



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1236377
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: _____

1236377

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <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> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Lora 1-32
Doc ID	1236377

Tops

Name	Top	Datum
Anhydrite	2176	+688
B Anhydrite	2196	+668
Heebner	3970	-1098
Lansing	4011	-1139
Stark Sh	4303	-1431
Marmaton	4436	-1564
Ft. Scott	4550	-1678
Cher Sh	4571	-1699
Mississippi	4635	-1763

ALLIED OIL & GAS SERVICES, LLC 063684

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Great Bend W

DATE <u>9-4-14</u>	SEC. <u>32</u>	TWP. <u>19</u>	RANGE <u>29</u>	CALLED OUT	ON LOCATION <u>6:30 pm</u>	JOB START <u>7:00 pm</u>	JOB FINISH <u>7:30 pm</u>
LEASE <u>h-ORA</u>	WELL# <u>1-32</u>	LOCATION <u>District 9 South To 60 RD</u>			COUNTY <u>hans</u>	STATE <u>KS</u>	
OLD OR <input checked="" type="radio"/> NEW (Circle one)			<u>4 1/2 west North into</u>				

CONTRACTOR HD Rig 3 OWNER _____

TYPE OF JOB Surface

HOLE SIZE 12 1/4 TD. 265 CEMENT _____

CASING SIZE 8 3/4 DEPTH 263 AMOUNT ORDERED 165 5% class A

TUBING SIZE _____ DEPTH _____ + 3% cc + 2% GC

DRILL PIPE _____ DEPTH _____

TOOL _____ DEPTH _____

PRES. MAX _____ MINIMUM _____

MEAS. LINE _____ SHOE JOINT _____

CEMENT LEFT IN CSG. 15

PERFS. _____

DISPLACEMENT 15.75 BBHs

EQUIPMENT

PUMP TRUCK CEMENTER Wayne Davis

366 HELPER Ben Howell

BULK TRUCK _____

609/639 DRIVER Zeb S

BULK TRUCK _____

_____ DRIVER _____

COMMON 165 @ 17.90 2,953.50

POZMIX @ _____

GEL 310 @ .50 155.00

CHLORIDE 465 @ 1.10 511.50

ASC Materials @ Total 3,620.00

@ Disc 25% 905.00

@ _____

@ _____

@ _____

@ _____

@ _____

Surf @ _____

HANDLING 178.42 @ 2.48 442.48

MILEAGE 8.14 x 30 x 2.75 671.55

REMARKS:

Pipe on Bottom B-cnk circulation
with Ris mud

Raw 5 BBHs water ahead

mix 165 5% class A + 3% cc + 2% GC

Disp 15.75 f-csh water

Shut in

Cement circulated

DEPTH OF JOB 263

PUMP TRUCK CHARGE 1512.35

EXTRA FOOTAGE @ _____

MILEAGE Hum 30 @ 7.70 231.00

MANIFOLD @ _____

2um 30 @ 4.40 132.00

@ _____

CHARGE TO: Lanson

STREET _____

CITY _____ STATE _____ ZIP _____

TOTAL 2,989.35
Disc 25% 747.32

PLUG & FLOAT EQUIPMENT

@ _____

@ _____

@ _____

@ _____

@ _____

0% TOTAL 0

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.

PRINTED NAME LEWYNE TRESNER

SIGNATURE [Signature]

SALES TAX (If Any) _____

TOTAL CHARGES 6,609.28

25% 1,652.32 (25/25/0)

DISCOUNT _____ IF PAID IN 30 DAYS

4,956.96



CHARGE TO: Larson Eng. Needing
 ADDRESS:
 CITY, STATE, ZIP CODE:

TICKET 26593

PAGE 1 OF 1

SERVICE LOCATIONS 1. <u>Ness City KS</u>	WELL/PROJECT NO. <u>1-32</u>	LEASE <u>LORA</u>	COUNTY/PARISH <u>Lane</u>	STATE <u>KS</u>	CITY <u>Dighton</u>	DATE <u>23 SEP 14</u>	OWNER
2.	TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>WILD WEST</u>	RIG NAME/NO.	SHIPPED VIA <u>CT</u>	DELIVERED TO <u>location</u>	ORDER NO.	
3.	WELL TYPE <u>oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>cement port collar</u>	WELL PERMIT NO.	WELL LOCATION		
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
<u>575</u>		<u>1</u>			MILEAGE	<u>45</u>	<u>mi</u>			<u>6.00</u>	<u>270.00</u>
<u>576D</u>		<u>1</u>			Pump Charge	<u>1</u>	<u>ea</u>			<u>1500.00</u>	<u>1500.00</u>
<u>330</u>		<u>1</u>			SMD cement	<u>200</u>	<u>sk</u>			<u>18.50</u>	<u>3700.00</u>
<u>276</u>		<u>1</u>			Flare	<u>50</u>	<u>lb</u>			<u>2.50</u>	<u>125.00</u>
<u>290</u>		<u>1</u>			D-air	<u>2</u>	<u>gal</u>			<u>42.00</u>	<u>84.00</u>
<u>583</u>		<u>1</u>			Drayage	<u>22389</u>	<u>lb</u>	<u>503.77</u>	<u>T/M</u>	<u>1.00</u>	<u>503.77</u>
<u>581</u>		<u>1</u>			Service charge	<u>225</u>	<u>sk</u>			<u>2.00</u>	<u>450.00</u>

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
 DATE SIGNED _____ TIME SIGNED _____
 A.M.
 P.M.
11:38

REMIT PAYMENT TO:

SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
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		
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL 6638.77

Lane TAX 7.15% 279.49

TOTAL 6912.26

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR REC/ell APPROVAL _____

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 23 SEP 14 PAGE NO. 1

CUSTOMER Lalson Engineering WELL NO. 1-32 LEASE LORA JOB TYPE cement port collar TICKET NO. 26593

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								225 sk SMD cement w/ 7# floccule 23x5 1/2 port collar - 2625'
	0835							on loc TRK 112
	0855					1000	1000	test to 1000 psi - hold open port collar
	0905	3 1/2	3			400		inj rate 3 1/2 bpm @ 400 psi
	0907	3 1/2				400		Mix SMD cement @ 11.2 ppg
		3 1/2	14			400		- fluid to surface -
	0940	3 1/2	104			500		— cement to surface — 500 sk mixed 15 topit
								Displace w 7 1/2 bbl H2O
								close port collar
	0950					1000	1000	test to 1000 psi - hold
	0953							run 5 joints
	0958							Reverse hole clean - 2 cement floccs -
	1005							wash truck pull tools
								Break up
	1038							job complete - thubos Blaine, Flint, F ROB



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.11 @ 01:58:00

End Date: 2014.09.11 @ 08:46:09

Job Ticket #: 57725 DST #: 1

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

Printed: 2014.09.16 @ 11:09:18



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57725

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 01:58:00

GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:15:55

Time Test Ended: 08:46:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Interval: 4264.00 ft (KB) To 4285.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4285.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8674

Inside

Press@RunDepth: 90.69 psig @ 4265.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.11

End Date:

2014.09.11

Last Calib.:

2014.09.11

Start Time: 01:58:00

End Time:

08:46:09

Time On Btm:

2014.09.11 @ 04:15:40

Time Off Btm:

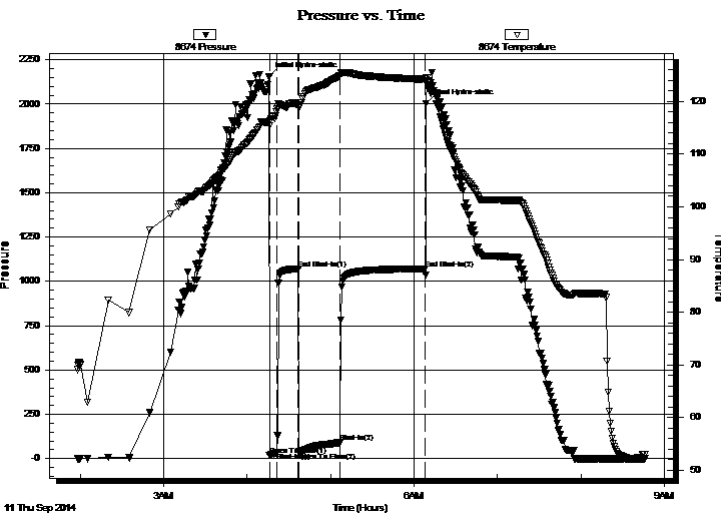
2014.09.11 @ 06:08:25

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

IS- No Blow

FF- Weak Surface Blow Built to 4 1/2"

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2156.50	116.11	Initial Hydro-static
1	18.30	115.42	Open To Flow (1)
6	35.00	118.64	Shut-In(1)
21	1071.19	119.35	End Shut-In(1)
22	37.10	118.72	Open To Flow (2)
52	90.69	124.98	Shut-In(2)
113	1071.39	124.27	End Shut-In(2)
113	2003.23	124.60	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MCW 37%w 63%w	0.30
62.00	WCM 29%w 71%w	0.30
10.00	WCM 12%w 88%w with A Few Oil Spc	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57725

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 01:58:00

GENERAL INFORMATION:

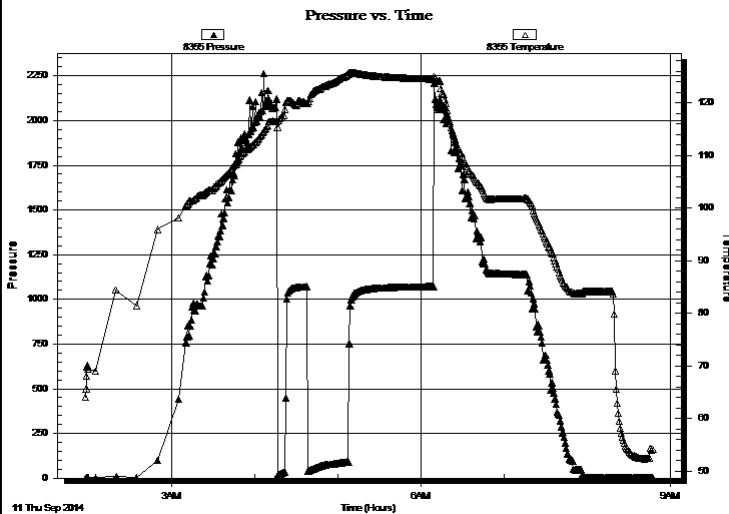
Formation: **LKC " J "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:15:55
 Time Test Ended: 08:46:09
 Interval: **4264.00 ft (KB) To 4285.00 ft (KB) (TVD)**
 Total Depth: 4285.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2872.00 ft (KB)
 2865.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8355

Outside

Press@RunDepth: psig @ 4265.00 ft (KB)
 Start Date: 2014.09.11 End Date: 2014.09.11
 Start Time: 01:58:00 End Time: 08:47:24
 Capacity: 8000.00 psig
 Last Calib.: 2014.09.11
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow Built to 1 1/4"
 IS- No Blow
 FF- Weak Surface Blow Built to 4 1/2"
 FS- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MCW 37%w 63%w	0.30
62.00	WCM 29%w 71%w	0.30
10.00	WCM 12%w 88%w with A Few Oil Spc	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57725

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 01:58:00

Tool Information

Drill Pipe:	Length: 4139.00 ft	Diameter: 3.80 inches	Volume: 58.06 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 8000.00 lb
			<u>Total Volume: 58.67 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4264.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	48.00 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			4238.00	
Shut In Tool	5.00			4243.00	
Hydraulic tool	5.00			4248.00	
Jars	5.00			4253.00	
Safety Joint	2.00			4255.00	
Packer	5.00			4260.00	27.00 Bottom Of Top Packer
Packer	4.00			4264.00	
Stubb	1.00			4265.00	
Recorder	0.00	8355	Outside	4265.00	
Recorder	0.00	8674	Inside	4265.00	
Perforations	15.00			4280.00	
Bullnose	5.00			4285.00	21.00 Bottom Packers & Anchor

Total Tool Length: 48.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57725

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 01:58:00

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:

16400 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.53 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	MCW 37%m 63%w	0.305
62.00	WCM 29%w 71%m	0.305
10.00	WCM 12%w 88%m with A Few Oil Spots	0.140

Total Length: 134.00 ft Total Volume: 0.750 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

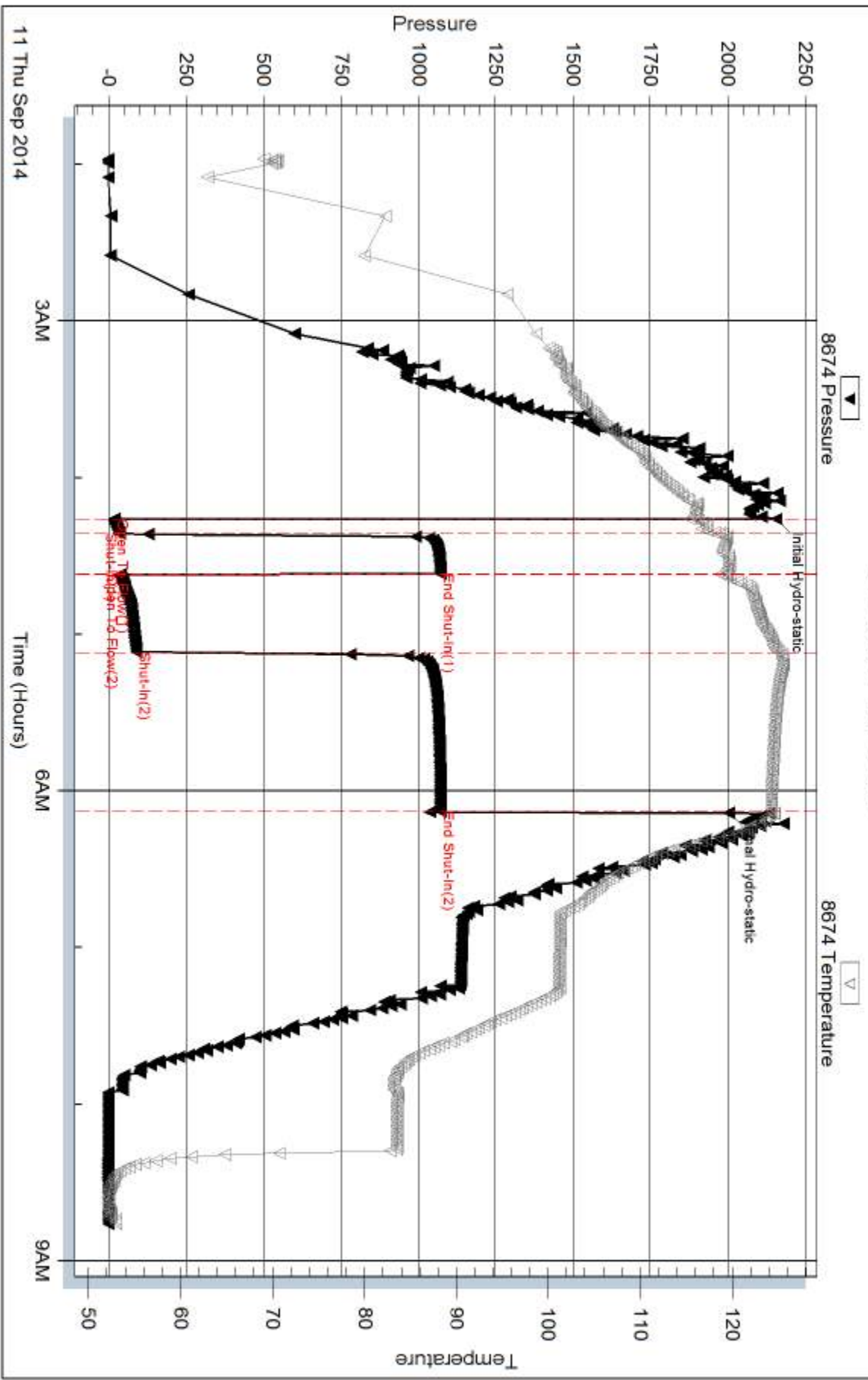
Serial #:

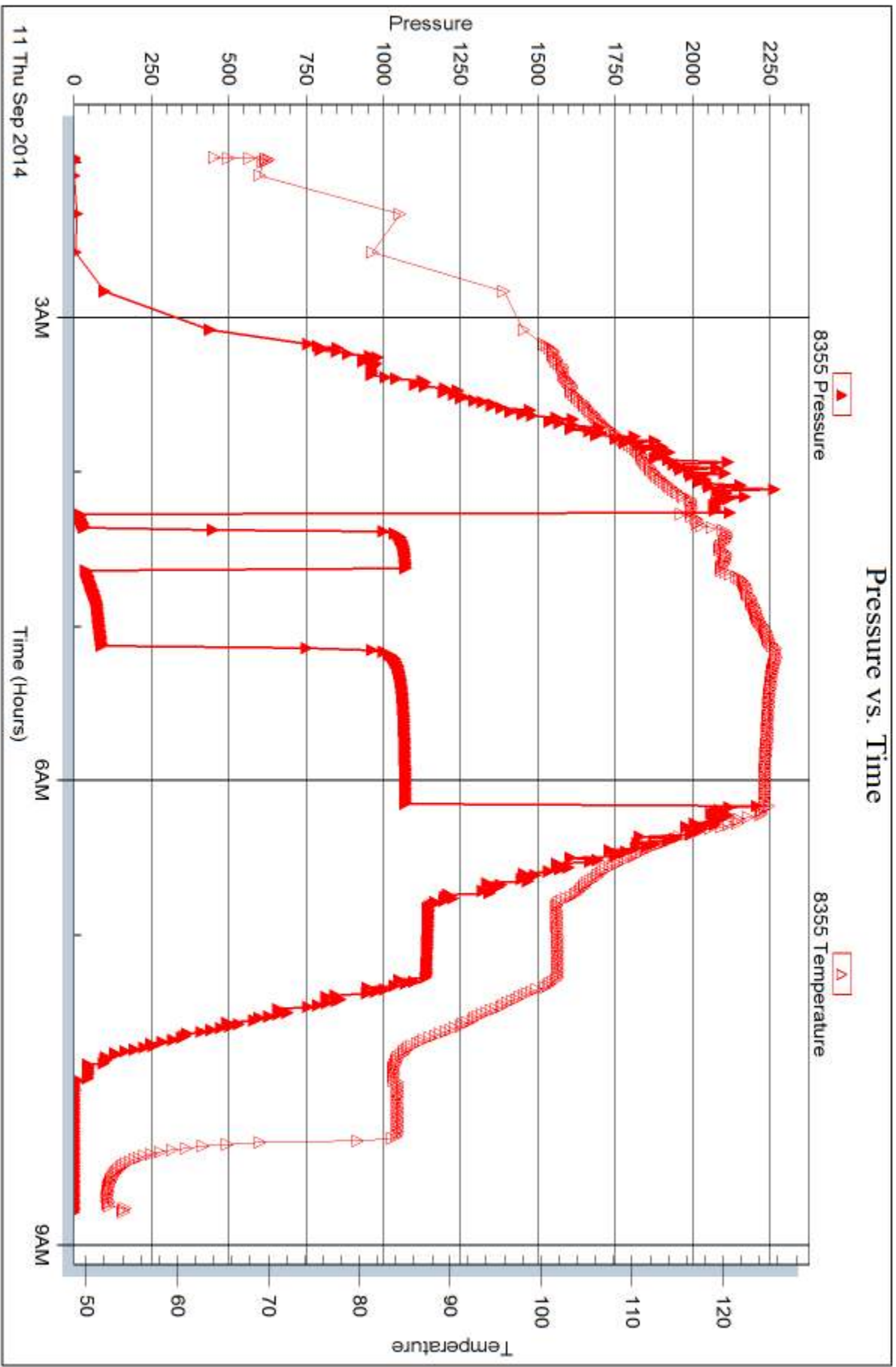
Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .494 @ 55f = 16,400

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.11 @ 16:00:00

End Date: 2014.09.11 @ 21:47:54

Job Ticket #: 57727 DST #: 2

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

Printed: 2014.09.16 @ 11:06:44



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57727

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 16:00:00

GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:45:10

Time Test Ended: 21:47:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4295.00 ft (KB) To 4316.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4285.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8674

Inside

Press@RunDepth: 579.66 psig @ 4296.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.11

End Date:

2014.09.11

Last Calib.:

2014.09.11

Start Time: 16:00:00

End Time:

21:47:54

Time On Btm:

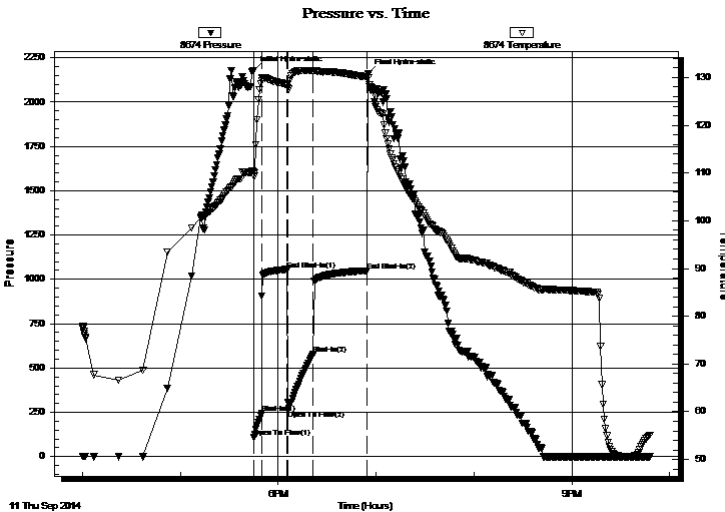
2014.09.11 @ 17:44:55

Time Off Btm:

2014.09.11 @ 18:55:10

TEST COMMENT: IF- Surface Blow Built to BOB in 2 min
IS- No Blow
FF- Surface Blow Built to BOB 1 3/4 min
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2178.18	110.17	Initial Hydro-static
1	110.39	109.31	Open To Flow (1)
5	243.01	129.37	Shut-In(1)
21	1056.19	128.51	End Shut-In(1)
21	261.86	127.81	Open To Flow (2)
37	579.66	131.38	Shut-In(2)
70	1048.49	130.09	End Shut-In(2)
71	2159.79	129.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
620.00	OGMCW 3%oil 7%g 8%m 82%w	7.57
248.00	GMOCW 9%g 10%m 15%oil 66%w	3.48
186.00	GOMCW 12%g 20%oil 30%m 38%w	2.61
124.00	GWMCO 8%g 18%w 35%m 39%oil	1.74
20.00	GMCO 3%g 9%m 88%oil	0.28
0.00	228' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57727

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 16:00:00

GENERAL INFORMATION:

Formation: **LKC " K "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:45:10

Time Test Ended: 21:47:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4295.00 ft (KB) To 4316.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4285.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4296.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.11 End Date: 2014.09.11

Last Calib.: 2014.09.11

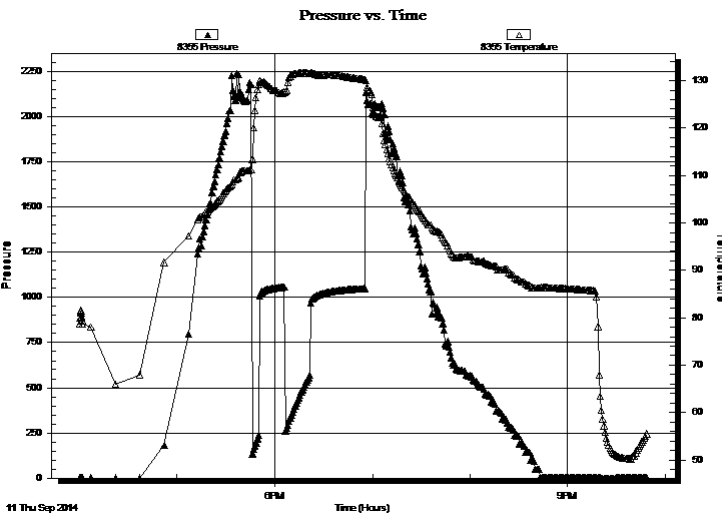
Start Time: 16:00:05 End Time: 21:48:59

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Surface Blow Built to BOB in 2 min
IS- No Blow
FF- Surface Blow Built to BOB 1 3/4 min
FS- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
620.00	OGMCW 3%oil 7%g 8%m 82%w	7.57
248.00	GMOCW 9%g 10%m 15%oil 66%w	3.48
186.00	GOMCW 12%g 20%oil 30%m 38%w	2.61
124.00	GWMCO 8%g 18%w 35%m 39%oil	1.74
20.00	GMCO 3%g 9%m 88%oil	0.28
0.00	228' 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.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57727

