



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1214583  
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: \_\_\_\_\_



1214583

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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Boomhower B 1-16
Doc ID	1214583

Tops

Name	Top	Datum
Anhydrite	2207	+598
B Anhydrite	2230	+575
Heebner	3926	-1121
Lansing	3965	-1139
Stark Sh	4221	-1416
Pawnee	4421	-1616
Ft. Scott	4473	-1668
Cher Sh	4499	-1694
Mississippi	4566	-1761



# ALLIED OIL & GAS SERVICES, LLC 062880

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Greensboro

DATE <u>3-22-14</u>	SEC. <u>16</u>	TWP. <u>17</u>	RANGE <u>29</u>	CALLED OUT	ON LOCATION <u>1pm</u>	JOB START <u>2pm</u>	JOB FINISH <u>2:30pm</u>
LEASE <u>Deerhouse</u>	WELL# <u>1-16</u>	LOCATION <u>Dighton 3 West 6 1/2 W into</u>			COUNTY <u>Love</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>							

CONTRACTOR HD

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D.

CASING SIZE 8 1/2 DEPTH 266.45

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15 F

PERFS.

DISPLACEMENT 16.01 bbl For water

OWNER

CEMENT

AMOUNT ORDERED 175 sks Class A 3 1/2 cc

2 1/2 gal

EQUIPMENT

PUMP TRUCK CEMENTER Josh Trice

# 366 HELPER Ben Howell

BULK TRUCK

# 610-170 DRIVER Kevin Workhouse

BULK TRUCK

# DRIVER

COMMON	<u>175</u>	@ <u>17.90</u>	<u>3,132.50</u>
POZMIX		@	
GEL	<u>3</u>	@ <u>23.40</u>	<u>70.20</u>
CHLORIDE	<u>493</u>	@ <u>.80</u>	<u>394.40</u>
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	<u>189.23</u>	@ <u>2.48</u>	<u>469.29</u>
MILEAGE	<u>8.63 x 34 x</u>	@ <u>2.60</u>	<u>763.42</u>
TOTAL			<u>4,829.81</u>

REMARKS:

Drill down - log up - had safety meeting

Run 9 1/2 casing - Break circulation, performed

pump 5 bbl fresh water

mix 175 sks class A 3 1/2 cc 2 1/2 gal

Displace 16.01 bbl For water

Switch @ 2:20 pm

Cement did circulation

log down

SERVICE

DEPTH OF JOB	<u>266</u>		
PUMP TRUCK CHARGE		<u>1512.25</u>	
EXTRA FOOTAGE		@	
MILEAGE	<u>Hum 34</u>	@ <u>7.70</u>	<u>261.80</u>
MANIFOLD		@	
	<u>Love 34</u>	@ <u>4.40</u>	<u>149.60</u>
		@	

CHARGE TO: Varson Engineering

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TOTAL 1,923.65

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	

TOTAL \_\_\_\_\_

To: Allied Oil & Gas Services, LLC.

You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES 6,753.46

DISCOUNT 1,688.38

IF PAID IN 30 DAYS

5,065.09

PRINTED NAME X. LEWIS TRESNER

SIGNATURE X. Lewis Tresner

Thank you!!



CHARGE TO: **LARSON ENGINEERING**  
 ADDRESS:  
 CITY, STATE, ZIP CODE:

TICKET 26196

PAGE 1 OF 2

SERVICE LOCATIONS: 1. **NESS CITY, KS**  
 WELL/PROJECT NO.: **BOOMHOWER 1-116** LEASE: **LANE** COUNTY/PARISH: **KS** CITY: **DIGHTON, KS.** DATE: **9 APR 14** OWNER:  
 TICKET TYPE:  SERVICE  SALES CONTRACTOR: **HD DRILLING RIG #3** RIG NAME/NO.: SHIPPED VIA: DELIVERED TO: ORDER NO.:  
 WELL TYPE: **OIL** WELL CATEGORY: **DEVELOPMENT** JOB PURPOSE: **5 1/2 LONGSTRING** WELL PERMIT NO.: WELL LOCATION: **SW 6 3/4 N, W 1/4 T10**  
 REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE # 115	45	mi			6.00	270.00
578					Pump CHARGE					1500.00	1500.00
280					FLOCHECK 21	500	gal			3.00	1500.00
221					LIQUID KCL	2	gal			25.00	50.00
419					ROTATING HEAD RENTAL	1	hr			200.00	200.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.  
 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS  
 X *[Signature]*  
 DATE SIGNED: **9 APR 14** TIME SIGNED: **1745**  A.M.  P.M.

**REMIT PAYMENT TO:**  
**SWIFT SERVICES, INC.**  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				1	3520.00
WE UNDERSTOOD AND MET YOUR NEEDS?				2	5478.10
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				subtotal	8998.10
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Lone TAX 7.15%	466.72
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		TOTAL	9464.82
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					

**CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES** - The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 SWIFT OPERATOR: *[Signature]* APPROVAL: *[Signature]* Thank You!



PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 26196

CUSTOMER LARSEN ENGINEERING WEL BOOMHOWER 1-16 DATE 9 APR 14 PAGE 21 OF 2

PRICE REFERENCE	SECONDARY REFERENCE PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY	U/M	QTY	U/M		
276						FLICELE	40	lbs			2.50	100.00
283						SALT	800	lbs			2.00	1600.00
284						CAUSEAL	7	SX			35.00	245.00
277						GILSONITE	1100	lbs			7.50	8250.00
292						HALAD B322	150	lbs			8.00	1200.00
325						STANDARD EA-2	155	SX			14.50	2247.50
581						SERVICE CHARGE					2.00	310.00
583						MILEAGE CHARGE	173.60				1.00	390.60
						LOADED MILES	45					
						TON MILES	390.60					
CONTINUATION TOTAL											5478.10	

JOB LOG

SWIFT Services, Inc.

DATE 9 APR 14 PAGE NO.

CUSTOMER LARSON ENGINEERING

WELL NO.

LEASE BOOMHOWER 1-16

JOB TYPE 5 1/2 LONG STRING

TICKET NO. 26196

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1400							ON LOCATION
								RID @ 4640 SET @ 4636 SS. 42.46. PORT COLLAR @ 2180
	1530							DROP BALL - CIRCULATE
	1630	6	15		✓		300	Pump 15 BBL KCL
		6	12		✓		300	Pump 500 gal FLOCHECK 21
		6	5		✓		300	Pump 5 BBL KCL
	1638		7					PLUG RH - 3DSX
	1641	4	30		✓			MIX 125 SX EA-2
	1651							WASH OUT Pump & LINES.
	1654	6			✓			START DISPLACING PLUG.
	1704		109		✓		1500	PLUG DOWN - LATCH PLUG IN.
	1716							RELEASE PSI - DRY
								WASH TRUCK
	1745							JOB COMPLETE
								THANKS #115
								JASON JUAN DONG





CHARGE TO: Larson  
 ADDRESS:  
 CITY, STATE, ZIP CODE:

TICKET 25527

SERVICE LOCATIONS  
 1. Hays, KS | WELL/PROJECT NO. 1-16 | LEASE Boomhauer B | COUNTY/PARISH Lane | STATE KS | CITY | DATE 4-17-14 | OWNER  
 2. Ness Link | TICKET TYPE SERVICE | CONTRACTOR | RIG NAME/NO. | SHIPPED VIA CT | DELIVERED TO Location | ORDER NO.  
 3. | WELL TYPE Oil | WELL CATEGORY Development | JOB PURPOSE Port Collar | WELL PERMIT NO. | WELL LOCATION Digby, KS W 02 E 04 N 20 W  
 4. REFERRAL LOCATION | INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT	
		LOC	ACCT	DF								
575		1			MILEAGE # 112	45	mi			6 <sup>00</sup>	270	<sup>00</sup>
576.0		1			Pump Charge Port Collar	1	eq			1500 <sup>00</sup>	1500	<sup>00</sup>
275		1			Cotton Seed Hulls	6	sls			32 <sup>00</sup>	192	<sup>00</sup>
290		1			D-App	2	gal			42 <sup>00</sup>	84	<sup>00</sup>
330		2			Swift Multi Density	200	sls			18 <sup>50</sup>	3700	<sup>00</sup>
276		2			Fluocel	75	llbs			2 <sup>50</sup>	187	<sup>50</sup>
581		2			Service Charge Cement	250	sls			2 <sup>00</sup>	500	<sup>00</sup>
<del>582</del> 583		2			Drayage	560.5	ftm			1 <sup>00</sup>	560	<sup>50</sup>

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 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS  
 x Perry Carr  
 DATE SIGNED 4-17-14 | TIME SIGNED 1:30 |  A.M.  P.M.

**REMIT PAYMENT TO:**  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				694 <sup>00</sup>
WE UNDERSTOOD AND MET YOUR NEEDS?				
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO			Lone TAX 7.15% 297 <sup>69</sup>
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				

**CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES** - The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 SWIFT OPERATOR: [Signature] | APPROVAL: [Signature] | Thank You!





## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.03.27 @ 17:35:00

End Date: 2014.03.27 @ 23:11:54

Job Ticket #: 56256                      DST #: 1

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

Printed: 2014.04.11 @ 11:19:43



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

ATTN: Vern Schrag

Job Ticket: 56256

**DST#: 1**

Test Start: 2014.03.27 @ 17:35:00

## GENERAL INFORMATION:

Formation: **LKC 'E'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:39:12

Time Test Ended: 23:11:54

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

**Interval: 4034.00 ft (KB) To 4065.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4065.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8357**

**Inside**

Press@RunDepth: 35.16 psig @ 4037.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.27

End Date:

2014.03.27

Last Calib.:

2014.03.27

Start Time: 17:35:05

End Time:

23:11:54

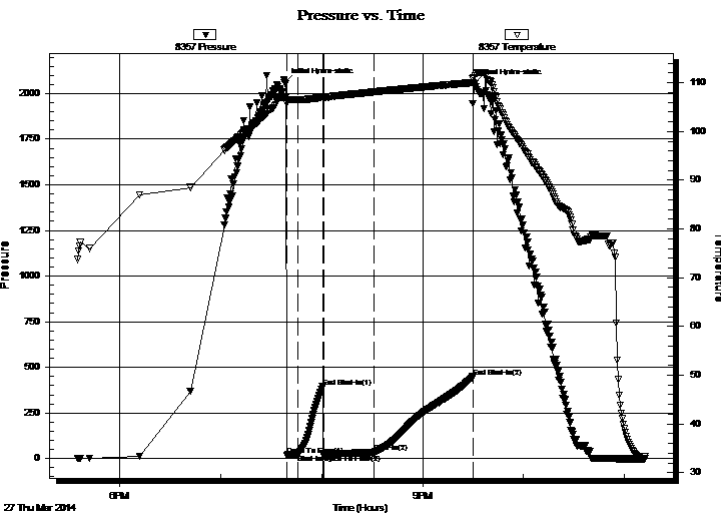
Time On Btm:

2014.03.27 @ 19:37:54

Time Off Btm:

2014.03.27 @ 21:30:24

**TEST COMMENT:** 6- 1" Blow .  
15- No return.  
30- 2 1/2" Blow .  
60- No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.19	106.93	Initial Hydro-static
2	19.24	105.69	Open To Flow (1)
8	23.49	106.49	Shut-In(1)
23	393.72	106.98	End Shut-In(1)
24	25.11	106.95	Open To Flow (2)
54	35.16	108.12	Shut-In(2)
112	448.89	110.03	End Shut-In(2)
113	2054.50	111.05	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 25o 75m	0.10

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 56256

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2014.03.27 @ 17:35:00

## Tool Information

Drill Pipe:	Length: 3921.00 ft	Diameter: 3.80 inches	Volume: 55.00 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 55.57 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.50 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4034.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	31.00 ft				
Tool Length:	58.50 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

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

Change Over Sub	1.00			4007.50	
Shut In Tool	5.00			4012.50	
Hydraulic tool	5.00			4017.50	
Jars	5.00			4022.50	
Safety Joint	2.50			4025.00	
Packer	5.00			4030.00	27.50 Bottom Of Top Packer
Packer	4.00			4034.00	
Stubb	1.00			4035.00	
Perforations	2.00			4037.00	
Recorder	0.00	8357	Inside	4037.00	
Recorder	0.00	8645	Outside	4037.00	
Perforations	25.00			4062.00	
Bullnose	3.00			4065.00	31.00 Bottom Packers & Anchor

**Total Tool Length: 58.50**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 56256

**DST#: 1**

ATTN: Vern Schrag

Test Start: 2014.03.27 @ 17:35:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.09 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 25o 75m	0.098

Total Length: 20.00 ft      Total Volume: 0.098 bbl

Num Fluid Samples: 0

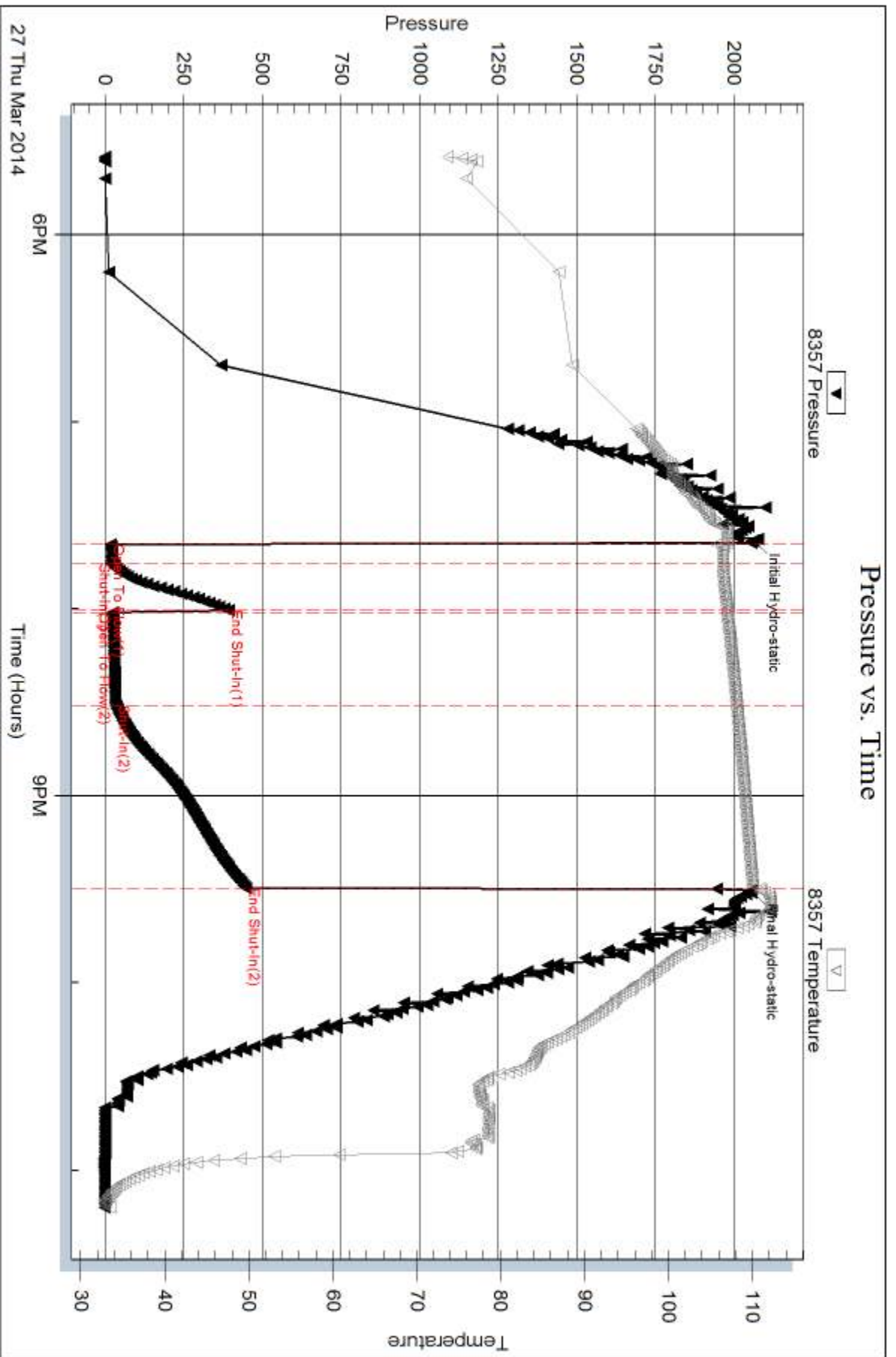
Num Gas Bombs: 0

Serial #:

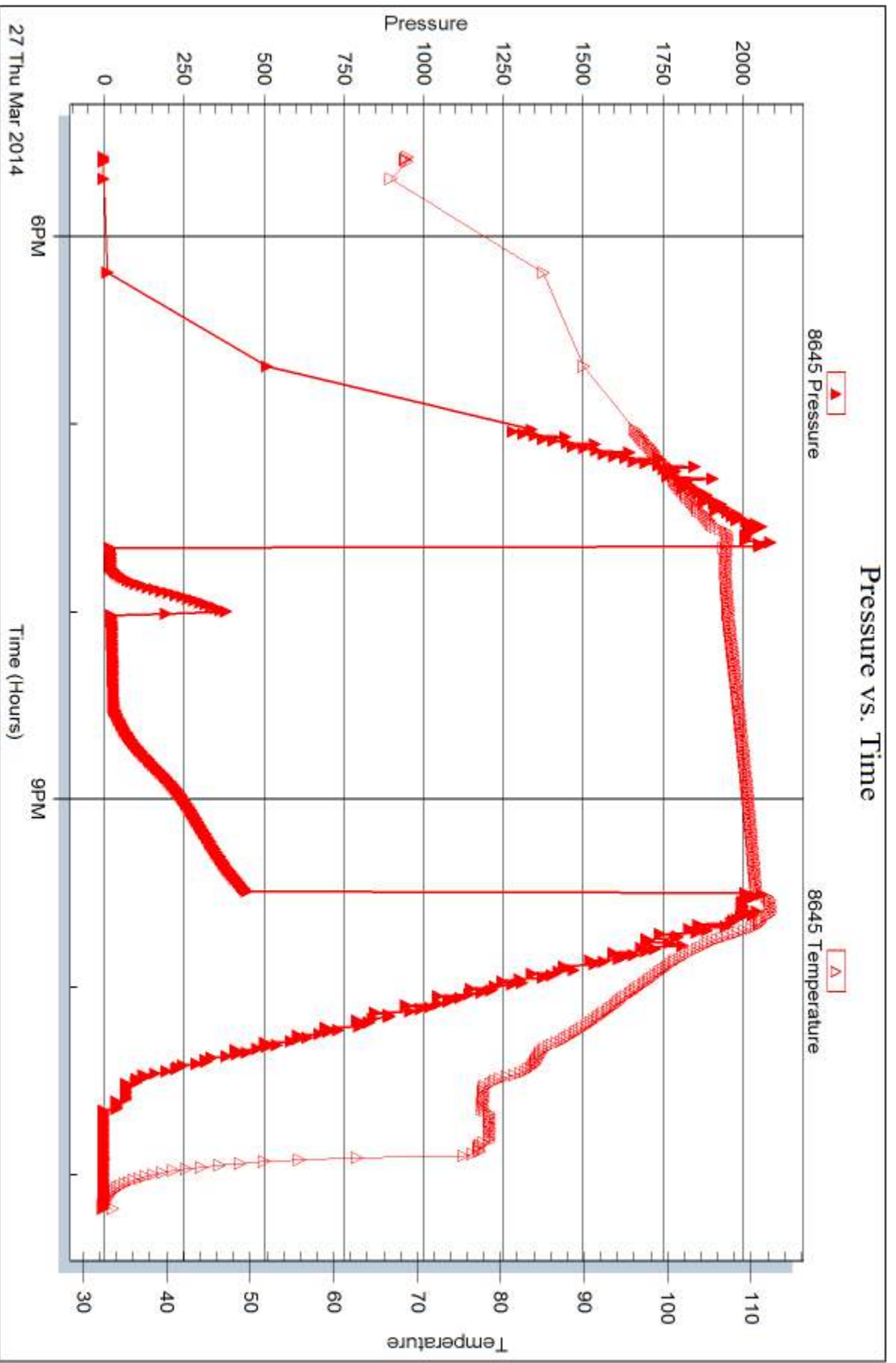
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.08 @ 05:25:00

End Date: 2014.04.08 @ 12:03:00

Job Ticket #: 56515                      DST #: 10

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

Printed: 2014.04.11 @ 11:15:41

Larson Engineering, Inc.

