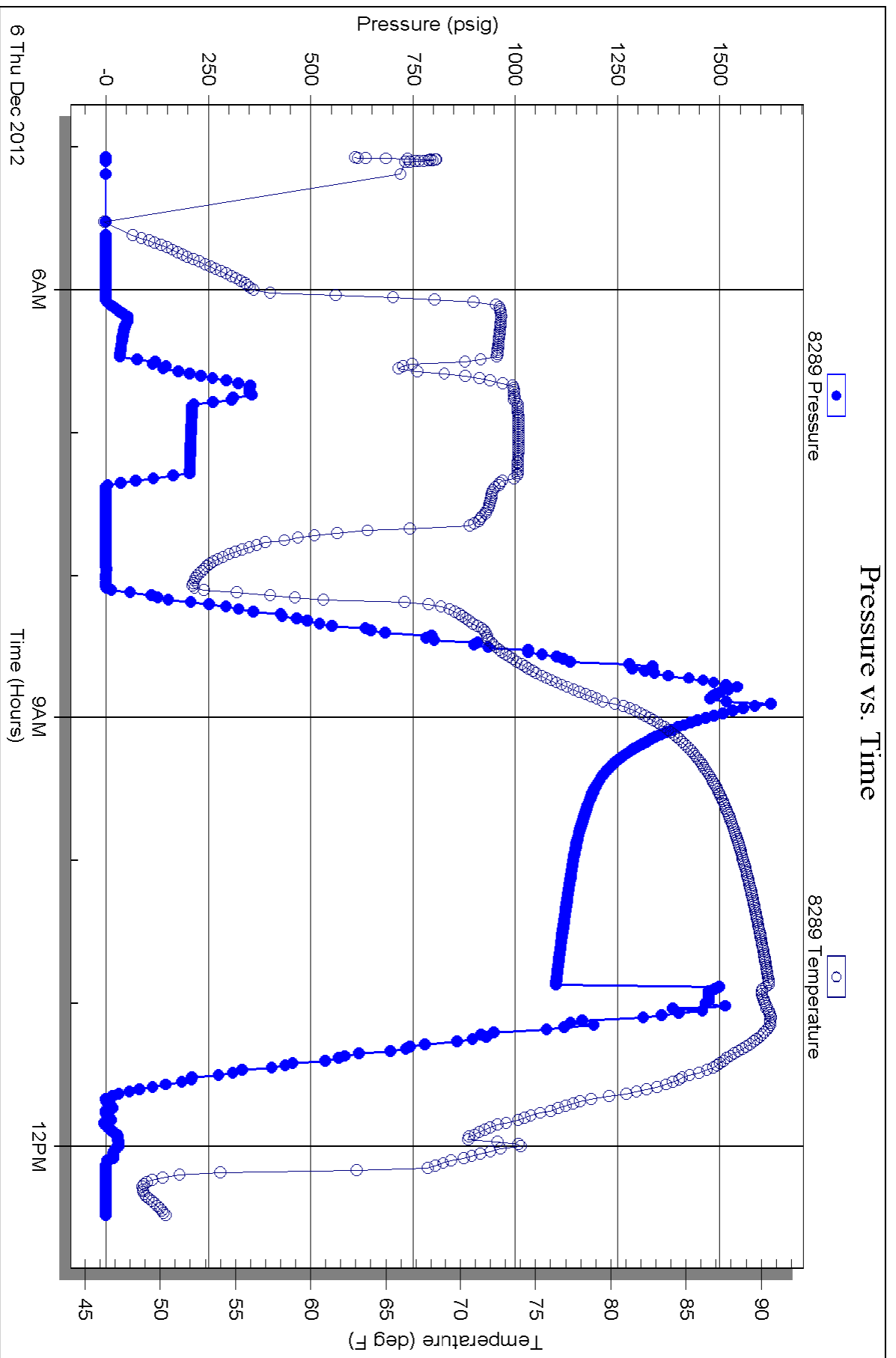
Length ft	Description	Volume bbl
125.00	GSOCM-20%G-10%O-70%M	0.615

Total Length: 125.00 ft      Total Volume: 0.615 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

# Pressure vs. Time









# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48746

Well Name & No. Boardman #1-23 Test No. 1 Date 12-5-12  
 Company Larson Engineering, Inc. Elevation 1853 KB 1848 GL  
 Address 562 W. State Road 4, Olmitz, Ks. 67564  
 Co. Rep / Geo. Tom Larson Rig Shields  
 Location: Sec. 23 Twp. 11s Rge. 15w Co. Russell State Ks

Interval Tested 3316-3347 Zone Tested Arbuckle  
 Anchor Length 31 Drill Pipe Run 2841 Mud Wt. 9.4  
 Top Packer Depth 3311 Drill Collars Run 0 Vis 51  
 Bottom Packer Depth 3316 Wt. Pipe Run 4164 WL 8.0  
 Total Depth 3406 LTD Chlorides 3900 ppm System LCM 2#  
 Blow Description IFPA - Strong, BOB in 1 min  
ISI - Dead  
FFA - Strong, BOB in 1 1/2 min.  
FSE - Dead

