Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1200271

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 # 3842
Name: Larson Engineering, Inc. dba Larson Operating Company
Address 1: 562 W STATE RD 4
Address 2:
City: OLMITZ State: KS Zip: 67564 + 8561
Contact Person: Thomas Larson
Phone: (620) 653-7368
CONTRACTOR: License # 33935
Name: H. D. Drilling, LLC
Wellsite Geologist: Vernon Schrag
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 #:

1/25/2014	2/6/2014	2/27/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-101-22489-00-00
Spot Description:
NW SE NW SE Sec. 31 Twp. 18 S. R. 27 ☐ East ☑ West
1898 Feet from ☐ North / ☑ South Line of Section
1783 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Lane
Lease Name: Trost Well #: 1-31
Field Name:
Producing Formation: L-KC
Elevation: Ground: 2719 Kelly Bushing: 2726
Total Vertical Depth: 4695 Plug Back Total Depth: 4550
Amount of Surface Pipe Set and Cemented at: 277 Feet
Multiple Stage Cementing Collar Used? ☑ Yes ☐ No
If yes, show depth set: 2031 Feet
If Alternate II completion, cement circulated from: 2031
feet depth to: 0 w/ 150 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 19500 ppm Fluid volume: 1500 bbls
Dewatering method used: Evaporated

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: 05/21/2014
☑ **Confidential Release Date:** 05/26/2016
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 05/21/2014

[redacted] 1200271

Operator Name: Larson Engineering, Inc. dba Larson Operating Company Lease Name: Trost Well #: 1-31

Sec. 31 Twp. 18 S. R. 27 ☐ East ☑ West County: Lane

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Dual Induction
Dual Comp Porosity
Microresistivity

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name Attached Top Attached Datum Attached

CASING RECORD ☑ New ☐ 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
Surface	12.25	8.625	20	277	Class A	175	2% gel, 3a% CC
Production	7.875	5.5	15.5	4680	EA-2	125	7#/sk gilsonite, 1/4#/sk flocee

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ Plug Off Zone	0-2031	SMD	150	1/4#/sk flocele
	-			

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 *(Amount and Kind of Material Used)*	Depth
4	4270-74	250 gal 15% RWR-1	4270-74

TUBING RECORD: Size: 2.375 Set At: 4541 Packer At: Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR. 2/27/2014

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: ☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL: 4270 - 4274

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Trost 1-31
Doc ID	1200271

Tops

Name	Top	Datum
Anhydrite	2076	+650
Base Anhydrite	2110	+616
Heebner	3955	-1228
Lansing	3996	-1269
Stark Sh	4263	-1536
Marmaton	4396	-1669
Pawnee	4459	-1732
Ft. Scott	4545	-1788
Cherokee Sh	4539-	1812

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Trost 1-31
Doc ID	1200271

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	20	277	Class A	175	2% gel, 3a% CC
Production	7.875	5.5	15.5	4680	EA-2	125	7#/sk gilsonite, 1/4#/sk flocee

CONSOLIDATED
Oil Well Services, LLC

265621

TICKET NUMBER 38143
LOCATION Oakley KS
FOREMAN Dane Retzloff, Jerry Yates

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
1-23-14	4802	Trost 1-31	31	18s	27w	Lane KS

CUSTOMER: Larson Engineering Inc.
MAILING ADDRESS: 562 west State RD 4
CITY: Olmitz | STATE: KS | ZIP CODE: 67564

Dighton East to RD Quantum South to RD 120 Entrinto

TRUCK #	DRIVER	TRUCK #	DRIVER
57	Travis		
693	Jake		

JOB TYPE Surface | HOLE SIZE 12 1/4 | HOLE DEPTH 280 | CASING SIZE & WEIGHT 8 5/8 20#
CASING DEPTH 280 | DRILL PIPE 4.5 | TUBING | OTHER
SLURRY WEIGHT 14.8 | SLURRY VOL 1.36 | WATER gal/sk 7.5 | CEMENT LEFT In CASING 20'
DISPLACEMENT 16.9 | DISPLACEMENT PSI | MIX PSI | RATE

REMARKS: Safety meeting on HD Rig #. Run casing Break circ. Hook up to pump truck mix 175 sks class A cement 3% cc 2% gel. wash up pump and lines displace 17 BBLs water and shut in. Cement did circulate.

circulate 4 1/2 cement to pit

Trucks Dane + Crew

ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401 S	1	PUMP CHARGE	1150	1150.00
5406	25	MILEAGE	5.25	131.25
5407	8.3	Ton Mileage Delivery (min)	430	430.00
1104 S	175 SKS	Class A cement	18.55	3246.25
1102	493	Calcium Chloride	.94	463.42
1118 B	329	Bentonite	.27	88.83
1111	100	Salt	—	—
			sub	5509.75
			less 10%	550.98
			sub	4958.77
			7.15	SALES TAX 244.43
				ESTIMATED TOTAL 5203.20

completed

Ravin 3737

AUTHORIZTION Rudyard Turner TITLE Trucker DATE 1-25-14

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

SWIFT Services, Inc.

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

TICKET 25855

PAGE 1 OF 2

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. Ness City KS	1-31	Test	Lane	KS	Dighton	7 Feb 14	
2.	TICKET TYPE ☐ SERVICE ☐ SALES	CONTRACTOR H-D	RIG NAME/NO. 3	SHIPPED VIA CT	DELIVERED TO location	ORDER NO.	
3.	WELL TYPE Oil	WELL CATEGORY Development	JOB PURPOSE cement long string 5½ in	WELL PERMIT NO.		WELL LOCATION 31-18-27	
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
575		1			MILEAGE TRK 114	30	mi			6 00	180 00
578		1			Pump Charge	1	ea			1500 00	1500 00
325		1			standard cement (For EA-2)	155	sk			14 50	2247 50
284		1			calseal	700	lb	7	sk	35 00	245 00
283		1			salt	800	lb			0 20	160 00
292		1			HALAD-322	150	lb			8 00	1200 00
277		1			Kolseal (Gilsonite)	1085	lb			0 75	813 75
276		1			Flocele	25	lb			2 50	62 50
280		1			Flocheck-21	500	gal			3 00	1500 00
221		1			KCL liquid	2	gal			25 00	50 00
290		1			D-AIR	2	gal			42 00	84 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

DATE SIGNED | TIME SIGNED 2145 ☐ 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? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 1	8042 75
2	769 95
	8812 70
SUBTOTAL	
Lane TAX 7.15%	469 24
TOTAL	9281 94

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

SWIFT OPERATOR [signature] APPROVAL [signature]

Thank You!

SWIFT Services, Inc.

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

TICKET CONTINUATION

TICKET No. 25855

CUSTOMER Larson Engineering | WELL KDOT 1-31 | DATE 7 Feb 14 | PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT.	DF	TIME	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
419						Rotating head pitot	52	in	1	ea	200 00	200 00
581						SERVICE CHARGE 155	CUBIC FEET				2 00	310 00
583						MILEAGE CHARGE TOTAL WEIGHT 17330 LOADED MILES 30	TON MILES 259.95				1 00	259 95
											CONTINUATION TOTAL	

JOB LOG

SWIFT Services, Inc.

DATE 7 Feb 14 | PAGE NO. 1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Larson Engineering	1-31	TROST	cement long string	25855

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								155 sk SA-2 w/ GILSONITE & flocele
								500 gal Flocheck 21
								5½" x 15.5# casing, TD = 4692 port collar - 2031'
								set 4682' shoe jt 42.34'
	1700							on loc YRK 114
	1705							start 5½" x 15.5 casing in well
	1845							Drop ball - circulate - ROTATE
	2015	4	5				200	Pump 5 bbl KCL flush
		4	12				200	Pump 500 gal Flocheck 21
		4	15				200	Pump 15 bbl KCL flush
	2020		7					Plug RH - 30 sks
	2025	4	31				200	mix SA-2 cement 125 sk @ 15.3 ppg
								Drop latch down plug, wash out pump & line
	2042	6					200	Displace plug
		6	100				700	
	2100	6	110				1500	Land plug
								Release pressure to truck - dried up
	2105							wash truck
								Rack up
	2145							job complete
								thank
								Flint, Blaine, & Doug

SWIFT Services, Inc.

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

TICKET 25867

PAGE 1 OF 1

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. New City KS	1-31	TROST	Lane	KS	Dighton	21 Feb 14	
2.	TICKET TYPE ☐ SERVICE ☐ SALES	CONTRACTOR WILD WEST	RIG NAME/NO.	SHIPPED VIA CT	DELIVERED TO location	ORDER NO.	
3.	WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.		WELL LOCATION	
4.	oil	Development	cement port collar			31-18-27	
REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
575		1			MILEAGE TRK 114	40	mi			6 00	240 00
576D		1			Pump Charge	1	ea			1500 00	1500 00
330		1			SMD cement	150	sk			18 50	2775 00
276		1			flocele	50	lb			2 50	125 00
290		1			D-air	2	gal			42 00	84 00
288		1			sand	2	sk			22 00	44 00
581		1			service charge	235	sk			2 00	470 00
583		1			Drayage	23355	lb	467.98	TM	1 00	467 98

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. 1730

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? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	5705 98
Lane TAX 7.15%	216 50
TOTAL	5922 48

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

SWIFT OPERATOR | APPROVAL

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 21 Feb 14 | PAGE NO. 1

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Larson Engineering	1-31	TROST	cement port collar	25867

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								235sk SMD w/ ¼# flocele
								2 3/8 x 5 1/2 port collar - 2031'
	0930							on loc TRK 114
								sand spotted on plug 4000' - (20 Feb 14)
	0940		14			1000	1000	test to 1000 psi - held
		3 3/4	2			350		injrate - open port collar
	1005	4				400		mix SMD cement @ 11.2 ppg
	1010	4	20			500		- fluid to surface -
		4	82			600		—— cement to surface ——
								(150 sk mixed 15 to pit)
		2½	6			300		Displace 6 bbl H2O
								close port collar
	1038					1000	1000	test to 1000 psi - held
								Run 5 jts
	1050		20					Reverse hole clean
								- 2 cmt flags -
								wash truck
	1100							- Run down to wash sand
	1150		38					wash sand from plug
								latch onto plug
								Pick up
	1230							Job complete
								Thx
								Doug Flint & Blaine

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.01 @ 06:20:00
End Date: 2014.02.01 @ 12:13:45
Job Ticket #: 56691 DST #: 1

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

Printed: 2014.02.06 @ 14:46:18

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56691 **DST#: 1**

Test Start: 2014.02.01 @ 06:20:00

GENERAL INFORMATION:

Formation: **LKC K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:47:30
Time Test Ended: 12:13:45

Test Type: Conventional Bottom Hole (Initial)
Tester: Bob Hamel
Unit No: 71

Interval: 4260.00 ft (KB) To 4275.00 ft (KB) (TVD)
Total Depth: 4275.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

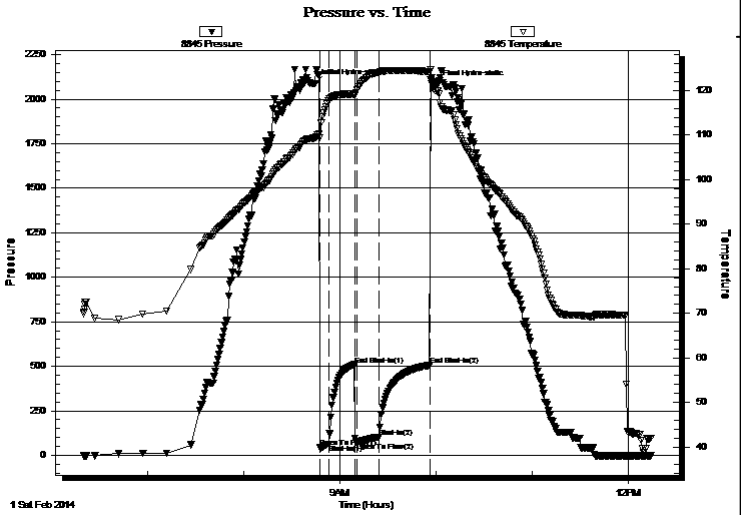
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8845 **Outside**

Press@RunDepth: 102.89 psig @ 4262.00 ft (KB)
Start Date: 2014.02.01 End Date: 2014.02.01
Start Time: 06:20:05 End Time: 12:13:44

Capacity: 8000.00 psig
Last Calib.: 2014.02.01
Time On Btm: 2014.02.01 @ 08:44:30
Time Off Btm: 2014.02.01 @ 09:59:45