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 16:00:00

Tool Information

Drill Pipe:	Length: 4172.00 ft	Diameter: 3.80 inches	Volume: 58.52 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 59.13 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4295.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	48.00 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			4269.00	
Shut In Tool	5.00			4274.00	
Hydraulic tool	5.00			4279.00	
Jars	5.00			4284.00	
Safety Joint	2.00			4286.00	
Packer	5.00			4291.00	27.00 Bottom Of Top Packer
Packer	4.00			4295.00	
Stubb	1.00			4296.00	
Recorder	0.00	8355	Outside	4296.00	
Recorder	0.00	8674	Inside	4296.00	
Perforations	15.00			4311.00	
Bullnose	5.00			4316.00	21.00 Bottom Packers & Anchor

Total Tool Length: 48.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57727

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.09.11 @ 16:00:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 54.00 sec/qt
Water Loss: 8.34 in³
Resistivity: ohm.m
Salinity: 4500.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 29 deg API
Water Salinity: 25200 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
620.00	OGMCW 3%oil 7%g 8%m 82%w	7.567
248.00	GMOCW 9%g 10%m 15%oil 66%w	3.479
186.00	GOMCW 12%g 20%oil 30%m 38%w	2.609
124.00	GWMCO 8%g 18%w 35%m 39%oil	1.739
20.00	GMCO 3%g 9%m 88%oil	0.281
0.00	228' of GIP	0.000

Total Length: 1198.00 ft Total Volume: 15.675 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: API is 29 @ 60f = 29
RW is .327 @ 56f = 25200



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.12 @ 07:50:00

End Date: 2014.09.12 @ 13:18:39

Job Ticket #: 57728 DST #: 3

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

Printed: 2014.09.16 @ 11:06:08



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.
562 W. State Rd.
Olmitz KS 67564
ATTN: Vern Schrag

32-19s-29w Lane, KS
Lora #1-32
Job Ticket: 57728 **DST#: 3**
Test Start: 2014.09.12 @ 07:50:00

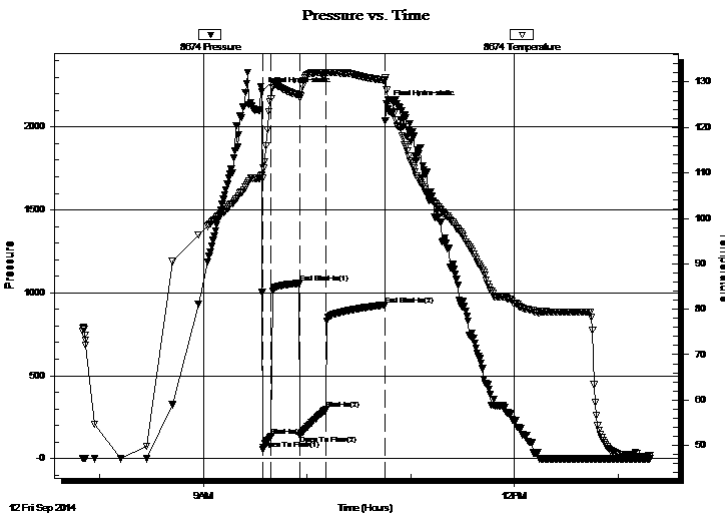
GENERAL INFORMATION:

Formation: **Mid Creek**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 09:34:10 Tester: Will MacLean
Time Test Ended: 13:18:39 Unit No: 71
Interval: 4335.00 ft (KB) To 4352.00 ft (KB) (TVD) Reference Elevations: 2872.00 ft (KB)
Total Depth: 4352.00 ft (KB) (TVD) 2865.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8674 Inside
Press@RunDepth: 298.03 psig @ 4337.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.09.12 End Date: 2014.09.12 Last Calib.: 2014.09.12
Start Time: 07:50:00 End Time: 13:18:39 Time On Btm: 2014.09.12 @ 09:33:40
Time Off Btm: 2014.09.12 @ 10:45:55

TEST COMMENT: IF- Surface Blow Built to BOB in 3 1/2 min
IS- Weak Surface Blow in 8 1/2 min
FF- Surface Blow Built to BOB in 4 1/4 min
FS- Weak Surface Blow in 6 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2214.24	109.51	Initial Hydro-static
1	54.00	108.84	Open To Flow (1)
6	136.84	126.34	Shut-In(1)
22	1058.25	127.17	End Shut-In(1)
22	142.74	126.58	Open To Flow (2)
38	298.03	131.94	Shut-In(2)
72	928.20	130.40	End Shut-In(2)
73	2138.53	128.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	GOMCW 6%g 7%oil 11%m 76%w	1.48
186.00	MOGCW 14%m 22%oil 26%g 38%w	2.61
186.00	GOCM 20%g 32%oil 48%m	2.61
62.00	GOCM 14%g 26%oil 60%m	0.87
15.00	GMCO 3%g 22%m 75%oil	0.21
0.00	109' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57728

DST#: 3

ATTN: Vern Schrag

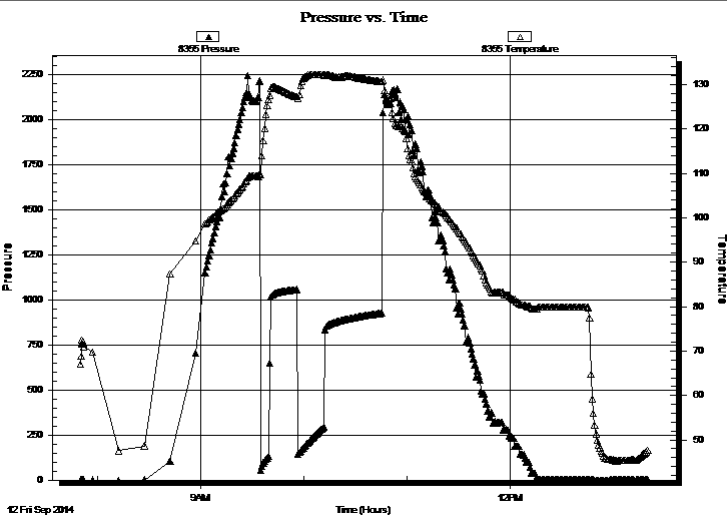
Test Start: 2014.09.12 @ 07:50:00

GENERAL INFORMATION:

Formation: **Mid Creek**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:34:10
 Time Test Ended: 13:18:39
 Interval: **4335.00 ft (KB) To 4352.00 ft (KB) (TVD)**
 Total Depth: 4352.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2872.00 ft (KB)
 2865.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8355 Outside
 Press@RunDepth: psig @ 4337.00 ft (KB)
 Start Date: 2014.09.12 End Date: 2014.09.12 Capacity: 8000.00 psig
 Last Calib.: 2014.09.12
 Start Time: 07:50:05 End Time: 13:19:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF- Surface Blow Built to BOB in 3 1/2 min
 IS- Weak Surface Blow in 8 1/2 min
 FF- Surface Blow Built to BOB in 4 1/4 min
 FS- Weak Surface Blow in 6 min



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
186.00	GOMCW 6%g 7%oil 11%m 76%w	1.48
186.00	MOGCW 14%m 22%oil 26%g 38%w	2.61
186.00	GOCM 20%g 32%oil 48%m	2.61
62.00	GOCM 14%g 26%oil 60%m	0.87
15.00	GMCO 3%g 22%m 75%oil	0.21
0.00	109' 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.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57728

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.09.12 @ 07:50:00

Tool Information

Drill Pipe:	Length: 4204.00 ft	Diameter: 3.80 inches	Volume: 58.97 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 59.58 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4335.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	17.00 ft				
Tool Length:	44.00 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			4309.00	
Shut In Tool	5.00			4314.00	
Hydraulic tool	5.00			4319.00	
Jars	5.00			4324.00	
Safety Joint	2.00			4326.00	
Packer	5.00			4331.00	27.00 Bottom Of Top Packer
Packer	4.00			4335.00	
Stubb	1.00			4336.00	
Perforations	1.00			4337.00	
Recorder	0.00	8355	Outside	4337.00	
Recorder	0.00	8674	Inside	4337.00	
Perforations	10.00			4347.00	
Bullnose	5.00			4352.00	17.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57728

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.09.12 @ 07:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

22 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

31000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.54 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	GOMCW 6%g 7%oil 11%m 76%w	1.480
186.00	MOGCW 14%m 22%oil 26%g 38%w	2.609
186.00	GOCM 20%g 32%oil 48%m	2.609
62.00	GOCM 14%g 26%oil 60%m	0.870
15.00	GMCO 3%g 22%m 75%oil	0.210
0.00	109' of GIP	0.000

Total Length: 635.00 ft Total Volume: 7.778 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API is 21 @ 50f = 22

RW is .342 @ 45



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.12 @ 19:50:00

End Date: 2014.09.13 @ 01:32:02

Job Ticket #: 57729 DST #: 4

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

Printed: 2014.09.16 @ 11:05:40



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57729

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.09.12 @ 19:50:00

GENERAL INFORMATION:

Formation: **LKC " L "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:51:48

Time Test Ended: 01:32:02

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4350.00 ft (KB) To 4360.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4360.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8674

Inside

Press@RunDepth: 24.74 psig @ 4351.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.12

End Date:

2014.09.13

Last Calib.:

2014.09.13

Start Time: 19:50:00

End Time:

01:32:02

Time On Btm:

2014.09.12 @ 21:51:33

Time Off Btm:

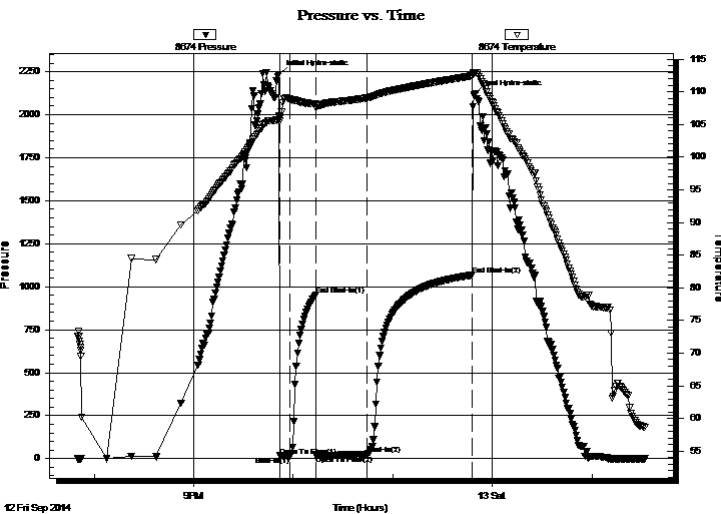
2014.09.12 @ 23:48:48

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	2235.53	106.36	Initial Hydro-static
1	16.88	105.51	Open To Flow (1)
7	16.87	108.99	Shut-In(1)
22	952.62	108.21	End Shut-In(1)
23	19.28	107.58	Open To Flow (2)
53	24.74	109.09	Shut-In(2)
117	1067.24	112.45	End Shut-In(2)
118	2116.53	112.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
8.00	WOCM 6%w 29%oil 65%m	0.04
2.00	MCO 23%m 77%oil	0.01

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 W. State Rd.
 Olmitz KS 67564
 ATTN: Vern Schrag

32-19s-29w Lane,KS
Lora #1-32
 Job Ticket: 57729 **DST#: 4**
 Test Start: 2014.09.12 @ 19:50:00

