



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1214596
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: _____

1214596

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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

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	RH A Unit 1-33
Doc ID	1214596

Tops

Name	Top	Datum
Anhydrite	2117	+635
B Anhydrite	2146	+606
Heebner	3937	-1185
Lansing	3975	-1223
Stark Sh	4255	-1503
Marmaton	4374	-1622
Pawnee	4448	-1696
Ft. Scott	4503	-1751
Cher Sh	4525	-1773
Mississippi	4598	-1846

QUALITY WELL SERVICE, INC.

6139

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

Office 620-727-3410
Fax 620-672-3663

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

Date 04 10 14	Sec. 33	Twp. 18s	Range 28w	County Lane	State KS	On Location 5:45PM	Finish 8:45PM
Lease RHA unit	Well No. 1-33	Location Ness Co. & Lane Co. Line, 10w, 2s, 3/4E, 5/16th					
Contractor H-D Drilling				Owner Carson			
Type Job Surface				To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size 12 1/4	T.D. 265			Charge To Carson			
Csg. 8 5/8	Depth 265'			Street			
Tbg. Size	Depth			City			
Tool	Depth			State			
Cement Left in Csg. 20'	Shoe Joint N/A			The above was done to satisfaction and supervision of owner agent or contractor.			
Meas Line	Displace 15 1/2 Bbls Fresh			Cement Amount Ordered 175sx class A + 3%cc + 2%gd			

EQUIPMENT

Pumptrk 6 No. David F.	Common 175
Bulktrk 9 No. Sean	Poz. Mix
Bulktrk No.	Gel. 3
Pickup No. Rich	Calcium 6

JOB SERVICES & REMARKS

Rat Hole	Hulls
Mouse Hole	Salt
Centralizers	Flowseal
Baskets	Kol-Seal
D/V or Port Collar	Mud CLR 48
	CFL-117 or CD110 CAF 38
	Sand
Casing on Btm, Break Circ.	Handling 184
Pump Spacer 386ls Fresh	Mileage 35
Mix 175sx A 342 cement = 41.76 Bbls	

FLOAT EQUIPMENT

Disp. w/ Fresh H₂O	Guide Shoe
wash up + Ruck	Centralizer
Slow Rate	Baskets
Stop Pump at 15 1/2 Bbls to total Disp.	AFU Inserts
Shutin, Cement Did Circ.	Float Shoe
	Latch Down
	LMU 35
	Service Supervisor
	Pumptrk Charge Surface
	Mileage 25 x 2

	Tax
	Discount
	Total Charge

X Signature *[Handwritten Signature]*

GENERAL TERMS AND CONDITIONS

DEFINITIONS: In these terms and conditions, "Quality" shall mean Quality Well Service, Inc. and "Customer" shall refer to the party identified by that term on the front of this contract. As applicable, "Job" relates to the services described on the front side of this contract, "merchandise" refers to the material described on the front of this contract and to other materials, products, or supplies used, sold, or furnished under the requirements of this contract.

– **TERMS:** Unless satisfactory credit has been established, "CUSTOMER" must tender full cash payment to "QUALITY" before the job is undertaken or merchandise is delivered. If satisfactory credit has been established, the terms of payment for the job and/or merchandise, including bulk cement, are net cash, payable in 30 days from the completion of the job and/or delivery of the merchandise. For all past due invoices, "CUSTOMER" agrees to pay interest on amounts invoiced at a rate of 18 percent per annum until paid. Notwithstanding the foregoing in no event shall this Contract provide for interest exceeding the maximum rate of interest that "CUSTOMER" may agree to pay under applicable law. If any such interest should be provided for, it shall be and hereby is deemed to be a mistake, and this contract shall be automatically reformed to lower the rate of interest to the maximum legal contract rate, any amounts previously paid as excess interest shall be deducted from the amounts owing from the "CUSTOMER" or at the option of "QUALITY," refunded directly to "CUSTOMER." For purposes of this paragraph, QUALITY and CUSTOMER agree that KANSAS law shall apply. Any discounts granted with this contract are null and void if the charges are not paid when due.

– **ATTORNEY FEES:** In any legal action or proceeding between the parties to enforce any of the terms of this Service Contract, or in any way pertaining to the term of this Contract, the prevailing party shall be entitled to recover all expenses, including, but not limited to, a reasonable sum as and attorney's fees.

– **PRICES AND TAXES:** All merchandise listed in "QUALITY'S" current price shall schedule are F.O.B. QUALITY'S local station and are subject to change without notice. All prices are exclusive of any federal, state, local, or special taxes for the sale or use of the merchandise or services listed. The amount of taxes required to be paid by QUALITY shall be added to the quoted prices charged to CUSTOMER.

– **TOWING CHARGES:** QUALITY will make a reasonable attempt to get to and from each job site using its own equipment. Should QUALITY be unable to do so because of poor or inadequate road conditions, and should it become necessary to employ a tractor or other pulling equipment to get to or from the job site, the tractor or pulling equipment will be supplied by CUSTOMER or, if furnished by QUALITY, will be charged to and paid by CUSTOMER.

– **PREPARATION CHARGES:** If a job and/or merchandise is ordered and CUSTOMER cancels the order after preparation of a chemical solution or other material, CUSTOMER will pay QUALITY for the expenses incurred by QUALITY as a result of the cancellation.

– **DEADHAUL CHARGES:** Unless otherwise specified on the front of this Contract, a deadhaul charge as set forth in QUALITY'S current price book will be charged each way for each service unit which is ordered by CUSTOMER but not used.

– **SERVICE CONDITIONS AND LIABILITIES:** 1. QUALITY carries public liability and property damage insurance, but since there are so many uncertain and unknown conditions beyond QUALITY'S control, QUALITY shall not be liable for injuries to property or persons or for loss or damage arising from the performance of the job or delivery of the merchandise. CUSTOMER shall be responsible for and indemnify, defend, and hold harmless QUALITY, its officers, agents and employees, from and against any and all claims or suits for:

(A) Damage to property or for bodily injury, sickness, disease, or death, brought by any person, including CUSTOMER and/or the well owner; and:

(B) Oil spills, pollution, surface or sub-surface damage, injury to the well, reservoir loss, or damage arising from a well blowout arising out of or in connection with QUALITY'S performance of the job or furnishing of merchandise in accordance with this contract, unless such loss or damage is caused by the willful misconduct or gross negligence of QUALITY or its employees.

2. With respect to any of QUALITY'S tools, equipment, or instruments which are lost in the well or damaged when performing or attempting to perform the job or, in the case of marine operations, are lost or damaged at any time after delivery to the landing for CUSTOMER and before return to QUALITY at the landing, CUSTOMER shall either recover the lost item without cost to QUALITY or reimburse QUALITY the current replacement cost of the item unless the loss or damage results from the sole negligence of QUALITY or its employees.

3. QUALITY does not assume any liability or responsibility for damages or conditions resulting from chemical action in cements caused by contamination of water or other fluids.

WARRANTIES: 1. QUALITY warrants all merchandise manufactured or furnished by it to be free from defects in material and workmanship under normal use and service when installed, and used, and/or serviced in the manner provided and intended. QUALITY'S obligation under this warranty is expressly limited to repair replacement, or allowance for credit, at its option, for any merchandise which is determined by QUALITY to be defective. THIS IS THE SOLE WARRANTY OF QUALITY AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESS OR OTHERWISE IMPLIED, IN FACT OR IN LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE, CUSTOMER'S sole and only remedy with regard to any defective merchandise shall be the repair or replacement thereof or allowance for credit as herein provided, and QUALITY shall not be liable for any consequential, special, incidental, or punitive damages resulting from or caused by defective materials, products or supplies.

2. More specifically:

(A) Nothing in this contract shall be construed as a warranty by QUALITY of the success or the effectiveness of the result of any work done or merchandise used, sold, or furnished under this contract.

(B) Nothing in this contract shall be construed as a warranty of the accuracy or correctness of any facts, information, or data furnished by QUALITY or any interpretation of test, meter readings, chart information, analysis or research, or recommendations made by QUALITY, unless the inaccuracy or incorrectness is caused by the willful misconduct or gross negligence of QUALITY or its employees in the preparation or furnishing of such facts, information or data. (C) Work done by QUALITY shall be under the direct supervision and control of the CUSTOMER or his agent and QUALITY will accomplish the job as an independent contractor and not as an employee or agent of the CUSTOMER.



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

TICKET 26260

PAGE 1 OF 2

SERVICE LOCATIONS: 1. **Ness City, KS.**
 WELL/PROJECT NO.: **RH"A" UNIT 133** LEASE: **LANE** COUNTY/PARISH: **KS.** CITY: **DIGHTON, KS.** DATE: **22 APR 14** OWNER:
 2. TICKET TYPE: SERVICE SALES CONTRACTOR: **HD DRILLING RIG #3** RIG NAME/NO.: SHIPPED VIA: DELIVERED TO: ORDER NO.:
 3. WELL TYPE: **OIL** WELL CATEGORY: **DEVELOPMENT** JOB PURPOSE: **5 1/2 LONGSTRING** WELL PERMIT NO.: WELL LOCATION: **2E, 25 3/4, STUTO**
 4. REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE #115	30	MIL			6 ⁰⁰	180 ⁰⁰
578					Pump CHARGE	1	JOB			1500 ⁰⁰	1500 ⁰⁰
280					FLOCHECK 21	500	92			3 ⁰⁰	1500 ⁰⁰
221					LIDWOKCE	2	92			25 ⁰⁰	50 ⁰⁰
419					ROTATING HEAD RENTAL	1	JOB			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: **22 APR 14** TIME SIGNED: **12:15** 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	3430 ⁰⁰
WE UNDERSTOOD AND MET YOUR NEEDS?				2	5410 ⁰⁰
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				Subtotal	8840 ⁰⁰
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Lane TAX 7.15%	471 ²²
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO			TOTAL	9312 ¹²

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

SWIFT OPERATOR: *[Signature]* APPROVAL:

Thank You!



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

TICKET CONTINUATION

TICKET No. 26260

CUSTOMER LARSON ENGINEERING WELL RH "A" UNIT 1-33 DATE 22 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						FLOCELE	40	lbs			2.50	100.00
283						SALT	800	lbs			2.00	1600.00
284						UALSEAL	7	sk			35.00	245.00
292						HALAD-322	150	lbs			8.00	1200.00
277						GILSONITE	1100	lbs			7.50	8250.00
290						D-AIR	1 1/2	sq			42.00	63.00
325						STANDARD EA-2	155	sk			14.50	2247.50
581						SERVICE CHARGE					2.00	310.00
583						MILEAGE CHARGE					1.00	260.40
						TOTAL WEIGHT	1736	LB				
						LOADER MILES	30					
						TON MILES	260.40					
CONTINUATION TOTAL											5410.90	

JOB LOG

SWIFT Services, Inc.

DATE 22 APR 14 PAGE NO.

CUSTOMER LARSON ENGINEERING

WELL NO.

LEASE "RH" A UNIT 1-33

JOB TYPE 5/2 LONGSTRING

TICKET NO. 26260

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1000							ON LOCATION
								RTD @ 4636 SET @ 4629 SHOETT. 42.47 PORT COLLAR @ 2094
	1030							DROP BALL - CIRCULATE
	1125	6	15	✓		300		Pump 15 BBL KCL
		6	12	✓		300		Pump 500 G/L FLOCHECK 21
		6	5	✓		300		Pump 5 BBL KCL
	1139		7					PLUG RH 30SX
	1137	4	30	✓	✓			MIX 1/25 SX EA 2
	1146							WASH OUT Pump & LINES
	1148							START DISPLACING PLUG
	1206		109	✓		1500		PLUG DOWN LATCH PLUG IN
	1208							RELEASE PSI - DRY
	1210							WASH TRUCK
	1245							JOB COMPLETE
								THANKS # 115
								JASON DAVE ISAAC



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

TICKET 26263

PAGE 1 OF 1

SERVICE LOCATIONS 1. <u>Ness City KS</u>	WELL/PROJECT NO. <u>1-33</u>	LEASE <u>R.H.A Unit</u>	COUNTY/PARISH <u>Leane</u>	STATE <u>KS</u>	CITY <u>Dighton</u>	DATE <u>4-29-17</u>	OWNER
2.	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>Chyenne Well Service</u>	RIG NAME/NO.	SHIPPED <u>VICT</u>	DELIVERED TO <u>Location</u>	ORDER NO.	
3.	WELL TYPE <u>Oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>Cement 5 1/2" Port Collar</u>	WELL PERMIT NO.	WELL LOCATION <u>Dighton KS - 2E, 2S, 4E</u>		
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE		AMOUNT	
		LOC	ACCT	DF		QTY.	U/M	QTY.	U/M		
575		1			MILEAGE			40	mi	6 ⁰⁰	240 ⁰⁰
576 D		1			Pump Charge - Port Collar		1		job	1500 ⁰⁰	1500 ⁰⁰
330		1			SMD Cement			215	skts	18 ⁵⁰	3977 ⁵⁰
276		1			Flocle		1/4	50	lbs	2 ⁵⁰	125 ⁰⁰
290		1			D-Air			5	gal	42 ⁰⁰	210 ⁰⁰
275		1			Cotton Seed Hulls			2	skts	32 ⁰⁰	64 ⁰⁰
581		1			Service Charge Cement			250	skts	2 ⁰⁰	500 ⁰⁰
583		1			Drayage	24878	lbs	497.56	TM	1 ⁰⁰	497 ⁵⁶

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

John D. [Signature]
 DATE SIGNED 4-29-17 TIME SIGNED 1230 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	7117	06
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				TOTAL	7426	98

Lane TAX 7.15% 312 92

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

SWIFT OPERATOR David Huehn APPROVAL

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 4-21-14 PAGE NO. 1

CUSTOMER Larson Engineering		WELL NO. 1-33	LEASE RHA. Unit	JOB TYPE Cement 5 1/2" Port Collar		TICKET NO. 26263		
CHART NO.:	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1030							on location
								P.C. 2096 2 3/8 x 5 1/2" 250 sks SMD w/ 1/4" Flo
	1045	0	0		✓	1000		Pressure Test open Port Collar
								Injection Rate
	1055	3	4		✓	300		
	1100	3 1/2	120		✓	350		mix 215 sks SMD w/ 1/4 Flo circulate <u>15 sks</u> to Pit
	1130	3 1/2	7.5		✓	400		Displace Cement close Port Collar
	1140	0	0		✓	1000		Pressure Test Run Sijts
	1150	3 1/2	25		✓	300		Reverse Clean wash up Truck
	1230							Job Complete
								Thank You Dave Jason Craig