TEST COMMENT: I.F. - 5 - BOB in 3 min
I.S.I. - 15 - Weak surface blow back throughout
F.F. - 15 - BOB in 3 min
F.S.I. - 30 - Weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2087.82	109.37	Initial Hydro-static
3	42.82	109.42	Open To Flow (1)
9	63.28	117.62	Shut-In(1)
25	509.58	119.19	End Shut-In(1)
27	71.75	120.21	Open To Flow (2)
40	102.89	124.12	Shut-In(2)
72	504.61	124.23	End Shut-In(2)
76	2084.31	119.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
147.00	S,W,C,M,C,G,O 5%WTR 5%MUD 15%GA 1.11%OIL	
126.00	S,M,C,G,O, 5 %MUD 10%GAS 85%OIL	1.77
10.00	CLEAN OIL 100%	0.14
0.00	63' G.I.P.	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56691 **DST#: 1**

Test Start: 2014.02.01 @ 06:20:00

GENERAL INFORMATION:

Formation: **LKC K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:47:30
Time Test Ended: 12:13:45

Test Type: Conventional Bottom Hole (Initial)
Tester: Bob Hamel
Unit No: 71

Interval: 4260.00 ft (KB) To 4275.00 ft (KB) (TVD)
Total Depth: 4275.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

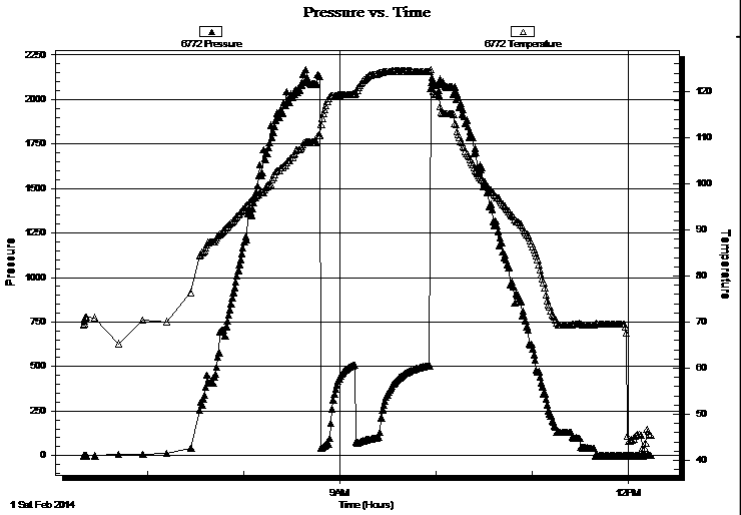
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6772 **Outside**

Press@RunDepth: psig @ 4262.00 ft (KB)
Start Date: 2014.02.01 End Date: 2014.02.01
Start Time: 06:20:05 End Time: 12:13:59

Capacity: 8000.00 psig
Last Calib.: 1899.12.30
Time On Btm:
Time Off Btm:

TEST COMMENT: I.F. - 5 - BOB in 3 min
I.S.I. - 15 - Weak surface blow back throughout
F.F. - 15 - BOB in 3 min
F.S.I. - 30 - Weak surface blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
147.00	S,W,C,M,C,G,O 5%WTR 5%MUD 15%GA 1.11%OIL	
126.00	S,M,C,G,O, 5 %MUD 10%GAS 85%OIL	1.77
10.00	CLEAN OIL 100%	0.14
0.00	63' G.I.P.	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56691 **DST#: 1**

Test Start: 2014.02.01 @ 06:20:00

Tool Information

Drill Pipe:	Length:	4150.00 ft	Diameter:	3.80 inches	Volume:	58.21 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	105.00 ft	Diameter:	2.25 inches	Volume:	0.52 bbl	Weight to Pull Loose:		65000.00 lb
					Total Volume:	58.73 bbl	Tool Chased		2.00 ft
Drill Pipe Above KB:		23.00 ft					String Weight:	Initial	60000.00 lb
Depth to Top Packer:		4260.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		15.00 ft							
Tool Length:		43.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4233.00		
Shut In Tool	5.00			4238.00		
Hydraulic tool	5.00			4243.00		
Jars	5.00			4248.00		
Safety Joint	3.00			4251.00		
Packer	5.00			4256.00	28.00	Bottom Of Top Packer
Packer	4.00			4260.00		
Stubb	1.00			4261.00		
Perforations	1.00			4262.00		
Recorder	0.00	6772	Outside	4262.00		
Recorder	0.00	8845	Outside	4262.00		
Perforations	8.00			4270.00		
Bullnose	5.00			4275.00	15.00	Bottom Packers & Anchor
Total Tool Length:	**43.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56691 **DST#: 1**

Test Start: 2014.02.01 @ 06:20:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	27.6 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	55.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.17 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2100.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
147.00	S,W,C,M,C,G,O 5%WTR 5%MUD 15%GAS 75	1.106
126.00	S,M,C,G,O, 5 %MUD 10%GAS 85%OIL	1.767
10.00	CLEAN OIL 100%	0.140
0.00	63' G.I.P.	0.000

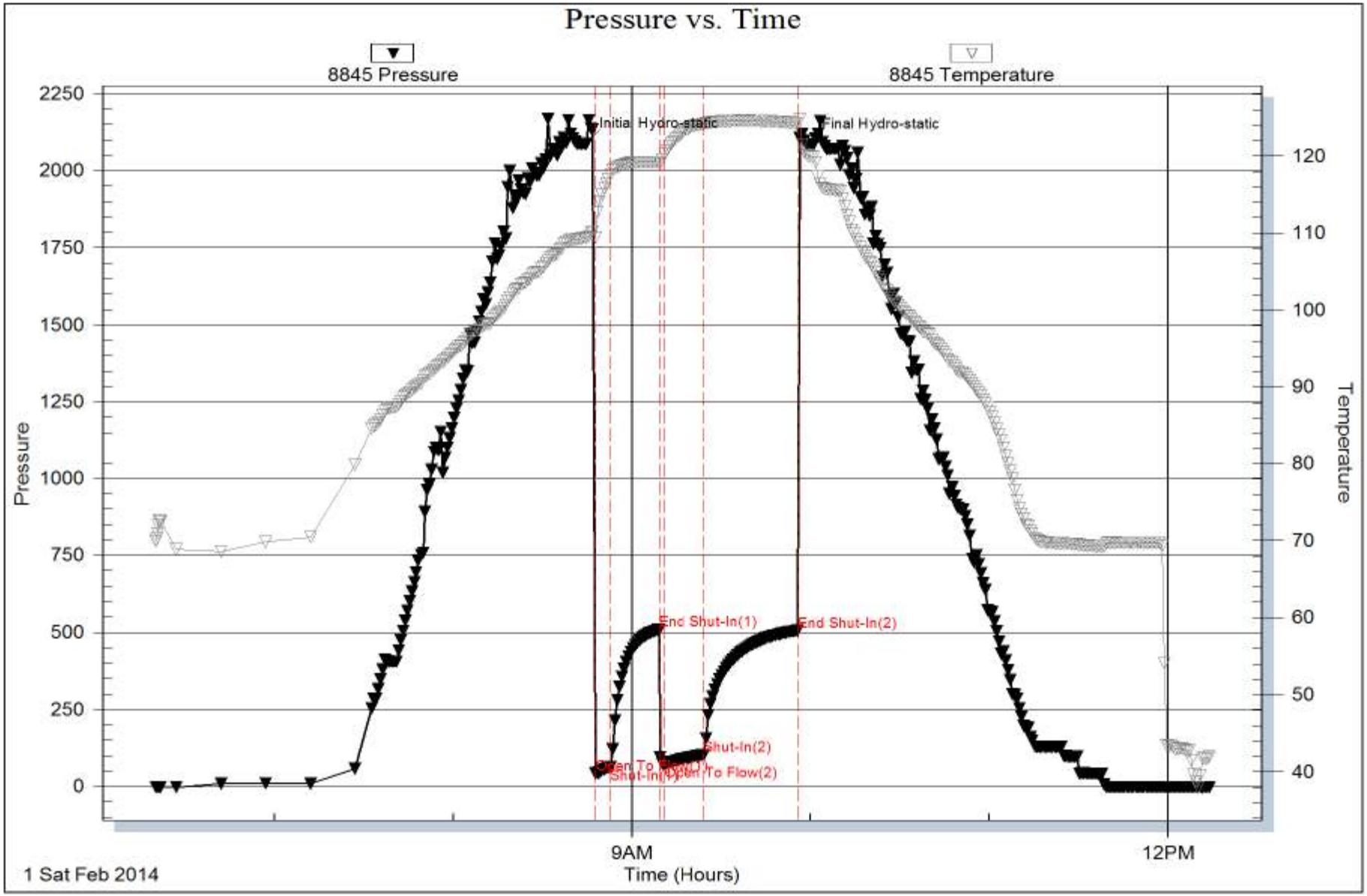
Total Length: 283.00 ft Total Volume: 3.013 bbl

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

Laboratory Name: Laboratory Location:

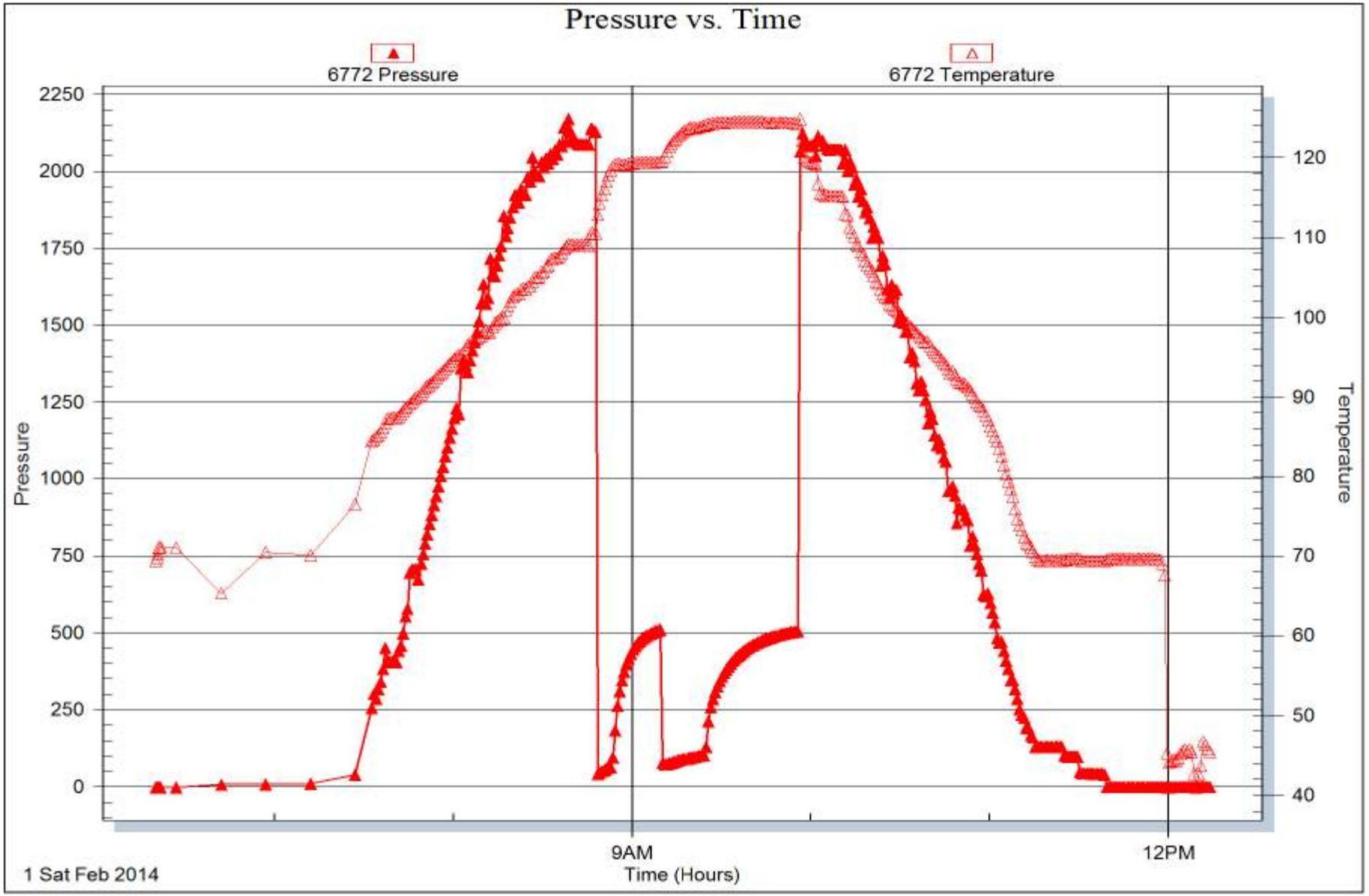
Recovery Comments: CLEAN OIL GRAVITY = 27.6 @ 60 DEG