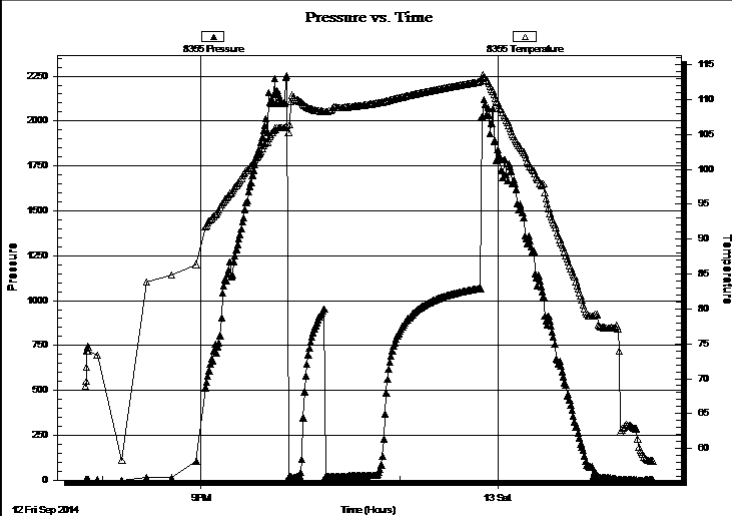
GENERAL INFORMATION:

Formation: **LKC " L "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:51:48
 Time Test Ended: 01:32:02
Interval: 4350.00 ft (KB) To 4360.00 ft (KB) (TVD)
 Total Depth: 4360.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2872.00 ft (KB)
 2865.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4351.00 ft (KB)
 Start Date: 2014.09.12 End Date: 2014.09.13
 Start Time: 19:50:05 End Time: 01:33:44
 Capacity: 8000.00 psig
 Last Calib.: 2014.09.13
 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)
8.00	WOCM 6%w 29%oil 65%m	0.04
2.00	MCO 23%m 77%oil	0.01

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.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57729

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.09.12 @ 19:50:00

Tool Information

Drill Pipe:	Length: 4205.00 ft	Diameter: 3.80 inches	Volume: 58.99 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	4000.00 lb
			<u>Total Volume: 59.60 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4350.00 ft			Final	58000.00 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			4324.00	
Shut In Tool	5.00			4329.00	
Hydraulic tool	5.00			4334.00	
Jars	5.00			4339.00	
Safety Joint	2.00			4341.00	
Packer	5.00			4346.00	27.00 Bottom Of Top Packer
Packer	4.00			4350.00	
Stubb	1.00			4351.00	
Recorder	0.00	8355	Outside	4351.00	
Recorder	0.00	8674	Inside	4351.00	
Perforations	4.00			4355.00	
Bullnose	5.00			4360.00	10.00 Bottom Packers & Anchor

Total Tool Length: 37.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57729

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.09.12 @ 19:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

28500 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.15 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
8.00	WOCM 6%w 29%oil 65%m	0.039
2.00	MCO 23%m 77%oil	0.010

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

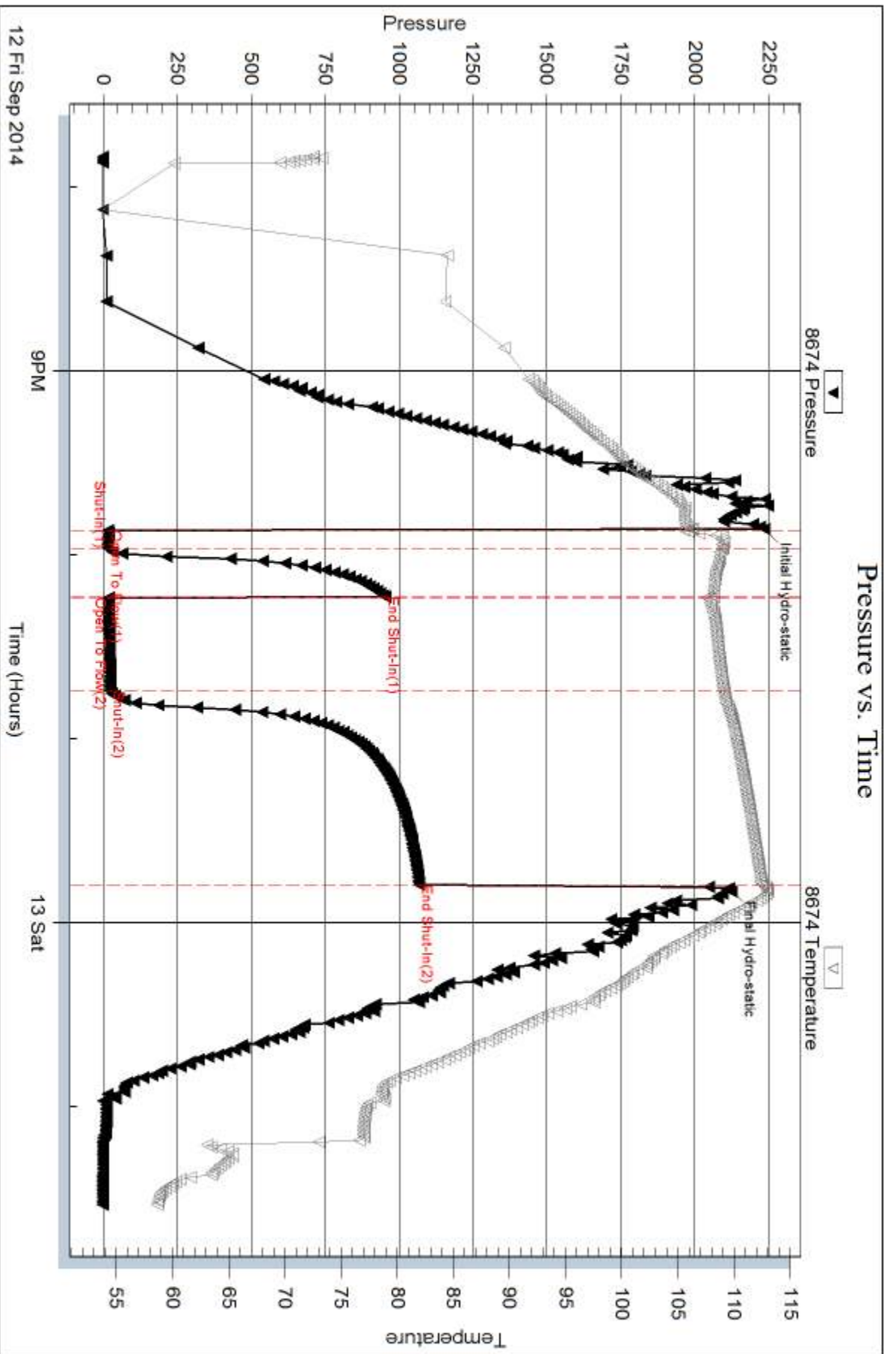
Serial #:

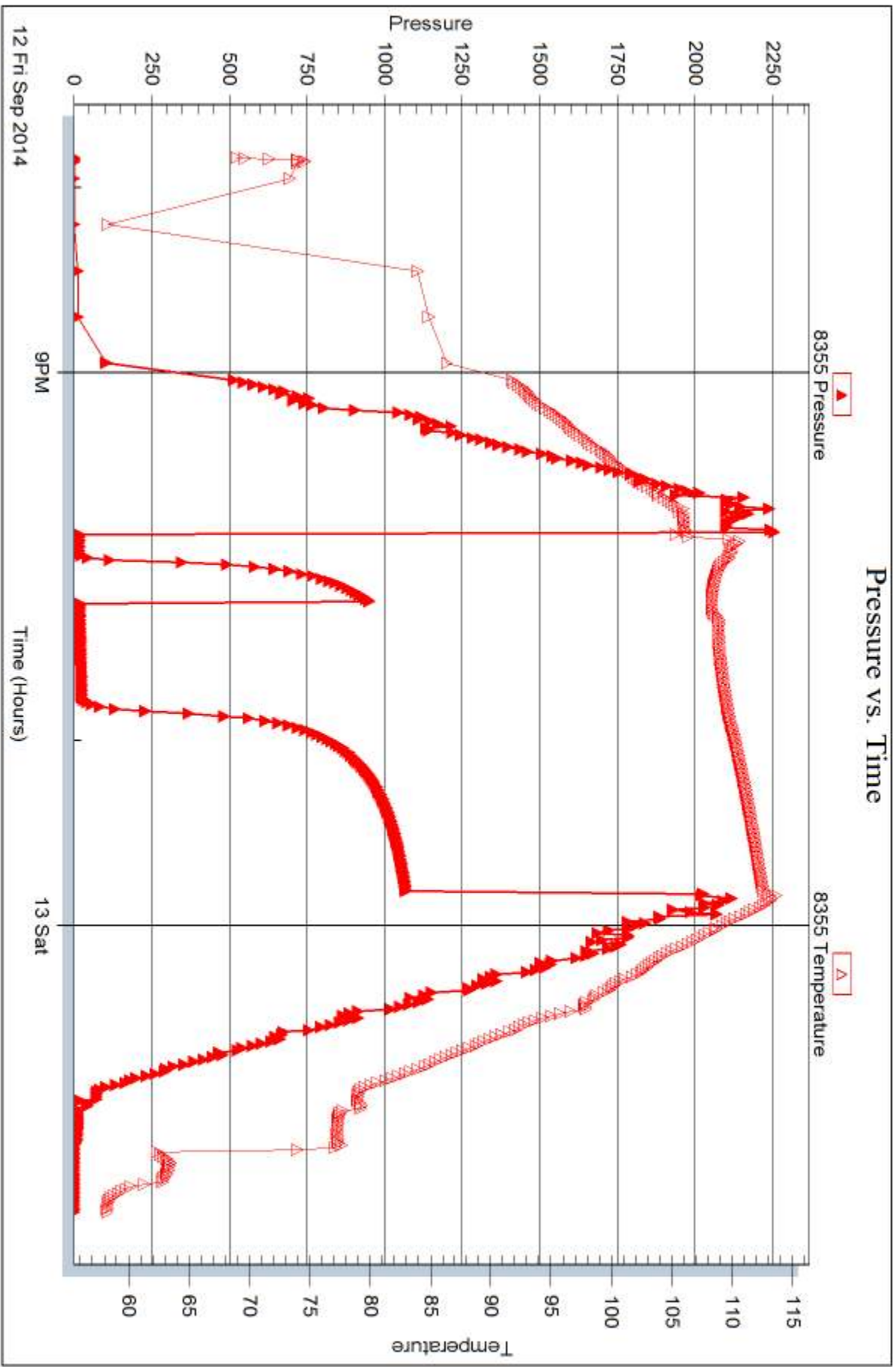
Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .361 @ 45f = 28500

API is 25 @ 50f = 26







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.13 @ 19:30:00

End Date: 2014.09.14 @ 00:33:09

Job Ticket #: 57730 DST #: 5

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

Printed: 2014.09.16 @ 11:05:17



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57730

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.09.13 @ 19:30:00

GENERAL INFORMATION:

Formation: **Marmanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:00:55

Time Test Ended: 00:33:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4377.00 ft (KB) To 4480.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4480.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8674 Inside

Press@RunDepth: 288.33 psig @ 4378.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.13

End Date:

2014.09.14

Last Calib.: 2014.09.14

Start Time: 19:30:00

End Time:

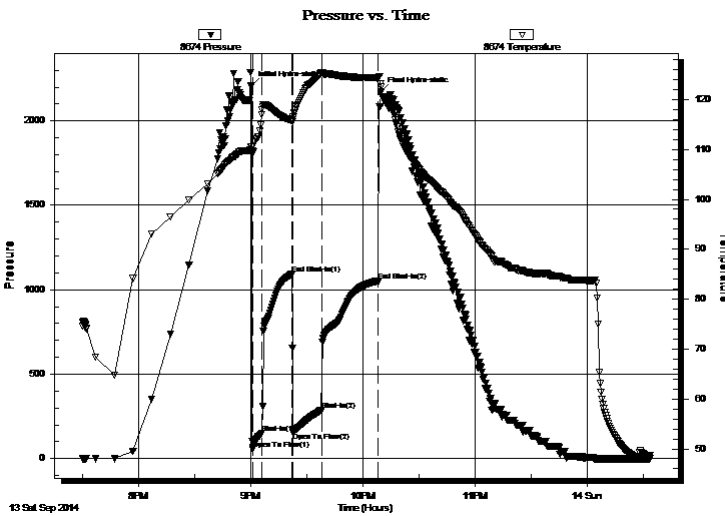
00:33:09

Time On Btm: 2014.09.13 @ 21:00:25

Time Off Btm: 2014.09.13 @ 22:09:25

TEST COMMENT: IF- Surface Blow Built to BOB in 4 1/2 min
IS- No Blow
FF- Surface Blow Built to BOB in 5 1/4 min
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2210.30	110.61	Initial Hydro-static
1	56.31	109.76	Open To Flow (1)
6	152.54	117.95	Shut-In(1)
22	1092.52	115.80	End Shut-In(1)
22	154.37	115.91	Open To Flow (2)
38	288.33	125.34	Shut-In(2)
68	1052.36	124.39	End Shut-In(2)
69	2172.57	122.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	OGWCM 3%oil 6%g 26%w 65%m	1.48
62.00	OWGCM 5%oil 14%w 15%g 66%w	0.87
186.00	OWGCM 4%oil 5%w 9%g 82%m	2.61
62.00	OGCM 6%oil 11%g 83%m	0.87
82.00	100%m w ith Oil Spots	1.15

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57730

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.09.13 @ 19:30:00

GENERAL INFORMATION:

Formation: **Marmanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:00:55

Time Test Ended: 00:33:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4377.00 ft (KB) To 4480.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4480.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4378.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.13

End Date:

2014.09.14

Last Calib.:

2014.09.14

Start Time: 19:30:05

End Time:

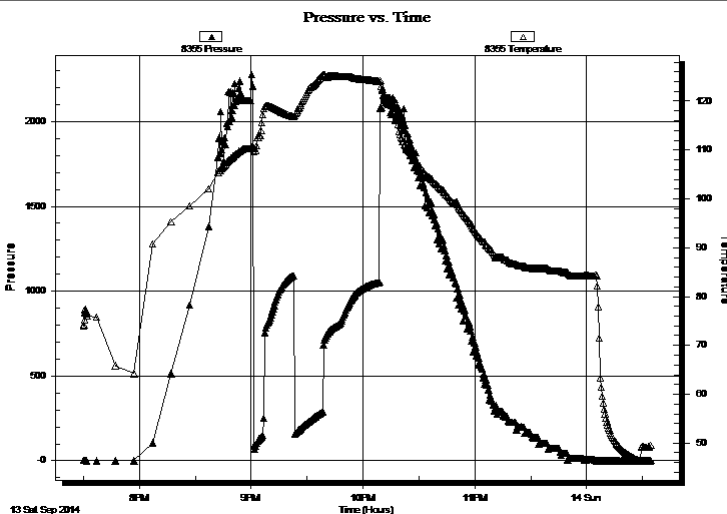
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Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Surface Blow Built to BOB in 4 1/2 min
IS- No Blow
FF- Surface Blow Built to BOB in 5 1/4 min
FS- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
186.00	OGWCM 3%oil 6%g 26%w 65%m	1.48
62.00	OWGCM 5%oil 14%w 15%g 66%w	0.87
186.00	OWGCM 4%oil 5%w 9%g 82%m	2.61
62.00	OGCM 6%oil 11%g 83%m	0.87
82.00	100%m w ith Oil Spots	1.15

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.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57730

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.09.13 @ 19:30:00

Tool Information

Drill Pipe:	Length: 4238.00 ft	Diameter: 3.80 inches	Volume: 59.45 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:	34000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	8000.00 lb
			<u>Total Volume: 60.06 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4377.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	103.00 ft				
Tool Length:	130.00 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			4351.00	
Shut In Tool	5.00			4356.00	
Hydraulic tool	5.00			4361.00	
Jars	5.00			4366.00	
Safety Joint	2.00			4368.00	
Packer	5.00			4373.00	27.00 Bottom Of Top Packer
Packer	4.00			4377.00	
Stubb	1.00			4378.00	
Recorder	0.00	8355	Outside	4378.00	
Recorder	0.00	8674	Inside	4378.00	
Perforations	33.00			4411.00	
Change Over Sub	1.00			4412.00	
Drill Pipe	62.00			4474.00	
Change Over Sub	1.00			4475.00	
Bullnose	5.00			4480.00	103.00 Bottom Packers & Anchor

Total Tool Length: 130.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane,KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57730

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.09.13 @ 19:30:00

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:

27000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	OGWCM 3%oil 6%g 26%w 65%m	1.480
62.00	OWGCM 5%oil 14%w 15%g 66%w	0.870
186.00	OWGCM 4%oil 5%w 9%g 82%m	2.609
62.00	OGCM 6%oil 11%g 83%m	0.870
82.00	100%m with Oil Spots	1.150

Total Length: 578.00 ft Total Volume: 6.979 bbl

Num Fluid Samples: 0

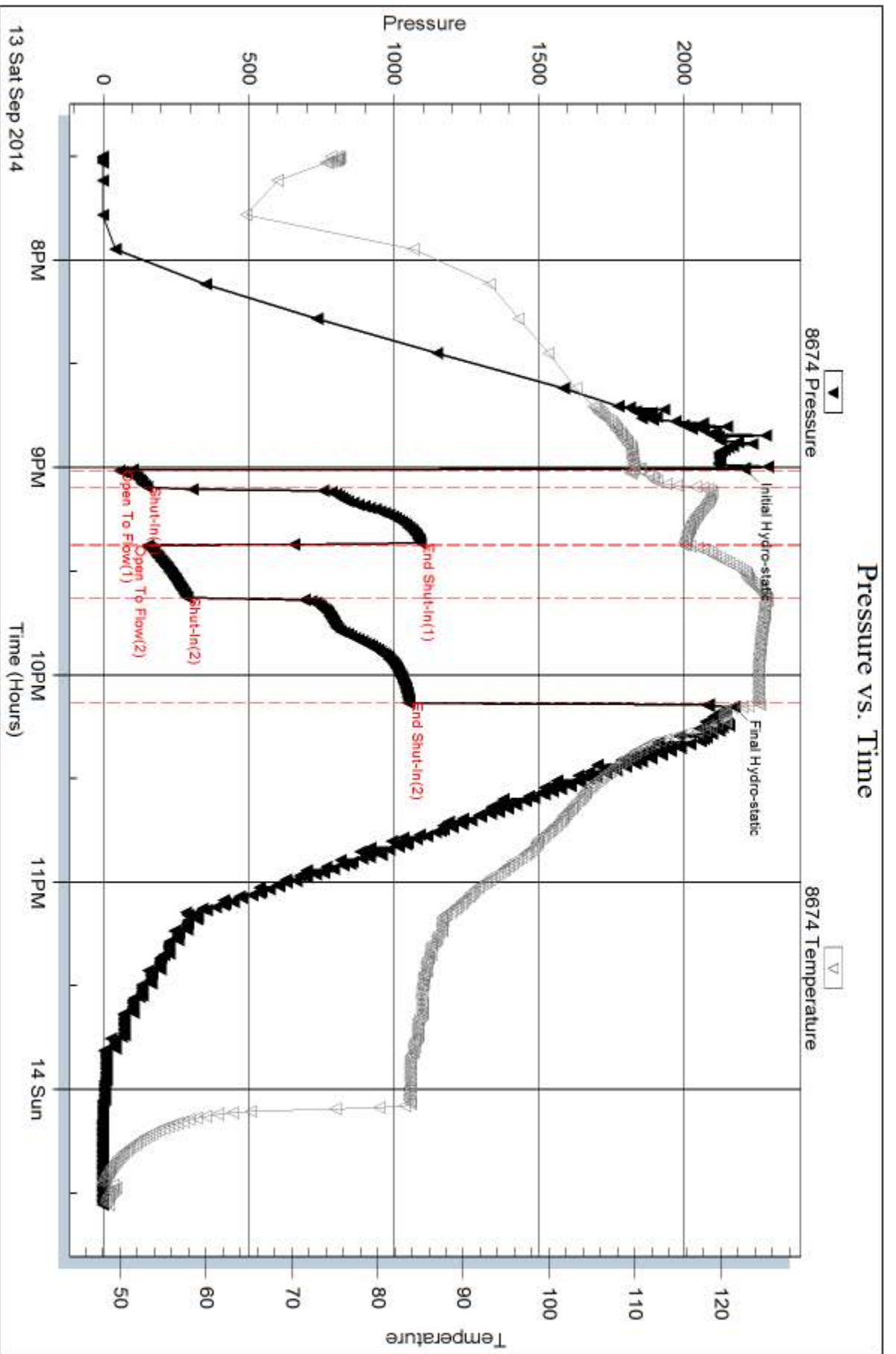
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API is .373 @ 54f = 27000

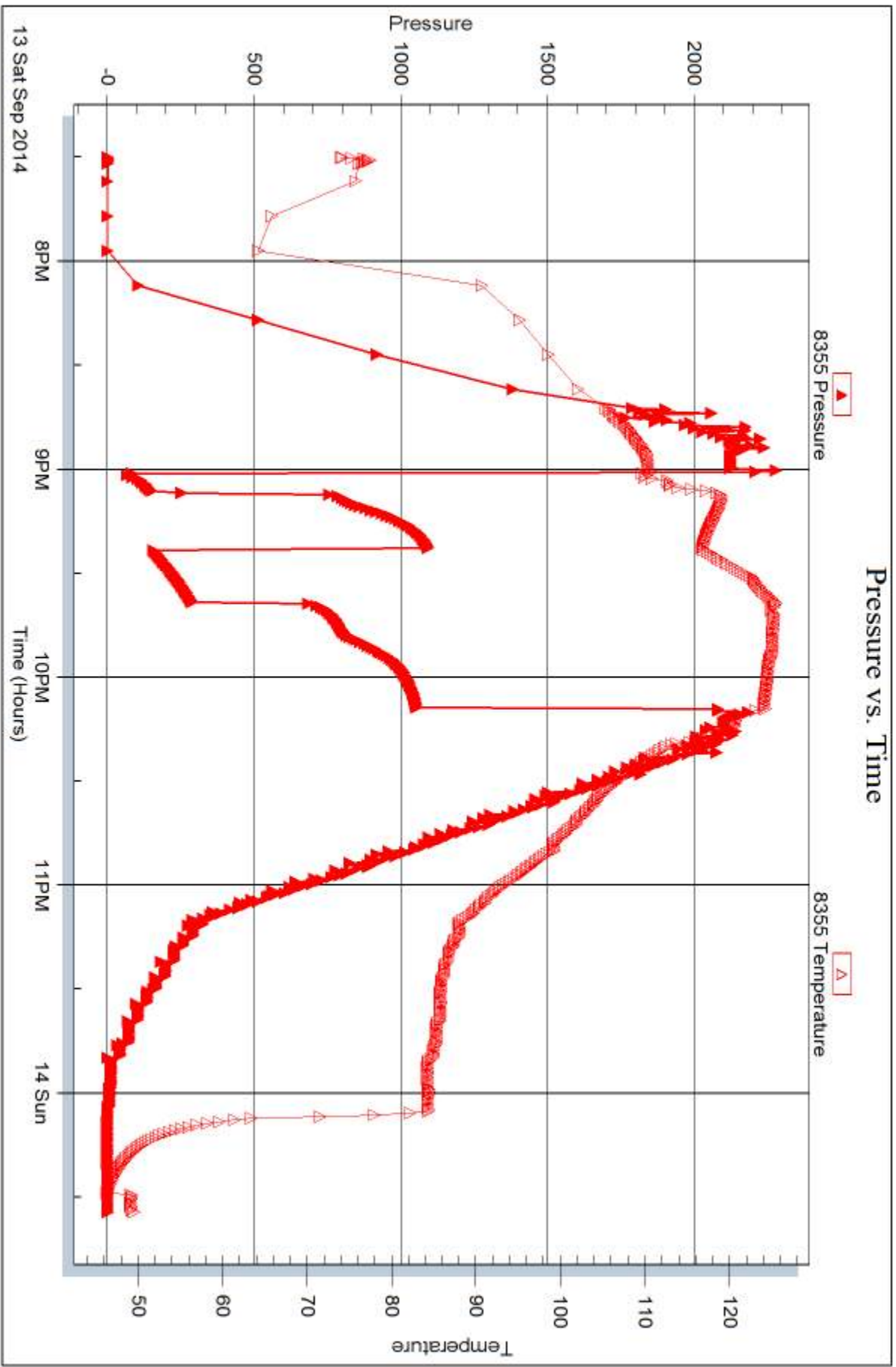


Serial #: 8355

Outside Larson Engineering Inc.