S16-17s-29w Lane,KS

Boomhower B #1-16

DST # 10

Cherokee

2014.04.08



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 56515

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.04.08 @ 05:25:00

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:46:45

Time Test Ended: 12:03:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III

Unit No: 72

**Interval: 4496.00 ft (KB) To 4560.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8674 Inside**

Press@RunDepth: 74.51 psig @ 4499.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.08

End Date: 2014.04.08

Last Calib.: 2014.04.08

Start Time: 05:25:05

End Time: 12:02:59

Time On Btm: 2014.04.08 @ 07:46:30

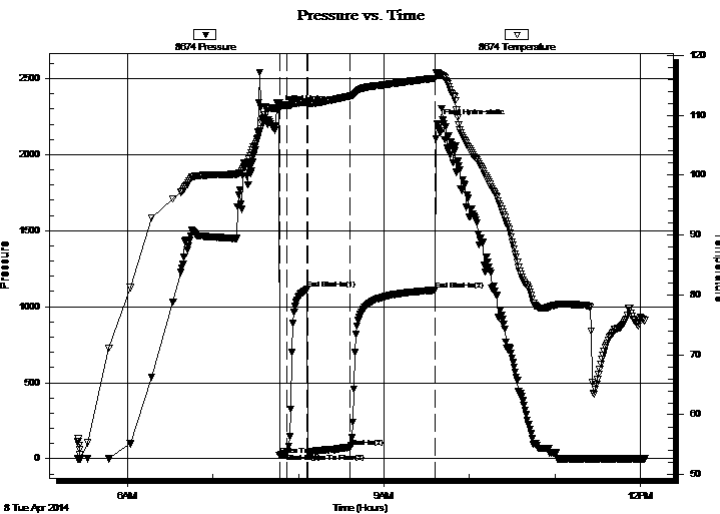
Time Off Btm: 2014.04.08 @ 09:37:30

**TEST COMMENT:** IF: 3 in. Blow

IS: Bled off in 2 min.-Fair surface Blow back return-Died in 10 min.

FF: Surface blow -built to B.o.b. in 16 1/2 min.

FS: Bled off in 2 min.-Fair surface blow back-Built to 1/2 in.-Died back to surface blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2298.28	112.04	Initial Hydro-static
1	21.53	111.07	Open To Flow (1)
6	35.10	111.57	Shut-In(1)
20	1114.02	112.23	End Shut-In(1)
21	38.01	111.80	Open To Flow (2)
50	74.51	113.17	Shut-In(2)
110	1108.96	116.15	End Shut-In(2)
111	2203.12	117.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
58.00	G & MCO 15g 20m 65o	0.29
53.00	M & GCO 10m 30g 60o	0.26
5.00	CGO 15g 85o	0.02
30.00	G & MCO 15g 30m 55o	0.42
1.00	CGO 15g 85o	0.01
0.00	GIP=283	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 56515

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.04.08 @ 05:25:00

## Tool Information

Drill Pipe:	Length: 4358.00 ft	Diameter: 3.80 inches	Volume: 61.13 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:	26000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	5000.00 lb
			<u>Total Volume: 61.70 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4496.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	64.00 ft				
Tool Length:	91.00 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			4470.00	
Shut In Tool	5.00			4475.00	
Hydraulic tool	5.00			4480.00	
Jars	5.00			4485.00	
Safety Joint	2.00			4487.00	
Packer	5.00			4492.00	27.00 Bottom Of Top Packer
Packer	4.00			4496.00	
Stubb	1.00			4497.00	
Perforations	1.00			4498.00	
Change Over Sub	1.00			4499.00	
Recorder	0.00	8355	Outside	4499.00	
Recorder	0.00	8674	Inside	4499.00	
Drill Pipe	31.00			4530.00	
Change Over Sub	1.00			4531.00	
Perforations	24.00			4555.00	
Bullnose	5.00			4560.00	64.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>91.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 56515

**DST#: 10**

ATTN: Vern Schrag

Test Start: 2014.04.08 @ 05:25:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.60 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2300.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
58.00	G & MCO 15g 20m 65o	0.285
53.00	M & GCO 10m 30g 60o	0.261
5.00	CGO 15g 85o	0.025
30.00	G & MCO 15g 30m 55o	0.421
1.00	CGO 15g 85o	0.014
0.00	GIP=283	0.000

Total Length: 147.00 ft      Total Volume: 1.006 bbl

Num Fluid Samples: 0

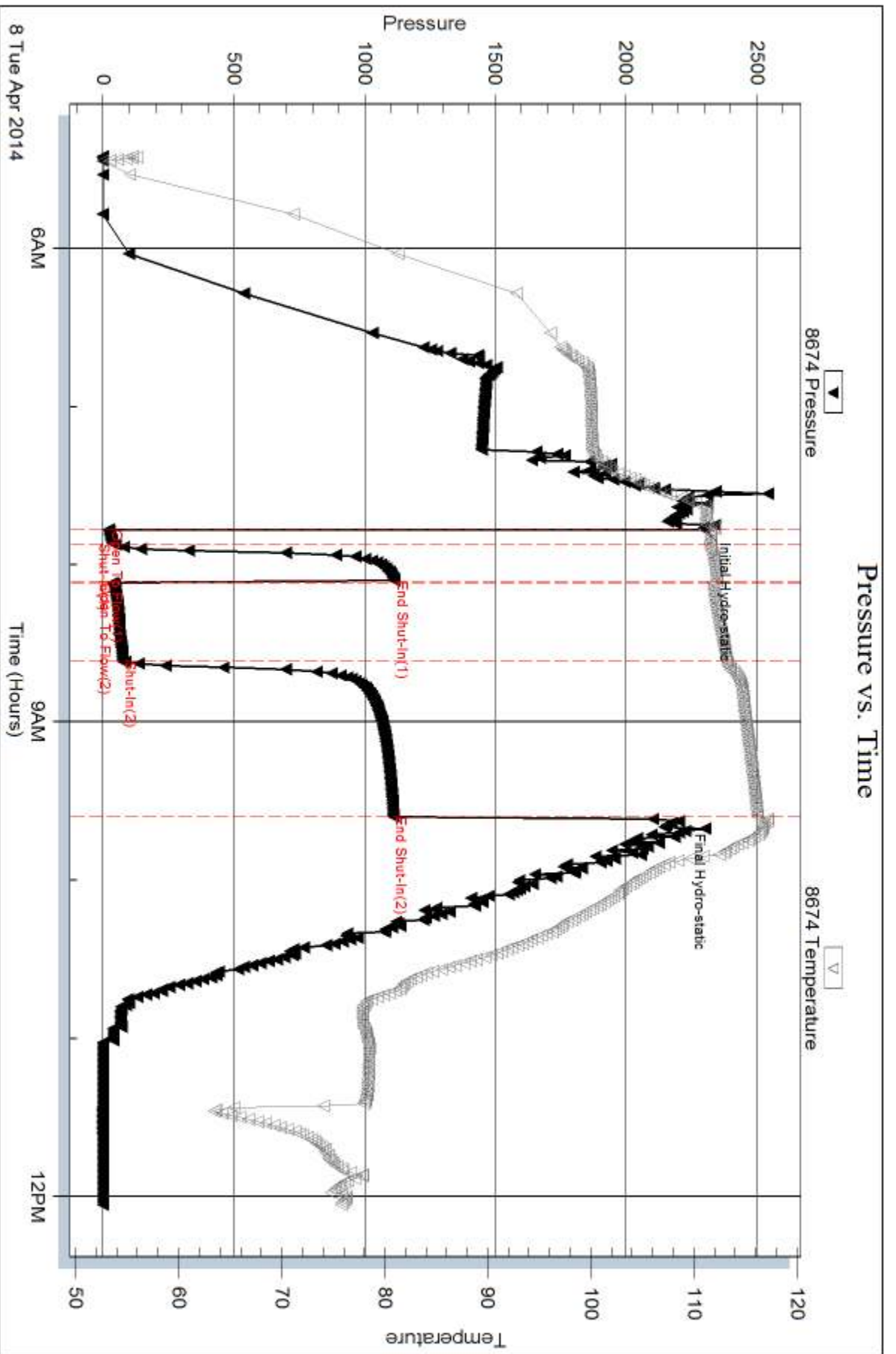
Num Gas Bombs: 0

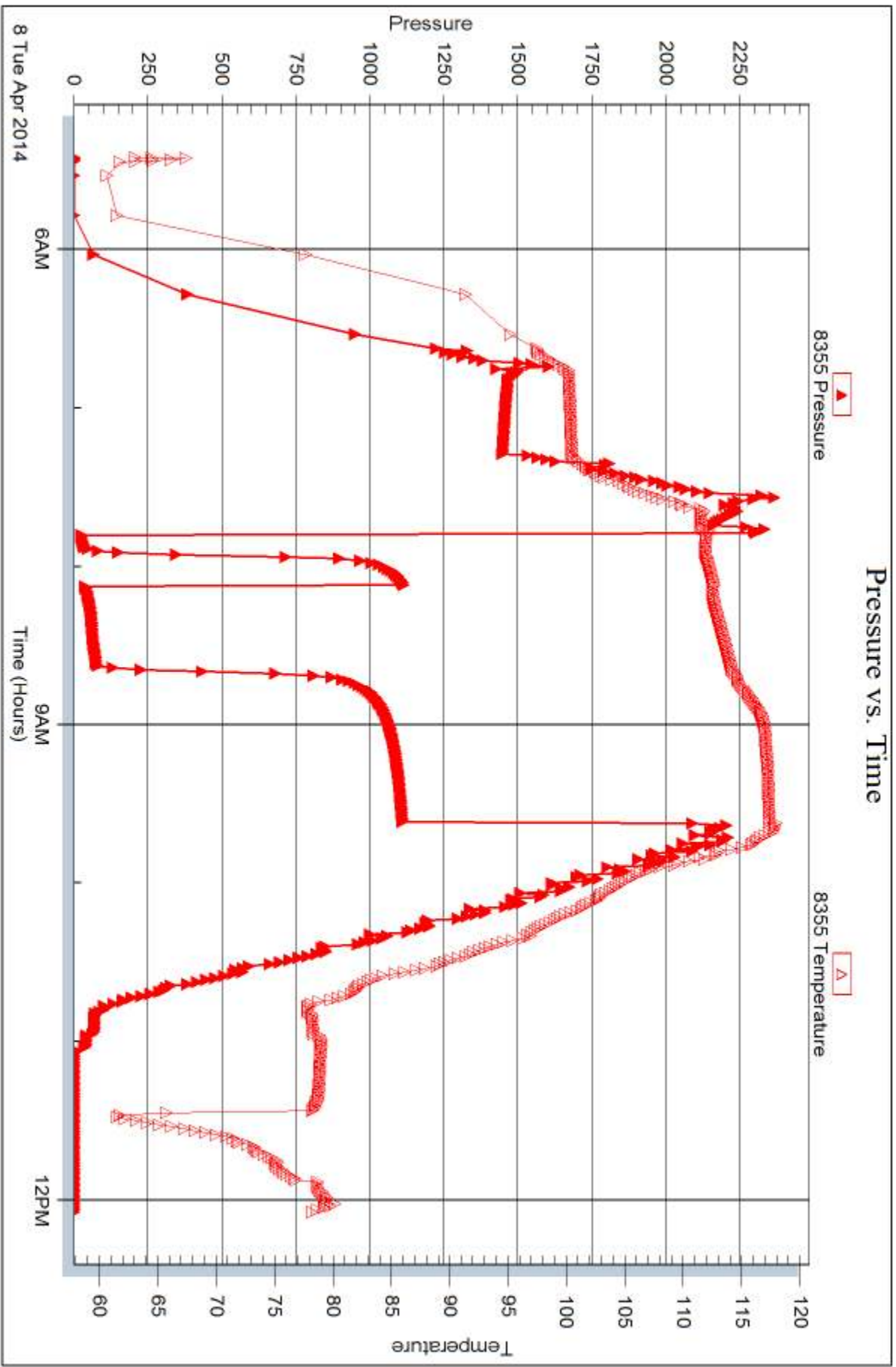
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity 38@80=36









## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.02 @ 16:08:00

End Date: 2014.04.02 @ 21:09:09

Job Ticket #: 57232                      DST #: 2

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

Printed: 2014.04.11 @ 11:19:11



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

ATTN: Vern Schrag

Job Ticket: 57232

**DST#: 2**

Test Start: 2014.04.02 @ 16:08:00

## GENERAL INFORMATION:

Formation: **LKC "H"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:12:55

Time Test Ended: 21:09:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4125.00 ft (KB) To 4148.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4148.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 24.48 psig @ 4126.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.02

End Date:

2014.04.02

Last Calib.:

2014.04.02

Start Time:

16:08:00

End Time:

21:09:09

Time On Btm:

2014.04.02 @ 18:12:40

Time Off Btm:

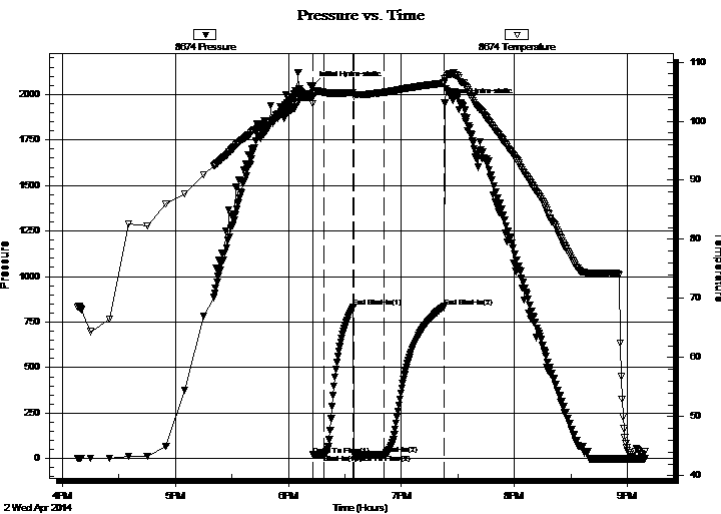
2014.04.02 @ 19:22:55

TEST COMMENT: IF- Weak Surface Blow 1/2"

IS- No Blow

FF- No Blow

FS- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2046.04	104.05	Initial Hydro-static
1	20.88	102.98	Open To Flow (1)
6	21.84	104.86	Shut-In(1)
22	833.06	104.81	End Shut-In(1)
22	22.84	104.23	Open To Flow (2)
38	24.48	104.87	Shut-In(2)
70	835.40	106.46	End Shut-In(2)
71	1953.81	107.12	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% m with a Skim of Oil on Top	0.02

\* 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 Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

**S16-17s-29w Lane,KS**

**Boomer B #1-16**

Job Ticket: 57232

**DST#: 2**

Test Start: 2014.04.02 @ 16:08:00

## GENERAL INFORMATION:

Formation: **LKC "H"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:12:55

Time Test Ended: 21:09:09

**Interval: 4125.00 ft (KB) To 4148.00 ft (KB) (TVD)**

Total Depth: 4148.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

Reference Elevations: 2805.00 ft (KB)

2798.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8355**

**Outside**

Press@RunDepth: psig @ 4126.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.02

End Date:

2014.04.02

Last Calib.:

2014.04.02

Start Time: 16:08:05

End Time:

21:10:14

Time On Btm:

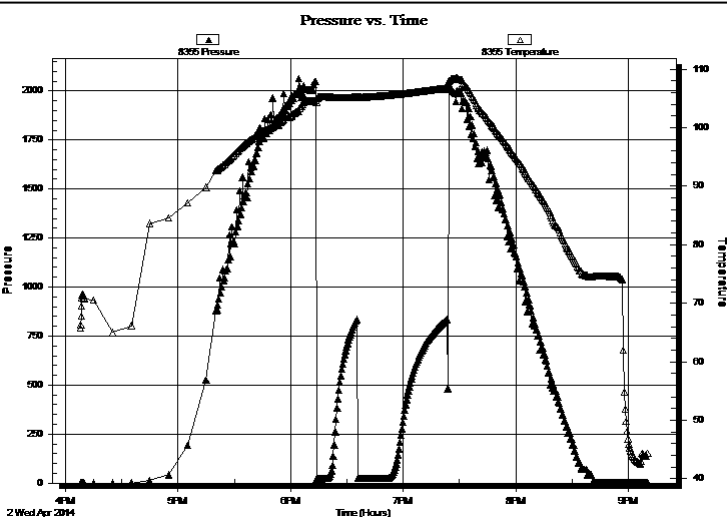
Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow 1/2"

IS- No Blow

FF- No Blow

FS- No Blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% m with a Skim of Oil on Top	0.02

## 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.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57232

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.04.02 @ 16:08:00

## Tool Information

Drill Pipe:	Length: 4012.00 ft	Diameter: 3.80 inches	Volume: 56.28 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	12000.00 lb
			<u>Total Volume: 56.85 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	4125.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	50.00 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			4099.00	
Shut In Tool	5.00			4104.00	
Hydraulic tool	5.00			4109.00	
Jars	5.00			4114.00	
Safety Joint	2.00			4116.00	
Packer	5.00			4121.00	27.00 Bottom Of Top Packer
Packer	4.00			4125.00	
Stubb	1.00			4126.00	
Recorder	0.00	8355	Outside	4126.00	
Recorder	0.00	8674	Inside	4126.00	
Perforations	17.00			4143.00	
Bullnose	5.00			4148.00	23.00 Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57232

**DST#: 2**

ATTN: Vern Schrag

Test Start: 2014.04.02 @ 16:08:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.89 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% m with a Skim of Oil on Top	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