Serial #: 8845 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 56691 Printed: 2014.02.06 @ 14:46:21

Serial #: 6772 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 56691 Printed: 2014.02.06 @ 14:46:21

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.01 @ 23:30:00
End Date: 2014.02.02 @ 05:26:45
Job Ticket #: 56692 DST #: 2

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

Printed: 2014.02.06 @ 14:45:26

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56692 **DST#: 2**

Test Start: 2014.02.01 @ 23:30:00

GENERAL INFORMATION:

Formation: **LKC L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:19:30
Time Test Ended: 05:26:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4296.00 ft (KB) To 4314.00 ft (KB) (TVD)
Total Depth: 4314.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

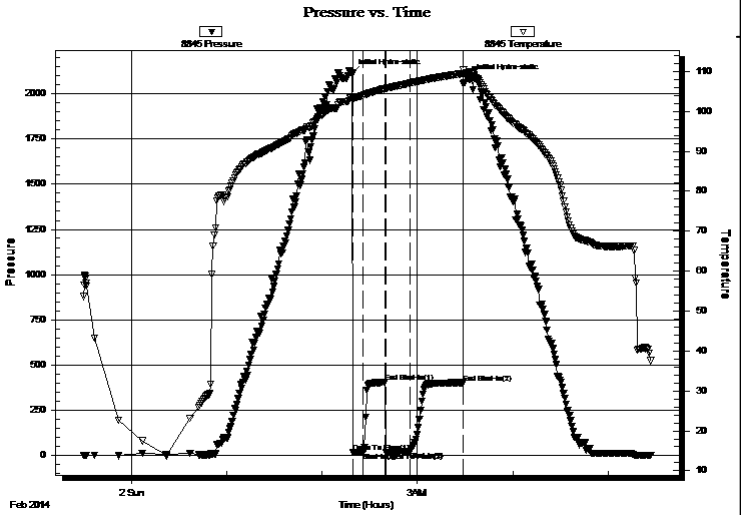
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8845 **Outside**

Press@RunDepth: 22.17 psig @ 4301.00 ft (KB)
Start Date: 2014.02.01 End Date: 2014.02.02
Start Time: 23:30:05 End Time: 05:26:44

Capacity: 8000.00 psig
Last Calib.: 2014.02.01
Time On Btm: 2014.02.02 @ 02:19:00
Time Off Btm:

TEST COMMENT: I.F.- 5 - Weak surface blow
I.S.I - 15 - Weak surface blow back
F.F. - 15 - Weak surface blow built to 1/2"
F.S.I. - 30 - Weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2110.42	103.55	Initial Hydro-static
1	14.03	102.81	Open To Flow (1)
7	16.01	104.01	Shut-In(1)
21	403.13	105.67	End Shut-In(1)
22	16.82	105.63	Open To Flow (2)
37	22.17	107.05	Shut-In(2)
70	401.01	109.48	End Shut-In(2)
74	2082.07	109.79	Initial Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56692 **DST#: 2**

Test Start: 2014.02.01 @ 23:30:00

GENERAL INFORMATION:

Formation: **LKC L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:19:30
Time Test Ended: 05:26:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4296.00 ft (KB) To 4314.00 ft (KB) (TVD)
Total Depth: 4314.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

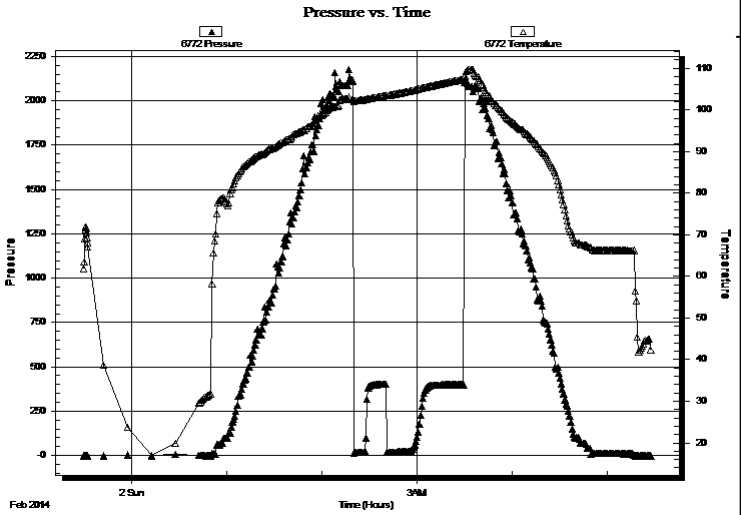
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6772 **Outside**

Press@RunDepth: psig @ 4301.00 ft (KB)
Start Date: 2014.02.01 End Date: 2014.02.02
Start Time: 23:30:05 End Time: 05:26:58

Capacity: 8000.00 psig
Last Calib.: 1899.12.30
Time On Btm:
Time Off Btm:

TEST COMMENT: I.F.- 5 - Weak surface blow
I.S.I - 15 - Weak surface blow back
F.F. - 15 - Weak surface blow built to 1/2"
F.S.I. - 30 - Weak surface blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56692 **DST#: 2**

Test Start: 2014.02.01 @ 23:30:00

Tool Information

Drill Pipe:	Length:	4179.00 ft	Diameter:	3.80 inches	Volume:	58.62 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	105.00 ft	Diameter:	2.25 inches	Volume:	0.52 bbl	Weight to Pull Loose:		60000.00 lb
					Total Volume:	59.14 bbl	Tool Chased		3.00 ft
Drill Pipe Above KB:		16.00 ft					String Weight:	Initial	60000.00 lb
Depth to Top Packer:		4296.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een 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	
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	3.00			4287.00		
Packer	5.00			4292.00	28.00	Bottom Of Top Packer
Packer	4.00			4296.00		
Stubb	1.00			4297.00		
Perforations	4.00			4301.00		
Recorder	0.00	6772	Outside	4301.00		
Recorder	0.00	8845	Outside	4301.00		
Perforations	8.00			4309.00		
Bullnose	5.00			4314.00	18.00	Bottom Packers & Anchor
Total Tool Length:	**46.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56692 **DST#: 2**

Test Start: 2014.02.01 @ 23:30:00

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:	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:	2500.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

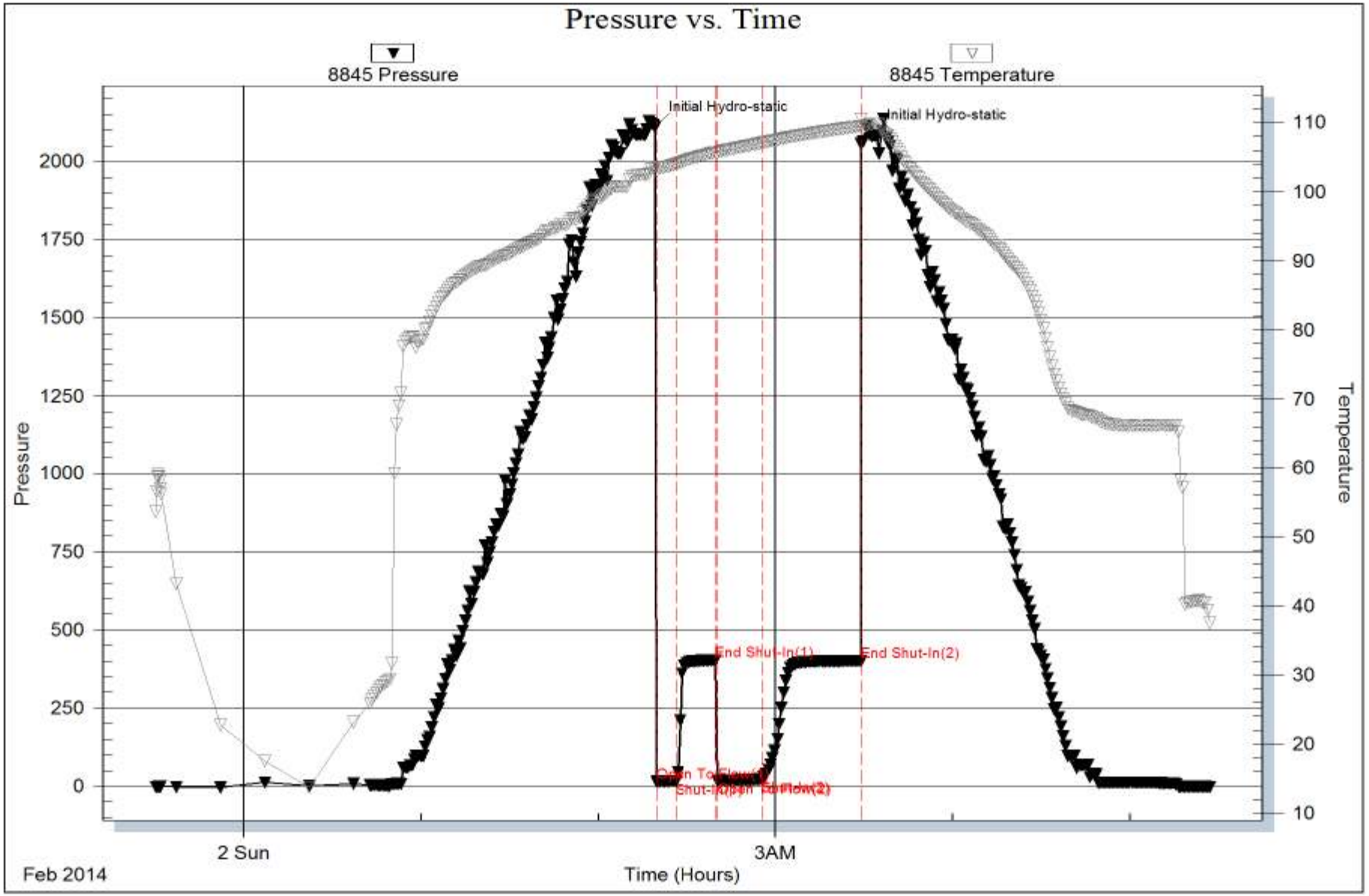
Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

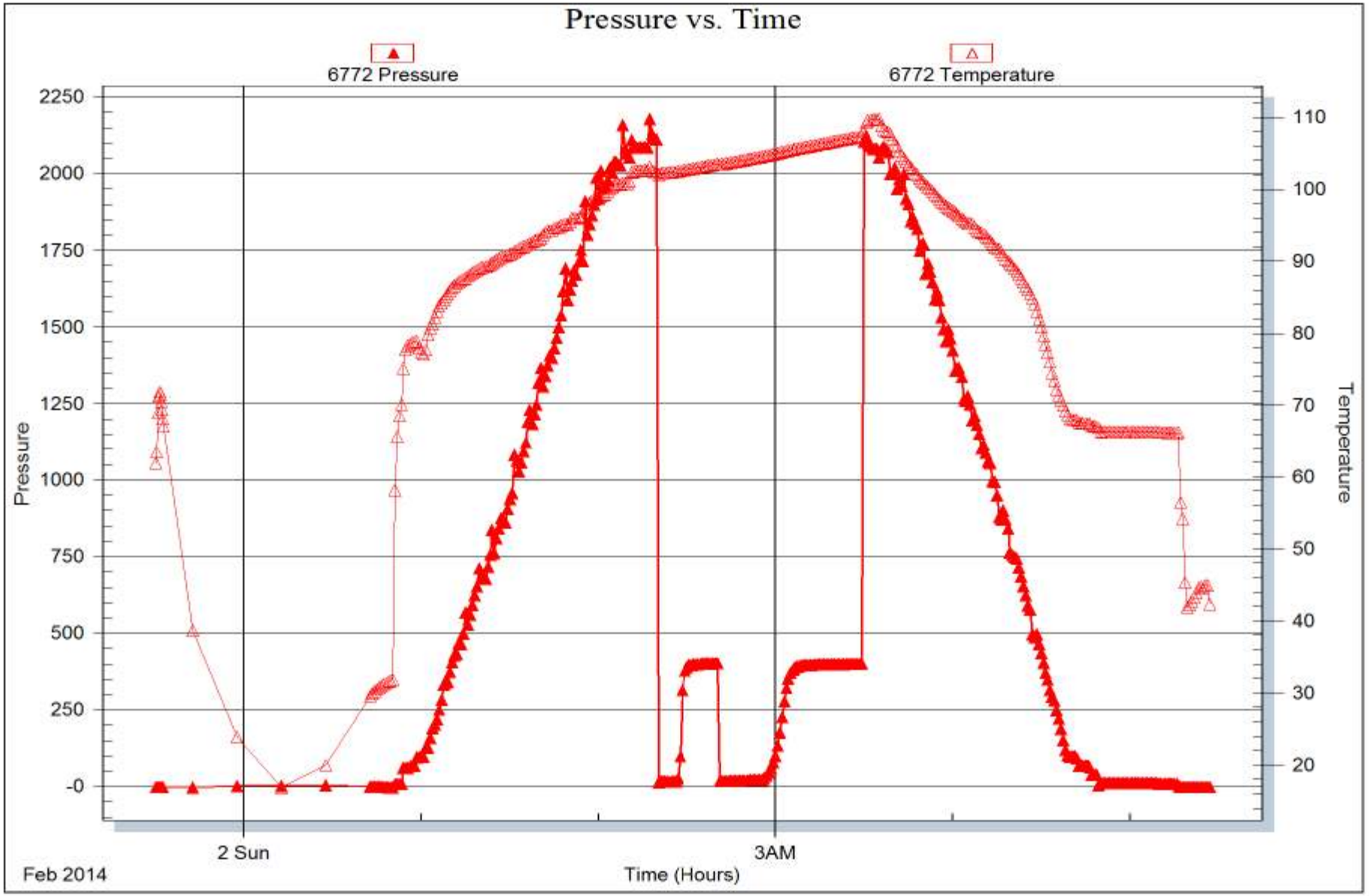
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8845 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 56692 Printed: 2014.02.06 @ 14:45:28