Lora #1-32

DST Test Number: 5



TriCoble Testing, Inc

Ref. No: 57730

Printed: 2014.09.16 @ 11:05:19



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 W. State Rd.
Olmitz KS 67564

ATTN: Vern Schrag

Lora #1-32

32-19s-29w Lane,KS

Start Date: 2014.09.14 @ 17:24:00

End Date: 2014.09.14 @ 22:54:54

Job Ticket #: 57731 DST #: 6

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

Printed: 2014.09.16 @ 11:04:46



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57731

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.09.14 @ 17:24:00

GENERAL INFORMATION:

Formation: **Cherokeee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:27:40

Time Test Ended: 22:54:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4499.00 ft (KB) To 4635.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4635.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8674

Inside

Press@RunDepth: 191.96 psig @ 4501.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.14

End Date:

2014.09.14

Last Calib.: 2014.09.14

Start Time: 17:24:00

End Time:

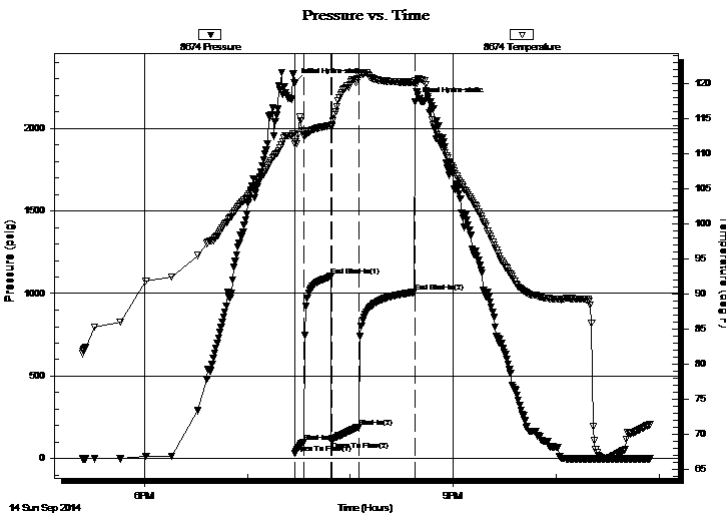
22:54:54

Time On Btm: 2014.09.14 @ 19:27:25

Time Off Btm: 2014.09.14 @ 20:37:55

TEST COMMENT: IF- Weak Surface Blow Built to 5 1/2"
IS- No Blow
FF- Weak Surface Blow Built to BOB in 11 1/2 min
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2274.91	112.92	Initial Hydro-static
1	32.05	111.49	Open To Flow (1)
6	102.00	112.65	Shut-In(1)
21	1104.10	114.08	End Shut-In(1)
22	108.53	113.84	Open To Flow (2)
38	191.96	121.13	Shut-In(2)
70	1008.06	120.25	End Shut-In(2)
71	2161.70	120.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WCM 3%w 97%m with a Few Oil Spots	0.61
124.00	WCM 3%w 97%m	1.74
92.00	100%m	1.29

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57731

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.09.14 @ 17:24:00

GENERAL INFORMATION:

Formation: **Cherokeee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:27:40

Time Test Ended: 22:54:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4499.00 ft (KB) To 4635.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4635.00 ft (KB) (TVD)

2865.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4501.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.14

End Date:

2014.09.14

Last Calib.:

2014.09.14

Start Time: 17:24:05

End Time:

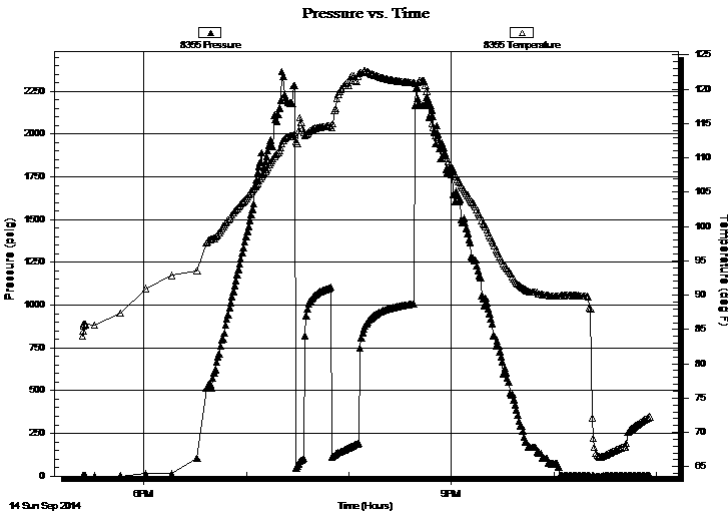
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Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow Built to 5 1/2"
IS- No Blow
FF- Weak Surface Blow Built to BOB in 11 1/2 min
FS- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WCM 3%w 97% m with a Few Oil Spots	0.61
124.00	WCM 3%w 97% m	1.74
92.00	100% m	1.29

* 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.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57731

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.09.14 @ 17:24:00

Tool Information

Drill Pipe:	Length: 4362.00 ft	Diameter: 3.80 inches	Volume: 61.19 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: 3000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 12000.00 lb
			<u>Total Volume: 61.80 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4499.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	136.00 ft			
Tool Length:	163.00 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			4473.00	
Shut In Tool	5.00			4478.00	
Hydraulic tool	5.00			4483.00	
Jars	5.00			4488.00	
Safety Joint	2.00			4490.00	
Packer	5.00			4495.00	27.00 Bottom Of Top Packer
Packer	4.00			4499.00	
Stubb	1.00			4500.00	
Perforations	1.00			4501.00	
Recorder	0.00	8355	Outside	4501.00	
Recorder	0.00	8674	Inside	4501.00	
Perforations	33.00			4534.00	
Change Over Sub	1.00			4535.00	
Drill Pipe	94.00			4629.00	
Change Over Sub	1.00			4630.00	
Bullnose	5.00			4635.00	136.00 Bottom Packers & Anchor
Total Tool Length:	163.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

32-19s-29w Lane, KS

562 W. State Rd.
Olmitz KS 67564

Lora #1-32

Job Ticket: 57731

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.09.14 @ 17:24:00

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:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	WCM 3%w 97%m with a Few Oil Spots	0.610
124.00	WCM 3%w 97%m	1.739
92.00	100%m	1.291

Total Length: 340.00 ft Total Volume: 3.640 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

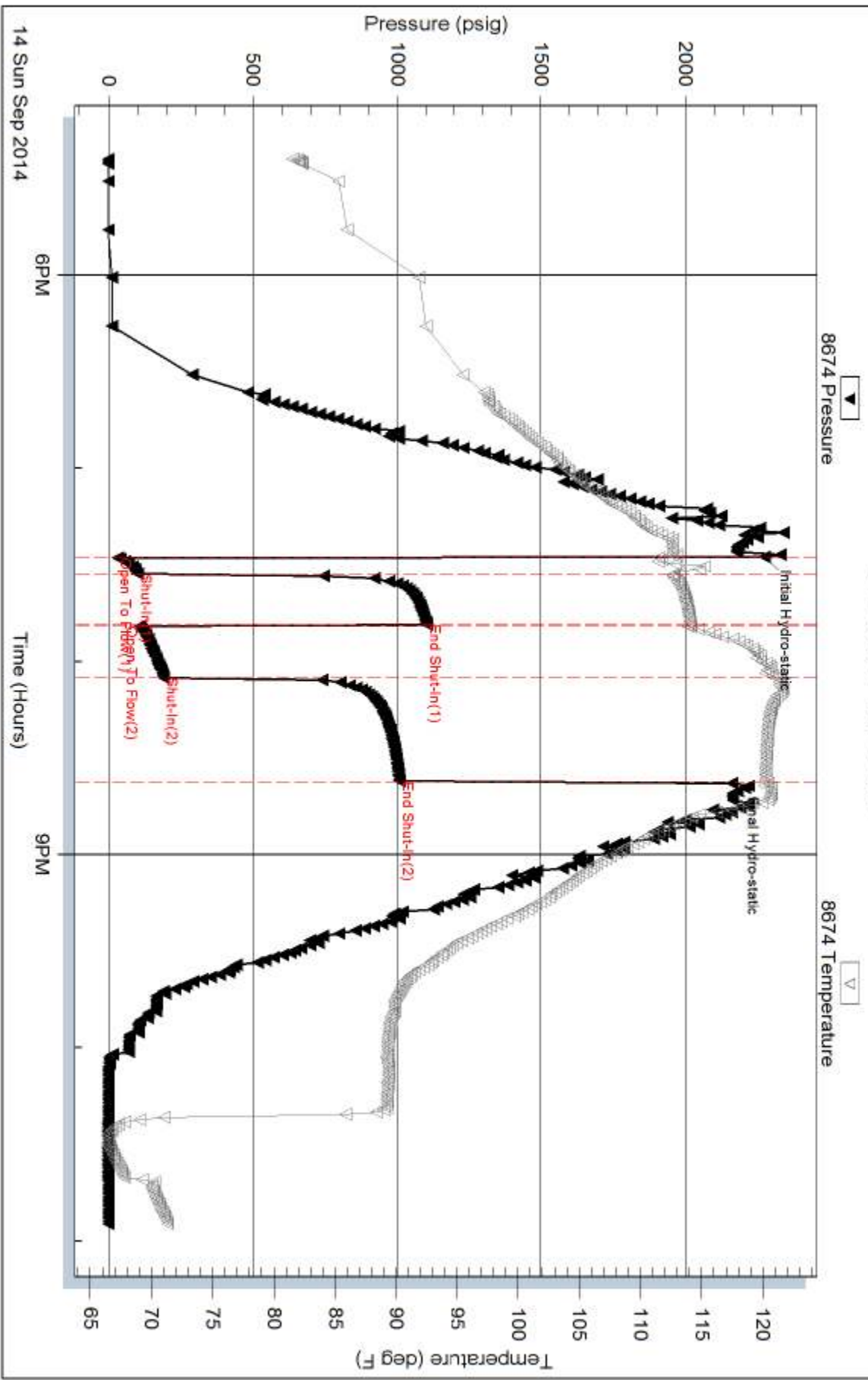
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