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.16 @ 13:50:42

End Date: 2014.04.16 @ 18:20:42

Job Ticket #: 55739 DST #: 1

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

Printed: 2014.04.24 @ 14:32:06



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
Job Ticket: 55739 **DST#: 1**
Test Start: 2014.04.16 @ 13:50:42

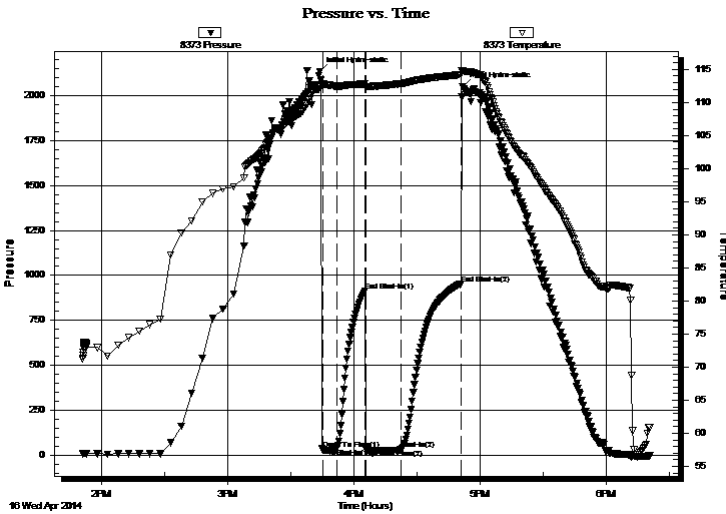
GENERAL INFORMATION:

Formation: **LKC H**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:45:12
Time Test Ended: 18:20:42
Interval: **4154.00 ft (KB) To 4180.00 ft (KB) (TVD)**
Total Depth: 4180.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Brandon Turley
Unit No: 60
Reference Elevations: 2752.00 ft (KB)
2745.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373 **Inside**
Press@RunDepth: 32.49 psig @ 4155.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.16 End Date: 2014.04.16 Last Calib.: 2014.04.16
Start Time: 13:50:47 End Time: 18:20:41 Time On Btm: 2014.04.16 @ 15:43:42
Time Off Btm: 2014.04.16 @ 16:51:42

TEST COMMENT: IF: Weak surface blow .
IS: No return.
FF: No blow .
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2133.06	112.65	Initial Hydro-static
2	31.33	112.87	Open To Flow (1)
8	37.35	112.44	Shut-In(1)
22	912.11	112.80	End Shut-In(1)
22	30.47	112.41	Open To Flow (2)
39	32.49	112.84	Shut-In(2)
67	952.84	114.23	End Shut-In(2)
68	2048.73	114.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud oil spots 100%m	0.01

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

Test Start: 2014.04.16 @ 13:50:42

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:45:12

Time Test Ended: 18:20:42

Interval: **4154.00 ft (KB) To 4180.00 ft (KB) (TVD)**

Total Depth: 4180.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Reference Elevations: 2752.00 ft (KB)

2745.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4155.00 ft (KB)

Start Date: 2014.04.16

End Date: 2014.04.16

Start Time: 13:50:10

End Time: 18:20:04

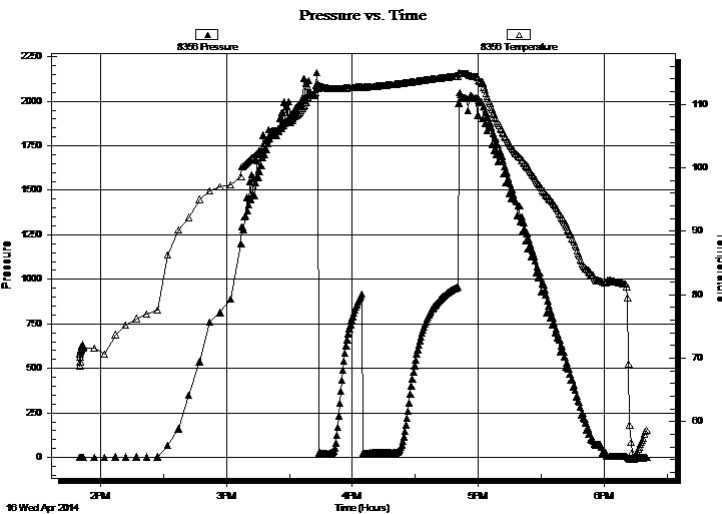
Capacity: 8000.00 psig

Last Calib.: 2014.04.16

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak surface blow .
IS: No return.
FF: No blow .
FS: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud oil spots 100%m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.16 @ 13:50:42

Tool Information

Drill Pipe:	Length: 4013.00 ft	Diameter: 3.80 inches	Volume: 56.29 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:	25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 56.90 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4154.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	54.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4127.00	
Shut In Tool	5.00			4132.00	
Hydraulic tool	5.00			4137.00	
Jars	5.00			4142.00	
Safety Joint	3.00			4145.00	
Packer	5.00			4150.00	28.00 Bottom Of Top Packer
Packer	4.00			4154.00	
Stubb	1.00			4155.00	
Recorder	0.00	8373	Inside	4155.00	
Recorder	0.00	8356	Outside	4155.00	
Perforations	20.00			4175.00	
Bullnose	5.00			4180.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55739

DST#: 1

ATTN: Vern Schrag

Test Start: 2014.04.16 @ 13:50:42

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud oil spots 100%m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

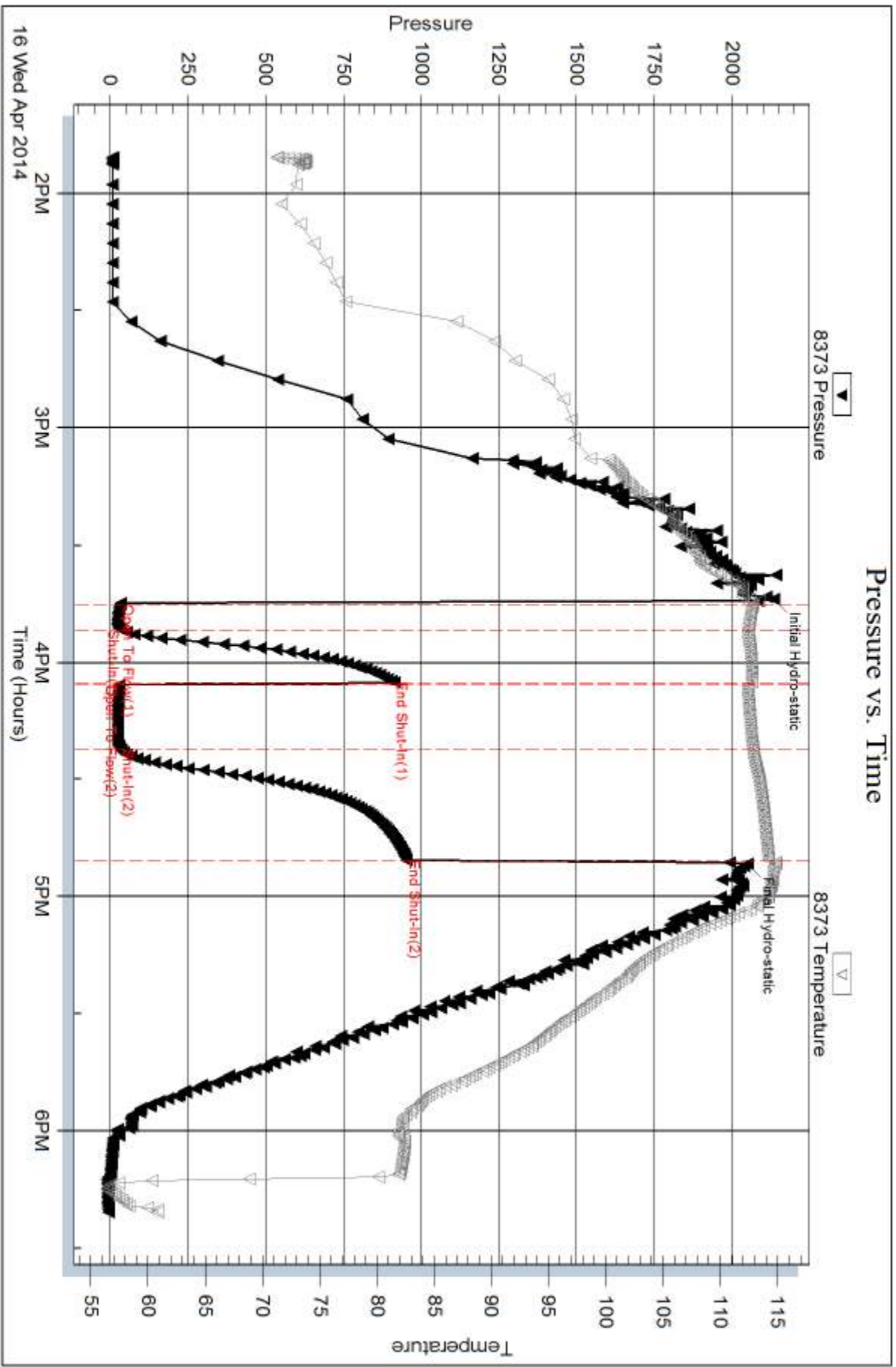
Num Gas Bombs: 0

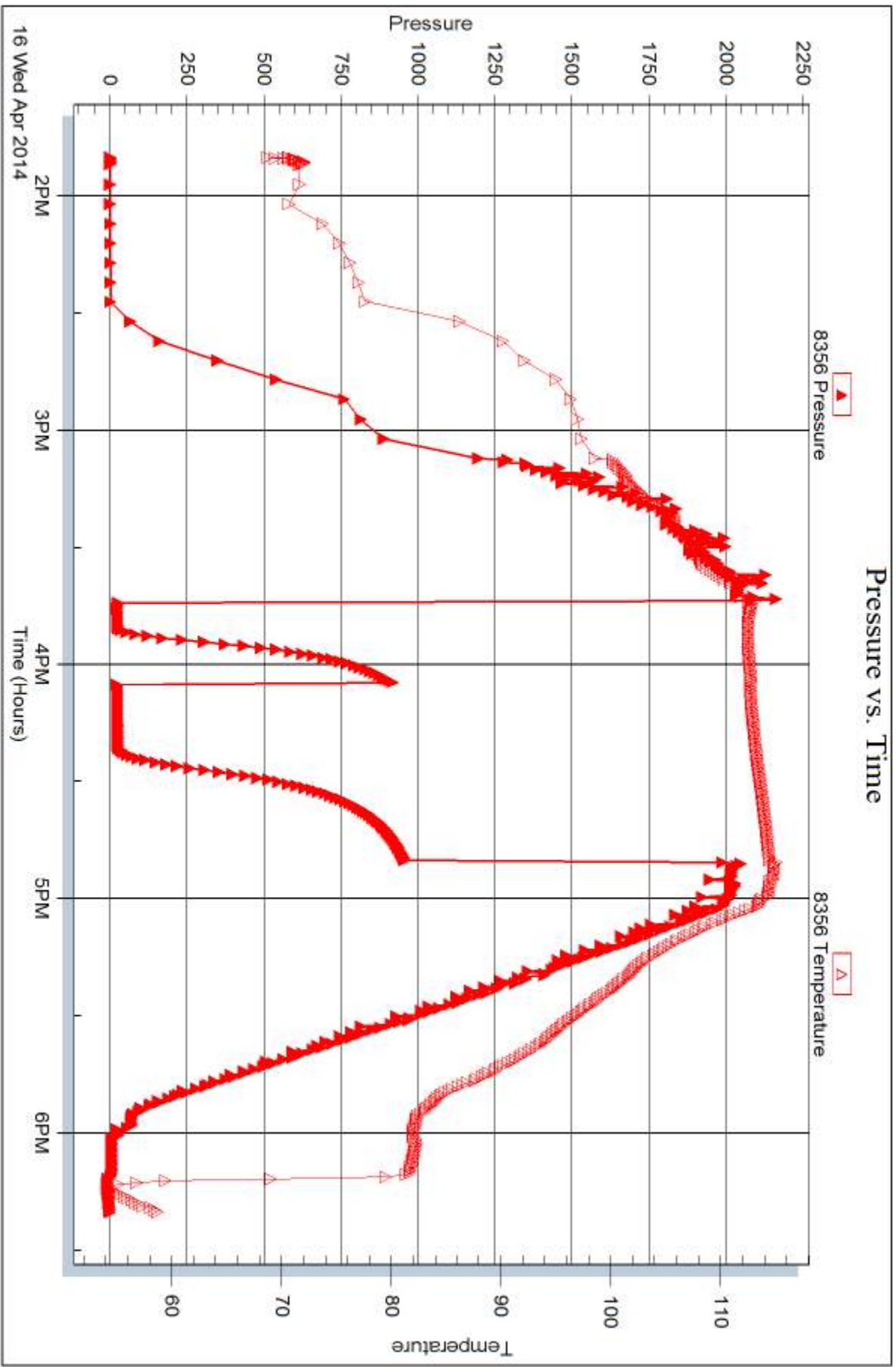
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.17 @ 05:29:46

End Date: 2014.04.17 @ 10:00:46

Job Ticket #: 55740 DST #: 2

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

Printed: 2014.04.24 @ 14:31:43



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55740 **DST#: 2**
 Test Start: 2014.04.17 @ 05:29:46

GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:06:46
 Time Test Ended: 10:00:46
 Interval: **4222.00 ft (KB) To 4241.00 ft (KB) (TVD)**
 Total Depth: 4222.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

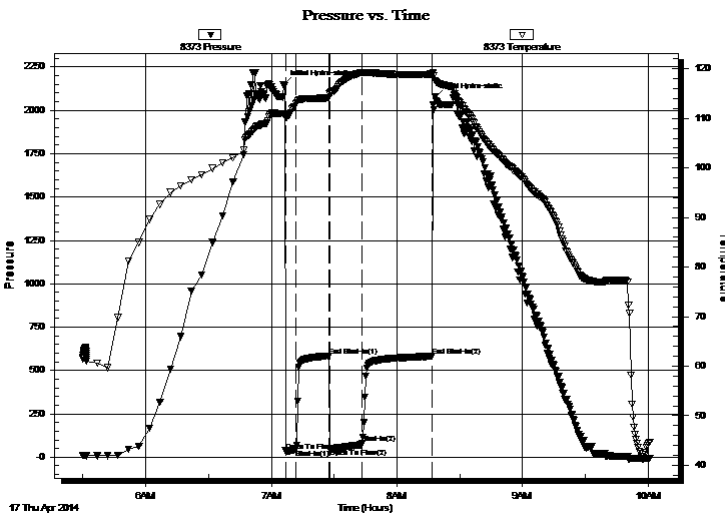
Serial #: 8373

Inside

Press@RunDepth: 78.11 psig @ 4223.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
 Start Time: 05:29:51 End Time: 10:00:45 Time On Btm: 2014.04.17 @ 07:05:46
 Time Off Btm: 2014.04.17 @ 08:18:16