Serial #: 6772 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 56692 Printed: 2014.02.06 @ 14:45:28

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.02 @ 20:47:00
End Date: 2014.02.03 @ 03:34:15
Job Ticket #: 56693 DST #: 3

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

Printed: 2014.02.06 @ 14:43:30

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56693 **DST#: 3**

Test Start: 2014.02.02 @ 20:47:00

GENERAL INFORMATION:

Formation: **Pleasanton**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:30:45
Time Test Ended: 03:34:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4343.00 ft (KB) To 4389.00 ft (KB) (TVD)
Total Depth: 4389.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

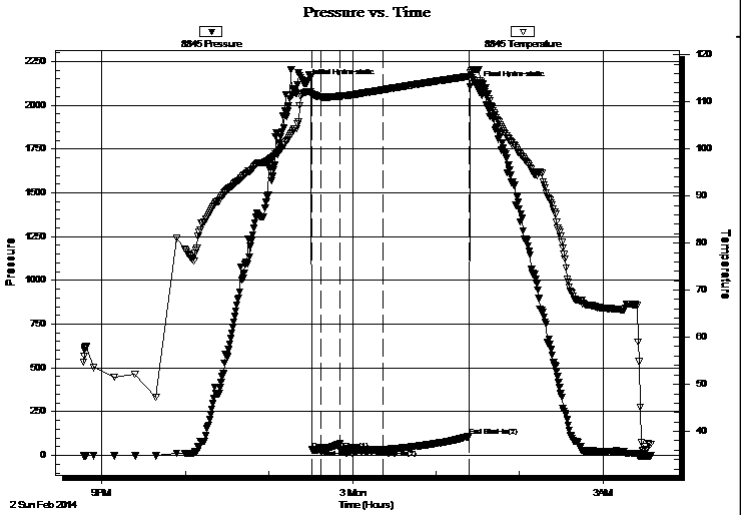
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8845 **Outside**

Press@RunDepth: 32.48 psig @ 4376.00 ft (KB)
Start Date: 2014.02.02 End Date: 2014.02.03
Start Time: 20:47:05 End Time: 03:34:14

Capacity: 8000.00 psig
Last Calib.: 2014.02.02
Time On Btm: 2014.02.02 @ 23:26:45
Time Off Btm: 2014.02.03 @ 01:29:15

TEST COMMENT: I.F. - 5 - Weak surface blow built to 3/4"
I.S.I. -15 - Weak surface blow back
F.F. - 30 - Weak surface blow
F.S.I. - 60 - Weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.65	112.09	Initial Hydro-static
4	31.39	111.26	Open To Flow (1)
11	32.05	111.03	Shut-In(1)
25	66.24	111.20	End Shut-In(1)
25	32.13	111.20	Open To Flow (2)
55	32.48	112.53	Shut-In(2)
117	108.25	115.42	End Shut-In(2)
123	2114.24	116.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56693 **DST#: 3**

Test Start: 2014.02.02 @ 20:47:00

GENERAL INFORMATION:

Formation: **Pleasanton**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:30:45
Time Test Ended: 03:34:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4343.00 ft (KB) To 4389.00 ft (KB) (TVD)
Total Depth: 4389.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

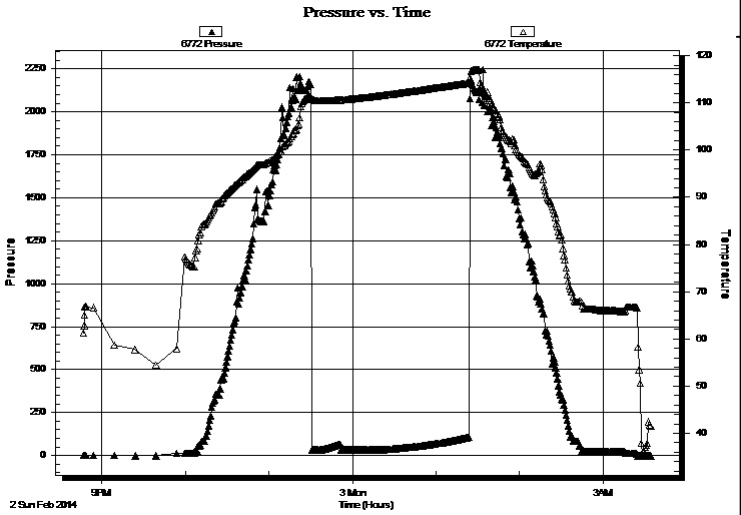
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6772 **Outside**

Press@RunDepth: psig @ 4376.00 ft (KB)
Start Date: 2014.02.02 End Date: 2014.02.03
Start Time: 20:47:05 End Time: 03:34:29

Capacity: 8000.00 psig
Last Calib.: 1899.12.30
Time On Btm:
Time Off Btm:

TEST COMMENT: I.F. - 5 - Weak surface blow built to 3/4"
I.S.I. -15 - Weak surface blow back
F.F. - 30 - Weak surface blow
F.S.I. - 60 - Weak surface blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56693 **DST#: 3**

Test Start: 2014.02.02 @ 20:47:00

Tool Information

Drill Pipe:	Length:	4216.00 ft	Diameter:	3.80 inches	Volume:	59.14 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	105.00 ft	Diameter:	2.25 inches	Volume:	0.52 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	59.66 bbl	Tool Chased		3.00 ft
Drill Pipe Above KB:		6.00 ft					String Weight:	Initial	60000.00 lb
Depth to Top Packer:		4343.00 ft						Final	60000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		46.00 ft							
Tool Length:		74.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4316.00		
Shut In Tool	5.00			4321.00		
Hydraulic tool	5.00			4326.00		
Jars	5.00			4331.00		
Safety Joint	3.00			4334.00		
Packer	5.00			4339.00	28.00	Bottom Of Top Packer
Packer	4.00			4343.00		
Stubb	1.00			4344.00		
Change Over Sub	1.00			4345.00		
Drill Pipe	30.00			4375.00		
Change Over Sub	1.00			4376.00		
Recorder	0.00	6772	Outside	4376.00		
Recorder	0.00	8845	Outside	4376.00		
Perforations	8.00			4384.00		
Bullnose	5.00			4389.00	46.00	Bottom Packers & Anchor
Total Tool Length:	**74.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern Schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56693 **DST#: 3**

Test Start: 2014.02.02 @ 20:47:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.78 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2400.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

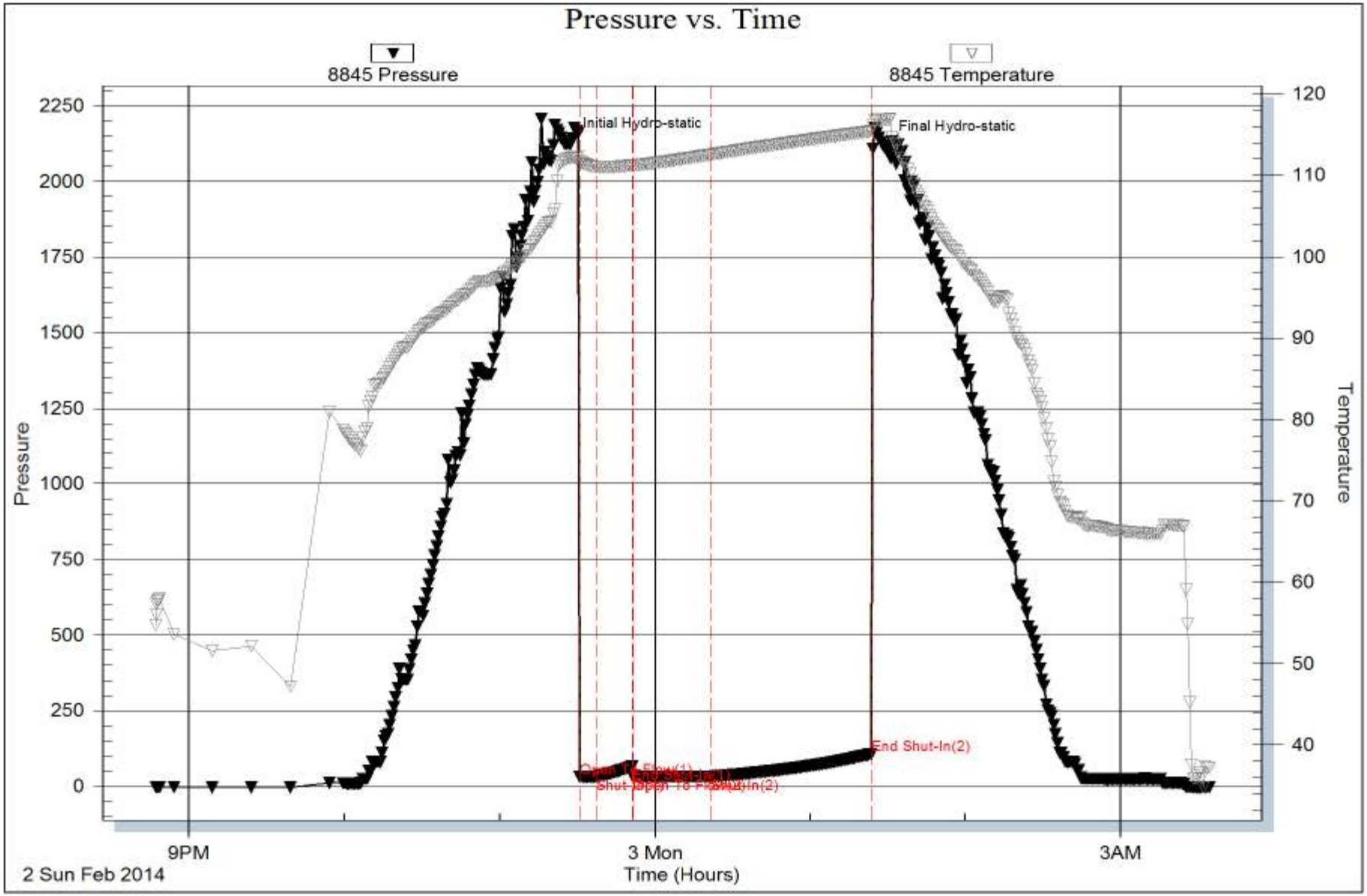
Recovery Table

Length ft	Description	Volume bbl
5.00	MUD 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