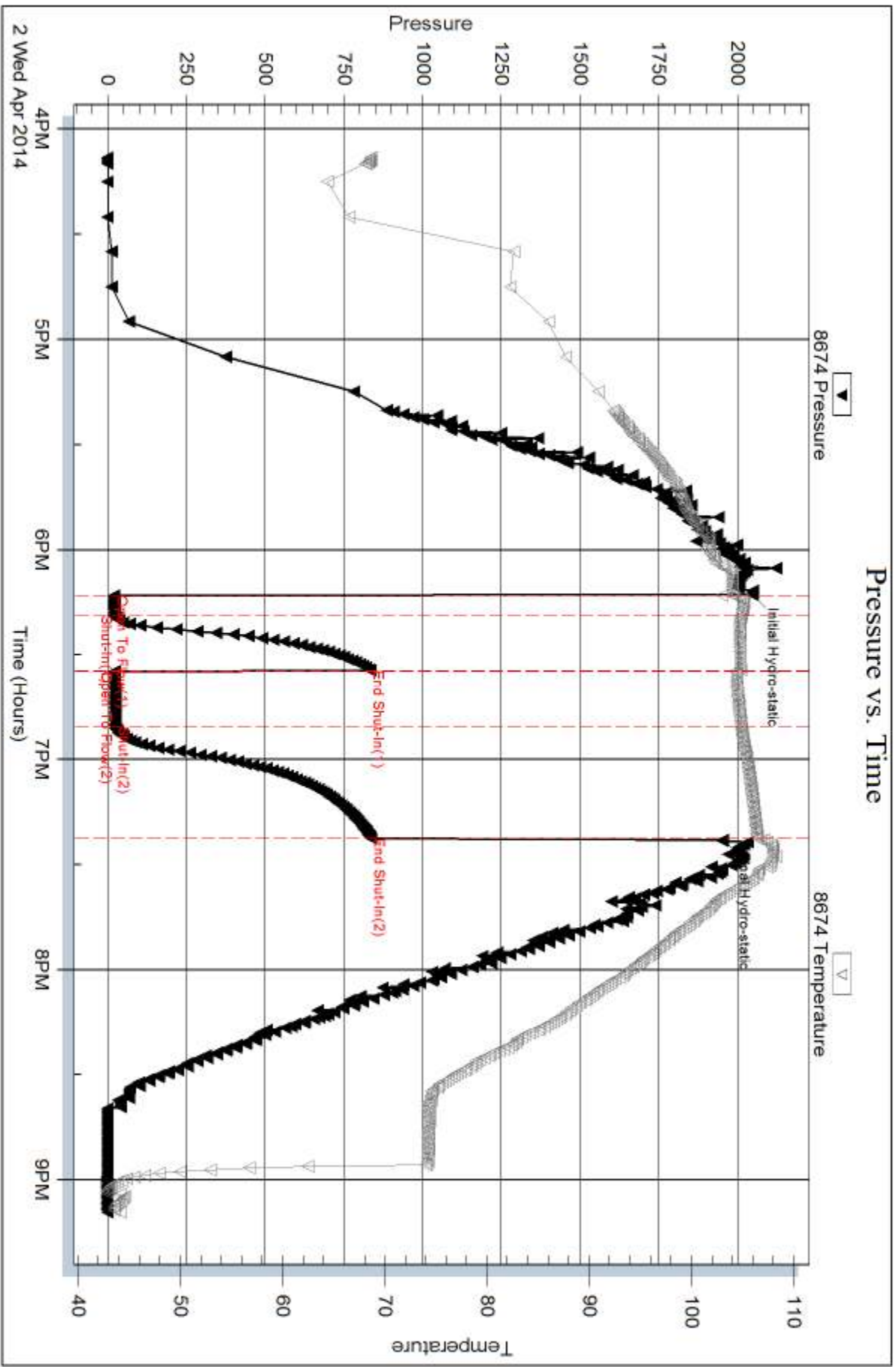
Num Gas Bombs: 0

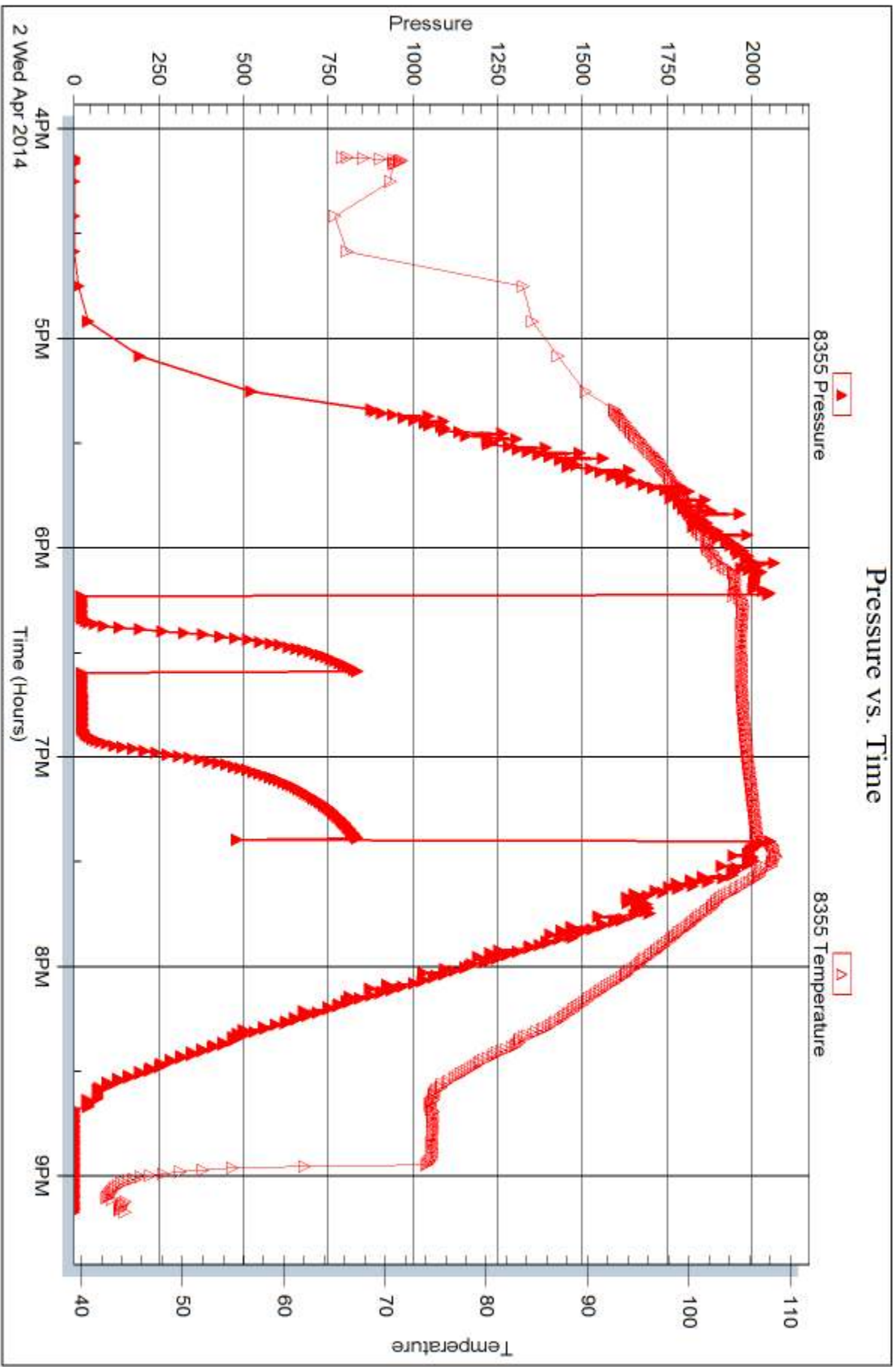
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.03 @ 09:48:00

End Date: 2014.04.03 @ 14:39:39

Job Ticket #: 57233                      DST #: 3

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

Printed: 2014.04.11 @ 11:18:47





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57233

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 09:48:00

## GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:45:40

Time Test Ended: 14:39:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4185.00 ft (KB) To 4204.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4204.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 23.49 psig @ 4186.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.03

End Date:

2014.04.03

Last Calib.:

2014.04.03

Start Time:

09:48:00

End Time:

14:39:39

Time On Btm:

2014.04.03 @ 11:45:25

Time Off Btm:

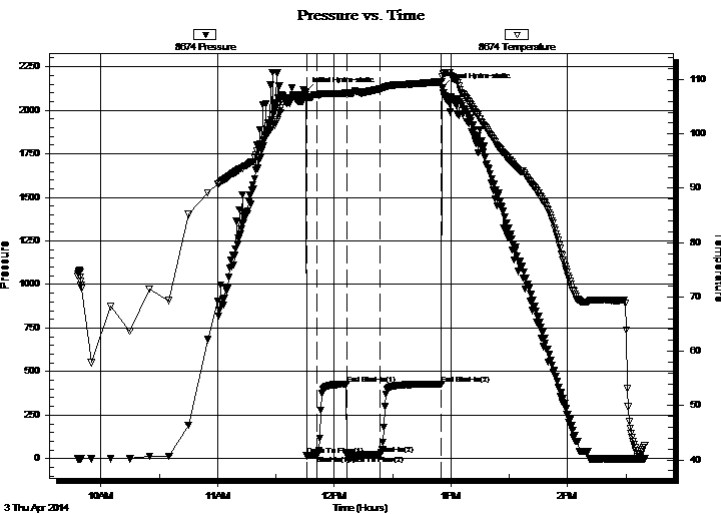
2014.04.03 @ 12:55:40

TEST COMMENT: IF- Weak Surface Blow 1/4"

IS- No Blow

FF- Weak Surface Blow Built to 1/4"

FS- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2105.40	107.28	Initial Hydro-static
1	16.87	106.45	Open To Flow (1)
6	18.50	107.24	Shut-In(1)
21	427.79	107.50	End Shut-In(1)
22	19.20	107.29	Open To Flow (2)
39	23.49	108.32	Shut-In(2)
70	427.97	109.65	End Shut-In(2)
71	2127.50	110.53	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
8.00	100%m with Oil Spots	0.04

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57233 **DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 09:48:00

### GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:45:40

Time Test Ended: 14:39:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

Interval: **4185.00 ft (KB) To 4204.00 ft (KB) (TVD)**

Total Depth: 4204.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2805.00 ft (KB)

2798.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: psig @ 4186.00 ft (KB)

Start Date: 2014.04.03

End Date: 2014.04.03

Start Time: 09:48:05

End Time: 14:40:59

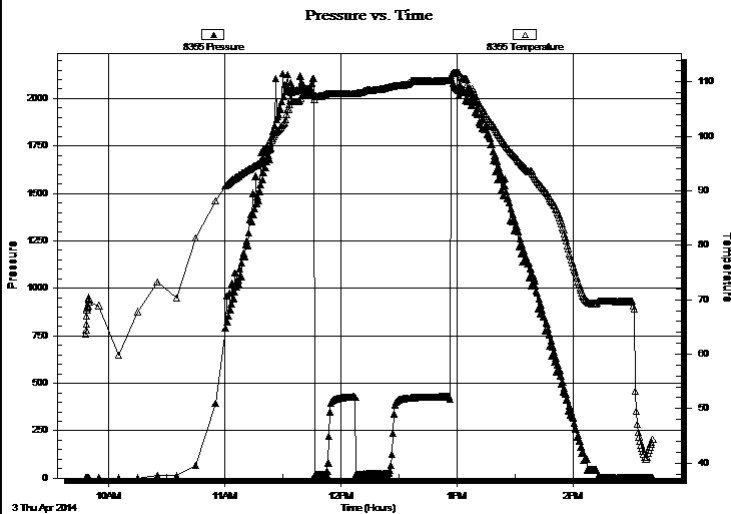
Capacity: 8000.00 psig

Last Calib.: 2014.04.03

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow 1/4"  
IS- No Blow  
FF- Weak Surface Blow Built to 1/4"  
FS- No Blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
8.00	100% m with Oil Spots	0.04

### 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.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57233

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 09:48:00

## Tool Information

Drill Pipe:	Length: 4046.00 ft	Diameter: 3.80 inches	Volume: 56.75 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 26000.00 lb
Drill Collar:	Length: 144.00 ft	Diameter: 2.25 inches	Volume: 0.71 bbl	Weight to Pull Loose: 8000.00 lb
			<u>Total Volume: 57.46 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4185.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.00 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			4159.00	
Shut In Tool	5.00			4164.00	
Hydraulic tool	5.00			4169.00	
Jars	5.00			4174.00	
Safety Joint	2.00			4176.00	
Packer	5.00			4181.00	27.00 Bottom Of Top Packer
Packer	4.00			4185.00	
Stubb	1.00			4186.00	
Recorder	0.00	8355	Outside	4186.00	
Recorder	0.00	8674	Inside	4186.00	
Perforations	13.00			4199.00	
Bullnose	5.00			4204.00	19.00 Bottom Packers & Anchor

**Total Tool Length: 46.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57233

**DST#: 3**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 09:48:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.90 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
8.00	100% m with Oil Spots	0.039

Total Length: 8.00 ft      Total Volume: 0.039 bbl

Num Fluid Samples: 0

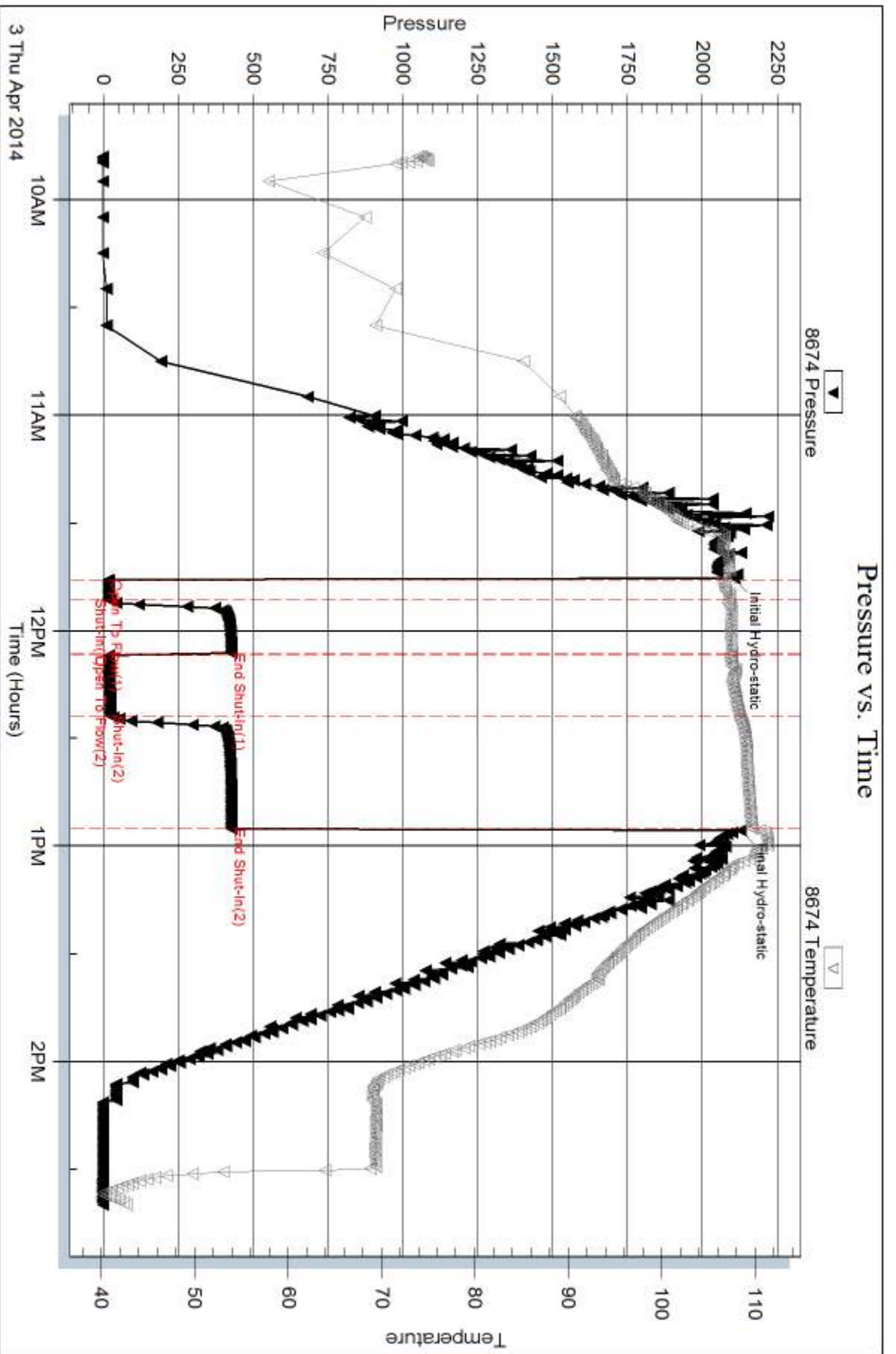
Num Gas Bombs: 0

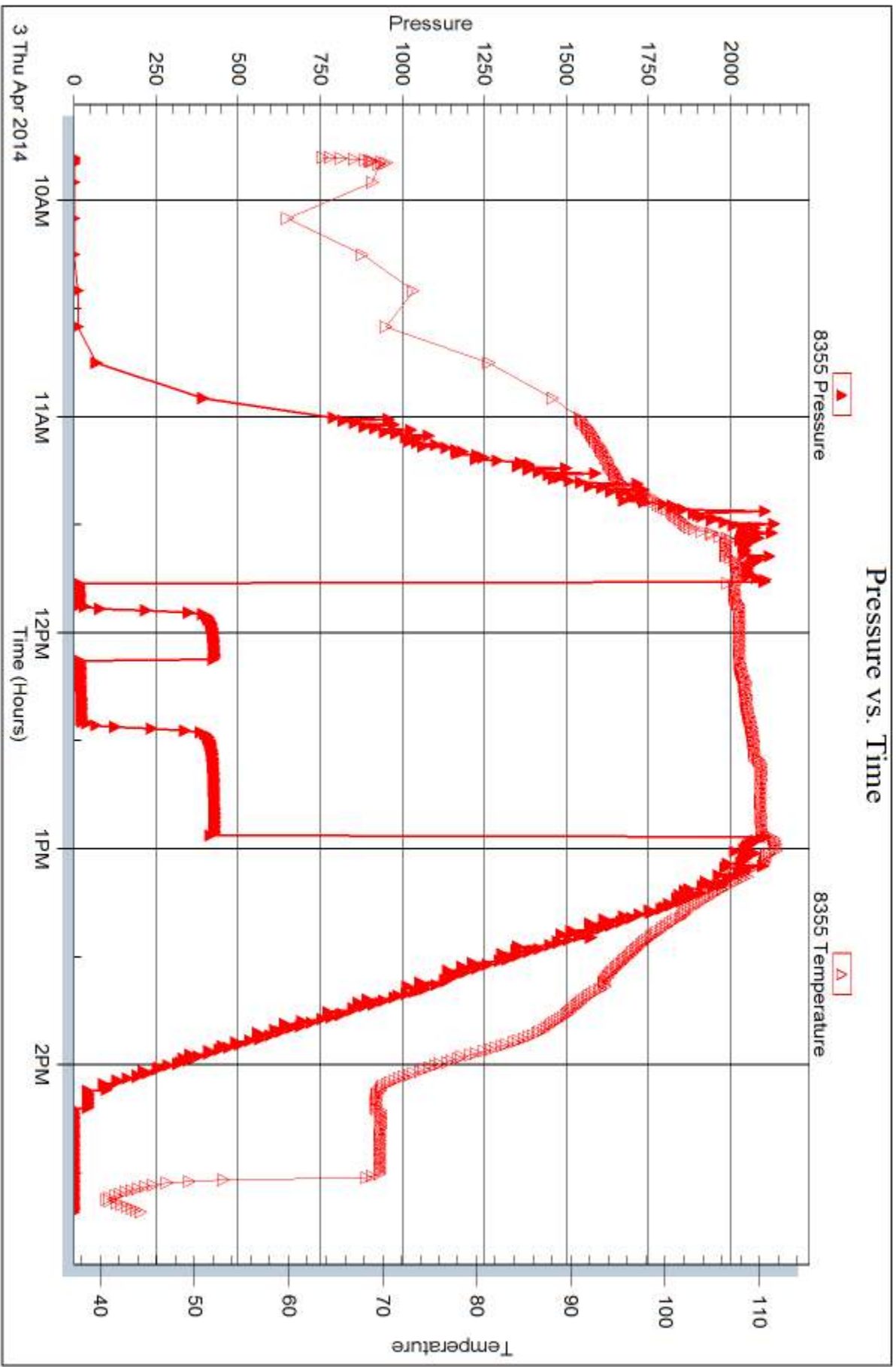
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.03 @ 21:24:00

End Date: 2014.04.04 @ 03:08:54

Job Ticket #: 57234                      DST #: 4

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

Printed: 2014.04.11 @ 11:18:23



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57234

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 21:24:00

## GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:26:55

Time Test Ended: 03:08:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4200.00 ft (KB) To 4210.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4210.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 25.80 psig @ 4201.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.03

End Date:

2014.04.04

Last Calib.:

2014.04.04

Start Time: 21:24:00

End Time:

03:08:54

Time On Btm:

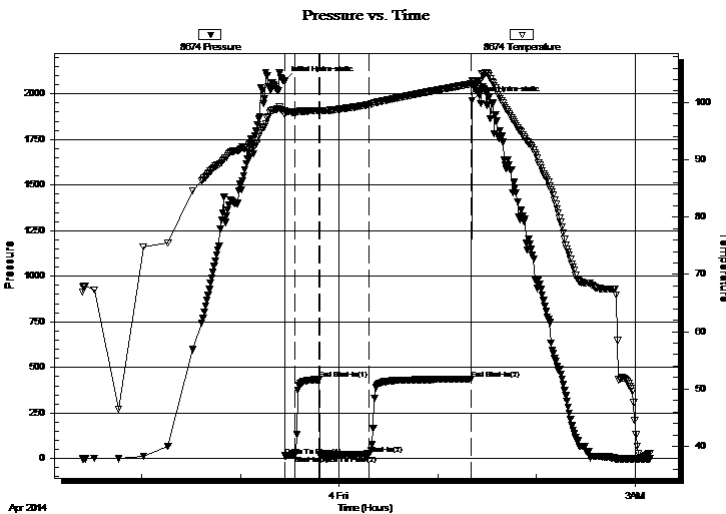
2014.04.03 @ 23:26:40

Time Off Btm:

2014.04.04 @ 01:20:40

**TEST COMMENT:** IF- Weak Surface Blow Built to 1/2"  
IS- No Blow  
FF- Weak Surface Blow Built to 1"  
FS- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2070.78	98.62	Initial Hydro-static
1	15.29	97.83	Open To Flow (1)
7	18.59	98.32	Shut-In(1)
21	433.58	98.64	End Shut-In(1)
22	19.17	98.47	Open To Flow (2)
52	25.80	99.65	Shut-In(2)
114	434.84	103.23	End Shut-In(2)
114	1964.25	103.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	OWCM 1%oil 11%w 88%m	0.07

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57234

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 21:24:00

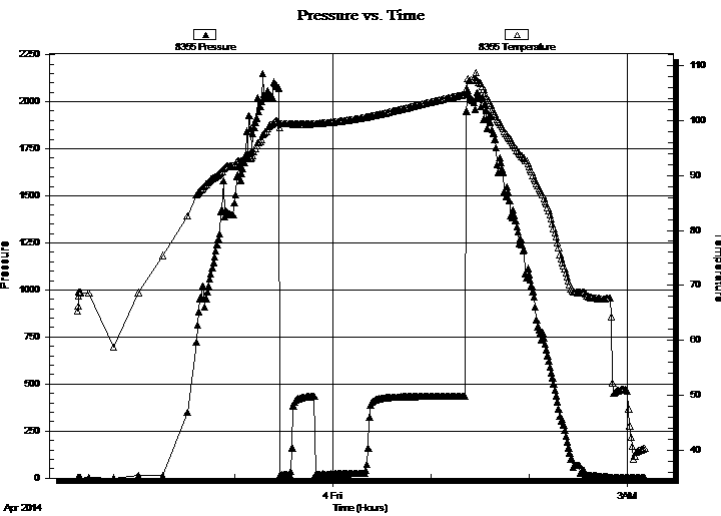
### GENERAL INFORMATION:

Formation: **LKC "J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 23:26:55  
 Time Test Ended: 03:08:54  
**Interval: 4200.00 ft (KB) To 4210.00 ft (KB) (TVD)**  
 Total Depth: 4210.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Will MacLean  
 Unit No: 72  
 Reference Elevations: 2805.00 ft (KB)  
 2798.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: psig @ 4201.00 ft (KB)  
 Start Date: 2014.04.03 End Date: 2014.04.04  
 Start Time: 21:24:05 End Time: 03:10:14  
 Capacity: 8000.00 psig  
 Last Calib.: 2014.04.04  
 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF- Weak Surface Blow Built to 1/2"  
 IS- No Blow  
 FF- Weak Surface Blow Built to 1"  
 FS- No Blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
15.00	OWCM 1%oil 11%w 88%m	0.07

\* Recovery from multiple tests

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57234

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 21:24:00

## Tool Information

Drill Pipe:	Length: 4073.00 ft	Diameter: 3.80 inches	Volume: 57.13 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	32000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	10000.00 lb
			<u>Total Volume: 57.70 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4200.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	10.00 ft				
Tool Length:	37.00 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			4174.00	
Shut In Tool	5.00			4179.00	
Hydraulic tool	5.00			4184.00	
Jars	5.00			4189.00	
Safety Joint	2.00			4191.00	
Packer	5.00			4196.00	27.00 Bottom Of Top Packer
Packer	4.00			4200.00	
Stubb	1.00			4201.00	
Recorder	0.00	8355	Outside	4201.00	
Recorder	0.00	8674	Inside	4201.00	
Perforations	4.00			4205.00	
Bullnose	5.00			4210.00	10.00 Bottom Packers & Anchor

**Total Tool Length: 37.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57234

**DST#: 4**

ATTN: Vern Schrag

Test Start: 2014.04.03 @ 21:24:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

28500 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.13 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OWCM 1%oil 11%w 88%m	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

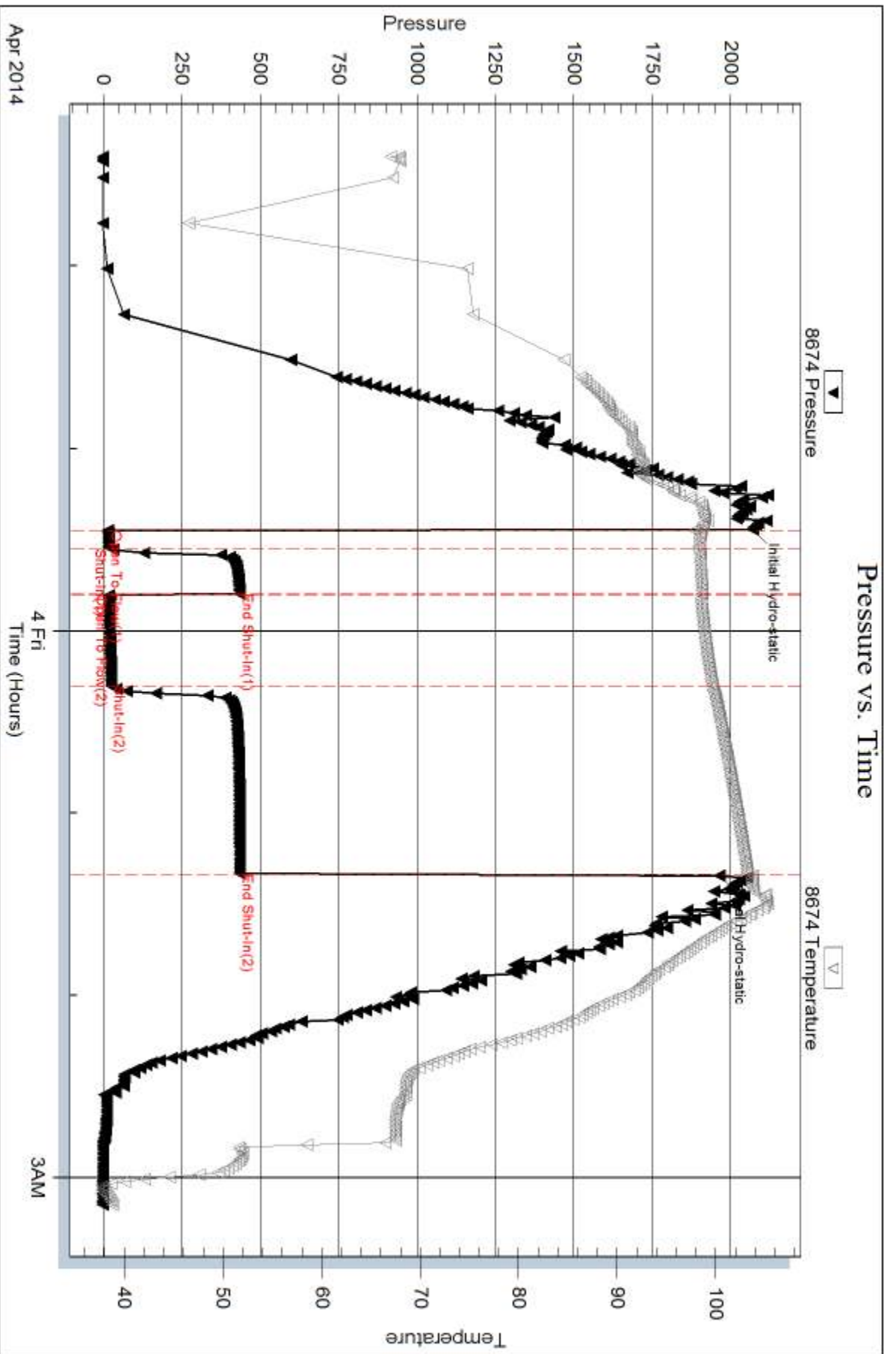
Num Gas Bombs: 0

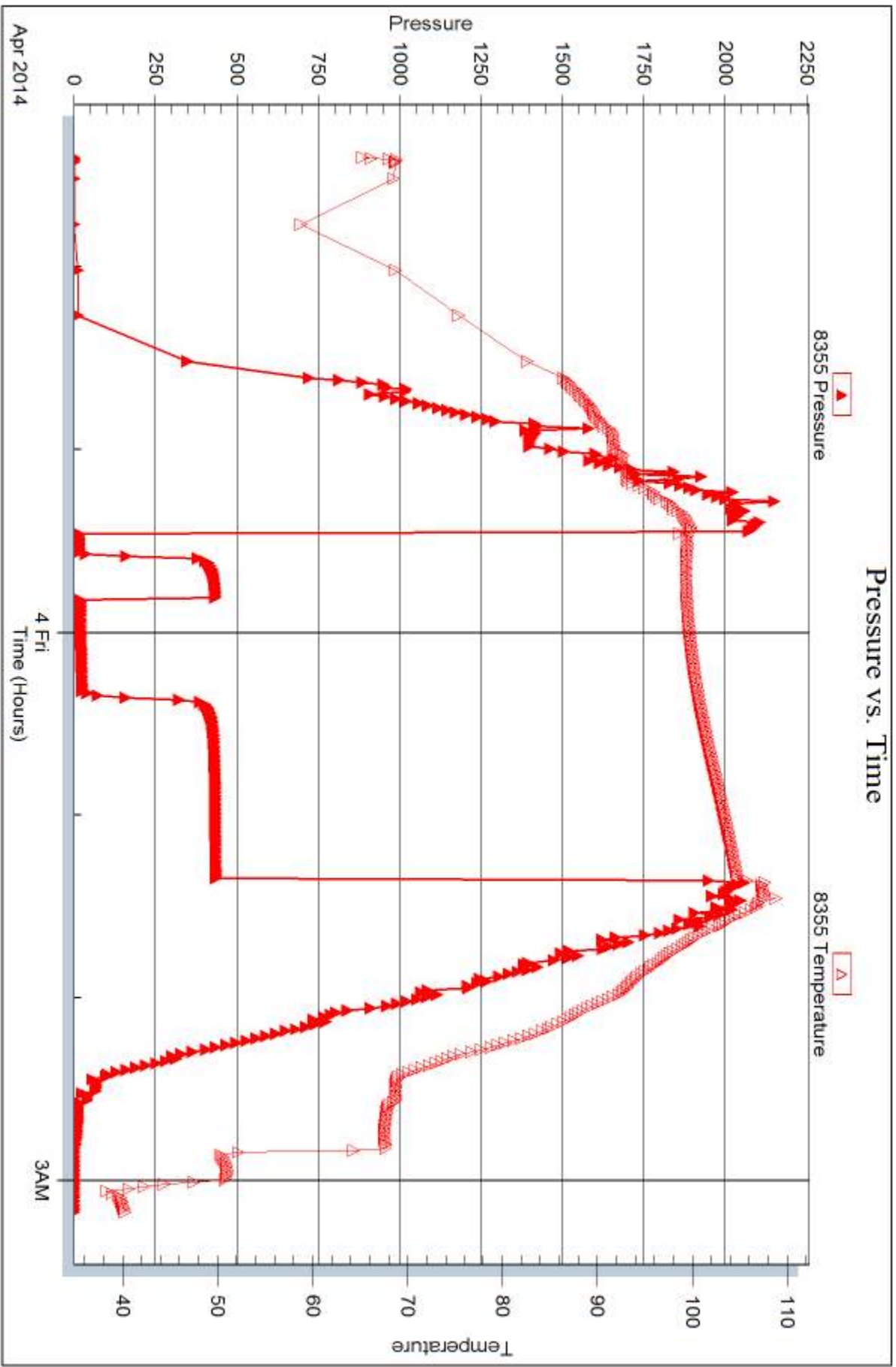
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .425 @ 38f = 28500







## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.04 @ 12:20:00

End Date: 2014.04.04 @ 17:03:54

Job Ticket #: 57235                      DST #: 5

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

Printed: 2014.04.11 @ 11:17:57



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

ATTN: Vern Schrag

Job Ticket: 57235

**DST#: 5**

Test Start: 2014.04.04 @ 12:20:00

## GENERAL INFORMATION:

Formation: **LKC " K "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:10:10

Time Test Ended: 17:03:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4220.00 ft (KB) To 4238.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4238.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 21.24 psig @ 4223.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.04

End Date:

2014.04.04

Last Calib.:

2014.04.04

Start Time: 12:20:00

End Time:

17:03:54

Time On Btm:

2014.04.04 @ 14:09:55

Time Off Btm:

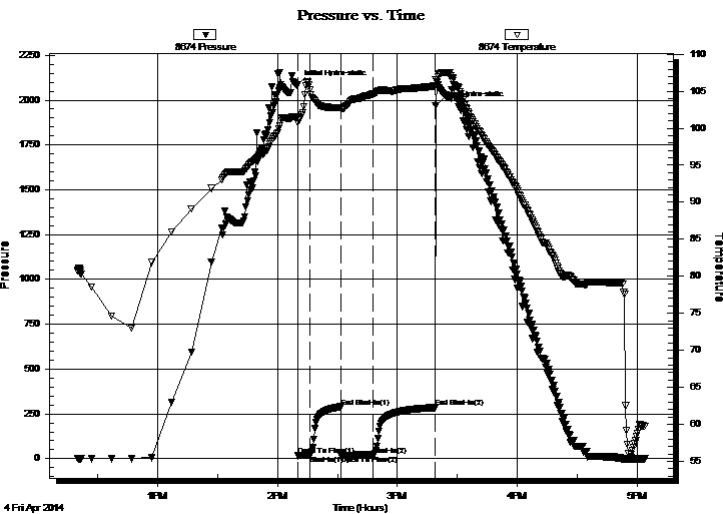
2014.04.04 @ 15:19:10

TEST COMMENT: IF- Weak Surface Blow 1/4"

IS- No Blow

FF- Weak Surface Blow Built to 1/4"

FS- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.97	101.53	Initial Hydro-static
1	16.69	100.74	Open To Flow (1)
7	18.55	105.14	Shut-In(1)
22	289.78	102.76	End Shut-In(1)
22	18.04	102.57	Open To Flow (2)
38	21.24	104.63	Shut-In(2)
69	285.24	105.70	End Shut-In(2)
70	1968.22	106.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% m with Few Oil Spots in Tool	0.02

\* 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 Rd. 4  
Olmitz, KS 67564  
ATTN: Vern Schrag

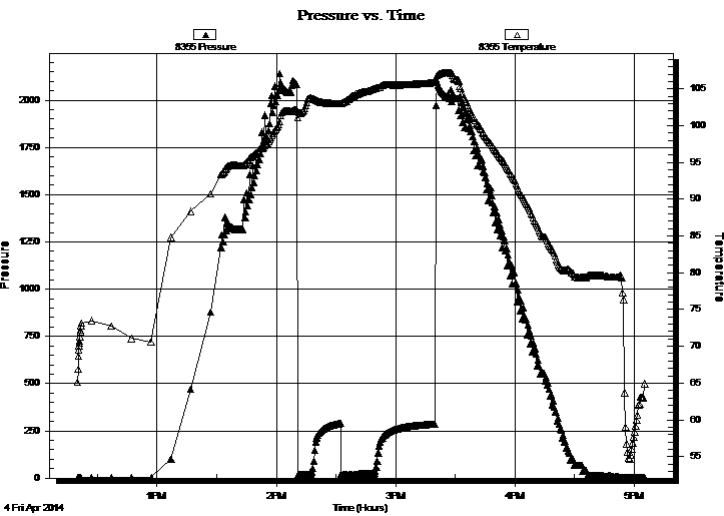
**S16-17s-29w Lane, KS**  
**Boomhower B #1-16**  
Job Ticket: 57235 **DST#: 5**  
Test Start: 2014.04.04 @ 12:20:00

### GENERAL INFORMATION:

Formation: **LKC "K"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 14:10:10  
Time Test Ended: 17:03:54  
Interval: **4220.00 ft (KB) To 4238.00 ft (KB) (TVD)**  
Total Depth: 4238.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches  
Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Will MacLean  
Unit No: 72  
Reference Elevations: 2805.00 ft (KB)  
2798.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8355 Outside**  
Press@RunDepth: psig @ 4223.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.04.04 End Date: 2014.04.04 Last Calib.: 2014.04.04  
Start Time: 12:20:05 End Time: 17:05:14 Time On Btm:  
Time Off Btm:

**TEST COMMENT:** IF- Weak Surface Blow 1/4"  
IS- No Blow  
FF- Weak Surface Blow Built to 1/4"  
FS- No Blow



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% m w ith Few Oil Spots in Tool	0.02

### 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.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57235

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.04.04 @ 12:20:00

## Tool Information

Drill Pipe:	Length: 4105.00 ft	Diameter: 3.80 inches	Volume: 57.58 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 58.15 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4220.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	45.00 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			4194.00	
Shut In Tool	5.00			4199.00	
Hydraulic tool	5.00			4204.00	
Jars	5.00			4209.00	
Safety Joint	2.00			4211.00	
Packer	5.00			4216.00	27.00 Bottom Of Top Packer
Packer	4.00			4220.00	
Stubb	1.00			4221.00	
Perforations	2.00			4223.00	
Recorder	0.00	8355	Outside	4223.00	
Recorder	0.00	8674	Inside	4223.00	
Perforations	10.00			4233.00	
Bullnose	5.00			4238.00	18.00 Bottom Packers & Anchor

**Total Tool Length: 45.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57235

**DST#: 5**

ATTN: Vern Schrag

Test Start: 2014.04.04 @ 12:20:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.14 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 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	100% m with Few Oil Spots in Tool	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