Rec	Feet of	%gas	%oil	%water	%mud
760	Muddy Water		80	20	
	(Bottom Packer Did Not Hold)				

Rec Total 760 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1716  Test 1150 T-On Location 9:39  
 (B) First Initial Flow 169  Jars \_\_\_\_\_ T-Started 11:15  
 (C) First Final Flow 270  Safety Joint \_\_\_\_\_ T-Open ~~7:50~~ 12:48  
 (D) Initial Shut-In 1103  Circ Sub \_\_\_\_\_ T-Pulled 13:53  
 (E) Second Initial Flow 359  Hourly Standby \_\_\_\_\_ T-Out 16:52  
 (F) Second Final Flow 452  Mileage 70 rt 108.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 1074  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1592  Straddle 600  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 1858.50  
 Final Flow call - 15  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1858.50

Approved By T.C. Larson Our Representative Jason M. Larson Thank You

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 opinions 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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48747

Well Name & No. Boardman # 1-23 Test No. 2 Date 12-5-12  
 Company Larson Engineering, Inc. Elevation 1853 KB 1878 GL  
 Address 562 W. State Road 4, Olmitz, KS. 67564  
 Co. Rep / Geo. Tom Larson Rig Shields  
 Location: Sec. 23 Twp. 11s Rge. 15w Co. Russell State KS

Interval Tested 3316-3351 Zone Tested Arbuckle  
 Anchor Length 35' Drill Pipe Run 2841 Mud Wt. 9.4  
 Top Packer Depth 3311 Drill Collars Run 0 Vis 5'  
 Bottom Packer Depth 3316 Wt. Pipe Run 464 WL 8.0  
 Total Depth 3406 Chlorides 3900 ppm System LCM 2<sup>nd</sup>  
 Blow Description IFP- Strong, BOB in 4 min.  
FSI-Dead  
FFP- Strong, BOB in 5 min.  
FSI-Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>515</u>	<u>VSOCMW</u>	<u>3</u>	<u>70</u>	<u>27</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 515 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1715  Test 1150 T-On Location 16:52  
 (B) First Initial Flow 65  Jars \_\_\_\_\_ T-Started 17:14  
 (C) First Final Flow 111  Safety Joint \_\_\_\_\_ T-Open 19:07  
 (D) Initial Shut-In 1051  Circ Sub \_\_\_\_\_ T-Pulled 20:12  
 (E) Second Initial Flow 138  Hourly Standby \_\_\_\_\_ T-Out 22:27  
 (F) Second Final Flow 259  Mileage 108.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 1013  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1620  Straddle 600  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 1858.50  
 Final Flow 15  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 30 Sub Total 1858.50

Approved By \_\_\_\_\_ Our Representative Jason Mc Leman *Thank You*  
 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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 48748

Well Name & No. Boardman # 1-23 Test No. 3 Date 12-6-12  
 Company Larson Engineering, Inc. Elevation 1853 KB 1848 GL  
 Address 562 W. State Road 4, Olmitz, KS. 67564  
 Co. Rep / Geo. Tom Larson Rig Shields  
 Location: Sec. 23 Twp. 11s Rge. 15w Co. Russell State KS

Interval Tested 2987-3054 Zone Tested LKC  
 Anchor Length 67' Drill Pipe Run 2526 Mud Wt. 9.9  
 Top Packer Depth 2982 Drill Collars Run 0 Vis 5.1  
 Bottom Packer Depth 2987 Wt. Pipe Run 464 WL 8.0  
 Total Depth 3406 Chlorides 3900 ppm System LCM 2\*\*  
 Blow Description IFP - Weak Blow, Built to 3 1/2"  
ISI - Dead  
FFP - Weak Blow, Built to 4 1/2"  
FSI - Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>Carry SOCM</u>	<u>20</u>	<u>10</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	Feet of	%gas	%oil	%water	%mud

Rec Total 125 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1565  Test 1250 T-On Location 4:29  
 (B) First Initial Flow 43  Jars \_\_\_\_\_ T-Started 5:00  
 (C) First Final Flow 67  Safety Joint \_\_\_\_\_ T-Open 8:52  
 (D) Initial Shut-In 575  Circ Sub \_\_\_\_\_ T-Pulled 10:42  
 (E) Second Initial Flow 78  Hourly Standby \_\_\_\_\_ T-Out 12:26  
 (F) Second Final Flow 109  Mileage 108.50 Comments \_\_\_\_\_  
 (G) Final Shut-In 504  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1464  Straddle 600  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1858.50  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1858.50

Approved By \_\_\_\_\_ 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.

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

March 29, 2013

Thomas Larson  
Larson Engineering, Inc. dba Larson Operating  
Company  
562 W STATE RD 4  
OLMITZ, KS 67564-8561

Re: ACO1  
API 15-167-23839-00-00  
Boardman 1-23  
SW/4 Sec.23-11S-15W  
Russell County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Thomas Larson