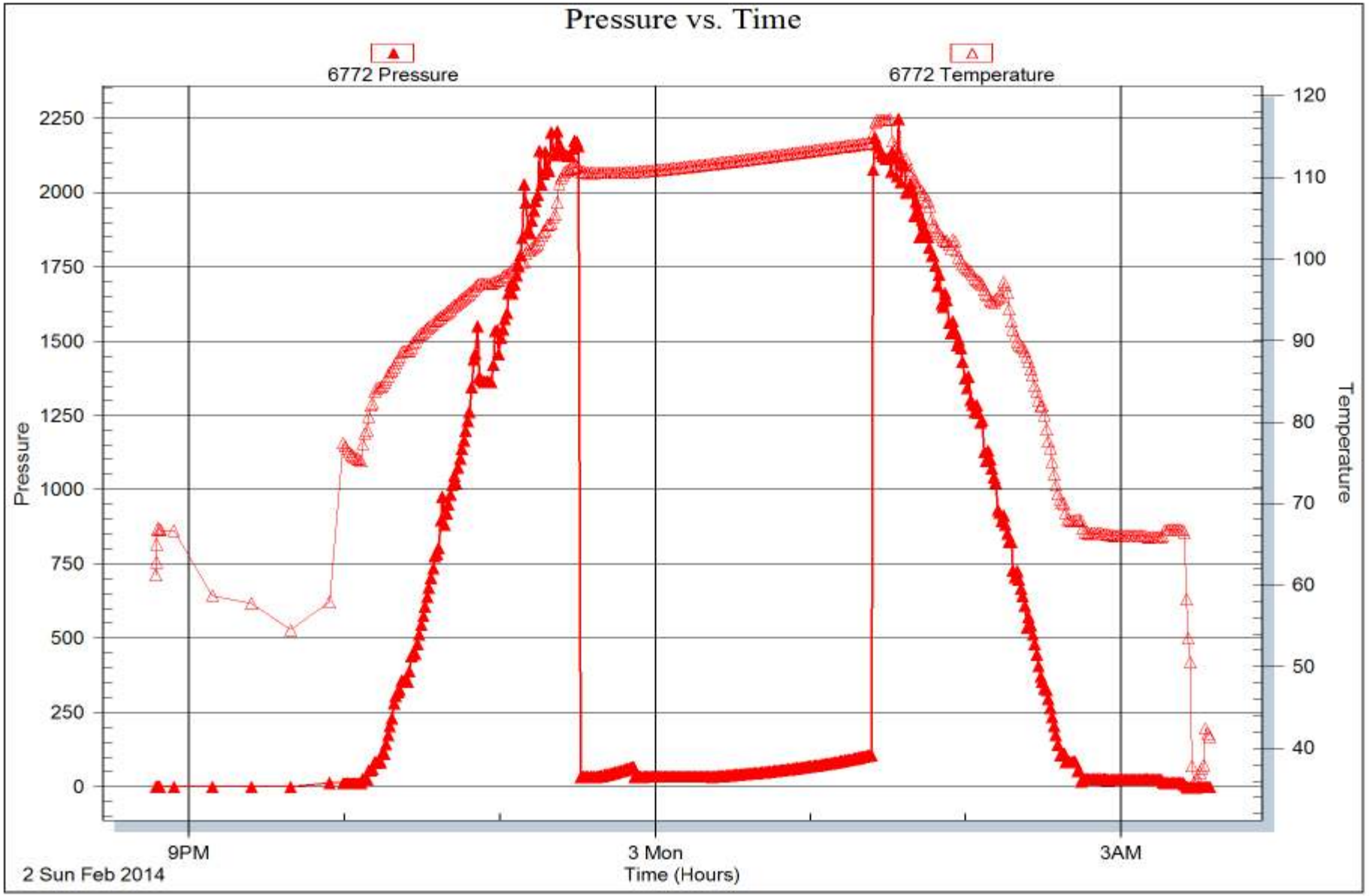
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8845 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 56693 Printed: 2014.02.06 @ 14:43:33

Serial #: 6772 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 56693 Printed: 2014.02.06 @ 14:43:33

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.04 @ 00:45:00

End Date: 2014.02.04 @ 06:45:15

Job Ticket #: 56694 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.02.06 @ 14:42:15

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56694 **DST#: 4**

Test Start: 2014.02.04 @ 00:45:00

GENERAL INFORMATION:

Formation: **Ft Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:20:30
Time Test Ended: 06:45:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4415.00 ft (KB) To 4539.00 ft (KB) (TVD)
Total Depth: 4539.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

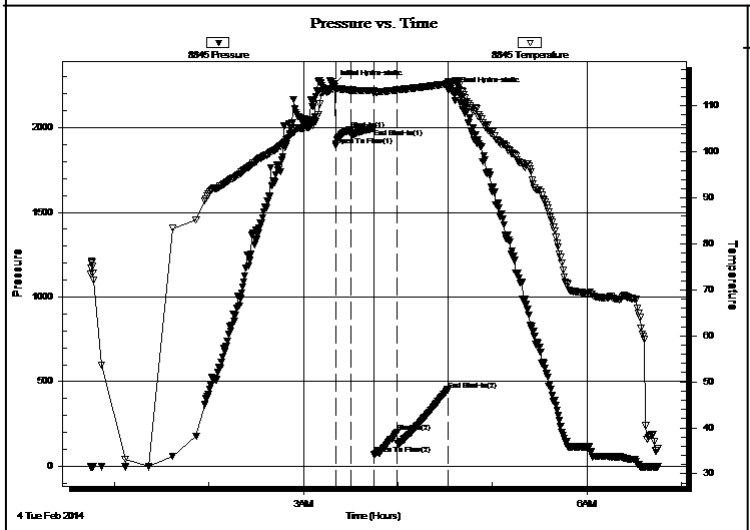
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8845 **Outside**

Press@RunDepth: 203.04 psig @ 4514.00 ft (KB)
Start Date: 2014.02.04 End Date: 2014.02.04
Start Time: 00:45:05 End Time: 06:45:14

Capacity: 8000.00 psig
Last Calib.: 2014.02.04
Time On Btm: 2014.02.04 @ 03:19:00
Time Off Btm: 2014.02.04 @ 04:34:30

TEST COMMENT: I.F. - 5 - No blow
I.S.I - 15 - No blow back
F.F. - 15 - Weak surface blow died in 2 min
F.S.I. - 30 - No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2254.86	113.71	Initial Hydro-static
2	1893.57	113.58	Open To Flow (1)
11	1988.53	113.46	Shut-In(1)
26	1995.25	113.39	End Shut-In(1)
26	69.35	112.69	Open To Flow (2)
41	203.04	113.47	Shut-In(2)
73	452.48	114.79	End Shut-In(2)
76	2214.35	115.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56694 **DST#: 4**

Test Start: 2014.02.04 @ 00:45:00

GENERAL INFORMATION:

Formation: **Ft Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:20:30
Time Test Ended: 06:45:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bob Hamel
Unit No: 71

Interval: 4415.00 ft (KB) To 4539.00 ft (KB) (TVD)
Total Depth: 4539.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

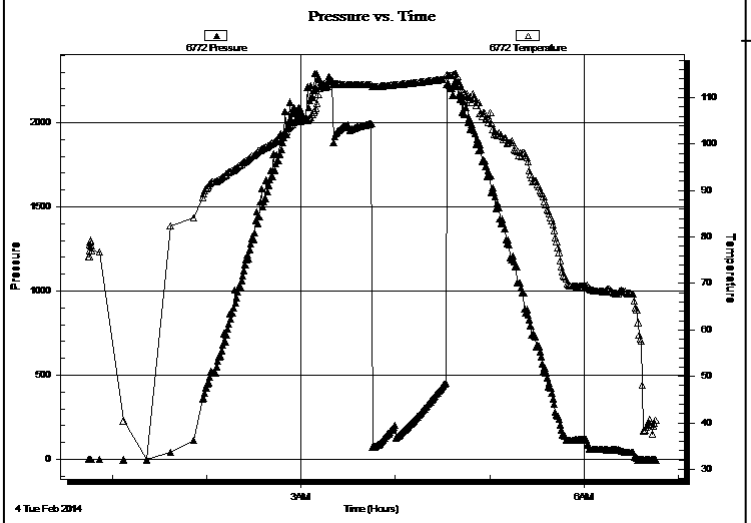
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6772

Press@RunDepth: psig @ ft (KB)
Start Date: 2014.02.04 End Date: 2014.02.04
Start Time: 00:45:05 End Time: 06:45:29

Capacity: 8000.00 psig
Last Calib.: 1899.12.30
Time On Btm:
Time Off Btm:

TEST COMMENT: I.F. - 5 - No blow
I.S.I - 15 - No blow back
F.F. - 15 - Weak surface blow died in 2 min
F.S.I. - 30 - No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	MUD 100%	0.02

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56694 **DST#: 4**

Test Start: 2014.02.04 @ 00:45:00

Tool Information

Drill Pipe:	Length:	4306.00 ft	Diameter:	3.80 inches	Volume:	60.40 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	105.00 ft	Diameter:	2.25 inches	Volume:	0.52 bbl	Weight to Pull Loose:		70000.00 lb
					Total Volume:	60.92 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		24.00 ft					String Weight:	Initial	64000.00 lb
Depth to Top Packer:		4415.00 ft						Final	64000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		124.00 ft							
Tool Length:		152.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4388.00		
Shut In Tool	5.00			4393.00		
Hydraulic tool	5.00			4398.00		
Jars	5.00			4403.00		
Safety Joint	3.00			4406.00		
Packer	5.00			4411.00	28.00	Bottom Of Top Packer
Packer	4.00			4415.00		
Stubb	1.00			4416.00		
Perforations	3.00			4419.00		
Change Over Sub	1.00			4420.00		
Drill Pipe	93.00			4513.00		
Change Over Sub	1.00			4514.00		
Recorder	0.00	6772	Outside	4514.00		
Recorder	0.00	8845	Outside	4514.00		
Perforations	20.00			4534.00		
Bullnose	5.00			4539.00	124.00	Bottom Packers & Anchor
Total Tool Length:	**152.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56694 **DST#: 4**

Test Start: 2014.02.04 @ 00:45:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.79 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2500.00 ppm				
Filter Cake:	2.00 inches				