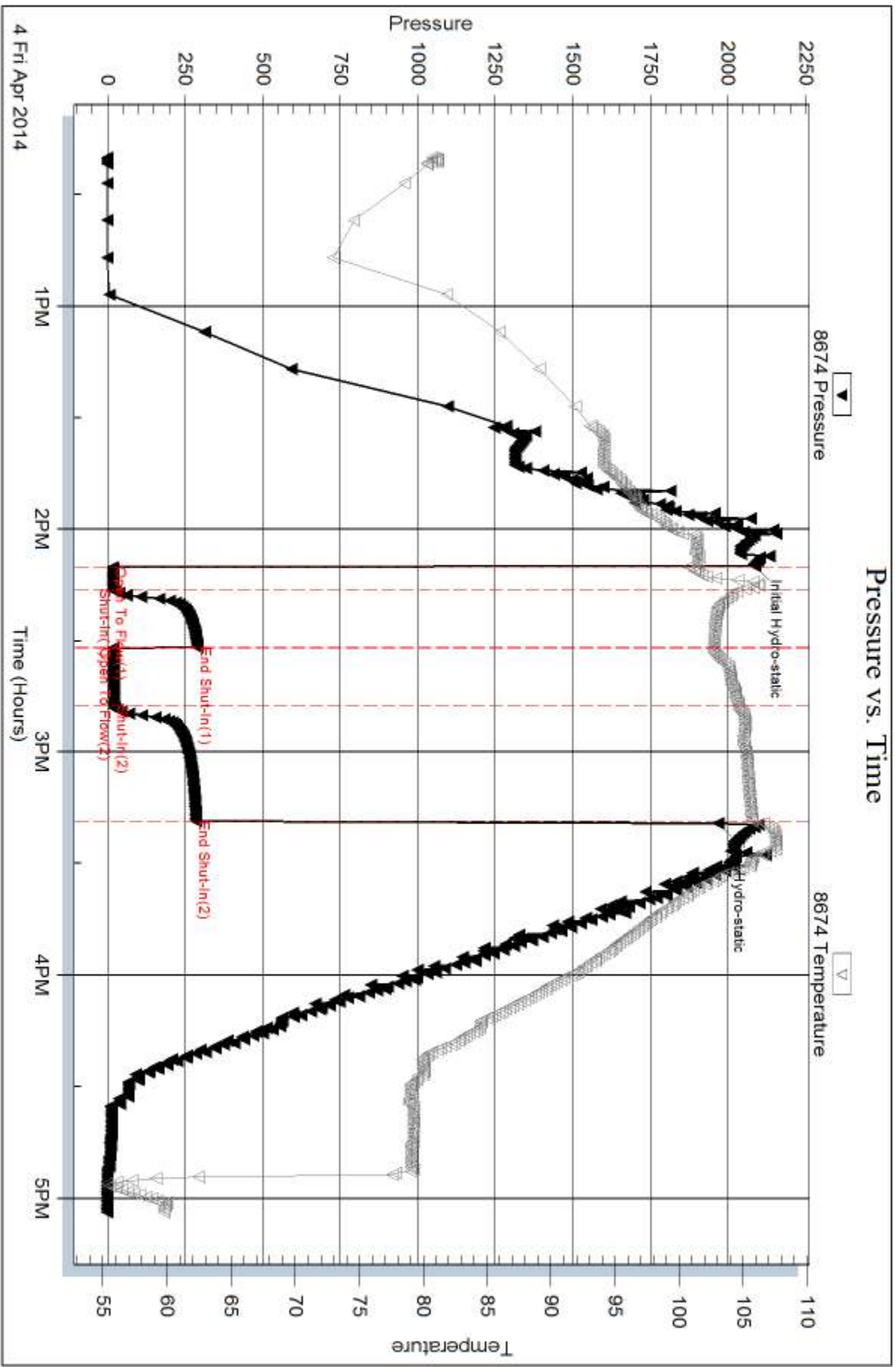
Num Gas Bombs: 0

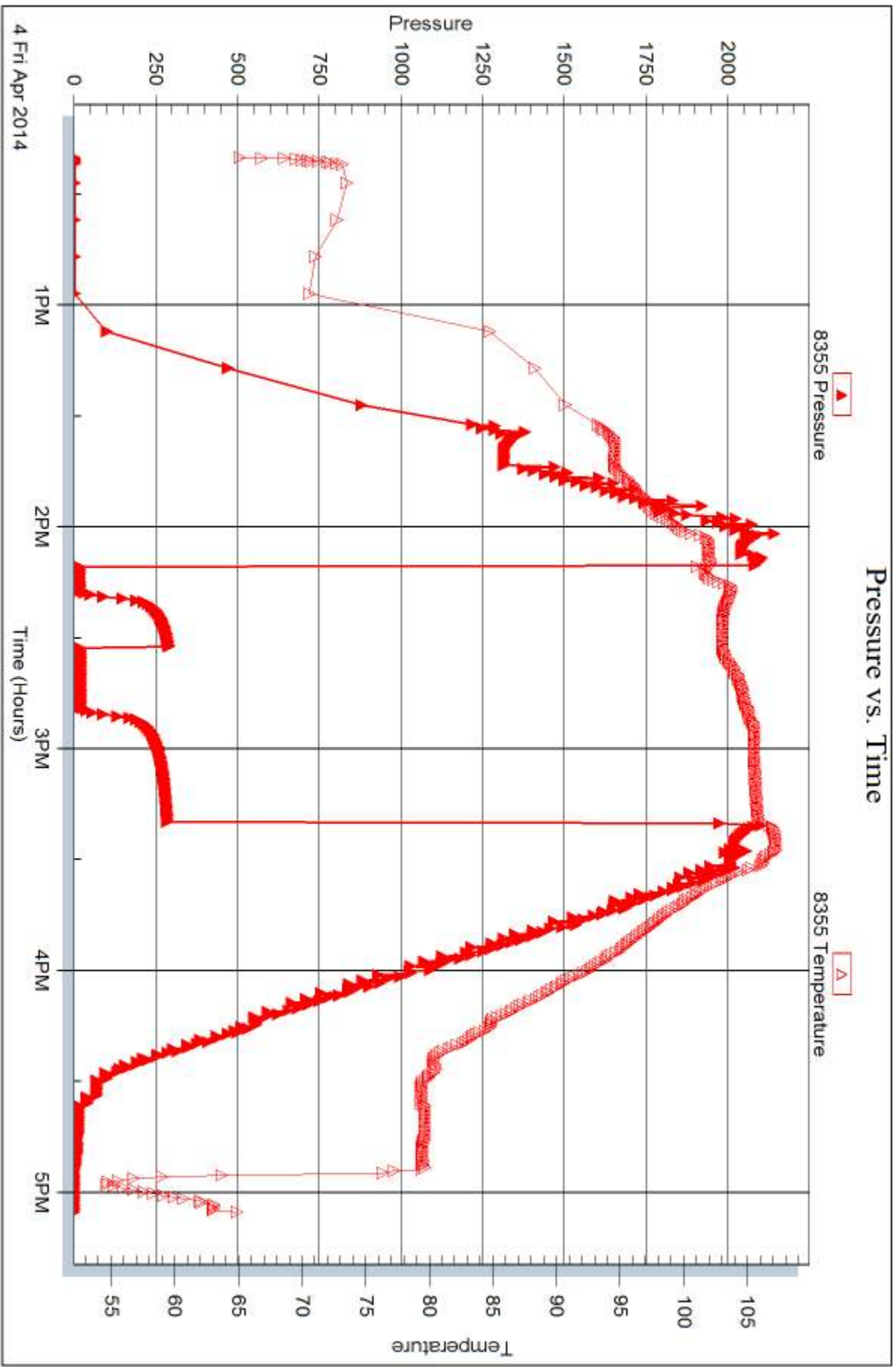
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomer B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.05 @ 06:32:00

End Date: 2014.04.05 @ 11:16:39

Job Ticket #: 57236                      DST #: 6

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

Printed: 2014.04.11 @ 11:17:34



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57236

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.04.05 @ 06:32:00

## GENERAL INFORMATION:

Formation: **LKC " L "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:24:40

Time Test Ended: 11:16:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4259.00 ft (KB) To 4281.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4065.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 18.73 psig @ 4262.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.05

End Date:

2014.04.05

Last Calib.:

2014.04.05

Start Time: 06:32:00

End Time:

11:16:39

Time On Btm:

2014.04.05 @ 08:24:25

Time Off Btm:

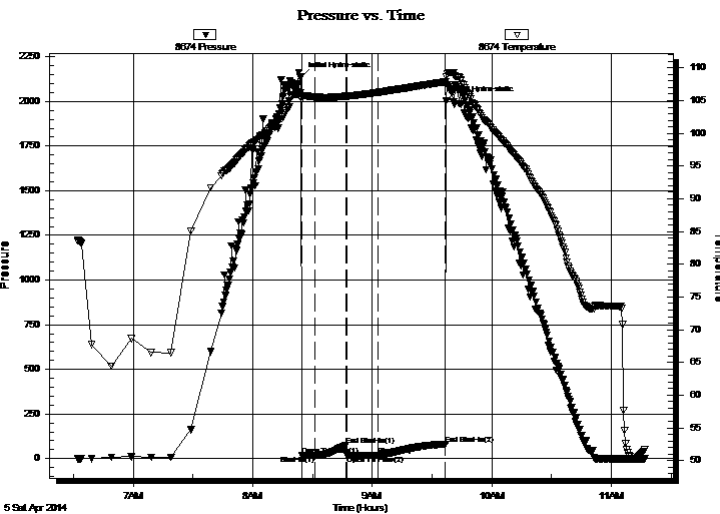
2014.04.05 @ 09:37:10

TEST COMMENT: IF- Weak Surface Blow 1/4"

IS- No Blow

FF- Weak Surface Blow

FS- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2138.76	106.27	Initial Hydro-static
1	16.40	105.16	Open To Flow (1)
7	16.55	105.57	Shut-In(1)
23	74.29	105.69	End Shut-In(1)
23	17.74	105.66	Open To Flow (2)
39	18.73	106.27	Shut-In(2)
73	81.49	107.87	End Shut-In(2)
73	2003.33	108.68	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	100% Couple Oil Spots in Tool	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57236

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.04.05 @ 06:32:00

## Tool Information

Drill Pipe:	Length: 4136.00 ft	Diameter: 3.80 inches	Volume: 58.02 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	10000.00 lb
			<u>Total Volume: 58.59 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4259.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	22.00 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			4233.00	
Shut In Tool	5.00			4238.00	
Hydraulic tool	5.00			4243.00	
Jars	5.00			4248.00	
Safety Joint	2.00			4250.00	
Packer	5.00			4255.00	27.00 Bottom Of Top Packer
Packer	4.00			4259.00	
Stubb	1.00			4260.00	
Perforations	2.00			4262.00	
Recorder	0.00	8355	Outside	4262.00	
Recorder	0.00	8674	Inside	4262.00	
Perforations	14.00			4276.00	
Bullnose	5.00			4281.00	22.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57236

**DST#: 6**

ATTN: Vern Schrag

Test Start: 2014.04.05 @ 06:32:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	100% m Couple Oil Spots in Tool	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

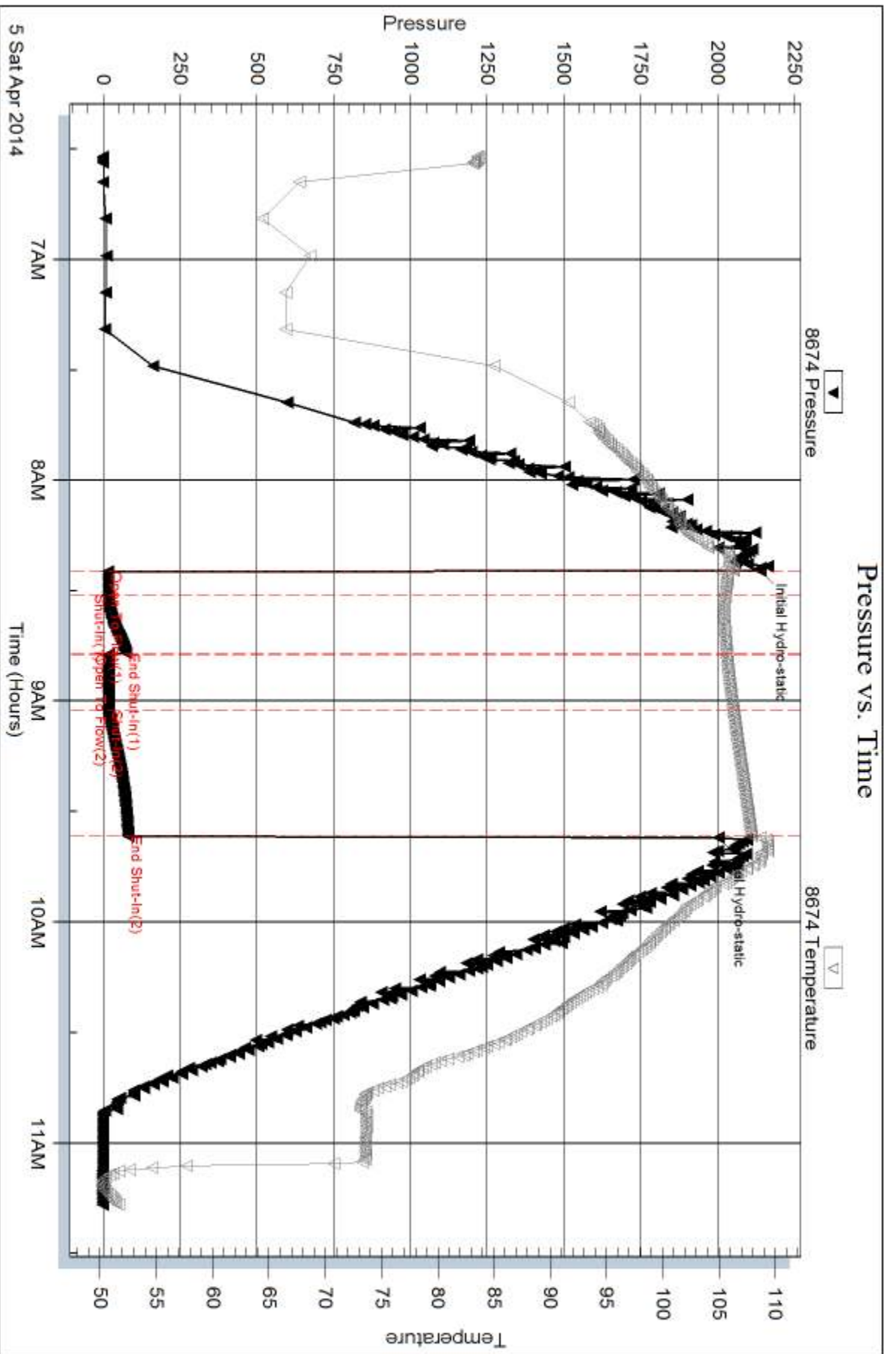
Num Gas Bombs: 0

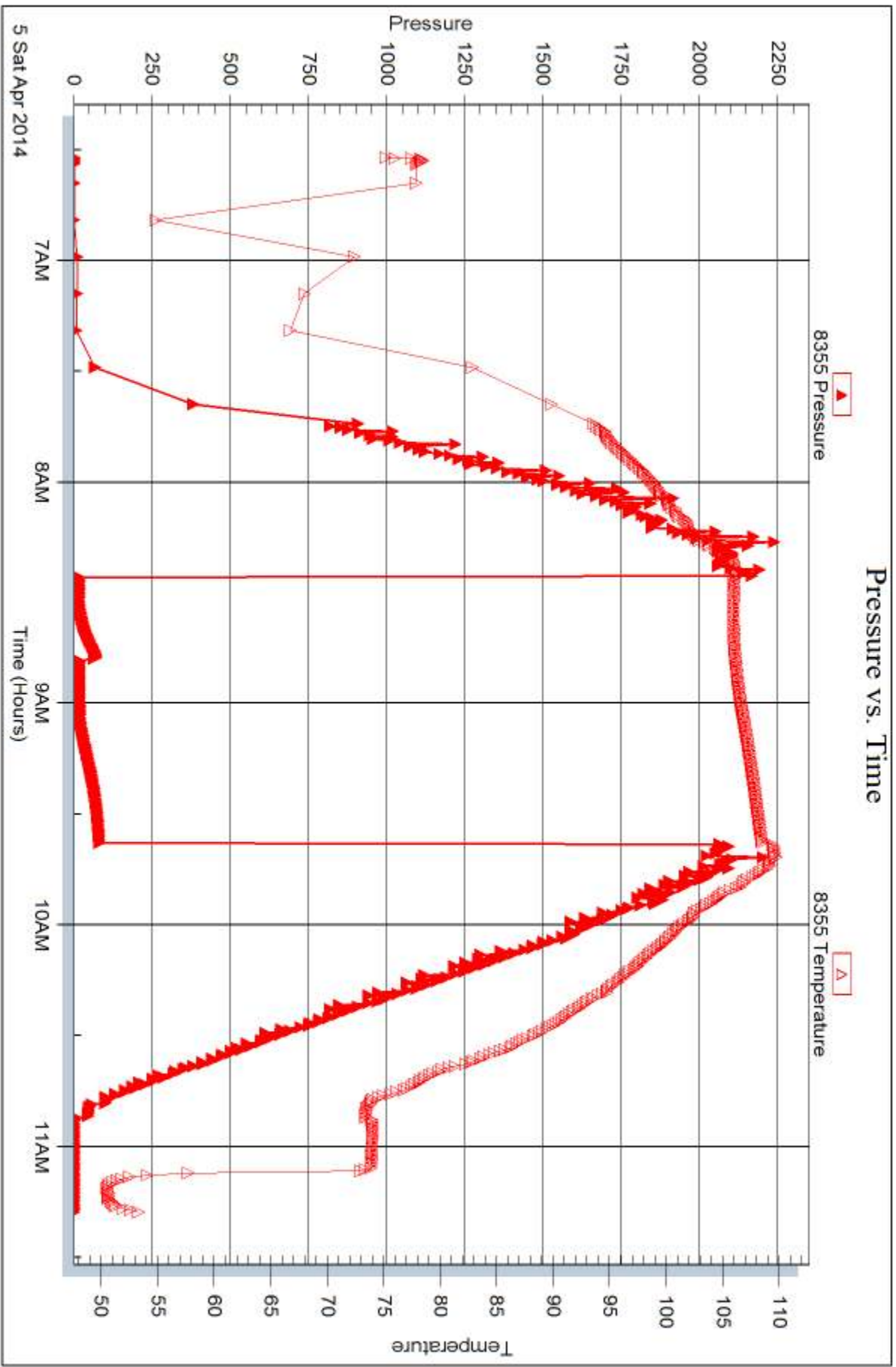
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomhower B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.06 @ 00:04:00

End Date: 2014.04.06 @ 04:52:09

Job Ticket #: 57237                      DST #: 7

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

Printed: 2014.04.11 @ 11:17:05



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57237

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 00:04:00

## GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:03:10

Time Test Ended: 04:52:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4314.00 ft (KB) To 4350.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4350.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 19.18 psig @ 4317.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.06

End Date:

2014.04.06

Last Calib.:

2014.04.06

Start Time: 00:04:00

End Time:

04:52:09

Time On Btm:

2014.04.06 @ 02:02:55

Time Off Btm:

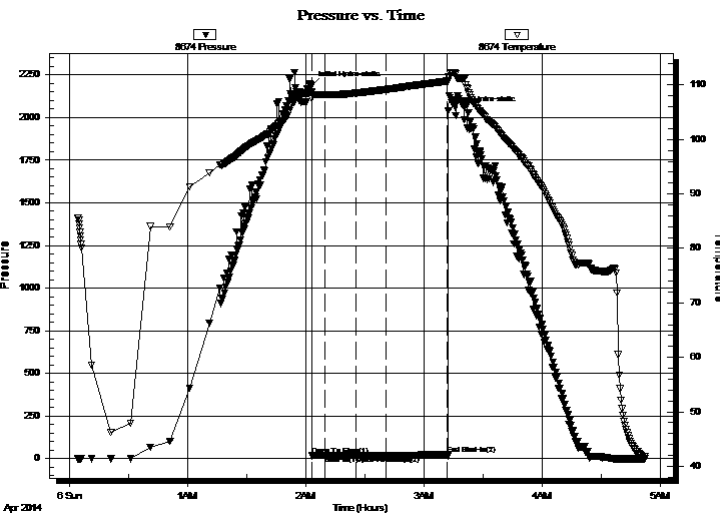
2014.04.06 @ 03:12:25

TEST COMMENT: IF- Weak Surface Blow

IS- No Blow

FF- No Blow

FS- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2186.87	108.67	Initial Hydro-static
1	16.97	107.47	Open To Flow (1)
7	18.74	108.19	Shut-In(1)
23	23.66	108.50	End Shut-In(1)
23	17.97	108.50	Open To Flow (2)
38	19.18	109.18	Shut-In(2)
69	24.89	110.71	End Shut-In(2)
70	2039.70	111.43	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	100% mud	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57237

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 00:04:00

## Tool Information

Drill Pipe:	Length: 4201.00 ft	Diameter: 3.80 inches	Volume: 58.93 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 59.50 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4314.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 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			4288.00	
Shut In Tool	5.00			4293.00	
Hydraulic tool	5.00			4298.00	
Jars	5.00			4303.00	
Safety Joint	2.00			4305.00	
Packer	5.00			4310.00	27.00 Bottom Of Top Packer
Packer	4.00			4314.00	
Stubb	1.00			4315.00	
Perforations	2.00			4317.00	
Recorder	0.00	8355	Outside	4317.00	
Recorder	0.00	8674	Inside	4317.00	
Perforations	28.00			4345.00	
Bullnose	5.00			4350.00	36.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57237

**DST#: 7**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 00:04:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 56.00 sec/qt

Cushion Volume: bbl

Water Loss: 6.36 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 bbl
1.00	100%mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