TEST COMMENT: IF: Weak blow built to 1 1/4" in 5 min.
 IS: No return.
 FF: 1/4" blow built to 3" in 15 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2147.12	110.96	Initial Hydro-static
1	36.06	110.24	Open To Flow (1)
6	45.17	112.92	Shut-In(1)
22	583.73	114.15	End Shut-In(1)
22	48.96	115.04	Open To Flow (2)
38	78.11	119.29	Shut-In(2)
71	582.68	118.93	End Shut-In(2)
73	2076.17	117.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	ocm 5%o 95%m	0.30
30.00	ocm 30%o 70%m	0.15
1.00	free oil 100%o	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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55740

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 05:29:46

Tool Information

Drill Pipe:	Length: 4099.00 ft	Diameter: 3.80 inches	Volume: 57.50 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:	25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4222.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	19.00 ft				
Tool Length:	47.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4195.00	
Shut In Tool	5.00			4200.00	
Hydraulic tool	5.00			4205.00	
Jars	5.00			4210.00	
Safety Joint	3.00			4213.00	
Packer	5.00			4218.00	28.00 Bottom Of Top Packer
Packer	4.00			4222.00	
Stubb	1.00			4223.00	
Recorder	0.00	8373	Inside	4223.00	
Recorder	0.00	8356	Outside	4223.00	
Perforations	13.00			4236.00	
Bullnose	5.00			4241.00	19.00 Bottom Packers & Anchor

Total Tool Length: 47.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55740

DST#: 2

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 05:29:46

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	ocm 5%o 95%m	0.305
30.00	ocm 30%o 70%m	0.148
1.00	free oil 100%o	0.005

Total Length: 93.00 ft Total Volume: 0.458 bbl

Num Fluid Samples: 0

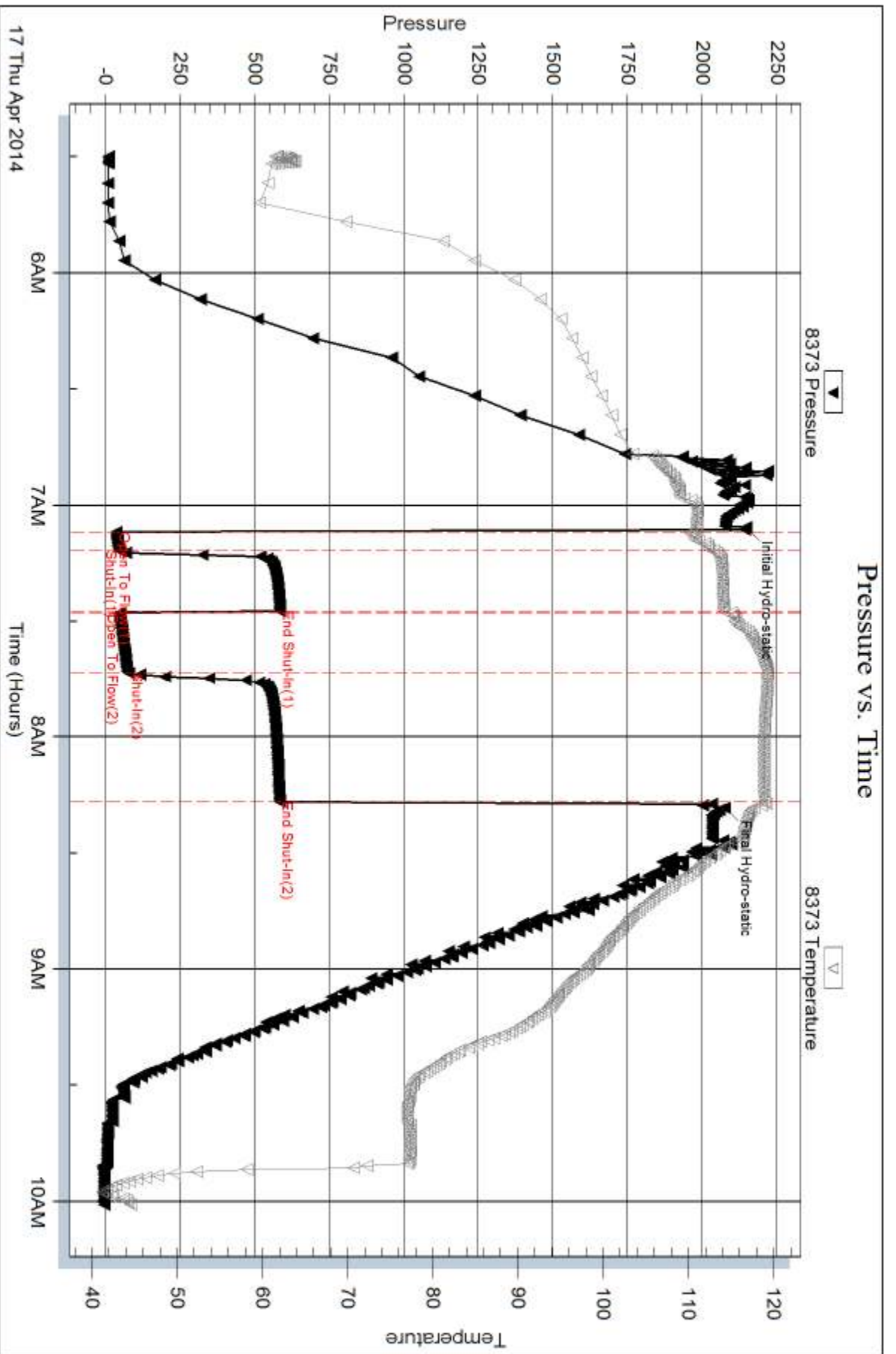
Num Gas Bombs: 0

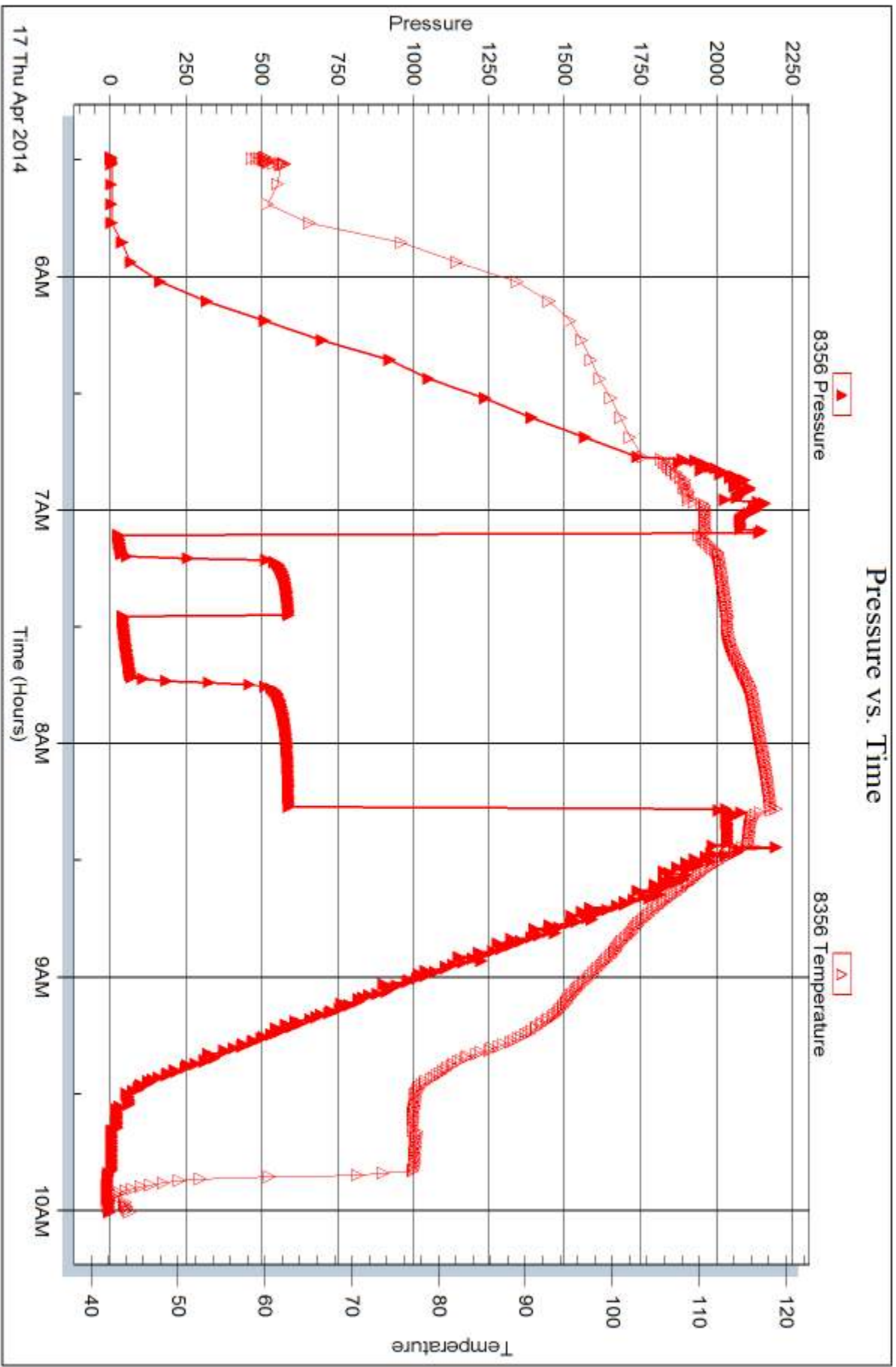
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.17 @ 17:54:16

End Date: 2014.04.17 @ 23:02:46

Job Ticket #: 55741 DST #: 3

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

Printed: 2014.04.24 @ 14:31:21



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
Job Ticket: 55741 **DST#: 3**
Test Start: 2014.04.17 @ 17:54:16

GENERAL INFORMATION:

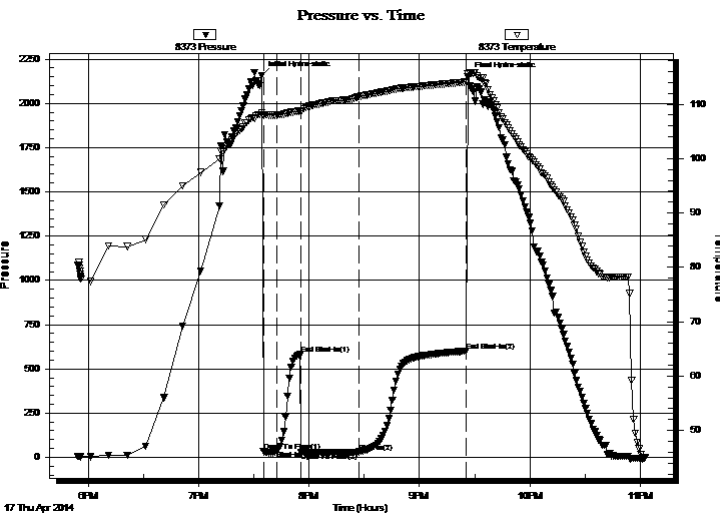
Formation: **LKC K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:35:16
Time Test Ended: 23:02:46
Interval: **4254.00 ft (KB) To 4265.00 ft (KB) (TVD)**
Total Depth: 4265.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Brandon Turley
Unit No: 60
Reference Elevations: 2752.00 ft (KB)
2745.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8373

Inside

Press@RunDepth: 30.42 psig @ 4255.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
Start Time: 17:54:21 End Time: 23:02:45 Time On Btm: 2014.04.17 @ 19:34:16
Time Off Btm: 2014.04.17 @ 21:26:16

TEST COMMENT: IF: Weak surface blow .
IS: No return.
FF: Surface blow built to 1" in 30 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.52	108.43	Initial Hydro-static
1	32.03	107.96	Open To Flow (1)
9	39.14	108.04	Shut-In(1)
21	584.66	108.77	End Shut-In(1)
22	29.30	108.60	Open To Flow (2)
53	30.42	111.38	Shut-In(2)
111	600.65	114.11	End Shut-In(2)
112	2152.50	115.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 10%o 90% m	0.02
2.00	free oil 100%o	0.01

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

ATTN: Vern Schrag

Job Ticket: 55741

DST#: 3

Test Start: 2014.04.17 @ 17:54:16

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:35:16

Time Test Ended: 23:02:46

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4254.00 ft (KB) To 4265.00 ft (KB) (TVD)

Total Depth: 4265.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2752.00 ft (KB)

2745.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356

Outside

Press@RunDepth: psig @ 4255.00 ft (KB)

Start Date: 2014.04.17

End Date:

2014.04.17

Start Time: 17:54:22

End Time:

23:02:46

Capacity: 8000.00 psig

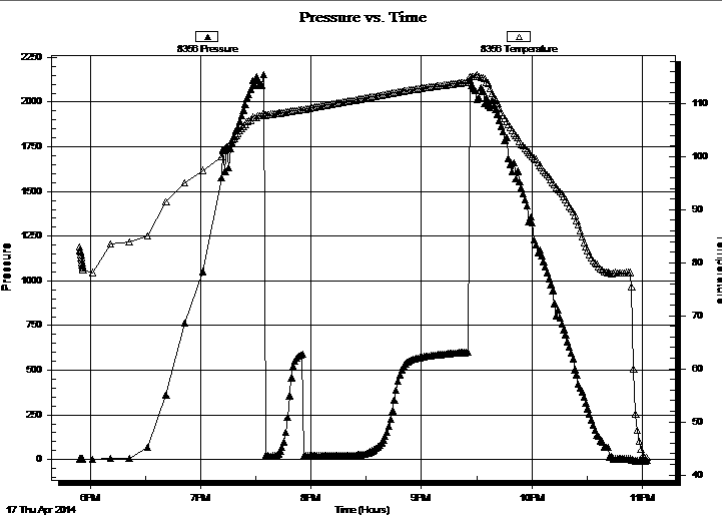
Last Calib.:

2014.04.17

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Weak surface blow .
IS: No return.
FF: Surface blow built to 1" in 30 min.
FS: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	ocm 10%o 90%m	0.02
2.00	free oil 100%o	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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55741

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 17:54:16

Tool Information

Drill Pipe:	Length: 4132.00 ft	Diameter: 3.80 inches	Volume: 57.96 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:	25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 58.57 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4254.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	11.00 ft				
Tool Length:	39.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4227.00	
Shut In Tool	5.00			4232.00	
Hydraulic tool	5.00			4237.00	
Jars	5.00			4242.00	
Safety Joint	3.00			4245.00	
Packer	5.00			4250.00	28.00 Bottom Of Top Packer
Packer	4.00			4254.00	
Stubb	1.00			4255.00	
Recorder	0.00	8373	Inside	4255.00	
Recorder	0.00	8356	Outside	4255.00	
Perforations	5.00			4260.00	
Bullnose	5.00			4265.00	11.00 Bottom Packers & Anchor

Total Tool Length: 39.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55741

DST#: 3

ATTN: Vern Schrag

Test Start: 2014.04.17 @ 17:54:16

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	ocm 10%o 90%m	0.025
2.00	free oil 100%o	0.010

Total Length: 7.00 ft Total Volume: 0.035 bbl

Num Fluid Samples: 0

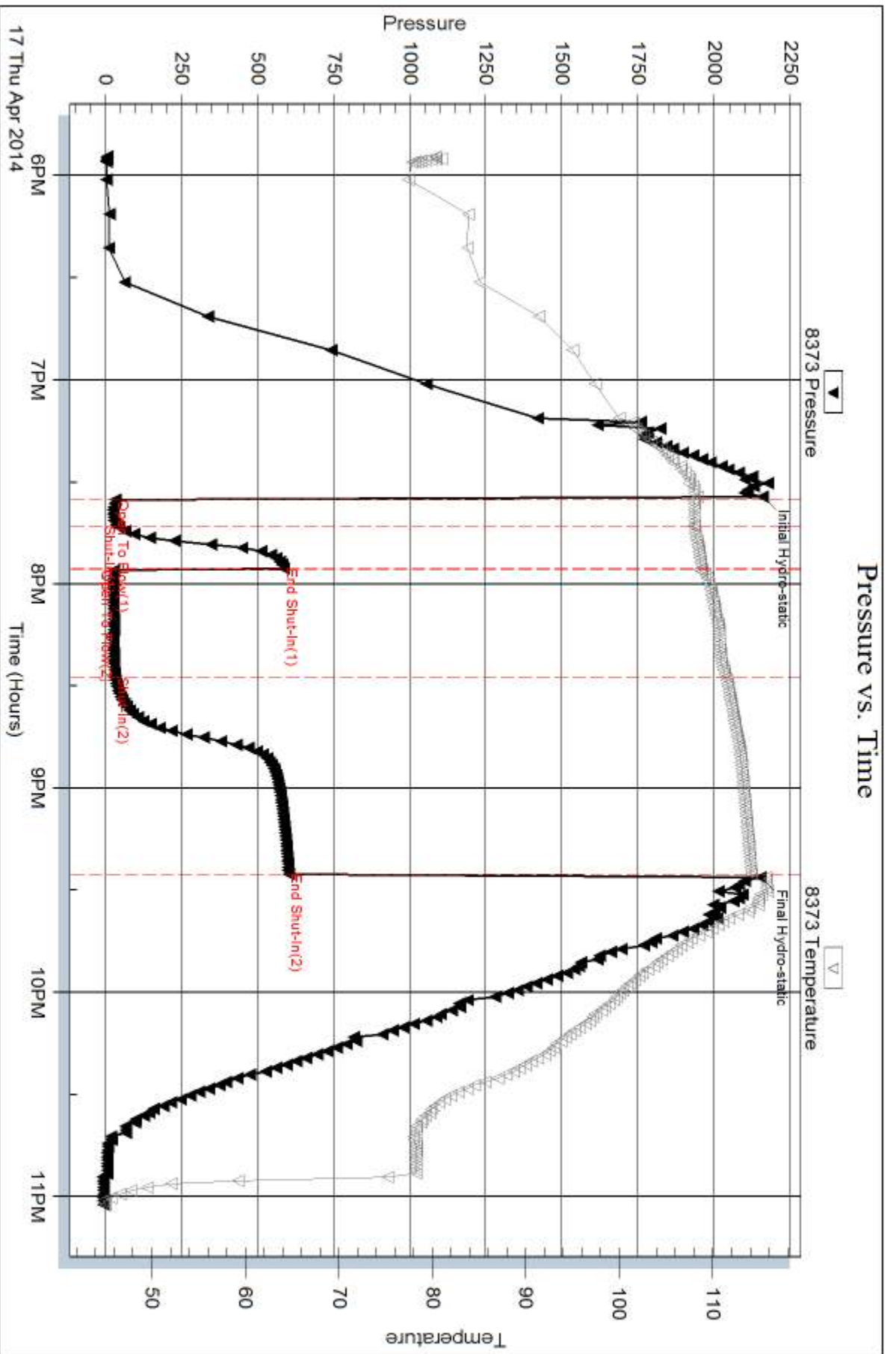
Num Gas Bombs: 0

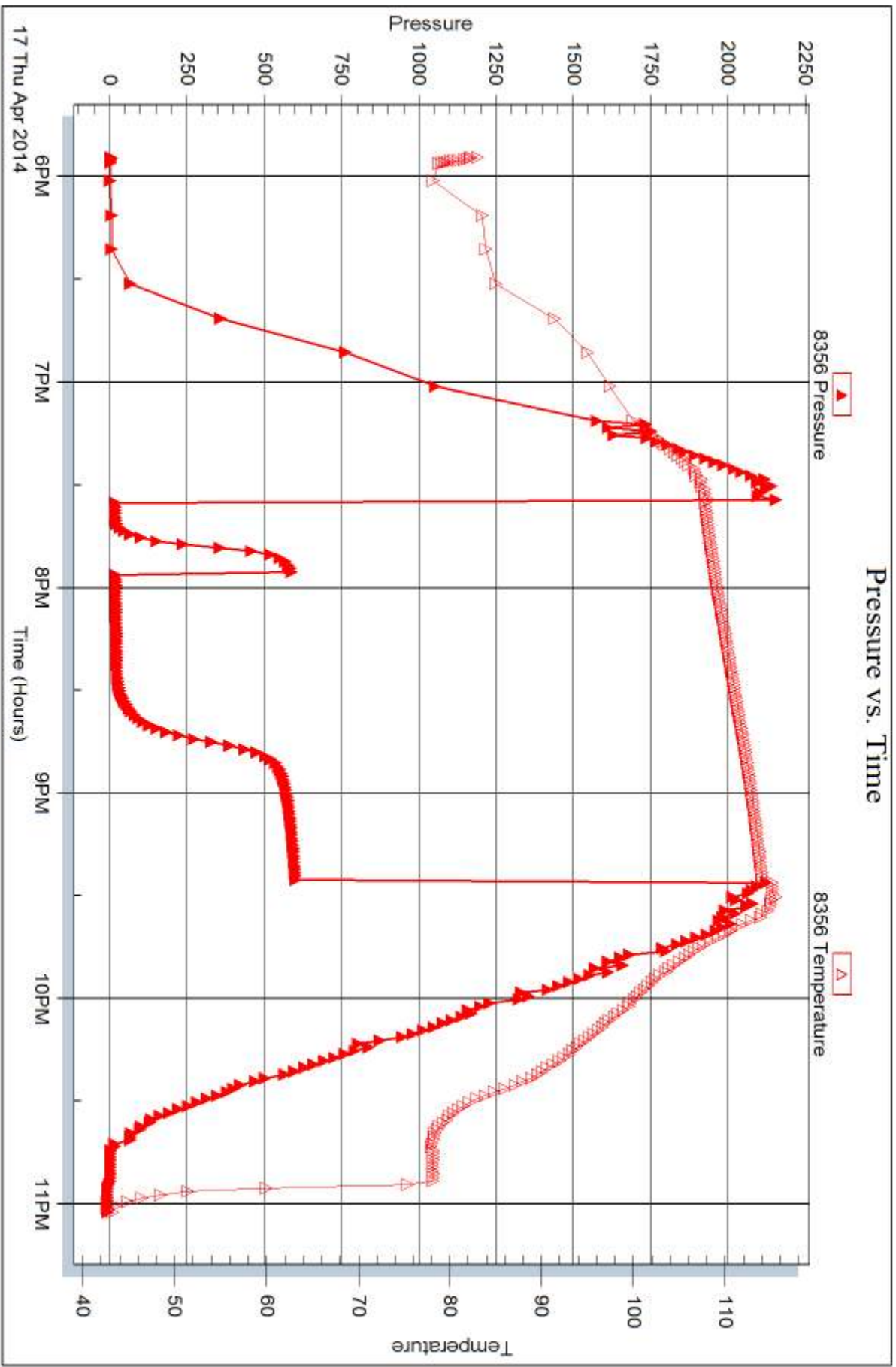
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.18 @ 06:08:28

End Date: 2014.04.18 @ 10:50:58

Job Ticket #: 55742 DST #: 4

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

Printed: 2014.04.24 @ 14:29:31



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.18 @ 06:08:28

Tool Information

Drill Pipe:	Length: 4104.00 ft	Diameter: 3.80 inches	Volume: 57.57 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: 25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4252.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4225.00	
Shut In Tool	5.00			4230.00	
Hydraulic tool	5.00			4235.00	
Jars	5.00			4240.00	
Safety Joint	3.00			4243.00	
Packer	5.00			4248.00	28.00 Bottom Of Top Packer
Packer	4.00			4252.00	
Stubb	1.00			4253.00	
Recorder	0.00	8373	Inside	4253.00	
Recorder	0.00	8356	Outside	4253.00	
Perforations	12.00			4265.00	
Bullnose	5.00			4270.00	18.00 Bottom Packers & Anchor