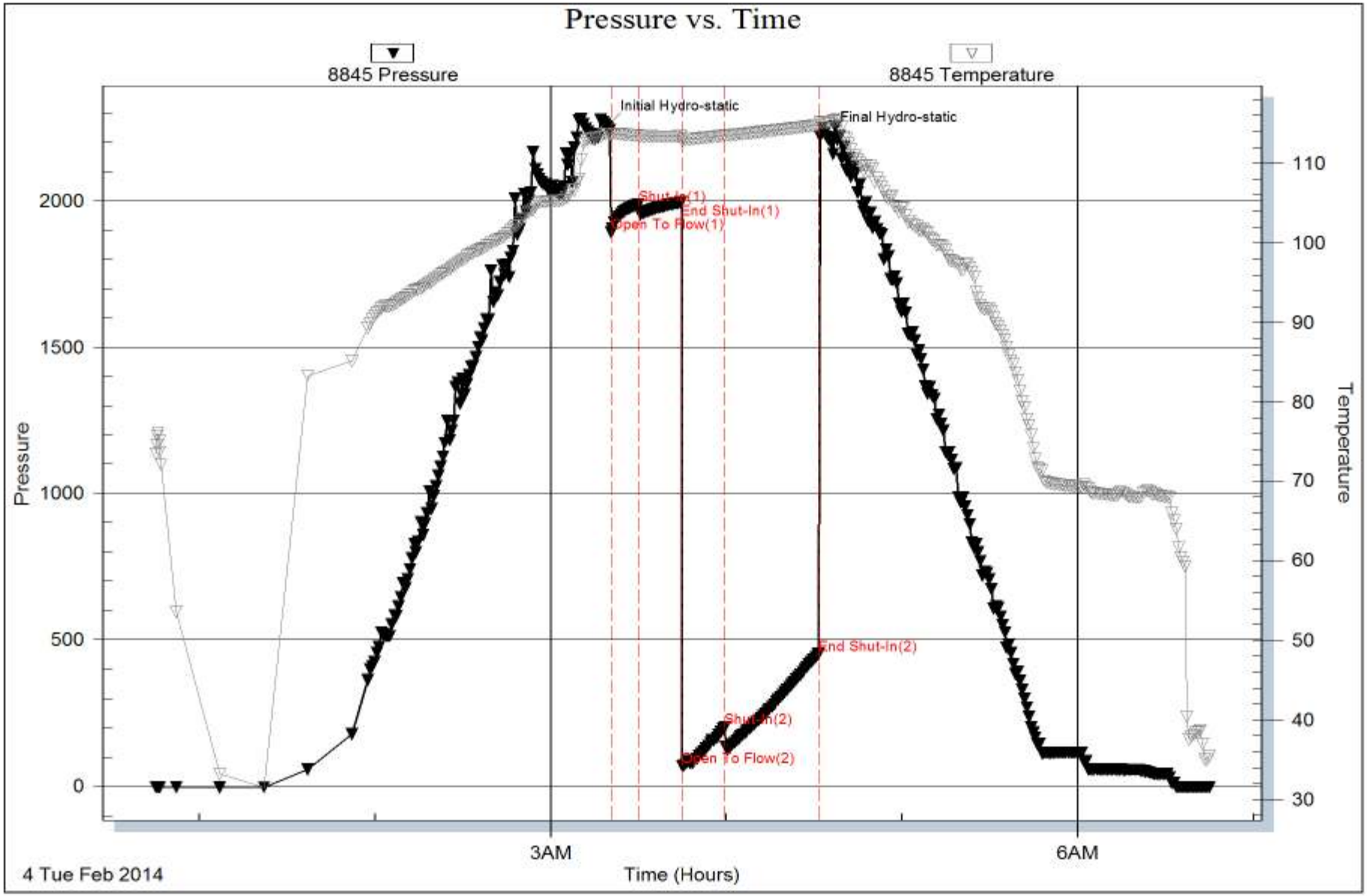
Recovery Information

Recovery Table

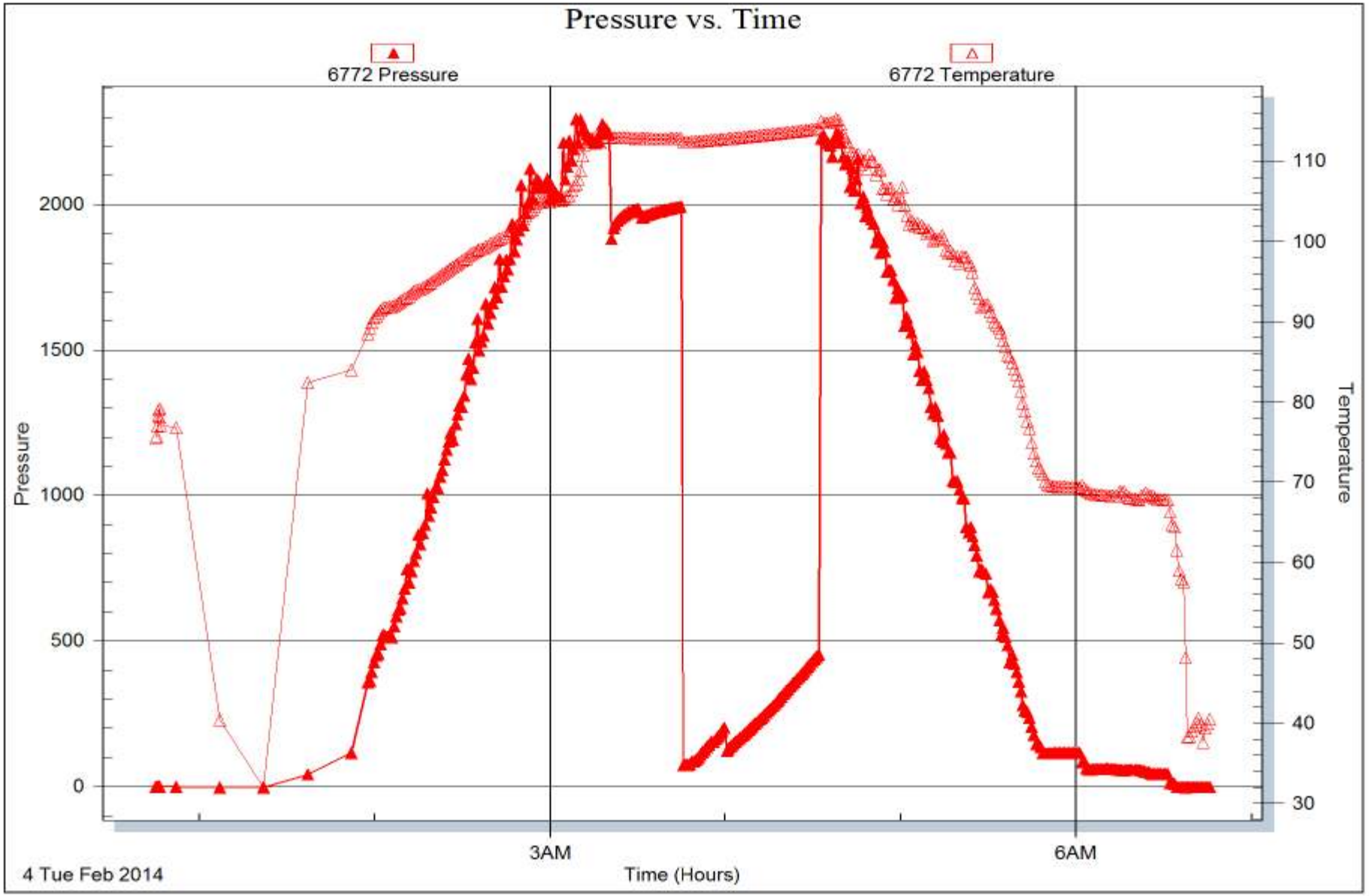
Length ft	Description	Volume bbl
5.00	MUD 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
8845 Pressure
8845 Temperature
Initial Hydro-static
Final Hydro-static
Shut-In(1)
End Shut-In(1)
Open To Flow(1)
End Shut-In(2)
Shut-In(2)
Open To Flow(2)
Pressure
Temperature
2000
1500
1000
500
0
110
100
90
80
70
60
50
40
30
3AM
6AM
4 Tue Feb 2014
Time (Hours)

Serial #: 6772 | Larson Engineering, Inc. | Trost #1-30 | DST Test Number: 4



Trilobite Testing, Inc | Ref. No: 56694 | Printed: 2014.02.06 @ 14:42:18

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

Trost #1-30

31-18s-27w Lane,KS

Start Date: 2014.02.04 @ 19:08:00
End Date: 2014.02.05 @ 01:29:15
Job Ticket #: 56717 DST #: 5

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

Printed: 2014.02.06 @ 14:41:35

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56717 **DST#: 5**

Test Start: 2014.02.04 @ 19:08:00

GENERAL INFORMATION:

Formation: **Cherokee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:10:30
Time Test Ended: 01:29:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Sam Esparza
Unit No: 71

Interval: 4538.00 ft (KB) To 4600.00 ft (KB) (TVD)
Total Depth: 4600.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

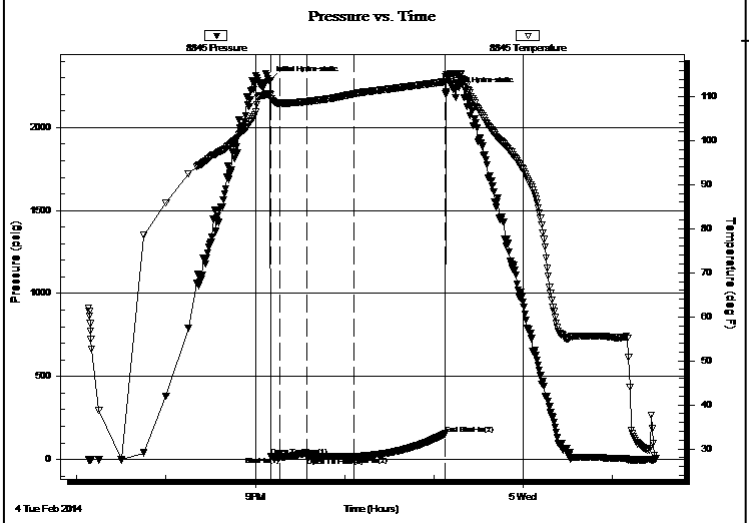
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8845 **Outside**

Press@RunDepth: 16.26 psig @ 4539.00 ft (KB)
Start Date: 2014.02.04 End Date: 2014.02.05
Start Time: 19:08:05 End Time: 01:29:14

Capacity: 8000.00 psig
Last Calib.: 2014.02.05
Time On Btm: 2014.02.04 @ 21:10:00
Time Off Btm: 2014.02.04 @ 23:08:00

TEST COMMENT: IF: 1/4" Blow .
ISI: No Return.
FF: Weak Surface Blow .
FSI: No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2282.14	110.54	Initial Hydro-static
1	16.11	109.62	Open To Flow (1)
7	16.24	108.52	Shut-In(1)
25	40.91	108.88	End Shut-In(1)
25	15.12	108.87	Open To Flow (2)
56	16.26	110.65	Shut-In(2)
118	153.85	113.42	End Shut-In(2)
118	2214.13	113.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100m	0.05

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56717 **DST#: 5**

Test Start: 2014.02.04 @ 19:08:00

GENERAL INFORMATION:

Formation: **Cherokee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:10:30
Time Test Ended: 01:29:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Sam Esparza
Unit No: 71

Interval: 4538.00 ft (KB) To 4600.00 ft (KB) (TVD)
Total Depth: 4600.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

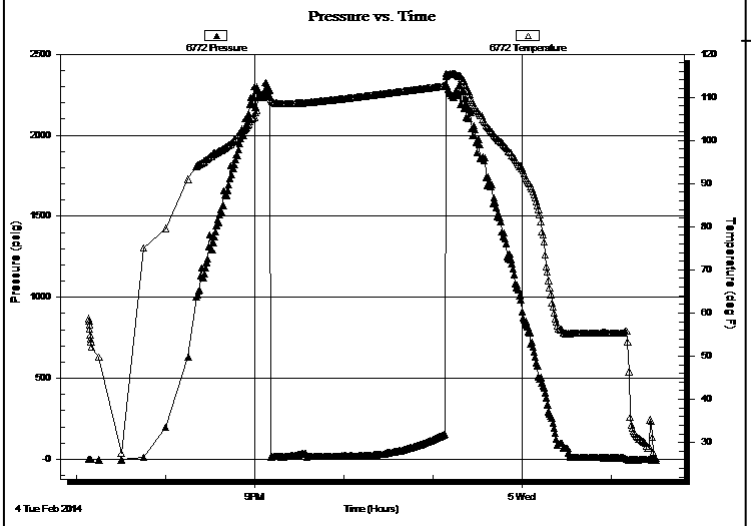
Reference Elevations: 2727.00 ft (KB)
2720.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6772 **Inside**

Press@RunDepth: psig @ 4539.00 ft (KB)
Start Date: 2014.02.04 End Date: 2014.02.05
Start Time: 19:08:05 End Time: 01:29:29

Capacity: 8000.00 psig
Last Calib.: 2014.02.05
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 1/4" Blow .
ISI: No Return.
FF: Weak Surface Blow .
FSI: No Return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100m	0.05

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56717 **DST#: 5**

Test Start: 2014.02.04 @ 19:08:00

Tool Information

Drill Pipe:	Length:	4389.00 ft	Diameter:	3.80 inches	Volume:	61.57 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	146.00 ft	Diameter:	2.25 inches	Volume:	0.72 bbl	Weight to Pull Loose:		80000.00 lb
					Total Volume:	62.29 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		25.00 ft					String Weight:	Initial	64000.00 lb
Depth to Top Packer:		4538.00 ft						Final	64000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		62.00 ft							
Tool Length:		90.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4511.00		
Shut In Tool	5.00			4516.00		
Hydraulic tool	5.00		Inside	4521.00		
Jars	5.00			4526.00		
Safety Joint	3.00			4529.00		
Packer	5.00			4534.00	28.00	Bottom Of Top Packer
Packer	4.00			4538.00		
Stubb	1.00			4539.00		
Recorder	0.00	6772	Inside	4539.00		
Recorder	0.00	8845	Outside	4539.00		
Perforations	23.00			4562.00		
Change Over Sub	1.00			4563.00		
Drill Pipe	31.00			4594.00		
Change Over Sub	1.00			4595.00		
Bullnose	5.00			4600.00	62.00	Bottom Packers & Anchor
Total Tool Length:	**90.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

522 West State Road 4
Olmitz, KS 67564

ATTN: Vern schrag

31-18s-27w Lane,KS

Trost #1-30

Job Ticket: 56717 **DST#: 5**

Test Start: 2014.02.04 @ 19:08:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.19 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2800.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