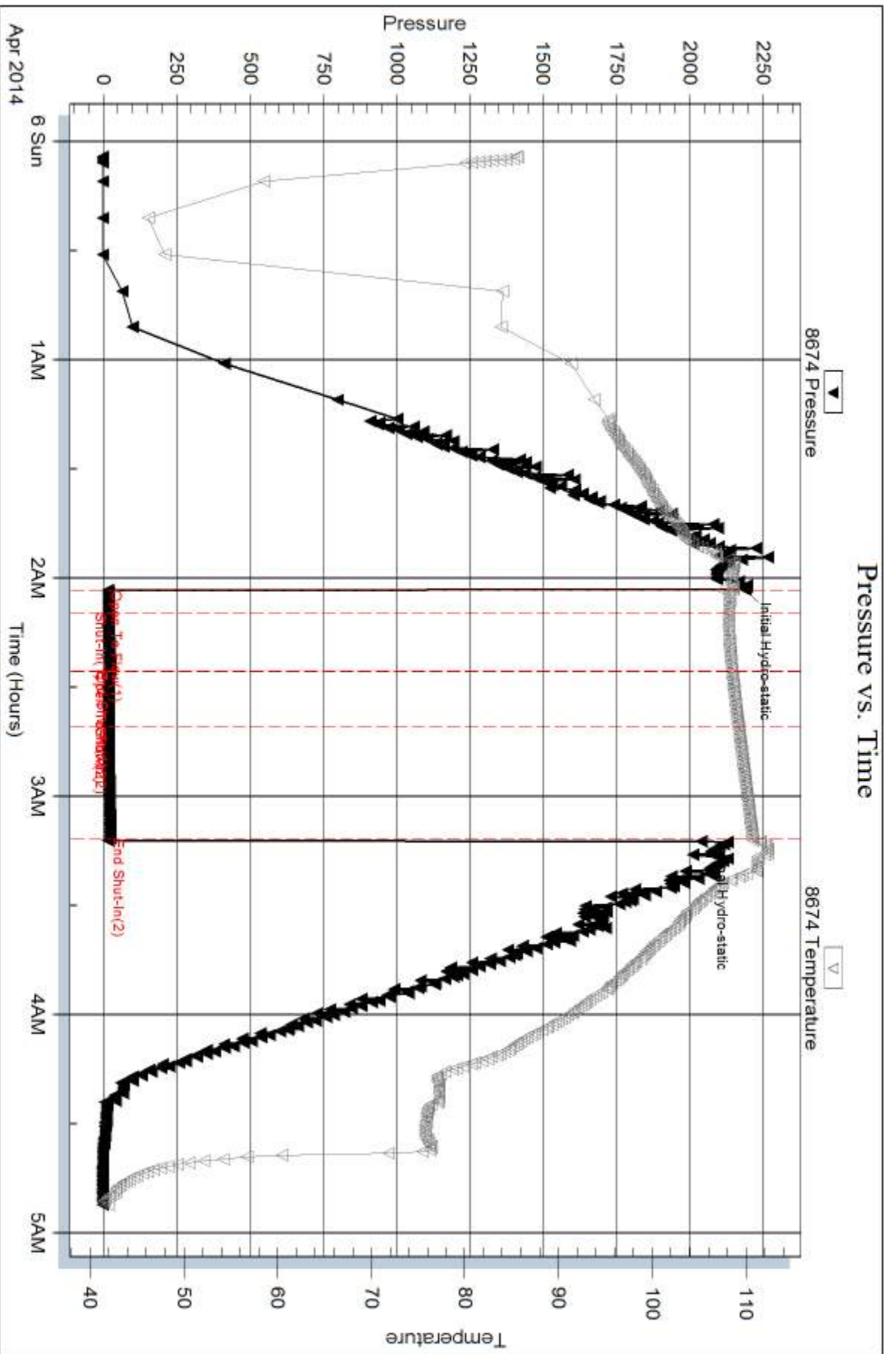
Serial #:

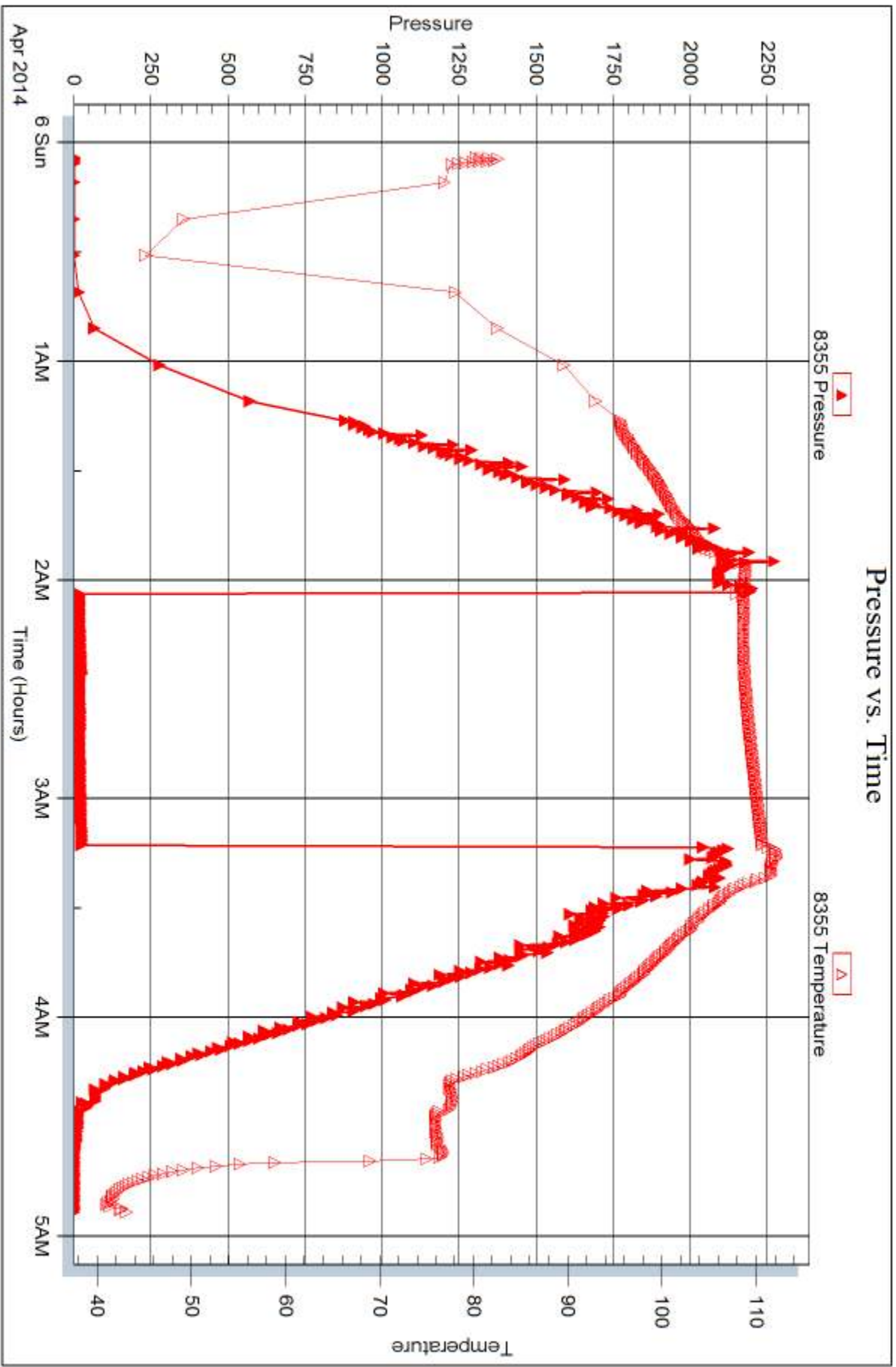
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomer B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.06 @ 14:50:00

End Date: 2014.04.06 @ 20:10:54

Job Ticket #: 57238                      DST #: 8

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

Printed: 2014.04.11 @ 11:16:43



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 57238

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 14:50:00

## GENERAL INFORMATION:

Formation: **Marmanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:34:25

Time Test Ended: 20:10:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 72

**Interval: 4346.00 ft (KB) To 4400.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4400.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

**Serial #: 8674**

**Inside**

Press@RunDepth: 108.44 psig @ 4347.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.06

End Date:

2014.04.06

Last Calib.:

2014.04.06

Start Time: 14:50:00

End Time:

20:10:54

Time On Btm:

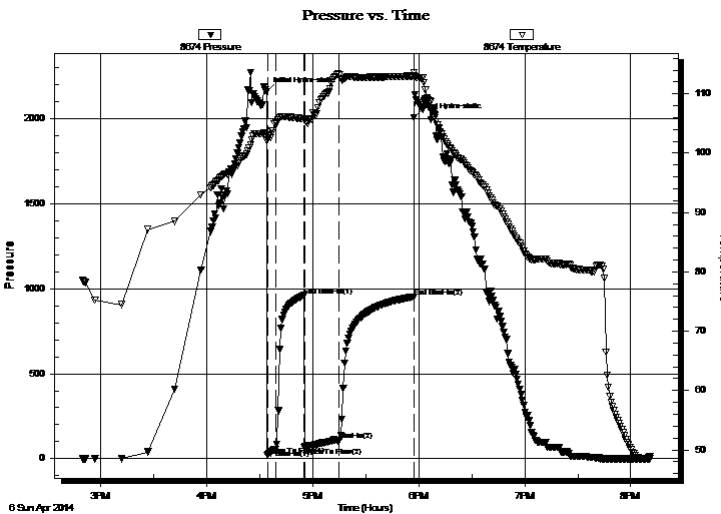
2014.04.06 @ 16:34:10

Time Off Btm:

2014.04.06 @ 17:57:25

**TEST COMMENT:** IF- Weak Surface Blow Built to 3 1/4"  
IS- No Blow  
FF- Weak Surface Blow Built to 10 1/2"  
FS- Weak Surface Blow in 11min

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2160.99	103.12	Initial Hydro-static
1	21.29	102.14	Open To Flow (1)
6	55.87	105.07	Shut-In(1)
21	960.00	105.80	End Shut-In(1)
22	67.02	105.45	Open To Flow (2)
41	108.44	113.23	Shut-In(2)
83	952.80	112.98	End Shut-In(2)
84	2007.01	113.62	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
58.00	OGCM 8%oil 14%g 78%m	0.29
58.00	OGCM 10%oil 27%g 63%m	0.29
62.00	OGCM 7%oil 12%g 81%m	0.87
10.00	GOCM 4%g 9%oil 87%m	0.14
0.00	114' of GIP	0.00

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57238

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 14:50:00

## Tool Information

Drill Pipe:	Length: 4233.00 ft	Diameter: 3.80 inches	Volume: 59.38 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	26000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	6000.00 lb
			<u>Total Volume: 59.95 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4346.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	54.00 ft				
Tool Length:	81.00 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			4320.00	
Shut In Tool	5.00			4325.00	
Hydraulic tool	5.00			4330.00	
Jars	5.00			4335.00	
Safety Joint	2.00			4337.00	
Packer	5.00			4342.00	27.00 Bottom Of Top Packer
Packer	4.00			4346.00	
Stubb	1.00			4347.00	
Recorder	0.00	8355	Outside	4347.00	
Recorder	0.00	8674	Inside	4347.00	
Perforations	15.00			4362.00	
Change Over Sub	1.00			4363.00	
Drill Pipe	31.00			4394.00	
Change Over Sub	1.00			4395.00	
Bullnose	5.00			4400.00	54.00 Bottom Packers & Anchor

**Total Tool Length: 81.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 57238

**DST#: 8**

ATTN: Vern Schrag

Test Start: 2014.04.06 @ 14:50:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
58.00	OGCM 8%oil 14%g 78%m	0.285
58.00	OGCM 10%oil 27%g 63%m	0.285
62.00	OGCM 7%oil 12%g 81%m	0.870
10.00	GOCM 4%g 9%oil 87%m	0.140
0.00	114' of GIP	0.000

Total Length: 188.00 ft

Total Volume: 1.580 bbl

Num Fluid Samples: 0

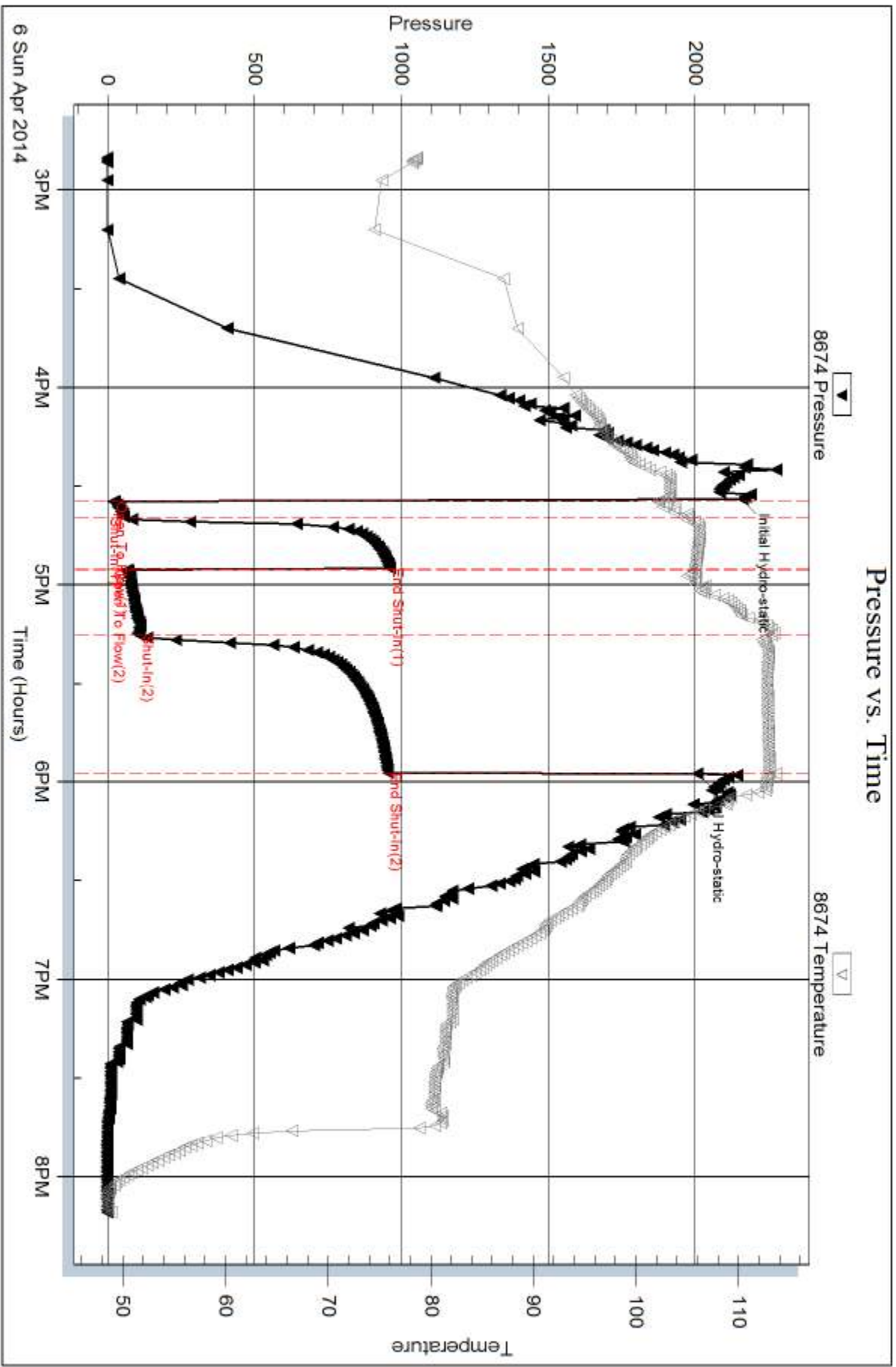
Num Gas Bombs: 0

Serial #:

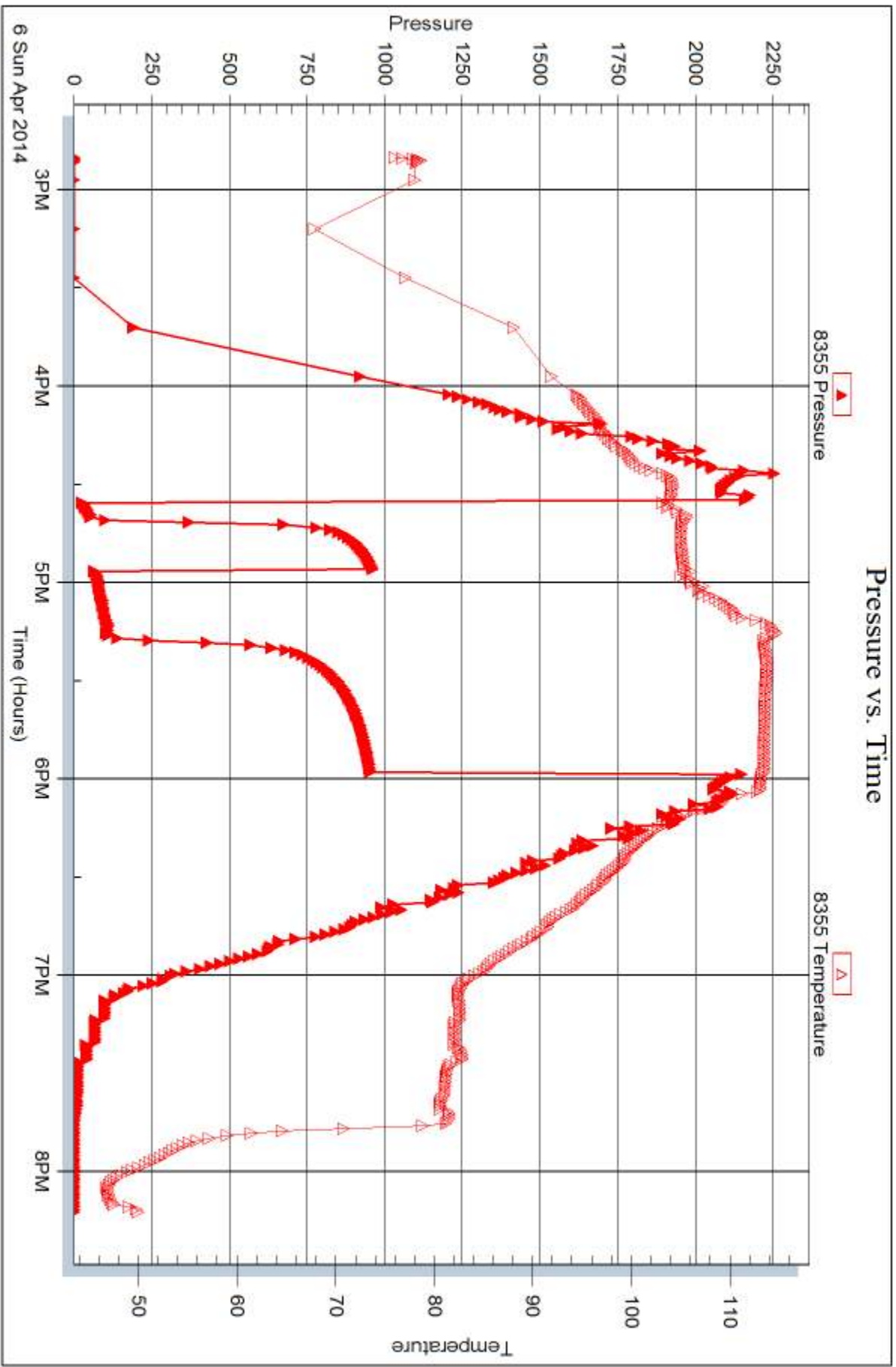
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

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

562 W. State Rd. 4  
Olmitz, KS 67564

ATTN: Vern Schrag

### **Boomer B #1-16**

### **S16-17s-29w Lane,KS**

Start Date: 2014.04.07 @ 10:21:00

End Date: 2014.04.07 @ 16:22:30

Job Ticket #: 56513                      DST #: 9

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

Printed: 2014.04.11 @ 11:16:19



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 56513

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.04.07 @ 10:21:00

## GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:45

Time Test Ended: 16:22:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III

Unit No: 72

**Interval: 4418.00 ft (KB) To 4495.00 ft (KB) (TVD)**

Total Depth: 4495.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2805.00 ft (KB)

2798.00 ft (CF)

KB to GR/CF: 7.00 ft

**Serial #: 8674 Inside**

Press@RunDepth: 65.45 psig @ 4421.00 ft (KB)

Start Date: 2014.04.07

End Date:

2014.04.07

Start Time: 10:21:05

End Time:

16:22:29

Capacity: 8000.00 psig

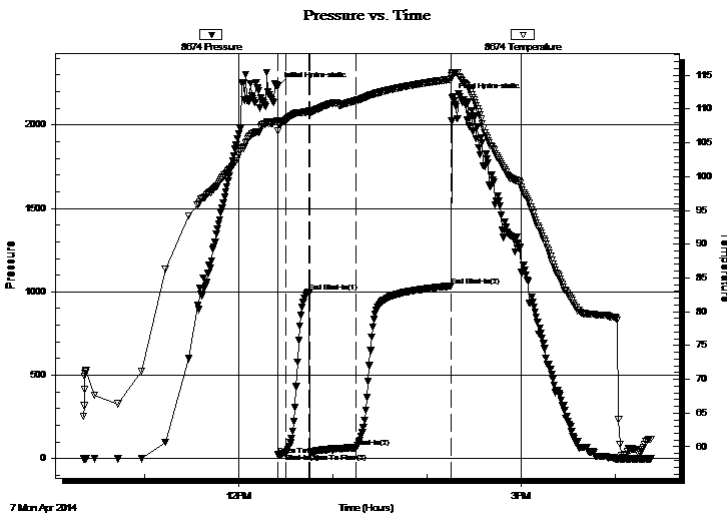
Last Calib.: 2014.04.07

Time On Btm: 2014.04.07 @ 12:24:30

Time Off Btm: 2014.04.07 @ 14:16:00

**TEST COMMENT:** IF: 2 1/2 in. of Blow  
IS: Bled off in 2 min.-No return  
FF: 1 1/2 Immediately-Built to B.o.b. in 15 min.  
FS: Bled off in 2 min.- Fair surface blow back-Died in 30 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2233.03	108.22	Initial Hydro-static
1	22.77	106.74	Open To Flow (1)
6	33.17	108.40	Shut-In(1)
21	996.54	109.70	End Shut-In(1)
21	35.21	109.26	Open To Flow (2)
50	65.45	111.23	Shut-In(2)
111	1035.45	114.42	End Shut-In(2)
112	2165.45	115.28	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mco & G 20m 40o 40g	0.30
30.00	G & Ocm 25g 35o 40m	0.15
30.00	O & Gcm 10o 15g 75m	0.18
1.00	Cgo 15g 85o	0.01
0.00	GIP=189	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Larson Engineering, Inc.