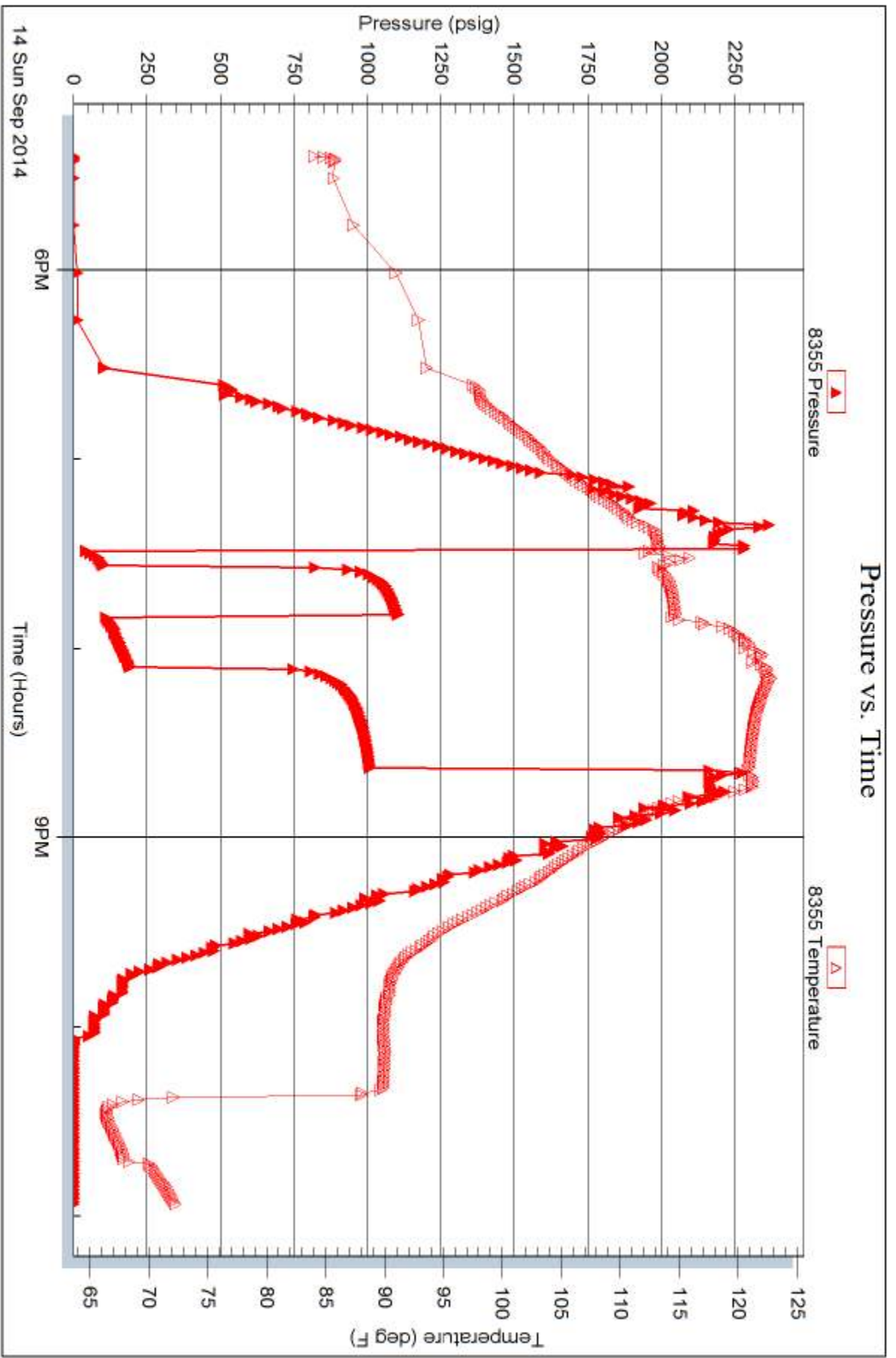


Serial #: 8355

Outside Larson Engineering Inc.

Lora #1-32

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 57731

Printed: 2014.09.16 @ 11:04:48



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57725

4/10

Well Name & No. Lora #1-32 Test No. DST #1 Date 9-11-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W. State Rd Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D 3
 Location: Sec. 32 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4264-4285 Zone Tested LRC "J"
 Anchor Length 21 Drill Pipe Run _____ Mud Wt. 8.9
 Top Packer Depth 4260 Drill Collars Run 124 Vis 62
 Bottom Packer Depth 4264 Wt. Pipe Run 0 WL 7.6
 Total Depth 4285 Chlorides 4400 ppm System LCM 115
 Blow Description FF-Weak Surface Blow Built to 1 1/4"
ISI- No Blow
FF-Weak Surface Blow Built to 4 1/2"
ISI- No Blow

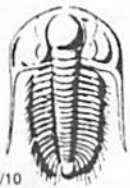
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>WCM</u> 1290 <u>with a few oil spots</u>		<u>12</u>	<u>88</u>	
<u>62</u>	<u>WCM</u>		<u>29</u>	<u>71</u>	
<u>62</u>	<u>MCH</u>		<u>63</u>	<u>37</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 134 BHT 124 Gravity _____ API RW. 494 @ 55 °F Chlorides 16,400 ppm

(A) Initial Hydrostatic <u>2156</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1:00</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1:58</u>
(C) First Final Flow <u>35</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>3:15</u>
(D) Initial Shut-In <u>1071</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>5:08</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>7:46</u>
(F) Second Final Flow <u>90</u>	<input checked="" type="checkbox"/> Mileage <u>74 R/T</u> <u>114.70</u>	Comments _____
(G) Final Shut-In <u>1071</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2003</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>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1689.70</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1689.70</u>	

Approved By Vern Schrag Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57727

Well Name & No. Lora #1-32 Test No. DST #2 Date 9-11-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W State Rd Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D 3
 Location: Sec. 32 Twp. 19s Rge. 29W Co. Lane State KS

Interval Tested 4295-4316 Zone Tested LRC "K1"
 Anchor Length 21 Drill Pipe Run 4172 Mud Wt. 9.1
 Top Packer Depth 4291 Drill Collars Run 124 Vis 54
 Bottom Packer Depth 4295 Wt. Pipe Run 0 WL 8.4
 Total Depth 4316 Chlorides 4500 ppm System LCM 116
 Blow Description IF- Surface Blow Built to BOB in 2min
ISI- No Blow
FF- Surface Blow Built to BOB in 1 3/4 min
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
20	375 G-MCO	3	88	9	
124	G-W-MCO	8	39	18	35
186	G-O-MCW	12	20	38	30
248	G-MOCW	9	15	66	10
620	O-G-MCW	7	3	82	8

Rec Total 1198 BHT 130 Gravity 29 API RW 327 @ 56 °F Chlorides 25 200 ppm

(A) Initial Hydrostatic 2178 Test 1250 T-On Location 15:30
 (B) First Initial Flow 110 Jars 250 T-Started 16:00
 (C) First Final Flow 243 Safety Joint 75 T-Open 17:45
 (D) Initial Shut-In 1056 Circ Sub N/C T-Pulled 18:55
 (E) Second Initial Flow 261 Hourly Standby _____ T-Out 21:47
 (F) Second Final Flow 579 Mileage 74 R/T 114.70 Comments _____
 (G) Final Shut-In 1048 Sampler _____ 228' of G-IP
 (H) Final Hydrostatic 2159 Straddle _____ API is 29 & 60 f = 29
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1689.70 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1689.70
 MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Approved By [Signature] 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. 57728

Well Name & No. Larson Engineering Inc Lora #1-32 Test No. DST #3 Date 9-12-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W. State Rd Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D #3
 Location: Sec. 32 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4335-4352 Zone Tested Mid Creek
 Anchor Length 17 Drill Pipe Run 4204 Mud Wt. 9.1
 Top Packer Depth 4331 Drill Collars Run 124 Vis 54
 Bottom Packer Depth 4335 Wt. Pipe Run 0 WL 8.4
 Total Depth 4352 Chlorides 4500 ppm System LCM 115

Blow Description IF - Surface Blow Built to BOB in 3 1/2 min
FSI - Weak Surface Blow in 8 1/2 min
FF - Surface Blow Built to BOB in 4 1/4 min
FSI - Weak Surface Blow in 6 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>15'</u>	<u>G-MCO</u>	<u>3</u>	<u>75</u>	<u></u>	<u>22</u>
<u>62</u>	<u>GOCM</u>	<u>14</u>	<u>26</u>	<u></u>	<u>60</u>
<u>186</u>	<u>GOCM</u>	<u>20</u>	<u>32</u>	<u></u>	<u>48</u>
<u>186</u>	<u>MOCW</u>	<u>26</u>	<u>22</u>	<u>38</u>	<u>14</u>
<u>186</u>	<u>GOMCW</u>	<u>6</u>	<u>7</u>	<u>76</u>	<u>11</u>

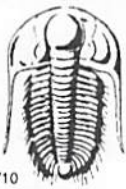
Rec Total 635 BHT 128 Gravity 22 API RW .342 @ 45 ° F Chlorides 31000 ppm

(A) Initial Hydrostatic 2214 Test 1250 T-On Location 6.44
 (B) First Initial Flow 54 Jars 250 T-Started 7.50
 (C) First Final Flow 136 Safety Joint 75 T-Open 9.34
 (D) Initial Shut-In 1058 Circ Sub MC T-Pulled 10.45
 (E) Second Initial Flow 142 Hourly Standby _____ T-Out 13.18
 (F) Second Final Flow 298 Mileage 74 RIT 114.70 Comments _____
 (G) Final Shut-In 928 Sampler _____
 (H) Final Hydrostatic 2138 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1689.70 Total 1689.70 MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Approved By [Signature] 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. 57729

Well Name & No. Lora #1-32 Test No. DST #4 Date 9-12-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W. State Rd Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D 3
 Location: Sec. 32 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4350-4360 Zone Tested LKC "L"
 Anchor Length 10 Drill Pipe Run 4205 Mud Wt. 9.2
 Top Packer Depth 4346 Drill Collars Run 124 Vis 52
 Bottom Packer Depth 4350 Wt. Pipe Run 0 WL 9.2
 Total Depth 4360 Chlorides 5400 ppm System LCM 115
 Blow Description IF - Weak Surface Blow Built to 1/2"
ISI - No Blow
FF - Weak Surface Blow Built to 1"
FST - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>OCH</u>		<u>27</u>	<u>23</u>	
<u>8</u>	<u>WOCH</u>		<u>29</u>	<u>6</u>	<u>65</u>

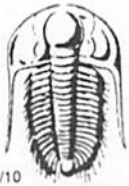
Rec Total 10 BHT 113 Gravity 26 API RW 361 @ 45 °F Chlorides 28500 ppm
 Test 1250 T-On Location 19:38
 Jars 250 T-Started 19:50
 Safety Joint 75 T-Open 21:51
 Circ Sub NIC T-Pulled 23:48
 Hourly Standby T-Out 1:32
 Mileage 74 R/T 114.70 Comments API is 25 @ 50t = 26
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1689.70
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1689.70
 MP/DST Disc't

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

Approved By V Schrag

Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57730

Well Name & No. Lora #1-32 Test No. DST #5 Date 9-13-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W. State Rd Olathe KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D 3
 Location: Sec. 32 Twp. 19S Rge. 29W Co. Lanc State KS

Interval Tested 4377-4480 Zone Tested Marmaton
 Anchor Length 103 Drill Pipe Run 4238 Mud Wt. 9.0
 Top Packer Depth 4373 Drill Collars Run 124 Vis 58
 Bottom Packer Depth 4377 Wt. Pipe Run 0 WL 7.6
 Total Depth 4480 Chlorides 4200 ppm System LCM 116
 Blow Description IF- Surface Blow Built to BOB in 4 1/2 min
ISI- No Blow
FF- Surface Blow Built to BOB in 5 1/4 min
FSI- No Blow

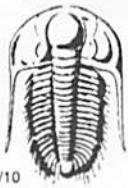
Rec	Feet of	%gas	%oil	%water	%mud
82	Mud with oil spots			100	
62	OG-CM	11	6	83	
186	OWG-CM	9	4	82	
62	OWG-CM	15	5	66	
186	OG-WCM	6	3	65	

Rec Total 578 BHT 122 Gravity _____ API RW 373@ 54 ° F Chlorides 27000 ppm

(A) Initial Hydrostatic 2210 Test 1250 T-On Location 19:10
 (B) First Initial Flow 56 Jars 250 T-Started 19:30
 (C) First Final Flow 152 Safety Joint 75 T-Open 21:00
 (D) Initial Shut-In 1092 Circ Sub NIC T-Pulled 22:09
 (E) Second Initial Flow 154 Hourly Standby _____ T-Out 00:33
 (F) Second Final Flow 288 Mileage 74 R/T 114.70 Comments 84' of well GIP
 (G) Final Shut-In 1052 Sampler _____
 (H) Final Hydrostatic 2172 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 5 Extra Recorder _____ Sub Total 0
 Initial Shut-In 15 Day Standby _____ Total 1689.70
 Final Flow 15 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1689.70