Total Tool Length: 46.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55742

DST#: 4

ATTN: Vern Schrag

Test Start: 2014.04.18 @ 06:08:28

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
7.00	ocm 30%o 70%m	0.034

Total Length: 7.00 ft Total Volume: 0.034 bbl

Num Fluid Samples: 0

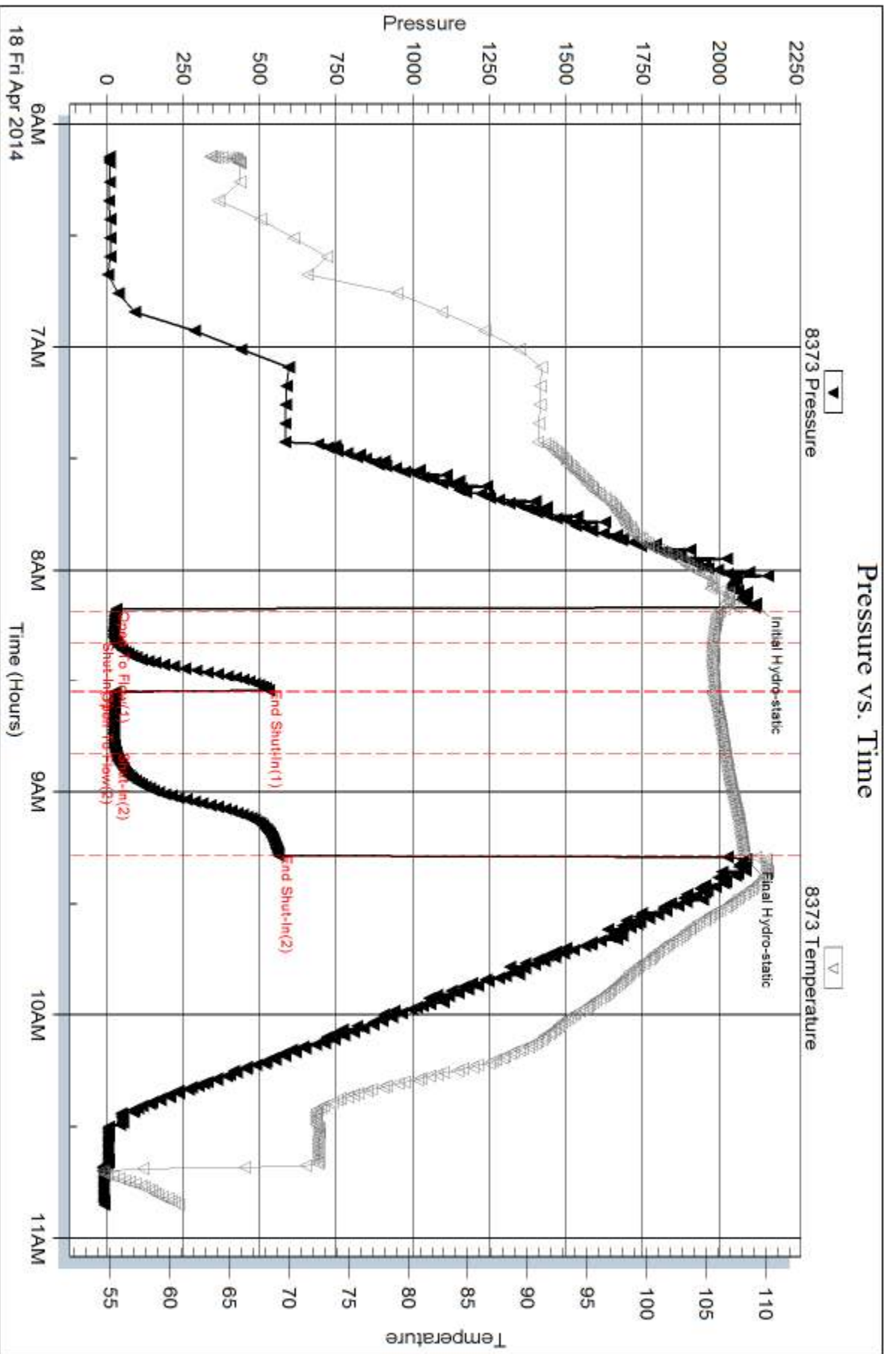
Num Gas Bombs: 0

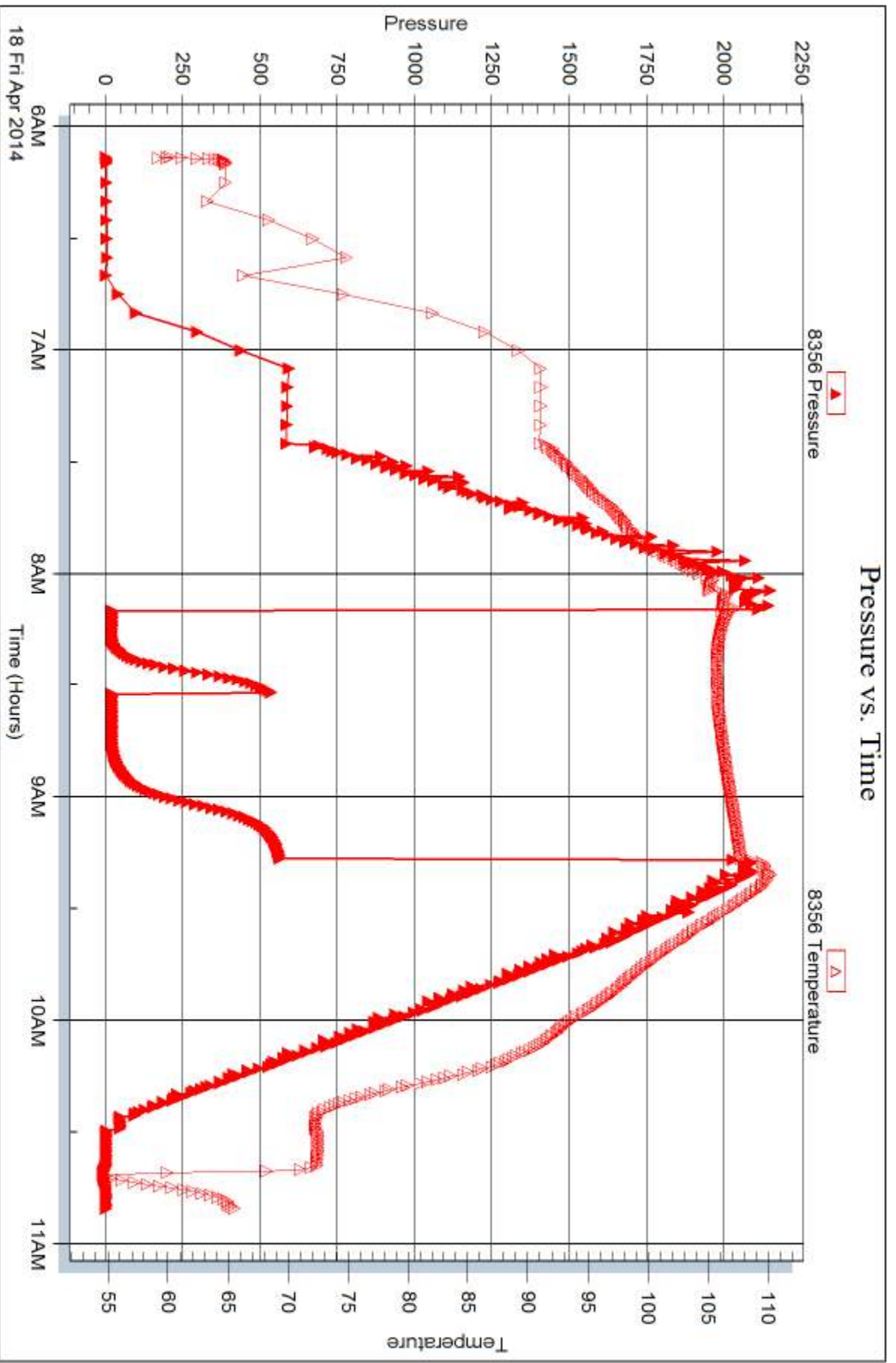
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.19 @ 00:12:19

End Date: 2014.04.19 @ 06:47:49

Job Ticket #: 55743 DST #: 5

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

Printed: 2014.04.24 @ 14:29:06



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Larson Engineering
562 W State Rd 4
Olmitz, KS 67564
ATTN: Vern Schrag

33-18s-28w Lane KS

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

Test Start: 2014.04.19 @ 00:12:19

GENERAL INFORMATION:

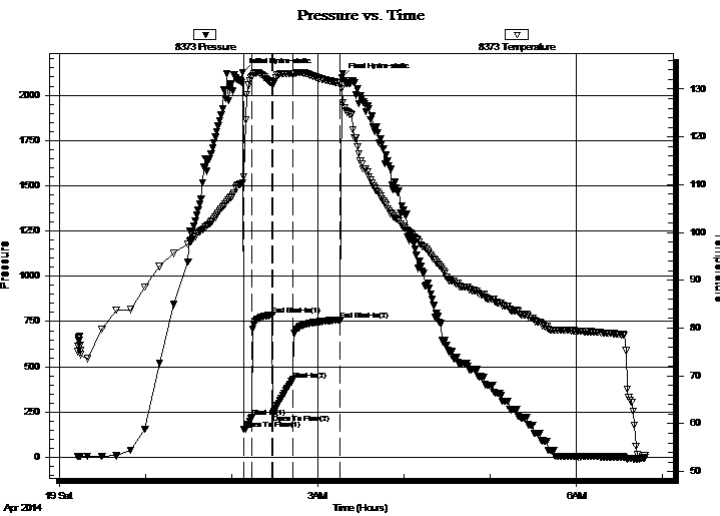
Formation: **LKC L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:08:19
 Time Test Ended: 06:47:49
 Interval: **4288.00 ft (KB) To 4296.00 ft (KB) (TVD)**
 Total Depth: 4296.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8373

Inside

Press@RunDepth: 428.38 psig @ 4289.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.19 End Date: 2014.04.19 Last Calib.: 2014.04.19
 Start Time: 00:12:24 End Time: 06:47:48 Time On Btm: 2014.04.19 @ 02:07:19
 Time Off Btm: 2014.04.19 @ 03:16:19

TEST COMMENT: IF: BOB in 30 sec.
 IS: BOB in 12 min.
 FF: BOB in 1 min.
 FS: BOB in 15 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2125.79	110.37	Initial Hydro-static
1	154.44	111.64	Open To Flow (1)
7	220.69	132.54	Shut-In(1)
21	786.90	131.13	End Shut-In(1)
21	240.25	130.77	Open To Flow (2)
35	428.38	133.16	Shut-In(2)
68	759.96	131.25	End Shut-In(2)
69	2098.00	130.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcgo 60%g 20%o 20%m	0.30
434.00	go 20%g 80%o	5.51
620.00	go 40%g 60%o	8.70
0.00	1178 GIP	0.00

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

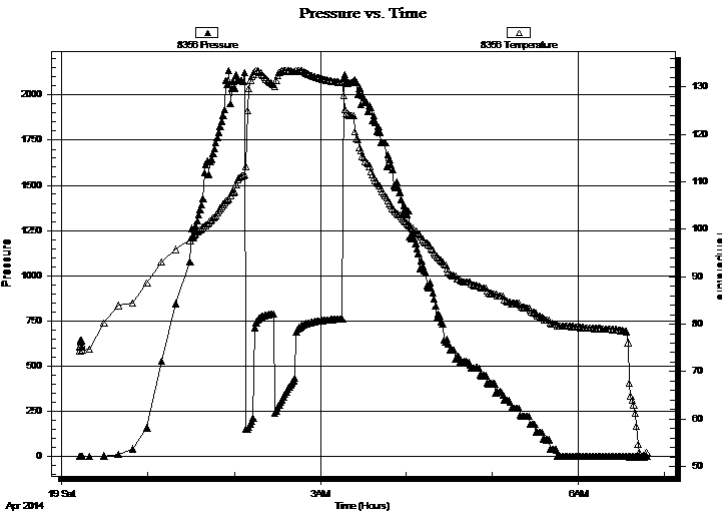
33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55743 **DST#: 5**
 Test Start: 2014.04.19 @ 00:12:19

GENERAL INFORMATION:

Formation: **LKC L**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:08:19
 Time Test Ended: 06:47:49
Interval: 4288.00 ft (KB) To 4296.00 ft (KB) (TVD)
 Total Depth: 4296.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8356 Outside
 Press@RunDepth: psig @ 4289.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.19 End Date: 2014.04.19 Last Calib.: 2014.04.19
 Start Time: 00:12:20 End Time: 06:47:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: BOB in 30 sec.
 IS: BOB in 12 min.
 FF: BOB in 1 min.
 FS: BOB in 15 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcgo 60%g 20%o 20%m	0.30
434.00	go 20%g 80%o	5.51
620.00	go 40%g 60%o	8.70
0.00	1178 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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.04.19 @ 00:12:19

Tool Information

Drill Pipe:	Length: 4165.00 ft	Diameter: 3.80 inches	Volume: 58.42 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:	25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 59.03 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	4288.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	36.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Stubb	1.00			4261.00	
Shut In Tool	5.00			4266.00	
Hydraulic tool	5.00			4271.00	
Jars	5.00			4276.00	
Safety Joint	3.00			4279.00	
Packer	5.00			4284.00	28.00 Bottom Of Top Packer
Packer	4.00			4288.00	
Stubb	1.00			4289.00	
Recorder	0.00	8373	Inside	4289.00	
Recorder	0.00	8356	Outside	4289.00	
Perforations	2.00			4291.00	
Bullnose	5.00			4296.00	8.00 Bottom Packers & Anchor

Total Tool Length: 36.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55743

DST#: 5

ATTN: Vern Schrag

Test Start: 2014.04.19 @ 00:12:19

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	mcgo 60%g 20%o 20%m	0.305
434.00	go 20%g 80%o	5.514
620.00	go 40%g 60%o	8.697
0.00	1178 GIP	0.000