**S16-17s-29w Lane, KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 56513

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.04.07 @ 10:21:00

### GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:24:45

Time Test Ended: 16:22:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cornelio Landa III

Unit No: 72

**Interval: 4418.00 ft (KB) To 4495.00 ft (KB) (TVD)**

Reference Elevations: 2805.00 ft (KB)

Total Depth: 4495.00 ft (KB) (TVD)

2798.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: psig @ 4421.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.07

End Date: 2014.04.07

Last Calib.: 2014.04.07

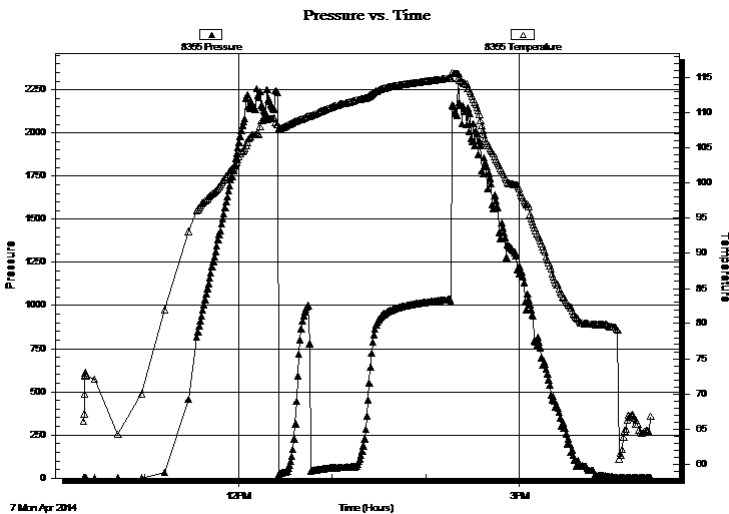
Start Time: 10:21:05

End Time: 16:23:44

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF: 2 1/2 in. of Blow  
IS: Bled off in 2 min.-No return  
FF: 1 1/2 Immediately-Built to B.o.b. in 15 min.  
FS: Bled off in 2 min.- Fair surface blow back-Died in 30 min.



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mco & G 20m 40o 40g	0.30
30.00	G & Ocm 25g 35o 40m	0.15
30.00	O & Gcm 10o 15g 75m	0.18
1.00	Cgo 15g 85o	0.01
0.00	GIP=189	0.00

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomhower B #1-16**

Job Ticket: 56513

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.04.07 @ 10:21:00

## Tool Information

Drill Pipe:	Length: 4295.00 ft	Diameter: 3.80 inches	Volume: 60.25 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:	26000.00 lb
Drill Collar:	Length: 116.00 ft	Diameter: 2.25 inches	Volume: 0.57 bbl	Weight to Pull Loose:	10000.00 lb
			<u>Total Volume: 60.82 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4418.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	77.00 ft				
Tool Length:	104.00 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			4392.00	
Shut In Tool	5.00			4397.00	
Hydraulic tool	5.00			4402.00	
Jars	5.00			4407.00	
Safety Joint	2.00			4409.00	
Packer	5.00			4414.00	27.00 Bottom Of Top Packer
Packer	4.00			4418.00	
Stubb	1.00			4419.00	
Perforations	1.00			4420.00	
Change Over Sub	1.00			4421.00	
Recorder	0.00	8355	Outside	4421.00	
Recorder	0.00	8674	Inside	4421.00	
Drill Pipe	63.00			4484.00	
Change Over Sub	1.00			4485.00	
Perforations	5.00			4490.00	
Bullnose	5.00			4495.00	77.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>104.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Larson Engineering, Inc.

**S16-17s-29w Lane,KS**

562 W. State Rd. 4  
Olmitz, KS 67564

**Boomer B #1-16**

Job Ticket: 56513

**DST#: 9**

ATTN: Vern Schrag

Test Start: 2014.04.07 @ 10:21:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	Mco & G 20m 40o 40g	0.295
30.00	G & Ocm 25g 35o 40m	0.148
30.00	O & Gcm 10o 15g 75m	0.184
1.00	Cgo 15g 85o	0.014
0.00	GIP=189	0.000

Total Length: 121.00 ft

Total Volume: 0.641 bbf

Num Fluid Samples: 0

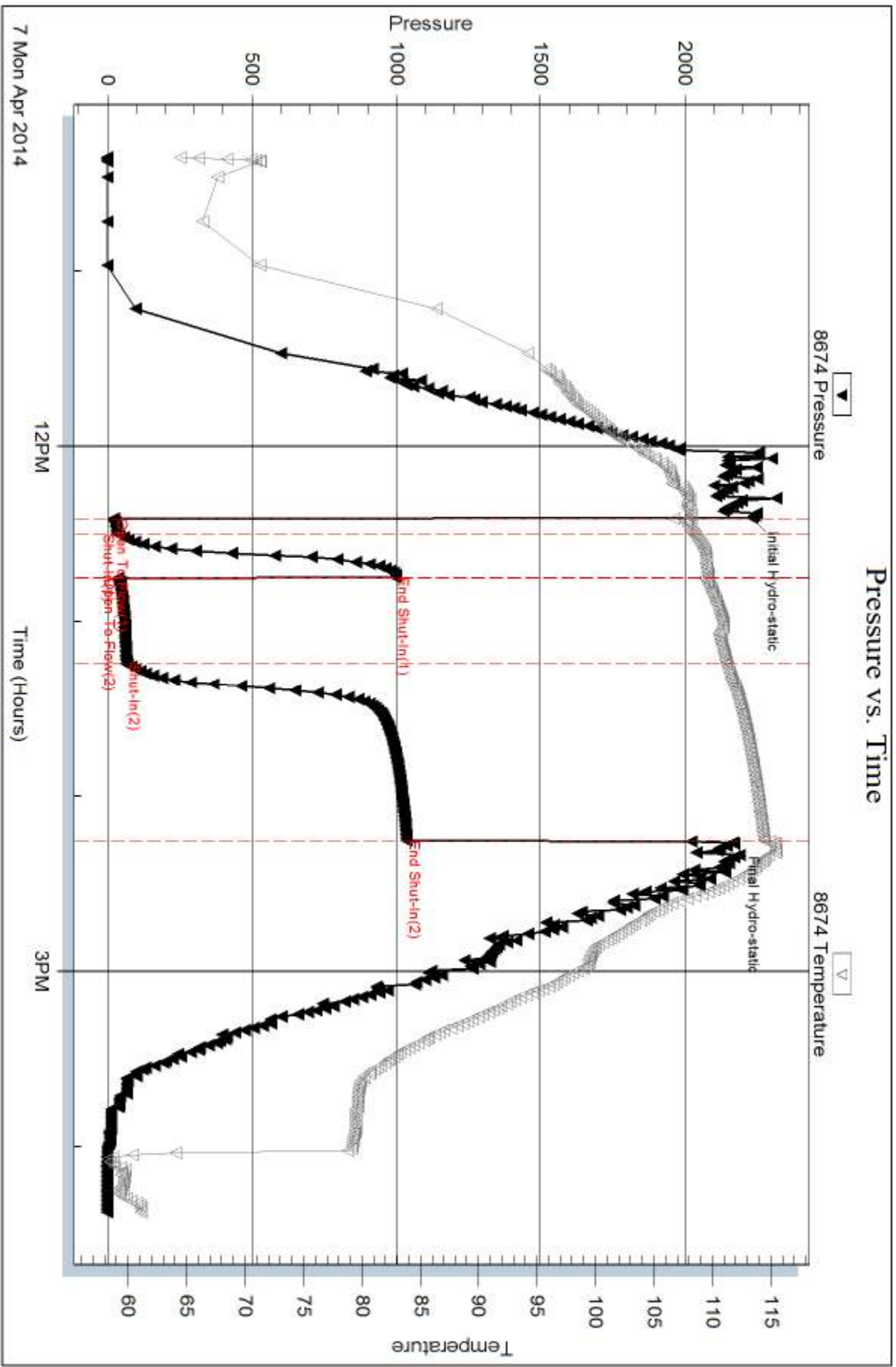
Num Gas Bombs: 0

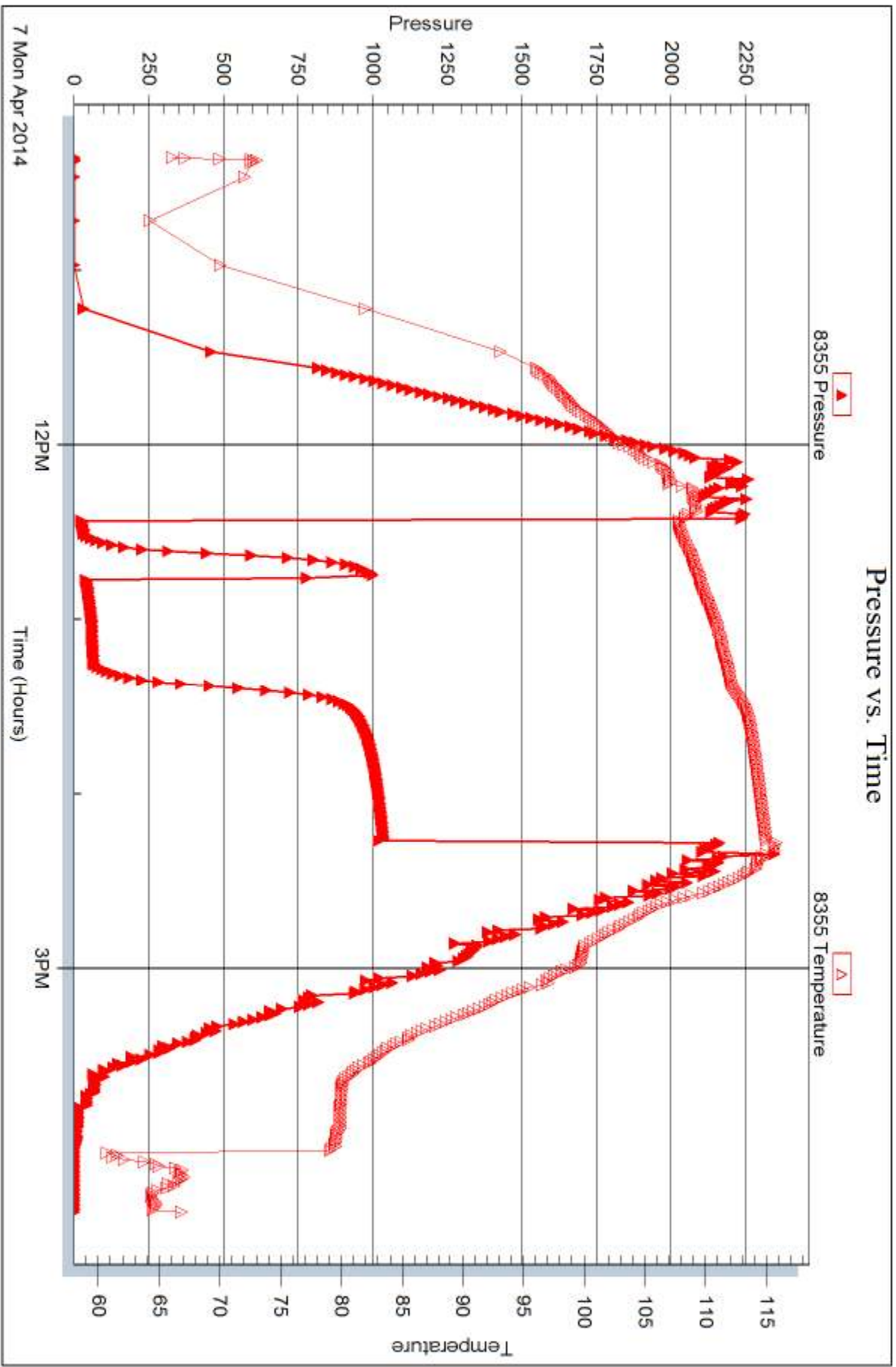
Serial #:

Laboratory Name:

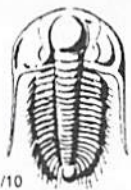
Laboratory Location:

Recovery Comments:









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56256

Well Name & No. Boombower B 1-16 Test No. 1 Date 3-27-14  
 Company Larson Engineering, Inc. Elevation 2805 KB 2798 GL  
 Address 562 W. St. Rd. 4 Olmitz, KS 67565  
 Co. Rep / Geo. Vern Schrag Rig HD#3  
 Location: Sec. 16 Twp. 17s Rge. 29w Co. Lane State KS

Interval Tested 40.34 - 40.65 Zone Tested LKC 'E'  
 Anchor Length 31 Drill Pipe Run 3921 Mud Wt. 9.3  
 Top Packer Depth 40.30 Drill Collars Run 116 Vis 57  
 Bottom Packer Depth 40.34 Wt. Pipe Run 0 WL 7.2  
 Total Depth 40.65 Chlorides 2000 ppm System LCM 2"  
 Blow Description 1' Blow  
No return.  
2 1/2" Blow  
No return.

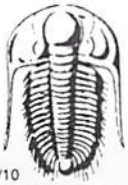
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>20</u>	Feet of <u>OCM</u>	%gas	<u>25</u> %oil	%water	<u>75</u> %mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 110 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2062</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>17:10</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:35</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:39</u>
(D) Initial Shut-In <u>394</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>21:30</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>23:12</u>
(F) Second Final Flow <u>35</u>	<input checked="" type="checkbox"/> Mileage <u>56RT x 2</u> 167.40	Comments <u>Picked up tool.</u> <u>NO TEST, rig problems</u> <u>3-28-14 10:00 a.m.</u>
(G) Final Shut-In <u>449</u>	<input type="checkbox"/> Sampler <u>54rt</u>	
(H) Final Hydrostatic <u>2055</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	
Initial Open <u>6</u>	<input type="checkbox"/> Extra Packer	<input checked="" type="checkbox"/> Ruined Shale Packer <u>N/A</u>
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Recorder	<input checked="" type="checkbox"/> Ruined Packer <u>320</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	Sub Total <u>320</u>
	Sub Total <u>1742.40</u>	Total <u>2062.40</u>

Approved By Vern Schrag Our Representative Chuck Smith

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57232

Well Name & No. Boomhauer B #1-16 Test No. DST #2 Date 4-2-14  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D R5 #3  
 Location: Sec. 16 Twp. 17s Rge. 29W Co. Lane State KS

Interval Tested 4125-4148 Zone Tested LRC "H"  
 Anchor Length 23 Drill Pipe Run 4012 Mud Wt. 9.0  
 Top Packer Depth 4121 Drill Collars Run 116 Vis 52  
 Bottom Packer Depth 4125 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4148 Chlorides 2200 ppm System LCM 216  
 Blow Description IF- Weak Surface Blow 1/2"  
ISJ- No Blow  
FF- No Blow  
FSJ- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud with c SK in at or on top</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 5 BHT 107 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2046</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>15:36</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>16:08</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>18:12</u>
(D) Initial Shut-In <u>833</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>19:22</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>21:09</u>
(F) Second Final Flow <u>24</u>	<input checked="" type="checkbox"/> Mileage <u>54 R/T</u> 83.70	Comments _____
(G) Final Shut-In <u>835</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1953</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1658.70</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1658.70</u>	

Approved By Vern Schrag Our Representative Will Hall

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57233

4/10

Well Name & No. Boomer B #1-16 Test No. DST #3 Date 4-3-14  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd. 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D Rig #3  
 Location: Sec. 16 Twp. 17s Rge. 29w Co. Lane State KS

Interval Tested 4185 - 4204 Zone Tested LRC "J"  
 Anchor Length 19 Drill Pipe Run 4046 Mud Wt. 9.0  
 Top Packer Depth 4181 Drill Collars Run 144 Vis 52  
 Bottom Packer Depth 4185 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4204 Chlorides 2200 ppm System LCM 216

Blow Description IF - Weak Surface Blow 1/4"  
ISI - No Blow  
FF - Weak Surface Blow Built to 1/4"  
FST - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>8</u>	<u>Mud with oil spots</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

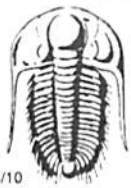
Rec Total 8 BHT 112 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2105  Test 1250 T-On Location 9:08  
 (B) First Initial Flow 16  Jars 250 T-Started 9:48  
 (C) First Final Flow 18  Safety Joint 75 T-Open 11:45  
 (D) Initial Shut-In 427  Circ Sub NIC T-Pulled 12:55  
 (E) Second Initial Flow 19  Hourly Standby \_\_\_\_\_ T-Out 14:39  
 (F) Second Final Flow 23  Mileage 54 R/T 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 427  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2127  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 5  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 15  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 15  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Total 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1658.70

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57234

Well Name & No. Boomer B #1-16 Test No. DST#4 Date 4-3-14  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Omitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D Rig #3  
 Location: Sec. 16 Twp. 17s Rge. 29W Co. Lane State KS

Interval Tested 4200-4210 Zone Tested LKC "J"  
 Anchor Length 10 Drill Pipe Run 4073 Mud Wt. 9.2  
 Top Packer Depth 4196 Drill Collars Run 116 Vis 50  
 Bottom Packer Depth 4200 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4210 Chlorides 2700 ppm System LCM 216  
 Blow Description IF- Weak Surface Blow Built to 1/2"  
ISI- No Blow  
FF- Weak Surface Blow Built to 1"  
FSI- No Blow