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57731

4/10

Well Name & No. Lora #1-32 Test No. DST #6 Date 9-14-14
 Company Larson Engineering Inc Elevation 2872 KB 2865 GL
 Address 562 W. State Rd Olathe KS 67564
 Co. Rep / Geo. Vern Schrag Rig H-D 3
 Location: Sec. 32 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4499 - 4635 Zone Tested Cherokee
 Anchor Length 136 Drill Pipe Run 4362 Mud Wt. 9.1
 Top Packer Depth 4495 Drill Collars Run 124 Vis 54
 Bottom Packer Depth 4499 Wt. Pipe Run 0 WL 8.0
 Total Depth 4635 Chlorides 3700 ppm System LCM 116
 Blow Description IF - Weak Surface Blow to 5 1/2"
ISI - No Blow
FF - Weak Surface Blow to BOB in 1 1/2 min
PST - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>92</u>	<u>Mud</u>			<u>100</u>	
<u>124</u>	<u>WCM</u>		<u>3</u>	<u>97</u>	
<u>124</u>	<u>WCM with a few oil spots</u>		<u>3</u>	<u>97</u>	

Rec Total 340 BHT 121 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2274</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>16:20</u>
(B) First Initial Flow <u>32</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:24</u>
(C) First Final Flow <u>102</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:27</u>
(D) Initial Shut-In <u>1104</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>20:34</u>
(E) Second Initial Flow <u>108</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>22:54</u>
(F) Second Final Flow <u>191</u>	<input checked="" type="checkbox"/> Mileage <u>74 RIT</u> 114.70	Comments _____
(G) Final Shut-In <u>1008</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2161</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>5</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Day Standby	Total <u>1689.70</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1689.70</u>	

Approved By Jessie Schrag Our Representative _____

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CHARGE TO: Larson Eng. Consulting
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 26593

PAGE 1 OF 1

SERVICE LOCATIONS 1. <u>Ness City KS</u>	WELL/PROJECT NO. <u>1-32</u>	LEASE <u>LORA</u>	COUNTY/PARISH <u>Lane</u>	STATE <u>KS</u>	CITY <u>Dighton</u>	DATE <u>23 SEP 14</u>	OWNER
2.	TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>WILD WEST</u>	RIG NAME/NO.	SHIPPED VIA <u>CT</u>	DELIVERED TO <u>Location</u>	ORDER NO.	
3.	WELL TYPE <u>oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>cement port collar</u>	WELL PERMIT NO.	WELL LOCATION		
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
<u>575</u>		<u>1</u>			MILEAGE	<u>45</u>	<u>mi</u>			<u>6.00</u>	<u>270.00</u>
<u>576D</u>		<u>1</u>			<u>Pump Charge</u>	<u>1</u>	<u>ea</u>			<u>1500.00</u>	<u>1500.00</u>
<u>330</u>		<u>1</u>			<u>SMD cement</u>	<u>200</u>	<u>sk</u>			<u>18.50</u>	<u>3700.00</u>
<u>276</u>		<u>1</u>			<u>Flare</u>	<u>50</u>	<u>lb</u>			<u>2.50</u>	<u>125.00</u>
<u>290</u>		<u>1</u>			<u>D-air</u>	<u>2</u>	<u>gal</u>			<u>42.00</u>	<u>84.00</u>
<u>583</u>		<u>1</u>			<u>Drayage</u>	<u>22389</u>	<u>lb</u>	<u>503.77</u>	<u>T/M</u>	<u>1.00</u>	<u>503.77</u>
<u>581</u>		<u>1</u>			<u>Service charge</u>	<u>225</u>	<u>sk</u>			<u>2.00</u>	<u>450.00</u>

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
 DATE SIGNED _____ TIME SIGNED 11:38 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
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
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		
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL 6638.77

Lane TAX 7.15% 279.49

TOTAL 6912.26

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR REC/ell APPROVAL _____

Thank You!

JOB LOG

SWIFT Services, Inc.

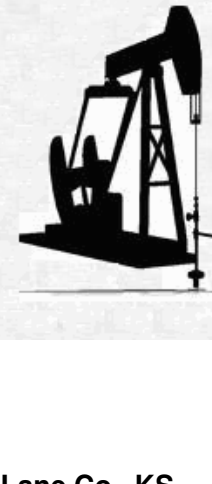
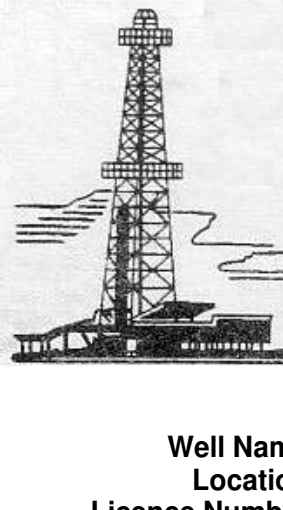
DATE 23 SEP 14 PAGE NO. 1

CUSTOMER *Lalson Engineering* WELL NO. 1-32 LEASE LORA JOB TYPE cement port collar TICKET NO. 26593

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								225 sk SMD cement w/ 7# floccle 23x5 1/2 port collar - 2625'
	0835							on loc TRK 112
	0855					1000	1000	test to 1000 psi - hold open port collar
	0905	3 1/2	3			400		inj rate 3 1/2 bpm @ 400 psi
	0907	3 1/2				400		MIX SMD cement @ 11.2 ppg - fluid to surface -
		3 1/2	14			400		
	0940	3 1/2	104			500		— cement to surface 500 sk mixed 15 topit
								Displace w 7 1/2 bbl H2O
								close port collar
	0950					1000	1000	test to 1000 psi - hold
	0953							run 5 joints
	0958							Reverse hole clean - 2 cement plugs -
	1005							wash truck pull tools
								Break up
	1038							job complete - thub Blaine, Flint, F ROB

WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST



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

Well Name: LORA #1-32
Location: E2 SW SE OF SEC. 32-19S-29W
Licence Number: API: 15-101-22535
Spud Date: September 04, 2014
Surface Coordinates: 330' FSL & 865' FEL

Region: Lane Co., KS
Drilling Completed: September 15, 2014

Bottom Hole Coordinates:
Ground Elevation (ft): 2865' **K.B. Elevation (ft):** 2872'
Logged Interval (ft): 3800' **To: RTD Total Depth (ft):** 4675'
Formation: Mississippi
Type of Drilling Fluid: Chemical Premix (Displaced)

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
 Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

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

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 556', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA20Q, 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 262'

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60-62 spm, Chemical, premix, earth pits, Morgan Mud, Inc., Cade Lines.

OPEN HOLE LOGS:

DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Dan Schmidt, Log total depth (4675') was three feet long to rotary total depth (4675').

DRILL STEM TEST #1:

LKC (J-zone): Interval: 4264-4285 (21') : Blow: weak incr 1-1/4" IFF, no RB, weak incr 4-1/2" FFP, no RB; Times: 5-15-30-60; Recovery: 134' TF; Grindouts: 10' WM (12%W, 88%O), 62' WM (29%W, 71%M), 62' MW (63%W, 37%M, Rw 0.494 @ 55 F, chlorides 16k); Pressures: HP: 2156-2003, SIP: 1071-1071, FP: 18-35, 37-90; BHT: 124 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.

DRILL STEM TEST #2:

LKC (K-zone): Interval: 4295-4316 (21') : Blow: BOB 2 min IFF, no RB, BOB 1-3/4 min FFP, no RB; Times: 5-15-30; Recovery: 228' GIP, 1198 TF; Grindouts: 20' MUD w/oil spots (100%M), 62' SOGCM (11%G, 8%G, 39%O, 18%W, 35%M), 186' GOMCW (14%G, 26%O, 20%O, 38%W, 30%M), 248' GOMCW (9%G, 15%O, 66%W, 10%M), 620' OGMCW (7%G, 3%O, 82%W, 8%M, Rw 0.327 at 56 F, chlorides 25k); Pressures: HP: 2178-2159, SIP: 1056-1048, FP: 110-243, 261-579; BHT: 130 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.

DRILL STEM TEST #3:

LKC (Lower-K & Middle Creek): Interval: 4335-4352 (17') : Blow: BOB 3-1/2 min IFF, weak surf RB, BOB 4-1/4 min FFP, weak surf RB; Times: 5-15-30; Recovery: 109' GIP, 635' TF; Grindouts: 15' GMO (3%G, 75%O, 22%M, 22 grav), 62' HGOCM (14%G, 26%O, 60%M), 186' HGOCM (20%G, 32%O, 48%M), 186' GOMCW (26%G, 22%O, 38%W, 14%M), 186' GOMCW (6%G, 7%O, 76%W, 11%M, Rw 0.342 at 45 F, chlorides 31k); Pressures: HP: 2214-2138, SIP: 1058-928, FP: 54-136, 142-298; BHT: 128 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.

DRILL STEM TEST #4:

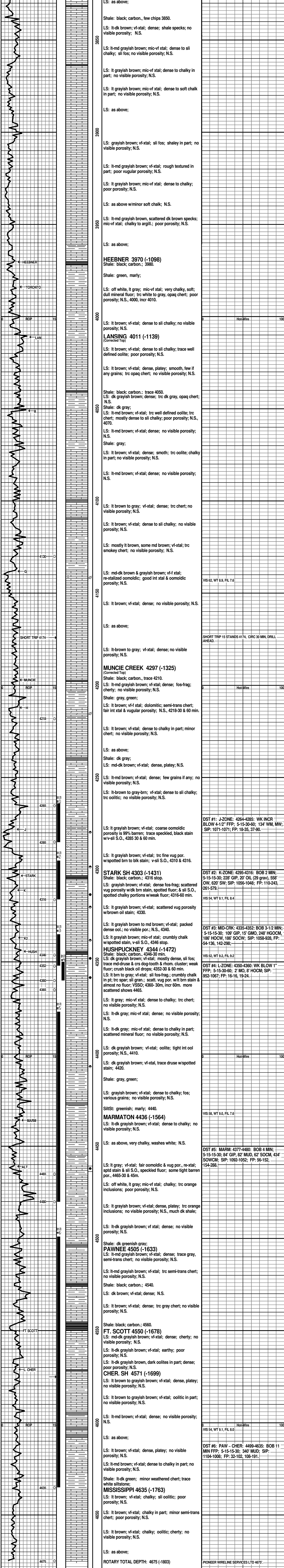
LKC (L-zone): Interval: 4350-4360 (10') : Blow: weak incr 1/2" IFF, no RB, weak incr 1" FFP, no RB; Times: 5-15-30-60; Recovery: 2' MO (77%O, 23%M, 26 grav.), 8' HOCM (29%O, 6%W, 65%M); Pressures: HP: 2235-2116, SIP: 952-1067, FP: 16-16, 19-24; BHT: 113 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.

DRILL STEM TEST #5:

Marmaton: Interval: 4377-4480 (103') : Blow: BOB 4-1/2 min. IFF, no RB; BOB 5-1/4 min. FFP, no RB; Times: 5-15-30; Recovery: 84' weak GIP, 578' TF; Grindouts: 82' mud w/oil spots (100%M), 62' SOGCM (11%G, 6%O, 83%M), 186' SOGCM (9%G, 4%O, 5%W, 82%M), 62' SOGCM (15%G, 5%O, 14%W, 66%M), 186' SOGCM (6%G, 3%O, 26%W, 65%M); Pressures: HP: 2210-2172, SIP: 1092-1052, FP: 56-152, 154-288; BHT: 122 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.

DRILL STEM TEST #6:

Pawnee thru Cherokee: Interval: 4499-4635 (136') : Blow: weak incr 5-1/2" IFF, no RB, weak incr BOB 11-1/2 min FFP, no RB; Times: 5-15-30; Recovery: 340' TF; Grindouts: 92' mud (100%M), 248' SWCM (3%W, 97%M); Pressures: HP: 2274-2161, SIP: 1104-1008, FP: 32-102, 108-191; BHT: 121 F; Trilobite Testing, Inc., Scott City, KS, Will MacLeone.



RTD 3:15 am
09-15-2014

PIONEER WIRELINE SERVICES LTD 4675'