Total Length: 1116.00 ft Total Volume: 14.516 bbl

Num Fluid Samples: 0

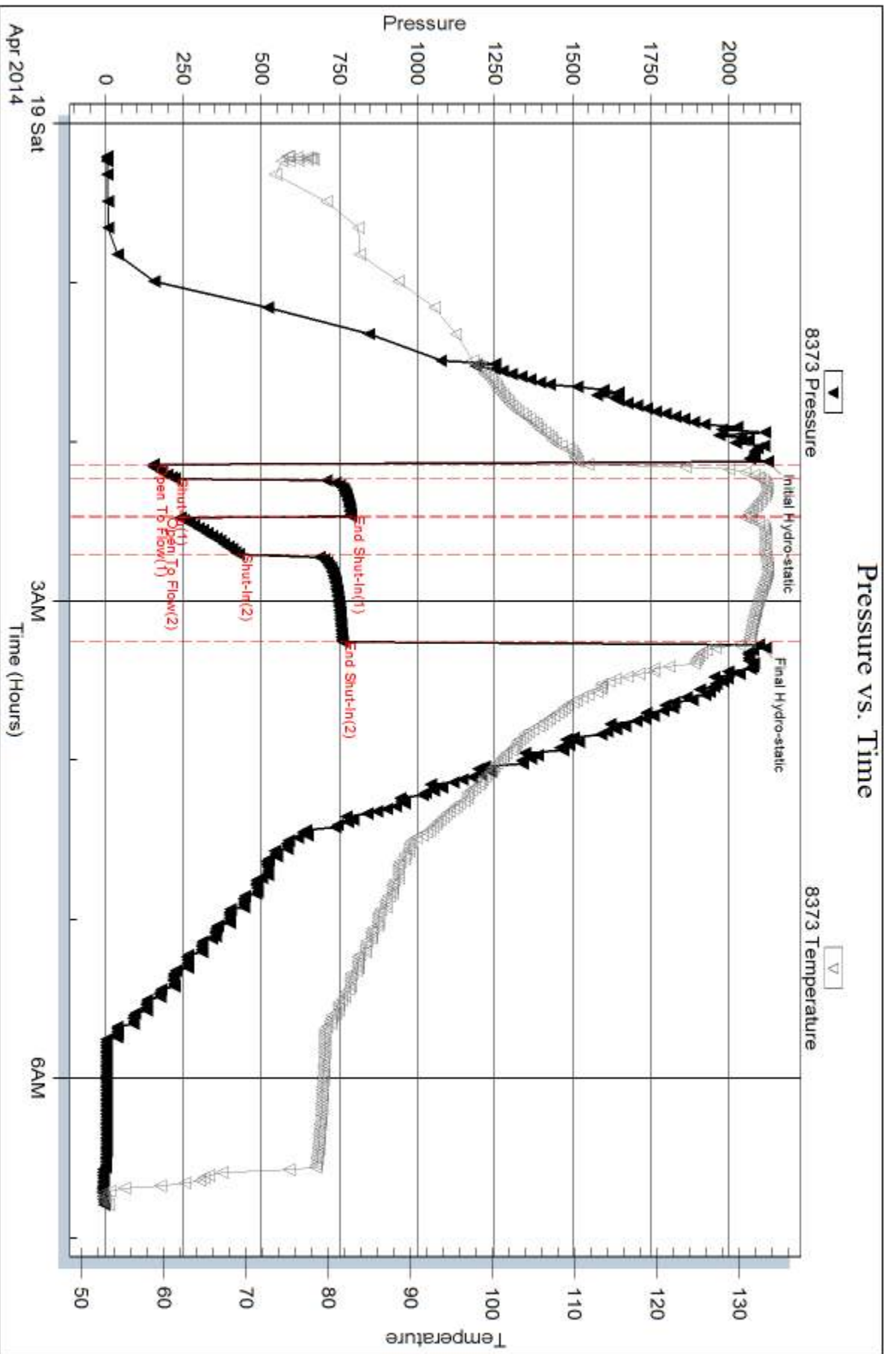
Num Gas Bombs: 0

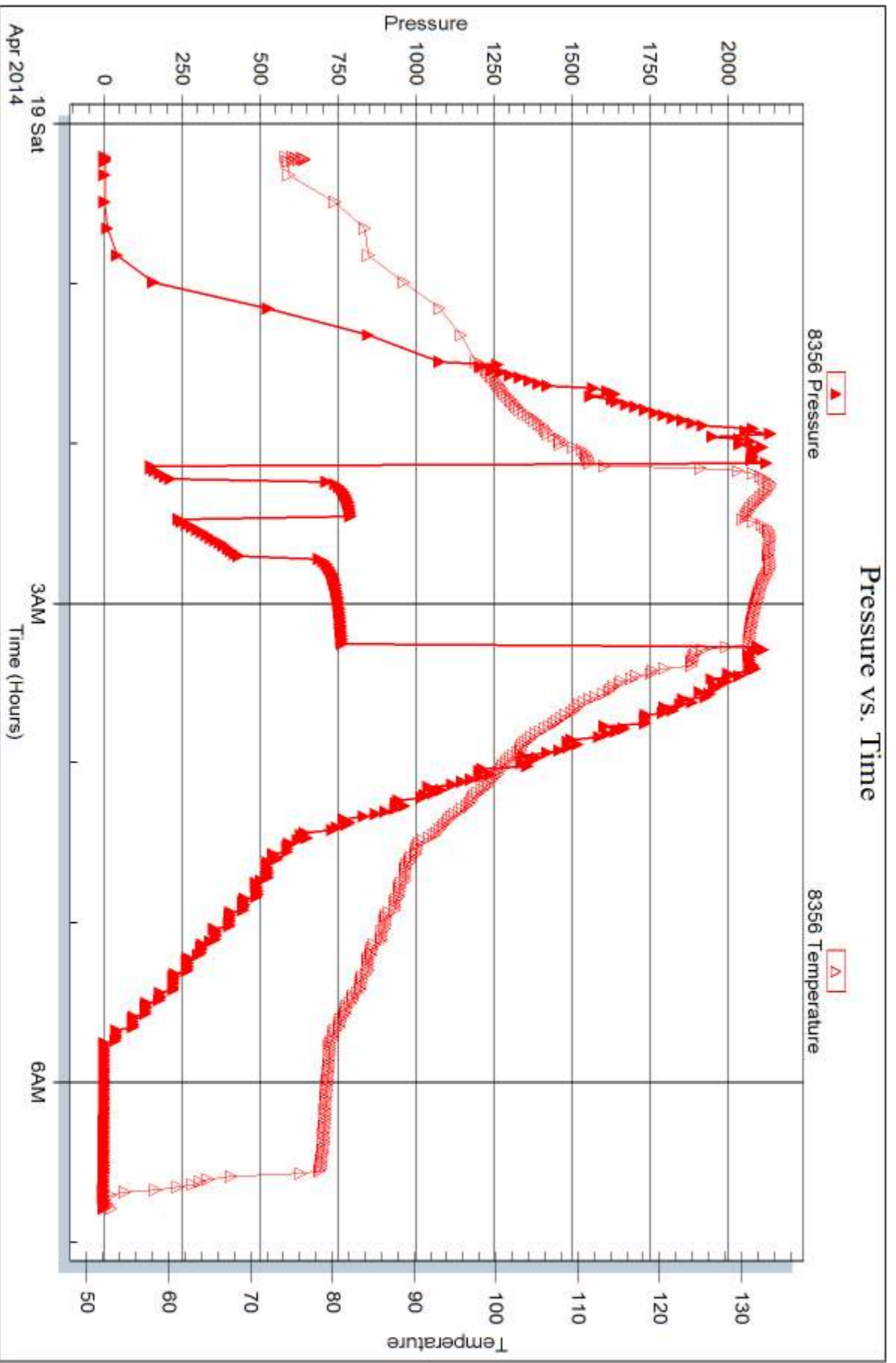
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 37@60=37







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.20 @ 02:57:00

End Date: 2014.04.20 @ 08:36:30

Job Ticket #: 55744 DST #: 6

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

Printed: 2014.04.24 @ 14:28:43



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55744 **DST#: 6**
 Test Start: 2014.04.20 @ 02:57:00

GENERAL INFORMATION:

Formation: **Marmaton**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:00:30
 Time Test Ended: 08:36:30
Interval: 4331.00 ft (KB) To 4440.00 ft (KB) (TVD)
 Total Depth: 4440.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

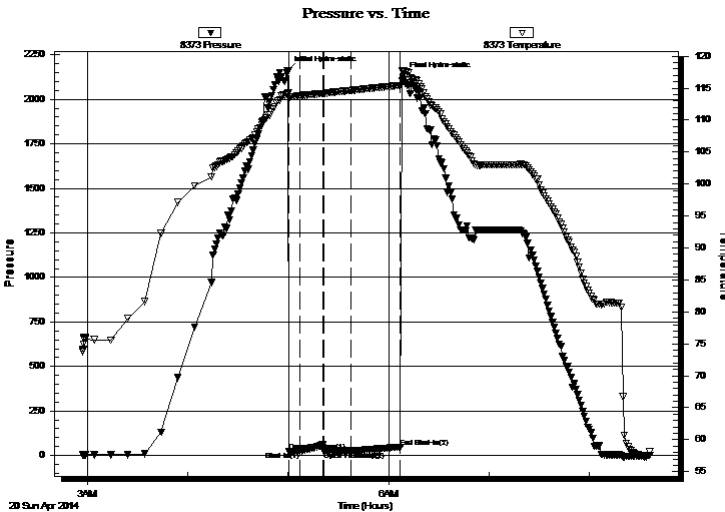
Serial #: 8373

Inside

Press@RunDepth: 25.12 psig @ 4336.00 ft (KB)
 Start Date: 2014.04.20 End Date: 2014.04.20
 Start Time: 02:57:05 End Time: 08:36:29
 Capacity: 8000.00 psig
 Last Calib.: 2014.04.20
 Time On Btm: 2014.04.20 @ 04:59:30
 Time Off Btm: 2014.04.20 @ 06:08:30

TEST COMMENT: IF: 1/4" blow built 1/2"
 IS: No return.
 FF: Surface blow never built.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.91	114.17	Initial Hydro-static
1	24.61	113.67	Open To Flow (1)
8	23.66	113.83	Shut-In(1)
21	59.75	114.15	End Shut-In(1)
22	25.77	114.12	Open To Flow (2)
38	25.12	114.64	Shut-In(2)
67	47.77	115.44	End Shut-In(2)
69	2128.37	117.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud oil spots 100%m	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

ATTN: Vern Schrag

Job Ticket: 55744 **DST#: 6**
Test Start: 2014.04.20 @ 02:57:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:00:30

Time Test Ended: 08:36:30

Interval: 4331.00 ft (KB) To 4440.00 ft (KB) (TVD)

Total Depth: 4440.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Reference Elevations: 2752.00 ft (KB)

2745.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8356 **Outside**

Press@RunDepth: psig @ 4336.00 ft (KB)

Start Date: 2014.04.20

End Date:

2014.04.20

Start Time: 02:57:20

End Time:

08:36:44

Capacity: 8000.00 psig

Last Calib.:

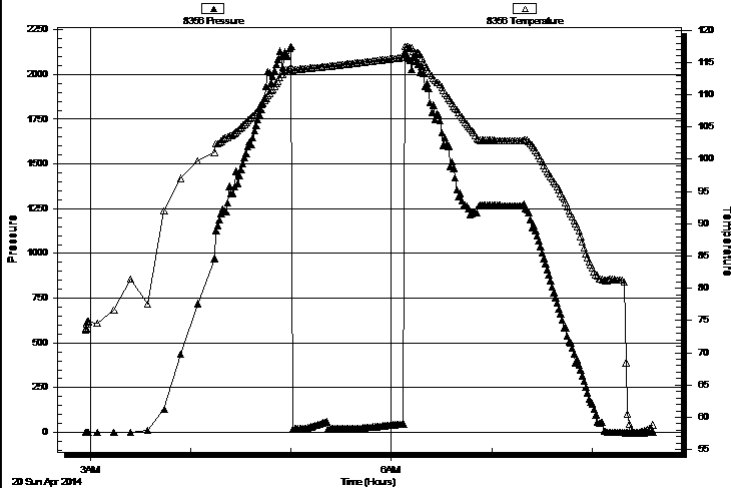
2014.04.20

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: 1/4" blow built 1/2"
IS: No return.
FF: Surface blow never built.
FS: No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud oil spots 100%m	0.05

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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55744

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.04.20 @ 02:57:00

Tool Information

Drill Pipe:	Length: 4198.00 ft	Diameter: 3.80 inches	Volume: 58.89 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: 25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 59.50 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4331.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	113.00 ft			
Tool Length:	137.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Stubb	1.00			4308.00	
Shut In Tool	5.00			4313.00	
Hydraulic tool	5.00			4318.00	
Jars	5.00			4323.00	
Safety Joint	3.00			4326.00	
Packer	5.00			4331.00	24.00 Bottom Of Top Packer
Packer - Shale	4.00			4335.00	
Stubb	1.00			4336.00	
Recorder	0.00	8373	Inside	4336.00	
Recorder	0.00	8356	Outside	4336.00	
Perforations	8.00			4344.00	
Change Over Sub	1.00			4345.00	
Drill Pipe	93.00			4438.00	
Change Over Sub	1.00			4439.00	
Bullnose	5.00			4444.00	113.00 Anchor Tool

Total Tool Length: 137.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55744

DST#: 6

ATTN: Vern Schrag

Test Start: 2014.04.20 @ 02:57:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud oil spots 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

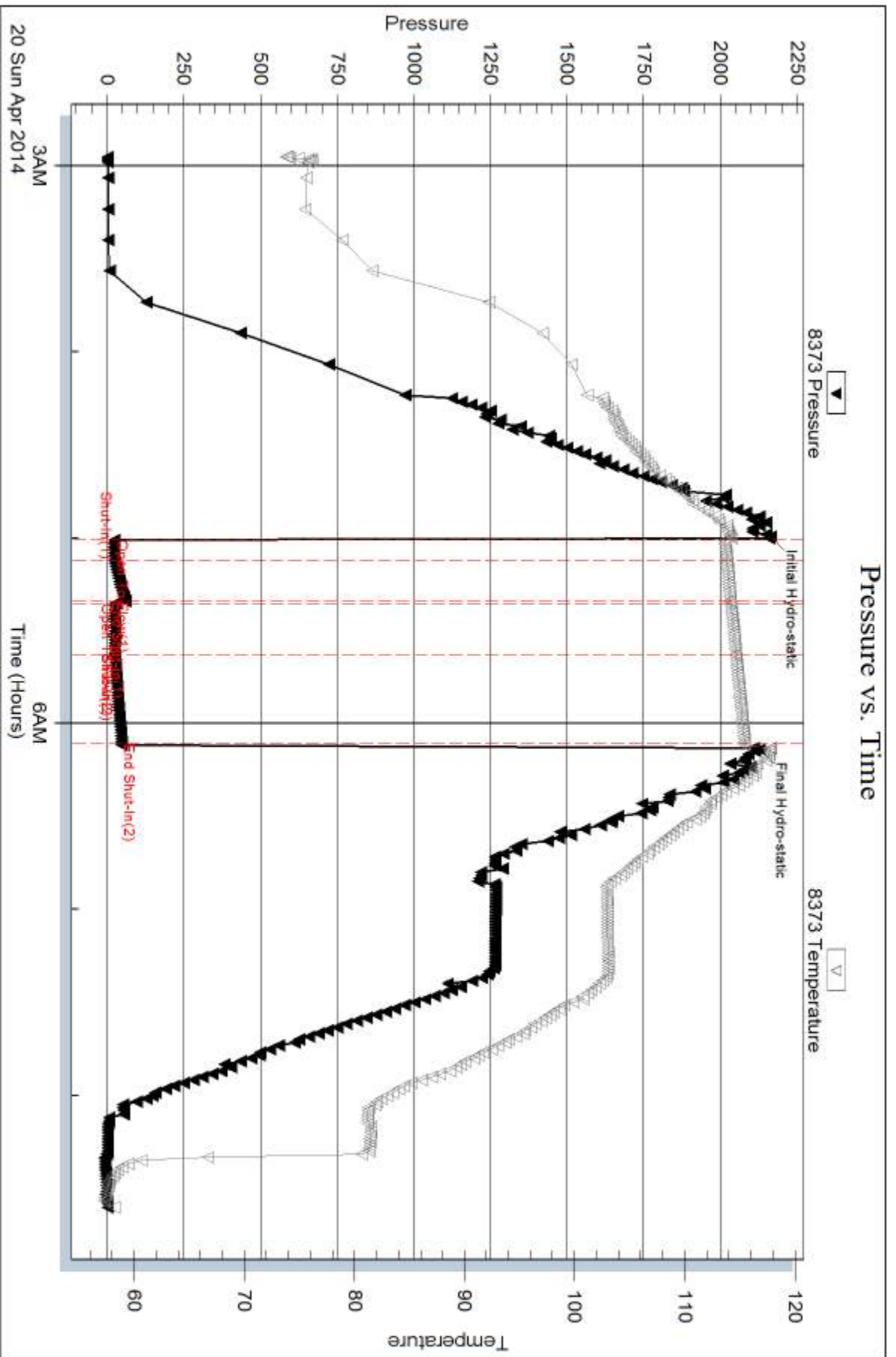
Num Gas Bombs: 0

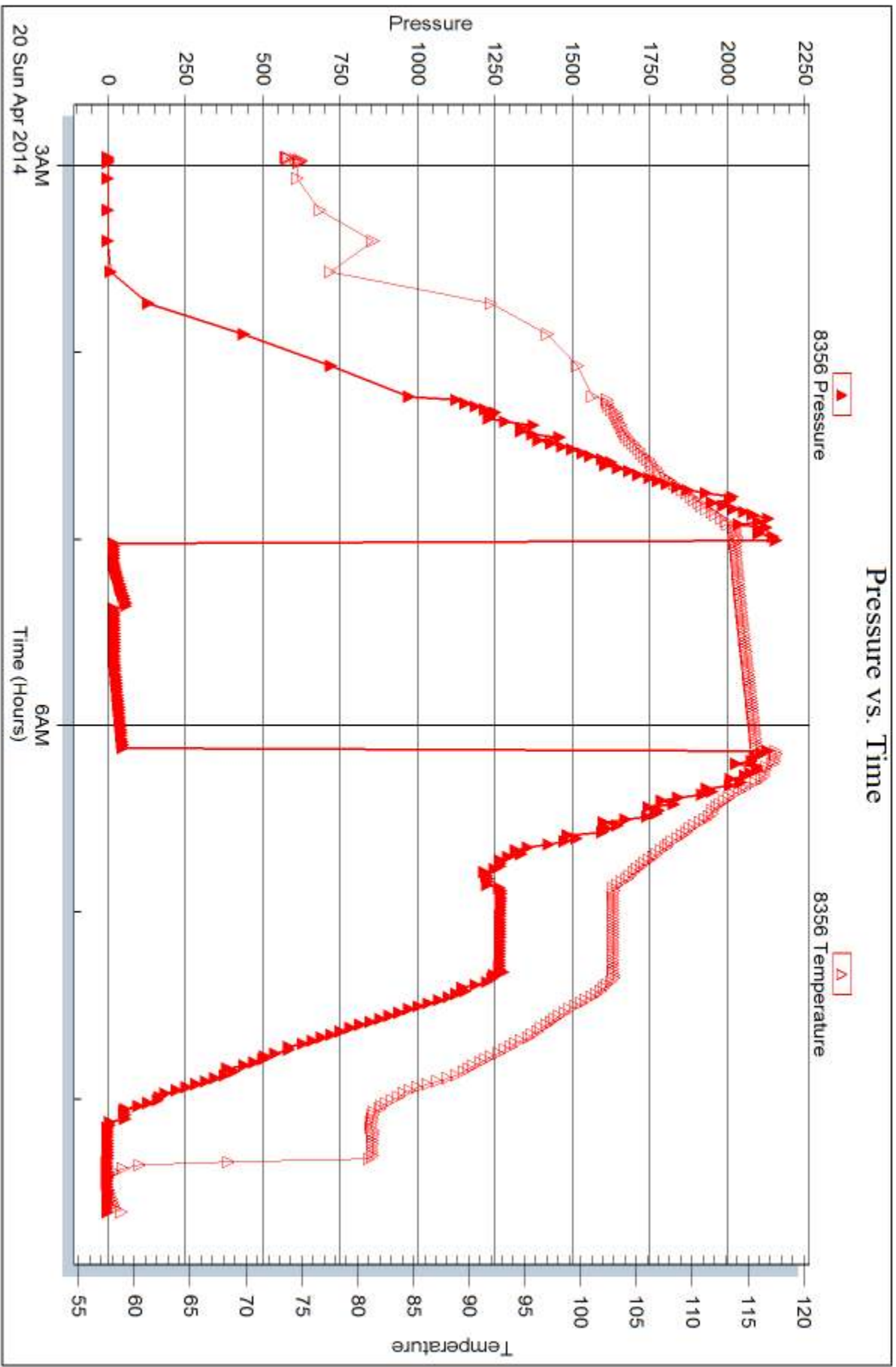
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering**