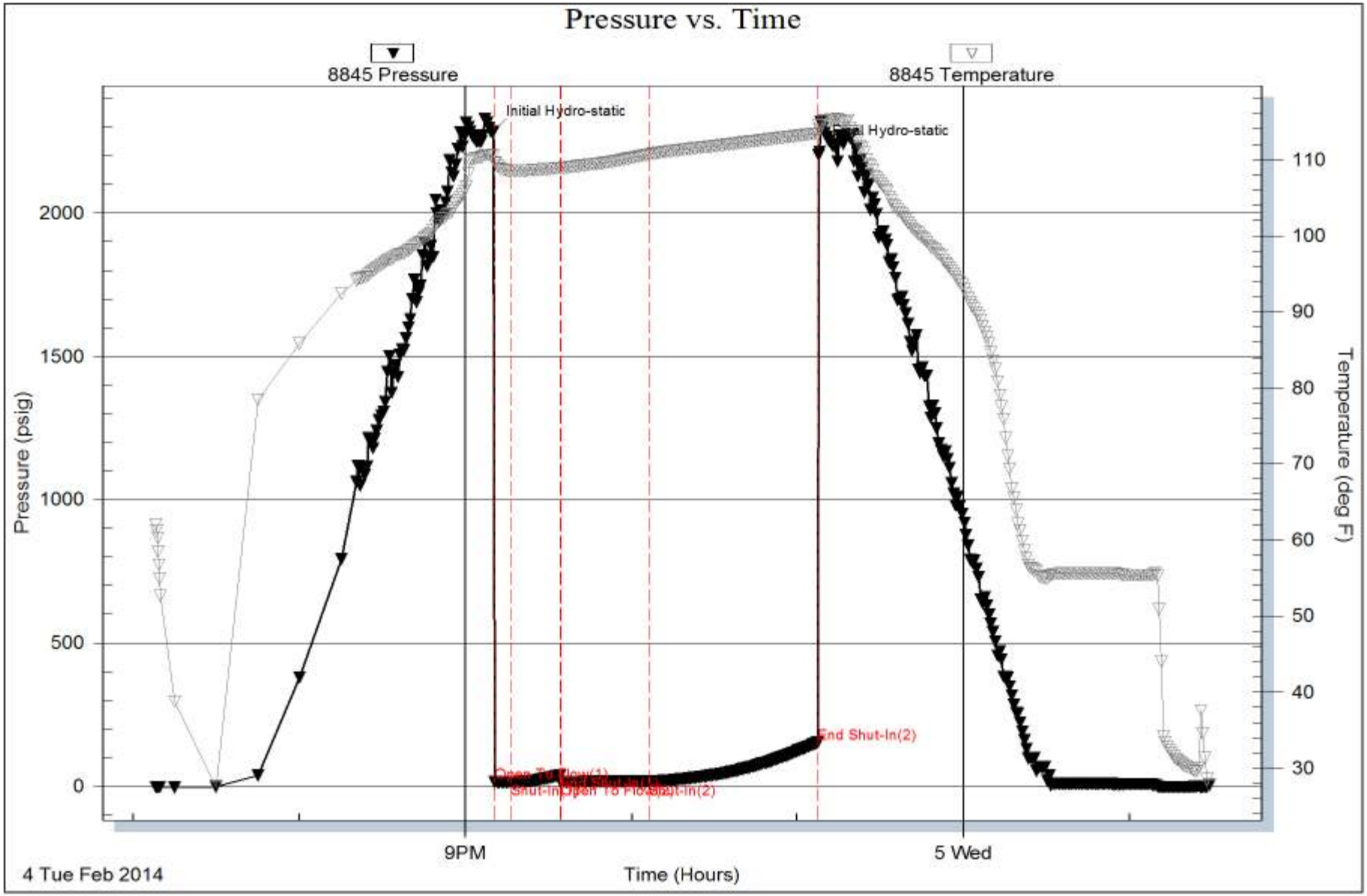
Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

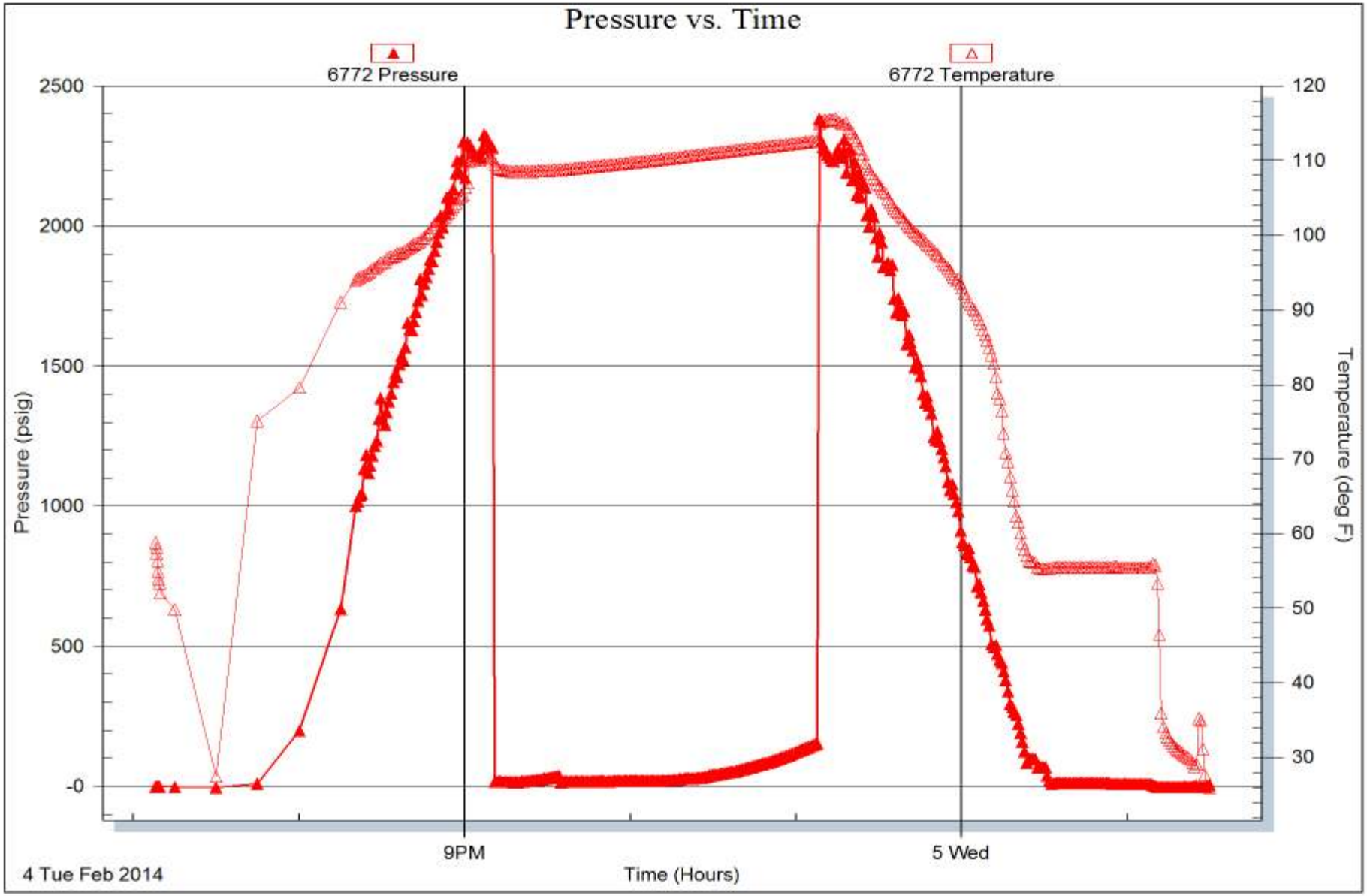
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8845 **Outside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 5



Trilobite Testing, Inc Ref. No: 56717 Printed: 2014.02.06 @ 14:41:38

Serial #: 6772 **Inside** Larson Engineering, Inc. Trost #1-30 DST Test Number: 5



Trilobite Testing, Inc Ref. No: 56717 Printed: 2014.02.06 @ 14:41:38

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 56691

Well Name & No. frost #1-30 Test No. 1 Date 2-1-14

Company Larson Engineering INC. Elevation 2727 KB 2720 GL

Address 562 West State RD. 4 Olm, +2 KS. 67564

Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3

Location: Sec. 31 Twp. 18-S. Rge. 27-W. Co. Lane State KS.

Interval Tested 4260-4275 Zone Tested "K"

Anchor Length 15 Drill Pipe Run 4,150 Mud Wt. 9.1

Top Packer Depth 4255 Drill Collars Run 105 Vis 55

Bottom Packer Depth 4260 Wt. Pipe Run — WL 7.2

Total Depth 4,275 Chlorides 2,100 ppm System LCM 1

Blow Description I.F.-5-1/2 INT. Blow Built to B.O.B. in 3 Min.

I.S.I-15-W.S.B.B. Started @ 2 Min No Build

F.F-15-1/2 INT. Blow Built to B.O.B. in 3 Min.

F.S.I-30-W.S.B.B. Started @ 5 Min Built to 3 1/2" in 30 Min

Rec —	Feet of 63' GIP	100 %gas	%oil	%water	%mud
Rec 10	Feet of C/O	%gas	100 %oil	%water	%mud
Rec 126'	Feet of S,M,C,G,O	~~10~~ %gas	85 ~~00~~ %oil	%water	5 ~~10~~ %mud
Rec 147'	Feet of S,W,C,M,C,G,O	15 %gas	75 %oil	5 %water	5 ~~10~~ %mud
Rec —	Feet of	%gas	%oil	%water	%mud

Rec Total 283' BHT 120 Gravity 27.6 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2088

(B) First Initial Flow 43

(C) First Final Flow 63

(D) Initial Shut-In 510

(E) Second Initial Flow 72

(F) Second Final Flow 103

(G) Final Shut-In 505

(H) Final Hydrostatic 2084

Initial Open 5

Initial Shut-In 15

Final Flow 15

Final Shut-In 30

- ☑ Test 1250
- ☑ Jars 250
- ☑ Safety Joint 75
- ☐ Circ Sub
- ☐ Hourly Standby
- ☑ Mileage 66 Mi RT 102.30
- ☐ Sampler
- ☐ Straddle
- ☐ Shale Packer
- ☐ Extra Packer
- ☐ Extra Recorder
- ☐ Day Standby
- ☐ Accessibility

Sub Total 1677.30

T-On Location 05:20:00

T-Started 06:20:00

T-Open 08:58:00

T-Pulled 10:03:00

T-Out 12:25:00

Comments

thank-you

- ☐ Ruined Shale Packer
- ☐ Ruined Packer
- ☐ Extra Copies

Sub Total 0

Total 1677.30

MP/DST Disc't

Approved By Vern C Schrag Our Representative

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

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 56692

Well Name & No. Trost #1-30 Test No. 2 Date 2-1-14

Company Larson Engineering INC. Elevation 2727 KB 2720 GL

Address 522 West State R.D. 4 Olmitz KS. 67564

Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3

Location: Sec. 31 Twp. 18-S. Rge. 27-W. Co. Lane State KS.

Interval Tested 4296-4314 Zone Tested L

Anchor Length 18 Drill Pipe Run 4179 Mud Wt. 9.1

Top Packer Depth 4291 Drill Collars Run 105 Vis 52

Bottom Packer Depth 4296 Wt. Pipe Run — WL 7.2

Total Depth 4314 Chlorides 2,500 ppm System LCM 1

Blow Description I.F.-5-1/4 INT. Blow No Build

I.S.I.-15-W.S.B.B. No Build

F.F.-15-W.S.B. Built to (1/2 in 15 Min.)

F.S.I.-30-W.S.B.B. No Build

Rec 5	Feet of	%gas	%oil	%water 100	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 109 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2,110

(B) First Initial Flow 14

(C) First Final Flow 16

(D) Initial Shut-In 405

(E) Second Initial Flow 17

(F) Second Final Flow 22

(G) Final Shut-In 400

(H) Final Hydrostatic 2,082

Initial Open 5

Initial Shut-In 15

Final Flow 15

Final Shut-In 30

- ☑ Test 1250
- ☑ Jars 250
- ☑ Safety Joint 75
- ☐ Circ Sub
- ☐ Hourly Standby
- ☑ Mileage 66/R.t. 102.30
- ☐ Sampler
- ☐ Straddle
- ☐ Shale Packer
- ☐ Extra Packer
- ☐ Extra Recorder
- ☐ Day Standby
- ☐ Accessibility

Sub Total 1677.30

T-On Location 23:18:00

T-Started 23:30:00

T-Open 02:20:00

T-Pulled 03:25:00

T-Out 05:30:00

Comments

Thank-you

- ☐ Ruined Shale Packer
- ☐ Ruined Packer
- ☐ Extra Copies

Sub Total 0

Total 1677.30

MP/DST Disc't

Approved By Our Representative Bel Hess

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 56693

Well Name & No. Frost #1-30 Test No. 3 Date 2-2-14

Company Larson Engineering INC. Elevation 2727 KB 2720 GL

Address 522 West State RD. 4 o/m. 42 KS. 67564

Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3

Location: Sec. 31 Twp. 18-S. Rge. 27-W Co. Lane State KS.

Interval Tested 4343-4389 Zone Tested Pleasanton

Anchor Length 46 Drill Pipe Run 4216 Mud Wt. 9.1

Top Packer Depth 4338 Drill Collars Run 105 Vis 52

Bottom Packer Depth 4343 Wt. Pipe Run — WL 6.8

Total Depth 4389 Chlorides 2,400 ppm System LCM 1.0

Blow Description I.F.-5-1/4 INT. Blow Built to (3/4 in 5 Min.)