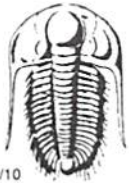
Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>OWCM</u>		<u>1</u>	<u>11</u>	<u>88</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 104 Gravity \_\_\_\_\_ API RW 425 @ 38 °F Chlorides 28,500 ppm  
 (A) Initial Hydrostatic 2070  Test 1250 T-On Location 21:00  
 (B) First Initial Flow 15  Jars 250 T-Started 21:24  
 (C) First Final Flow 18  Safety Joint 75 T-Open 23:26  
 (D) Initial Shut-In 433  Circ Sub NIC T-Pulled 1:20  
 (E) Second Initial Flow 19  Hourly Standby \_\_\_\_\_ T-Out 3:08  
 (F) Second Final Flow 25  Mileage 54 R/T 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 434  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1964  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1658.70

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60  
 Approved By [Signature] Our Representative Will Max

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57235

Well Name & No. Boomer B #1-16 Test No. DST #5 Date 4-4-14  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Olinitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D Rig #3  
 Location: Sec. 16 Twp. 17s Rge. 29W Co. Lane State KS

Interval Tested 4220-4238 Zone Tested LRC "K"  
 Anchor Length 18 Drill Pipe Run 4105 Mud Wt. 9.2  
 Top Packer Depth 4216 Drill Collars Run 116 Vis 50  
 Bottom Packer Depth 4220 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4238 Chlorides 2700 ppm System LCM 215

Blow Description IF-Weak Surface Blow 1/4"  
ISI- No Blow  
FF-Weak Surface Blow Built to 1/4"  
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud with few oil spots in Tool</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

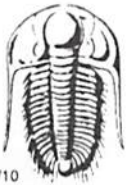
Rec Total 5 BHT 106 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2087  Test 1250 T-On Location 11:52  
 (B) First Initial Flow 16  Jars 250 T-Started 12:20  
 (C) First Final Flow 18  Safety Joint 75 T-Open 14:10  
 (D) Initial Shut-In 289  Circ Sub N/C T-Pulled 15:19  
 (E) Second Initial Flow 18  Hourly Standby T-Out 17:03  
 (F) Second Final Flow 21  Mileage BY R/T 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 285  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1968  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 5  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 15  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 15  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Total 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1658.70

Approved By Vern Schrag Our Representative Wim

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57236

4/10

Well Name & No. Bromhauer B # 1-16 Test No. DST #6 Date 4-5-12  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D Rys #3  
 Location: Sec. 16 Twp. 17s Rge. 29W Co. Lane State KS

Interval Tested 4259-4281 Zone Tested LRC "L"  
 Anchor Length 22 Drill Pipe Run 4136 Mud Wt. 9.1  
 Top Packer Depth 4255 Drill Collars Run 116 Vis 65  
 Bottom Packer Depth 4259 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4281 Chlorides 2800 ppm System LCM 116  
 Blow Description IF-Weak Surface Blow 1/4"  
ISI- No Blow  
FF-Weak Surface Blow  
FST- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud Couple 0.1 Spds in Tool</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 2 BHT 108 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

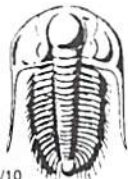
(A) Initial Hydrostatic 2138  Test 1250 T-On Location 5:58  
 (B) First Initial Flow 16  Jars 250 T-Started 6:30  
 (C) First Final Flow 16  Safety Joint 75 T-Open 8:24  
 (D) Initial Shut-In 74  Circ Sub NIC T-Pulled 9:37  
 (E) Second Initial Flow 17  Hourly Standby \_\_\_\_\_ T-Out 11:16  
 (F) Second Final Flow 18  Mileage 54 RIT 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 81  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2003  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 15  
 Final Shut-In 30  
 Sub Total 1658.70

Approved By VC Schrag Our Representative Jim m

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57237

Well Name & No. Boomer B# 1-16 Test No. DST #7 Date 4-5-11  
 Company Larson Engineering Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schrag Rig H-D Rig #3  
 Location: Sec. 16 Twp. 17s Rge. 2W Co. Lane State KS

Interval Tested 4314-4350 Zone Tested Pleasanton  
 Anchor Length ~~4310~~ 36 Drill Pipe Run 4201 Mud Wt. 9.1  
 Top Packer Depth ~~4314~~ 4310 Drill Collars Run 116 Vis 56  
 Bottom Packer Depth ~~4350~~ 4314 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4350 Chlorides 2500 ppm System LCM 116

Blow Description IF- Wear Surface Blow  
ISI- No Blow  
FF- No Blow  
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
1	Mud				

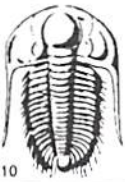
Rec Total 1 BHT 111 Gravity  API RW  @  °F Chlorides  ppm

(A) Initial Hydrostatic 2186  Test 1250 T-On Location 23:38  
 (B) First Initial Flow 16  Jars 250 T-Started 00:04  
 (C) First Final Flow 18  Safety Joint 75 T-Open 21:03  
 (D) Initial Shut-In 23  Circ Sub NIC T-Pulled 3:12  
 (E) Second Initial Flow 17  Hourly Standby  T-Out 4:52  
 (F) Second Final Flow 19  Mileage 54 R/T 83.70 Comments   
 (G) Final Shut-In 24  Sampler   
 (H) Final Hydrostatic 2039  Straddle   Ruined Shale Packer   
 Shale Packer   Ruined Packer   
 Extra Packer   Extra Copies   
 Extra Recorder  Sub Total 0  
 Day Standby  Total 1658.70  
 Accessibility  MP/DST Disc't

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 15  
 Final Shut-In 30  
 Sub Total 1658.70

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 57238

Well Name & No. Boamhower B #1-16 Test No. DST #8 Date 4-6-14  
 Company Larson Engineering Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd 4 Olmitz KS 67564  
 Co. Rep / Geo. Vern Schwag Rig H-D Rig #3  
 Location: Sec. 16 Twp. 17S Rge. 29W Co. Lanc State KS

Interval Tested 4346-4400 Zone Tested Marmanton  
 Anchor Length 54 Drill Pipe Run 4233 Mud Wt. 9.1  
 Top Packer Depth 4342 Drill Collars Run 116 Vis 68  
 Bottom Packer Depth 4346 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4400 Chlorides 2000 ppm System LCM 116

Blow Description IF- Weak Surface Blow Built to 3 1/4"  
ISI- No Blow  
FF- Weak Surface Blow Built to 10 1/2"  
FSL- Weak Surface Blow in 11 min

Rec	Feet of	%gas	%oil	%water	%mud
10	0-0CM	4	9	87	
62	0-0CM	12	7	81	
58	0-0CM	27	10	63	
58	0-0CM	14	8	78	
	114' of G-IP				

Rec Total 188 BHT 114 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2160  Test 1250 T-On Location 14:26  
 (B) First Initial Flow 21  Jars 250 T-Started 14:50  
 (C) First Final Flow 55  Safety Joint 75 T-Open 16:34  
 (D) Initial Shut-In 960  Circ Sub NIC T-Pulled \_\_\_\_\_  
 (E) Second Initial Flow 67  Hourly Standby \_\_\_\_\_ T-Out 20:10  
 (F) Second Final Flow 108  Mileage 54 RIT 83.70 Comments 114' of G-IP  
 (G) Final Shut-In 952  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 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 5  
 Initial Shut-In 15  
 Final Flow 20  
 Final Shut-In 40

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56513

Well Name & No. Boomer<sup>B</sup>#1-16 Test No. 9 Date 4-7-14  
 Company Larson Engineering, Inc. Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd. 4- Olmitz, KS 67564  
 Co. Rep / Geo. Vern Shrag Rig HD#3  
 Location: Sec. 16 Twp. 17-S Rge. 27-W Co. Lane State KS

Interval Tested 4418-4495 Zone Tested Pawnee  
 Anchor Length 77' Drill Pipe Run 4295 Mud Wt. 9.1  
 Top Packer Depth 4414 Drill Collars Run 116 Vis 63  
 Bottom Packer Depth 4418 Wt. Pipe Run Ø WL 7.2  
 Total Depth 4495 Chlorides 2,000 ppm System LCM # 1

Blow Description IF: 2 1/2 in. Blow  
FSI: Bled off in 2 min. - No Return  
FF: 1 1/2 in. Immediately - Built to B.o.b. in 15 min.  
FSI: Bled off in 2 min. - Fair surface Blow back - Died in 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>mco &amp; G</u>	<u>40</u>	<u>40</u>		<u>20</u>
<u>30</u>	<u>G &amp; Ocm</u>	<u>25</u>	<u>35</u>		<u>40</u>
<u>30</u>	<u><del>G &amp; Ocm</del> O &amp; Gcm</u>	<u>15</u>	<u>10</u>		<u>75</u>
<u>1</u>	<u>CGO</u>	<u>15</u>	<u>85</u>		
	<u>GIP=189</u>				

Rec Total 121 BHT 115 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2233  Test 1250 T-On Location 10:15  
 (B) First Initial Flow 23  Jars 250 T-Started 10:21  
 (C) First Final Flow 33  Safety Joint 75 T-Open 12:26  
 (D) Initial Shut-In 997  Circ Sub N/C T-Pulled 10:14:16  
 (E) Second Initial Flow 35  Hourly Standby \_\_\_\_\_ T-Out 16:22  
 (F) Second Final Flow 65  Mileage 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1035  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2165  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

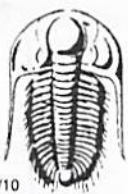
Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60

Sub Total 1658.70  
 Total 1658.70  
 MP/DST Disc't \_\_\_\_\_

Approved By Vern C. Shrag 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. 56515

Well Name & No. Boomhower B#1-16 Test No. 10 Date 4-8-14  
 Company Larson Engineering, Inc Elevation 2805 KB 2798 GL  
 Address 562 W. State Rd #4 - Olmitz, KS 67564  
 Co. Rep / Geo. Vern Schrag Rig HP#3  
 Location: Sec. 16 Twp. 7.5 Rge. 29-w Co. Lane State KS

Interval Tested 4496-4560 Zone Tested Cherokee  
 Anchor Length 64' Drill Pipe Run 4358' Mud Wt. 9.0  
 Top Packer Depth 4492 Drill Collars Run 116 Vis 58  
 Bottom Packer Depth 4496 Wt. Pipe Run Ø WL 7.6  
 Total Depth 4560 Chlorides 2300 ppm System LCM #1

Blow Description IF: 3 in. Blow  
ISI: Bled off in 2 min - Fair Surface Blowback Return - Died in 10 min.  
FF: Surface Blowback - Built to B.o.d. in 16 1/2 min.  
FST: Bled off in 2 min - Fair Surface Blowback - Built to 1/2 in. - Died back to Surface Blowback

Rec	Feet of	Gas	Oil	Water	Mud
58	GEMCO	15 %	65 %	20 %	
53	ME'GCO	30 %	60 %	10 %	
5	CGO	15 %	85 %		
30	GEMCO	15 %	55 %	30 %	
1	CGO	15 %	85 %		

Rec Total 147 BHT 117 Gravity 36 API RW → @ → ° F Chlorides → ppm

(A) Initial Hydrostatic 2298  Test 1250 T-On Location 5:15  
 (B) First Initial Flow 22  Jars 250 T-Started 5:25  
 (C) First Final Flow 35  Safety Joint 75 T-Open 7:46  
 (D) Initial Shut-In 1114  Circ Sub N/C T-Pulled 9:36  
 (E) Second Initial Flow 38  Hourly Standby \_\_\_\_\_ T-Out 12:03  
 (F) Second Final Flow 75  Mileage 83.70 Comments \_\_\_\_\_  
 (G) Final Shut-In 1169  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2203  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1658.70  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1658.70

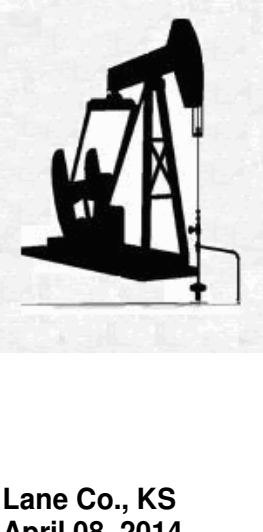
Initial Open 5  
 Initial Shut-In 15  
 Final Flow 30  
 Final Shut-In 60

Approved By Vern Schrag Our Representative Coltman CLT

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# WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG  
CONSULTANT GEOLOGIST



Scale 1:240 (5"=100') Imperial

Well Name: <b>BOOMHOWER B #1-16</b>	Location: <b>SW NE SE 16-17S-29W</b>	Region: <b>Lane Co., KS</b>
Licence Number: <b>API: 15-101-22500</b>	Spud Date: <b>March 22, 2014</b>	Drilling Completed: <b>April 08, 2014</b>
Surface Coordinates: <b>2265' FSL &amp; 342' FEL</b>		
Bottom Hole Coordinates:		
Ground Elevation (ft): <b>2798'</b>	K.B. Elevation (ft): <b>2805'</b>	
Logged Interval (ft): <b>3800'</b>	To: <b>RTD</b> Total Depth (ft): <b>4640'</b>	
Formation: <b>Mississippi</b>		
Type of Drilling Fluid: <b>Chemical Premix (Displaced)</b>		

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR:

Company: **Larson Engineering Inc.**  
Address: **562 West State Road 4  
Olmits, KS 67564-8561**

### DRILLING CONTRACTOR:

**H. D. Drilling, LLC, Rig #3 (Co. Tools)**

**DP 4.5" XH (16.6#); DC 6.25" x 2.25" x 646' down to 4071, 616' to RTD, hardbanded, Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA20-Q, 7-7/8", standard jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7" above ground level; LeWayne "Lew" Tresner (tool pusher).**

### CASING:

**Set 8-5/8" casing at 264'**

### CIRCULATION SYSTEM:

**Continental EMSCO D-300, duplex, 6 x 14, 58-60 spm, Chemical, premix, displaced; earth pits, Morgan Mud, Inc., Cade Lines.**

### OPEN HOLE LOGS:

**DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 4 1/2" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Y. Ruiz. Log total depth (4637') was three feet short to rotary total depth (4640').**

### DRILL STEM TEST #1:

**LKC "E/F zone": Interval: 4034-4065 (31') : Blow weak incr 1/2" IFF, no RB, weak incr 2-1/2" FFP, no RB; Times: 5-15-30; Recovery: 2' mud (100%M); Pressures: HP: 2087-2055; SIP: 394-449; FP: 19-23, 25-35; BHT: 110 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.**

### DRILL STEM TEST #2:

**LKC (H-zone): Interval: 4125-4148 (23') : Blow: weak 1/2" IFF, no RB, no blow 2nd open, no RB; Times: 5-15-30; Recovery: 5' mud (100%M); Pressures: HP: 2046-1953; SIP: 833-835; FP: 20-21, 22-24; BHT: 107 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #3:

**LKC (J-zone): Interval: 4185-4204 (19') : Blow: weak surf IFF, no RB, weak surf FFP, no RB; Times: 5-15-30; Recovery: 2' mud w/oil spots (100%M); Pressures: HP: 2105-2127; SIP: 427-427; FP: 16-18, 19-23; BHT: 112 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #4:

**LKC (J-zone): Interval: 4200-4210 (10') : Blow: weak incr 1/2" IFF, no RB, weak incr 1" FFP, no RB; Times: 5-15-30-60; Recovery: 15' OWC (1%O, 11%W, 88%M); Pressures: HP: 2070-1964; SIP: 433-434; FP: 15-18, 19-25; BHT: 104 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #5:

**LKC (K-zone): Interval: 4220-4238 (18') : Blow: weak surf IFF, no RB, weak surf FFP, no RB; Times: 5-15-30; Recovery: 5' mud w/oil spots (100%M); Pressures: HP: 2087-1968; SIP: 289-285; FP: 16-18, 18-21; BHT: 106 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #6:

**LKC (L-zone): Interval: 4259-4281 (22') : Blow: weak surf IFF, no RB, weak surf FFP, no RB; Times: 5-15-30; Recovery: 2' mud (100%M); Pressures: HP: 2138-2003; SIP: 74-81; FP: 16-16, 17-18; BHT: 108 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #7:

**Pleasanton: Interval: 4314-4350 (36') : Blow: weak surf IFF, no RB, no blow 2nd open; Times: 5-15-15-30; Recovery: 1' mud (100%M); Pressures: HP: 2186-2039; SIP: 23-24; FP: 16-18, 17-19; BHT: 111 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #8:

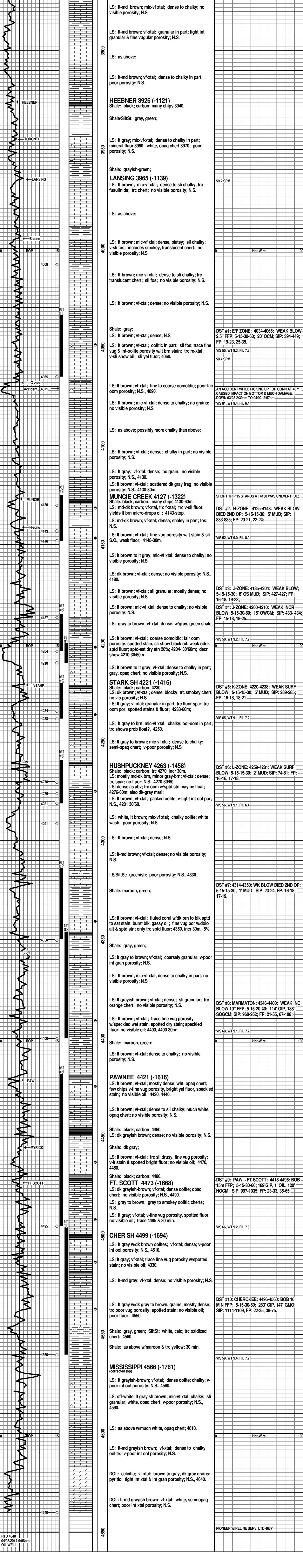
**Marmaton: Interval: 4346-4400 (54') : Blow: weak incr 3" IFF, no RB, weak incr 10" FFP, weak surf RB FSIP; Times: 5-15-20-40; Recovery: 114' GIP, 188' TF; Grindouts: 10' GOCM (4%G, 9%O, 87%M), 62' OGCM (12%G, 7%O, 81%M), 58' OGCM (27%G, 10%O, 63%M), 58' OGCM (14%G, 8%O, 78%M); Pressures: HP: 2160-2007; SIP: 960-952; FP: 21-55, 67-108; BHT: 114 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeon.**

### DRILL STEM TEST #9:

**Pawnee, Myrick Station, Ft. Scott: Interval: 4418-4495 (77') : Blow: weak incr 2.5" IFF, no RB; BOB 15 min FFP, weak surf RB FSIP; Times: 5-15-30-60; Recovery: 189' GIP, 121' TF; Grindouts: 1' GO (15%G, 85%O), 30' OGCM (15%G, 10%O, 75%M), 30' GOCM (25%G, 35%O, 40%M), 60' MGO (40%G, 40%O, 20%M); Pressures: HP: 2233-2165; SIP: 997-1035; FP: 23-33, 35-65; BHT: 115 F; Trilobite Testing, Inc., Scott City, KS, Cornelio "Corndog" Landa III.**

### DRILL STEM TEST #10:

**Cherokee: Interval: 4496-4560 (64') : Blow: weak incr 3" IFF, surf RB, BOB 16 min FFP, 1/2" RB FSIP; Times: 5-15-30-60; Recovery: 283' GIP, 147' TF; Grindouts: 1' GO (15%G, 85%O, 36 grav.), 30' GMO (15%G, 55%O, 30%M), 5' GO (15%G, 85%O), 53' GMO (30%G, 60%O, 10%M), 58' GMO (15%G, 65%O, 20%M); Pressures: HP: 2298-2203; SIP: 1114-1109; FP: 22-35, 38-75; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Cornelio "Corndog" Landa III.**



RTD 4640  
04/08/2014 9:08pm  
OIL WELL