562 W State Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

RH A Unit #1-33

33-18s-28w Lane KS

Start Date: 2014.04.21 @ 03:12:15

End Date: 2014.04.21 @ 09:09:15

Job Ticket #: 55745 DST #: 7

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

Printed: 2014.04.24 @ 14:27:55



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

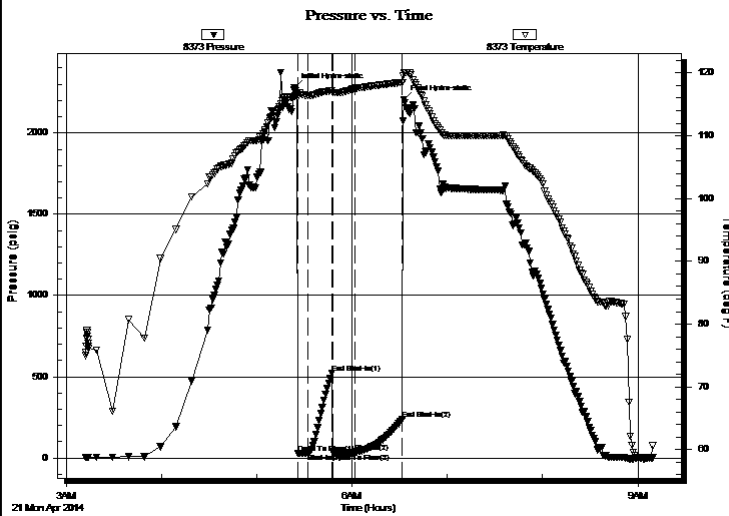
33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55745 **DST#: 7**
 Test Start: 2014.04.21 @ 03:12:15

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:25:45
 Time Test Ended: 09:09:15
Interval: 4442.00 ft (KB) To 4585.00 ft (KB) (TVD)
 Total Depth: 4585.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8373 Inside
 Press@RunDepth: 32.24 psig @ 4443.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.21 End Date: 2014.04.21 Last Calib.: 2014.04.21
 Start Time: 03:12:20 End Time: 09:09:14 Time On Btm: 2014.04.21 @ 05:23:45
 Time Off Btm: 2014.04.21 @ 06:32:45

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



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2279.31	116.27	Initial Hydro-static
2	28.01	116.04	Open To Flow (1)
9	28.81	116.36	Shut-In(1)
24	523.59	117.16	End Shut-In(1)
24	30.43	116.87	Open To Flow (2)
38	32.24	117.57	Shut-In(2)
68	240.30	118.52	End Shut-In(2)
69	2206.21	120.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100% m	0.05

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Larson Engineering
 562 W State Rd 4
 Olmitz, KS 67564
 ATTN: Vern Schrag

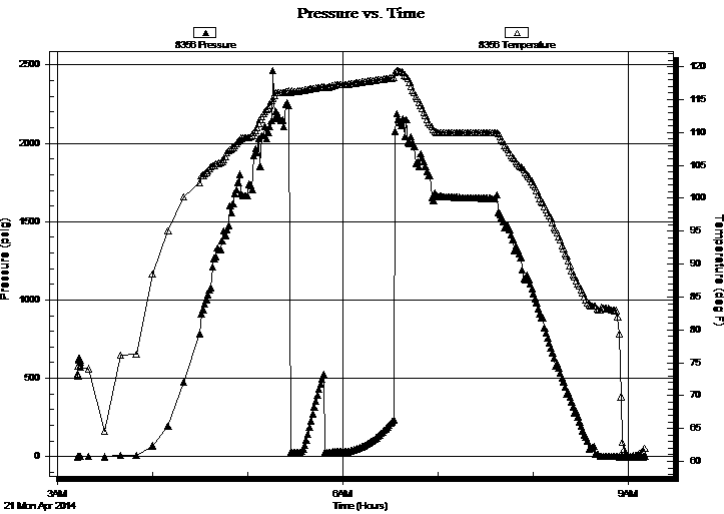
33-18s-28w Lane KS
RH A Unit #1-33
 Job Ticket: 55745 **DST#: 7**
 Test Start: 2014.04.21 @ 03:12:15

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:25:45
 Time Test Ended: 09:09:15
Interval: 4442.00 ft (KB) To 4585.00 ft (KB) (TVD)
 Total Depth: 4585.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 2752.00 ft (KB)
 2745.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8356 Outside
 Press@RunDepth: psig @ 4443.00 ft (KB)
 Start Date: 2014.04.21 End Date: 2014.04.21
 Start Time: 03:13:01 End Time: 09:09:55
 Capacity: 8000.00 psig
 Last Calib.: 2014.04.21
 Time On Btm:
 Time Off Btm:

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



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

* 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

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.04.21 @ 03:12:15

Tool Information

Drill Pipe:	Length: 4294.00 ft	Diameter: 3.80 inches	Volume: 60.23 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: 25000.00 lb
Drill Collar:	Length: 125.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 60.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4442.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	143.00 ft			
Tool Length:	171.00 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
Stubb	1.00			4415.00	
Shut In Tool	5.00			4420.00	
Hydraulic tool	5.00			4425.00	
Jars	5.00			4430.00	
Safety Joint	3.00			4433.00	
Packer	5.00			4438.00	28.00 Bottom Of Top Packer
Packer	4.00			4442.00	
Stubb	1.00			4443.00	
Recorder	0.00	8373	Inside	4443.00	
Recorder	0.00	8356	Outside	4443.00	
Perforations	11.00			4454.00	
Change Over Sub	1.00			4455.00	
Drill Pipe	124.00			4579.00	
Change Over Sub	1.00			4580.00	
Bullnose	5.00			4585.00	143.00 Bottom Packers & Anchor

Total Tool Length: 171.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering

33-18s-28w Lane KS

562 W State Rd 4
Olmitz, KS 67564

RH A Unit #1-33

Job Ticket: 55745

DST#: 7

ATTN: Vern Schrag

Test Start: 2014.04.21 @ 03:12:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

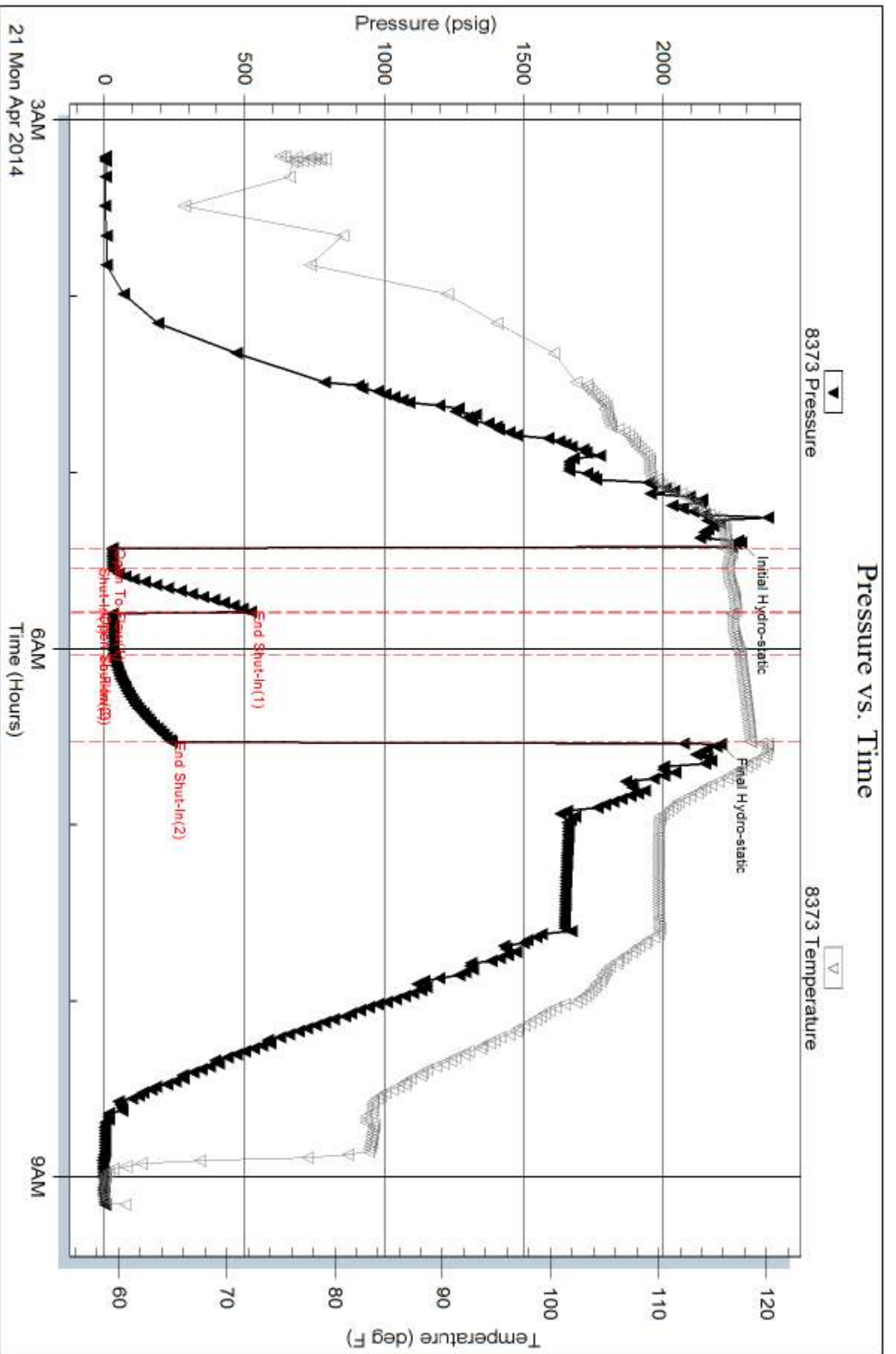
Num Gas Bombs: 0

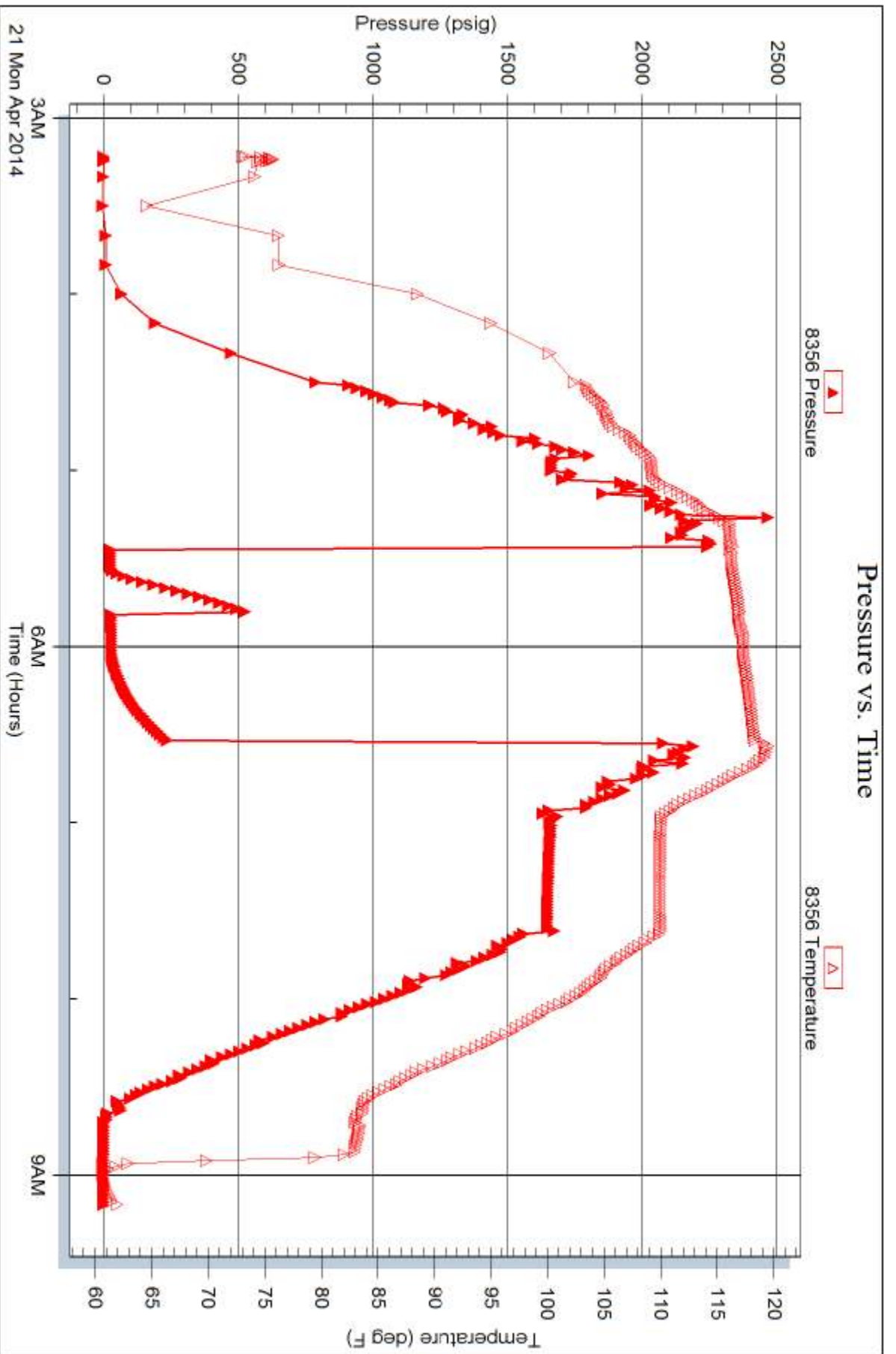
Serial #:

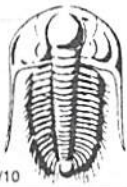
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55739

Well Name & No. RH "A" Unit 1-33 Test No. 1 Date 4-16-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address 562 W State Rd 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig 4D #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State KS

Interval Tested 4154 4180 Zone Tested H
 Anchor Length 26 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 4149 Drill Collars Run 125 Vis 52
 Bottom Packer Depth 4154 Wt. Pipe Run _____ WL 7.2
 Total Depth 4180 Chlorides 2800 ppm System LCM 4

Blow Description FF! Weak surface blow.
FS! No return.
FF! No blow.
FS! No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>mud 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 2 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2133</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>13:15</u>
(B) First Initial Flow <u>31</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>13:50</u>
(C) First Final Flow <u>37</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>15:44</u>
(D) Initial Shut-In <u>912</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>16:49</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>18:20</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>56</u> - 86.80	Comments _____
(G) Final Shut-In <u>952</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2048</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

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

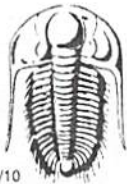
Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1661.80

Total 1661.80
 MP/DST Disc't _____

Approved By Vern Schrag Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55740

Well Name & No. RH "A" unit 1-33 Test No. 2 Date 4-17-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State KS

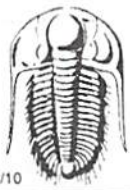
Interval Tested 4222 4241 Zone Tested J
 Anchor Length _____ Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 53
 Bottom Packer Depth 4222 Wt. Pipe Run _____ WL 7.2
 Total Depth 4241 Chlorides 2800 ppm System LCM 4
 Blow Description IF: Weak blow built to 1 1/4 in 5 min,
FS: No return.
FF: 1/4 blow built to 3 in 15 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free oil</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>30</u>	<u>0cm</u>	<u>30</u>	<u>0</u>	<u>70</u>	<u>0</u>
<u>62</u>	<u>0cm</u>	<u>5</u>	<u>0</u>	<u>95</u>	<u>0</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 93 BHT 119 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic	<u>2147</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>5:15</u>
(B) First Initial Flow	<u>36</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>5:29</u>
(C) First Final Flow	<u>45</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>7:05</u>
(D) Initial Shut-In	<u>583</u>	<input checked="" type="checkbox"/> Circ Sub	<u>NIL</u>	T-Pulled	<u>8:10</u>
(E) Second Initial Flow	<u>48</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>10:00</u>
(F) Second Final Flow	<u>78</u>	<input checked="" type="checkbox"/> Mileage	<u>56</u> 86.80	Comments	
(G) Final Shut-In	<u>582</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2076</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>1661.80</u>
Final Shut-In	<u>30</u>	<input type="checkbox"/> Accessibility		MP/DST Disc't	
		Sub Total	<u>1661.80</u>		

Approved By Vern Schrag Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55741

Well Name & No. RH 'A' Unit 1-33 Test No. 3 Date 4-17-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Line State KS

Interval Tested 4254 4265 Zone Tested K
 Anchor Length _____ Drill Pipe Run 4132 Mud Wt. 9.2
 Top Packer Depth 4249 Drill Collars Run 125 Vis 51
 Bottom Packer Depth 4254 Wt. Pipe Run _____ WL 7.6
 Total Depth 4265 Chlorides 3000 ppm System LCM 4

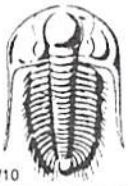
Blow Description IF: Weak surface blow.
IS: No return.
EF: Surface blow built to 1 in 30 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Free oil</u>	<u>100</u>			
<u>5</u>	<u>ocm</u>	<u>10</u>		<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 7 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 2158 Test 1250 T-On Location 17:45
 (B) First Initial Flow 32 Jars 250 T-Started 17:54
 (C) First Final Flow 39 Safety Joint 75 T-Open 19:34
 (D) Initial Shut-In 584 Circ Sub NIL T-Pulled 21:25
 (E) Second Initial Flow 29 Hourly Standby T-Out 23:00
 (F) Second Final Flow 30 Mileage 56- 86.80 Comments _____
 (G) Final Shut-In 600 Sampler _____
 (H) Final Hydrostatic 2152 Straddle _____

Initial Open 5 Ruined Shale Packer _____
 Initial Shut-In 15 Ruined Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 60 Extra Recorder _____
 Sub Total 0
 Total 1661.80
 MP/DST Disc't _____

Approved By Vern C Schrag Our Representative [Signature]
 TriLOBITE TESTING INC. shall not be liable for damaged or 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. 55742

Well Name & No. RH A unit 1-33 Test No. 4 Date 4-18-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HP #3
 Location: Sec. 33 Twp. 18^s Rge. 28^w Co. Lane State KS

Interval Tested 4252 4270 Zone Tested K
 Anchor Length _____ Drill Pipe Run 4104 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 51
 Bottom Packer Depth 4252 Wt. Pipe Run _____ WL 7.6
 Total Depth 4270 Chlorides 3060 ppm System LCM 4
 Blow Description IF: surface blow built to 1/4,
IS: No return,
FF: surface blow built to 1/2.
FS: No return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>7</u>	<u>0CM</u>	<u>30</u>		<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 7 BHT 108 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

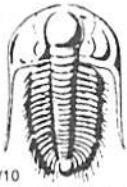
(A) Initial Hydrostatic 2119 Test 1250 T-On Location 5:40
 (B) First Initial Flow 31 Jars 250 T-Started 6:08
 (C) First Final Flow 31 Safety Joint 75 T-Open 8:10
 (D) Initial Shut-In 528 Circ Sub N/C T-Pulled 9:15
 (E) Second Initial Flow 30 Hourly Standby _____ T-Out 10:50
 (F) Second Final Flow 32 Mileage 56 - 86.80 Comments _____
 (G) Final Shut-In 561 Sampler _____
 (H) Final Hydrostatic 2087 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____

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

Sub Total 1661.80 Total 1661.80 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55743

Well Name & No. RH A Unit 1-33 Test No. 5 Date 4-18-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. T8S Rge. R8W Co. Lane State KS

Interval Tested 4288 4296 Zone Tested L
 Anchor Length _____ Drill Pipe Run 4165 Mud Wt. 9.3
 Top Packer Depth _____ Drill Collars Run 125 Vis 49
 Bottom Packer Depth 4288 Wt. Pipe Run _____ WL 7.6
 Total Depth 4296 Chlorides 2800 ppm System LCM 3

Blow Description IF: BoB in 30 sec.
IS: BoB in 12 min.
FK: BoB in 1 min.
FS: BoB in 15 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>620</u>	<u>90</u>	<u>40</u>	<u>60</u>		
<u>434</u>	<u>90</u>	<u>20</u>	<u>80</u>		
<u>62</u>	<u>mc90</u>	<u>60</u>	<u>20</u>		<u>20</u>
	<u>1178</u>				

Rec Total 1116 BHT 132 Gravity 37 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2125 Test 1250 T-On Location 23:50
 (B) First Initial Flow 154 Jars 250 T-Started 00:12
 (C) First Final Flow 220 Safety Joint 75 T-Open 2:07
 (D) Initial Shut-In 786 Circ Sub NIL T-Pulled 3:12
 (E) Second Initial Flow 240 Hourly Standby _____ T-Out 6:45
 (F) Second Final Flow 428 Mileage 56- 86.80 Comments _____
 (G) Final Shut-In 759 Sampler _____
 (H) Final Hydrostatic 2098 Straddle _____
 Shale Packer _____
 Ruined Shale Packer _____
 Extra Packer _____
 Ruined Packer _____
 Extra Copies _____

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

Sub Total 1661.80

Approved By Vern C. Schrag Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55744

Well Name & No. RH A Unit 1-33 Test No. 6 Date 4-20-14
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 33 Twp. 18^S Rge. 28^W Co. Lane State K5

Interval Tested 4331 4440 Zone Tested Marmaton
 Anchor Length _____ Drill Pipe Run 4198 Mud Wt. 9.2
 Top Packer Depth _____ Drill Collars Run 125 Vis 61
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 6.8
 Total Depth 4440 Chlorides 2200 ppm System LCM 3

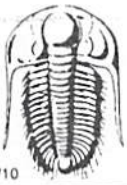
Blow Description FF: 1/4 blow built to 1/2,
IS: No return.
FF: surface blow never built,
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud 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 10 BHT 115 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2162</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:25</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2:57</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:00</u>
(D) Initial Shut-In <u>59</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>6:05</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>8:35</u>
(F) Second Final Flow <u>225</u>	<input checked="" type="checkbox"/> Mileage <u>56-86.80</u>	Comments _____
(G) Final Shut-In <u>47</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>2128</u>	<input type="checkbox"/> Straddle	_____
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Initial Open <u>5</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Initial Shut-In <u>15</u>	<input type="checkbox"/> Accessibility	Total <u>1911.80</u>
Final Flow <u>15</u>	Sub Total <u>1911.80</u>	MP/DST Disc't _____
Final Shut-In <u>30</u>		

Approved By [Signature] Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55745

Well Name & No. RH A unit 1-33 Test No. 7 Date 4-21
 Company Larson Engineering Elevation 2752 KB 2745 GL
 Address _____
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 33 Twp. 18S Rge. 28W Co. Lane State Ks

Interval Tested 4442 4585 Zone Tested Cherokee
 Anchor Length 143 Drill Pipe Run 4294 Mud Wt. 9.2
 Top Packer Depth 4437 Drill Collars Run 125 Vis 58
 Bottom Packer Depth 4442 Wt. Pipe Run _____ WL 7.6
 Total Depth 4585 Chlorides 2000 ppm System LCM 3

Blow Description IF: 1/2 blow built to 1,
IS: No return.
FF: No blow.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 118 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2279</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:45</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:12</u>
(C) First Final Flow <u>28</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:26</u>
(D) Initial Shut-In <u>523</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>6:31</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:10</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>56 -</u> 86.80	Comments _____
(G) Final Shut-In <u>240</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2206</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>5</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1911.80</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1911.80</u>	

Approved By Vern Schrag Our Representative [Signature]

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WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

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

Well Name: RH A Unit #1-33
Location: NE NE NW NE 33-18S-28W
Licence Number: API: 15-101-22506
Spud Date: April 10, 2014
Surface Coordinates: 225' FNL & 1326' FEL

Region: Lane Co., KS
Drilling Completed: April 22, 2014

Bottom Hole Coordinates:
Ground Elevation (ft): 2745' K.B. Elevation (ft): 2752'
Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4636'
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
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 616', 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 263'
Set 5-1/2" production casing

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 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; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Dan Schmidt, Log total depth (4633') was three feet short to rotary total depth (4636').

DRILL STEM TEST #1:

LKC "H-zone": Interval: 4154-4180 (26'); Blow: weak surf IFF, no RB, no blow FFP, no RB; Times: 5-15-30-60; Recovery: 2' mud w/oil spots (100%M); Pressures: HP: 2133-2048, SIP: 912-952, FP: 31-37, 30-32; BHT: 114 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #2:

LKC "J-zone": Interval: 4222-4241 (19'); Blow: weak incr 1-1/4" IFF, no RB, weak incr 3" FFP, no RB; Times: 5-15-30-60; Recovery: 93' TF; Grindouts: 1' oil (100%O), 30' OCM (30%O, 70%M), 62' SOCM (5%O, 95%M, sample taken at bottom of last stand); Pressures: HP: 2147-2076, SIP: 583-582, FP: 36-45, 48-78; BHT: 119 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #3:

LKC (Cannville): Interval: 4254-4265 (11'); Blow: surf IFF, no RB, weak incr 1" FFP, no RB; Times: 5-15-30-60; Recovery: 2' FO (100%O), 5' SOCM (10%O, 90%M); Pressures: HP: 2158-2152, SIP: 584-600, FP: 32-39, 29-30; BHT: 114 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #4:

LKC (Cannville, K-zone): Interval: 4252-4270 (18'); Blow: weak incr 1/4" IFF, no RB, weak incr 1/2" FFP, no RB; Times: 5-15-30-60; Recovery: 7' OCM (30%O, 70%M); Pressures: HP: 2119-2087, SIP: 528-561, FP: 31-31, 30-32; BHT: 108 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #5:

LKC (Middle Creek): Interval: 4288-4296 (8'); Blow: BOB 1/2 min IFF, BOB RB 12 min ISIP; BOB 1 min FFP, BOB RB 15 min FSIP; Times: 5-15-30-60; Recovery: 1178' GIP & 1116' TF; Grindouts: 620' GO (40%G, 60%O, grav 37), 434' GO (20%G, 80%O), 62' MGO (60%G, 20%O, 20%M); Pressures: HP: 2125-2098, SIP: 786-759, FP: 154-220, 240-428; BHT: 132 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #6:

Pleasanton, Marmaton: Interval: 4331-4440 (109'); Blow: weak 1/2" IFF, no RB, weak surf FFP, no RB; Times: 5-15-30-60; Recovery: 10' mud (100%M); Pressures: HP: 2162-2128, SIP: 59-47; FP: 24-23, 25-25; BHT: 115 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

DRILL STEM TEST #7:

Pawnee thru Cherokee Sand: Interval: 4442-4585 (143'); Blow: weak incr 1" IFF, no RB, no blow FFP, no RB; Times: 5-15-30-60; Recovery: 10' mud (100%M); Pressures: HP: 2279-2206, SIP: 523-240, FP: 28-28, 30-32; BHT: 118 F; Trilobite Testing, Inc., Scott City, KS, Brandon Turley.