I.S.I-15-W.S.B.B. No Build

F.F-30-W.S.B. No Build

F.S.I-60-W.S.B.B. No Build

Rec 3	Feet of	%gas	%oil	%water 100	%mud
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 3 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2,124	☑ Test 1250	T-On Location 20:45:00	
(B) First Initial Flow 32	☑ Jars 250	T-Started 20:47:00	
(C) First Final Flow 32	☑ Safety Joint 75	T-Open 23:31:00	
(D) Initial Shut-In 66	☐ Circ Sub	T-Pulled 01:21:00	
(E) Second Initial Flow 32	☐ Hourly Standby	T-Out 03:34:00	
(F) Second Final Flow 32	☑ Mileage 66 R.T. 102.30	Comments	
(G) Final Shut-In 108	☐ Sampler	Thank-you	
(H) Final Hydrostatic 2,114	☐ Straddle	☐ Ruined Shale Packer	
	☐ Shale Packer	☐ Ruined Packer	
Initial Open 5	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 15	☐ Extra Recorder	Sub Total 0	
Final Flow 30	☐ Day Standby	Total 1677.30	
Final Shut-In 60	☐ Accessibility	MP/DST Disc't	
	Sub Total 1677.30		

Approved By _____ Our Representative _____

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 56694

Well Name & No. Trust # 1-30 Test No. 4 Date 2-4-14

Company Larson Engineering INC. Elevation 2727 KB 2720 GL

Address 522 West State RD. 4 Olmitz Ks. 67564

Co. Rep / Geo. Vern Schrag Rig H.D. Rig #3

Location: Sec. 31 Twp. 18 S. Rge. 27 W. Co. Hane State Ks.

Interval Tested 4415 - 4539 Zone Tested Ft. Scott

Anchor Length 124 Drill Pipe Run 4306 Mud Wt. 9.0

Top Packer Depth 4410 Drill Collars Run 105 Vis 57

Bottom Packer Depth 4415 Wt. Pipe Run — WL 6.8

Total Depth 4539 Chlorides 2,500 ppm System LCM 1.5

Blow Description I.F. - 5 - No Blow
I.S.I - 15 - No B.B.
F.F - 15 - W.S.B. Died in 2 Min.
F.S.I - 30 - No B.B.

Rec 5	Feet of	%gas	%oil	%water 100	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 115 Gravity — API RW ~ @ — °F Chlorides ~ ppm

(A) Initial Hydrostatic 2,255	☑ Test 1050	T-On Location 00:15:00	
(B) First Initial Flow 1,894 ?	☑ Jars 250	T-Started 00:45:00	
(C) First Final Flow 1,989 ?	☑ Safety Joint 75	T-Open 03:25:00	
(D) Initial Shut-In 1,995 ?	☐ Circ Sub	T-Pulled 04:30:00	
(E) Second Initial Flow 69	☐ Hourly Standby	T-Out 06:45:00	
(F) Second Final Flow 203	☑ Mileage 66 R.T. 102.30	Comments	
(G) Final Shut-In 452	☐ Sampler	thank-you	
(H) Final Hydrostatic 2,214	☐ Straddle	☐ Ruined Shale Packer	
	☑ Shale Packer 250	☐ Ruined Packer	
Initial Open 5	☐ Extra Packer	☐ Extra Copies	
Initial Shut-In 15	☐ Extra Recorder	Sub Total 0	
Final Flow 15	☐ Day Standby	Total 1727.30	
Final Shut-In 30	☐ Accessibility	MP/DST Disc't	
	Sub Total 1727.30		

Approved By _____ Our Representative Bill Stone

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

4/10

Test Ticket

NO. 56717

Well Name & No. Trost #1-30 Test No. 5 Date 2/4/14

Company Larson Engineering, Inc. Elevation 2727 KB 2720 GL

Address 522 West State Road 4 Olmitz, KS 67564

Co. Rep / Geo. Vern Schrag Rig HD #3

Location: Sec. 31 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4538-4600 Zone Tested Cherokee

Anchor Length 62' Drill Pipe Run 4389 Mud Wt. 9.2

Top Packer Depth 4534 Drill Collars Run 146 Vis 54

Bottom Packer Depth 4538 Wt. Pipe Run 0 WL 7.2

Total Depth 4600 Chlorides 2800 ppm System LCM 2

Blow Description IF: ¼" Blow.
ISI: No Return.
FF: Weak surface Blow.
FSI: No Return.

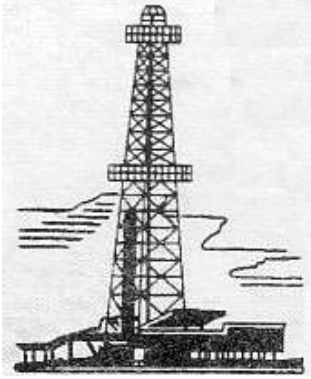
Rec 10	Feet of Mud	%gas	%oil	%water 100	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 113 Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic	2282	☒ Test	1250	T-On Location	18:20
(B) First Initial Flow	16	☒ Jars	250	T-Started	19:08
(C) First Final Flow	16	☒ Safety Joint	75	T-Open	21:41
(D) Initial Shut-In	41	☒ Circ Sub	N/C	T-Pulled	23:08
(E) Second Initial Flow	15	☐ Hourly Standby		T-Out	1:30
(F) Second Final Flow	16	☒ Mileage 66 R/T	102.30	Comments	loaded tools
(G) Final Shut-In	154	☐ Sampler			
(H) Final Hydrostatic	2214	☐ Straddle			
		☐ Shale Packer		☐ Ruined Shale Packer	
Initial Open	5	☐ Extra Packer		☒ Ruined Packer	320
Initial Shut-In	15	☐ Extra Recorder		☐ Extra Copies	
Final Flow	30	☐ Day Standby		Sub Total	0
Final Shut-In	60	☐ Accessibility		Total	1997.30
		Sub Total	1677.30	MP/DST Disc't	

Approved By JC Larson Our Representative

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



WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

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

Well Name:	**Trost #1-31**		
Location:	**NW SE NW SE SEC. 31-18S-27W**		
Licence Number:	**API: 15-101-22489**	**Region:**	**Lane Co., KS**
Spud Date:	**January 25, 2014**	**Drilling Completed:**	**February 5, 2014**
Surface Coordinates:	**1898' FSL & 1783' FEL** **Y= 651820, X= 1471669**		
Bottom Hole Coordinates:			
Ground Elevation (ft):	**2720'**	**K.B. Elevation (ft):**	**2727'**
Logged Interval (ft):	**3800' To: RTD**	**Total Depth (ft):**	**4692'**
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 (Company Tools)

DP 4.5" XH (16.6#); DC 6.25" x 2.25" x 553', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA20-Q, 7-7/8", jets 15-15-15 standard nozzels; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).

Drill collars were hard-banded prior to drilling this well. One might expect additional turbulence and abrasion and that could be a possible cause of sample quality problems?

DRILL STEM TEST #1:

LKC "K-zone": Interval: 4260-4275 (15'): Blow: BOB 3 min IFP, weak surf RB ISIP, BOB 3 min FFP, RB 3-1/2" FSIP; Times: 5-15-15-30; Recovery: 63' GIP, 283' TF: Grindout: 10' CO (100%O, 27.6 grav), 126' GMO (85-90%O), 147' GMO (15%G, 75%O, 5%W, 5%M) (no visible water during T.O.H. may be contamination or filtrate?); Pressures: HP: 2088-2084; SIP: 510-505; FP: 43-63, 72-103; BHT: 120 F; Trilobite Testing Co., Inc., Ellis, KS, Bob Hamel.

DRILL STEM TEST #2:

LKC "Mid Creek, L-zone": Interval: 4296-4314 (17'): Blow: weak 1/4" IFP, RB weak surf ISIP, weak incr 1/2" FFP, RB weak surf FSIP; Times: 5-15-15-30; Recovery: 5' mud (100%M); Pressures: HP: 2110-2082; SIP: 405-400; FP: 14-16, 17-22; BHT: 109 F; Trilobite Testing Co., Inc., Ellis, KS, Bob Hamel.

DRILL STEM TEST #3:

Pleasanton: Interval: 4343-4389 (46'): Blow: weak incr 3/4" IFP, RB weak surf ISIP, weak surf FFP, RB weak surf FSIP; Times: 5-15-30-60; Recovery: 3' mud (100%M); Pressures: HP: 2124-2114, SIP: 66-108, FP: 32-32, 32-32; BHT: 116 F; Trilobite Testing Co., Inc., Ellis, KS, Bob Hamel.

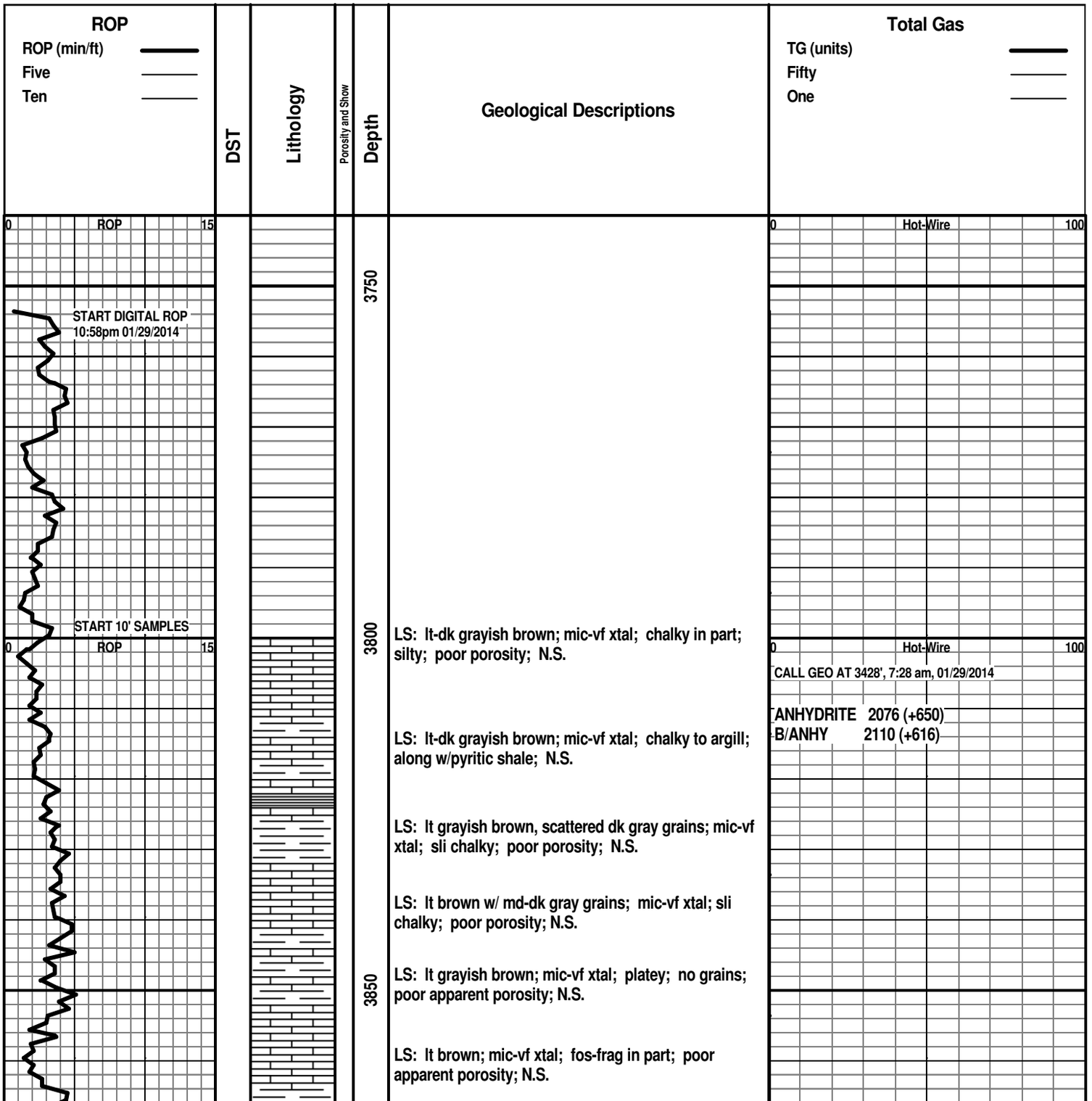
DRILL STEM TEST #4:

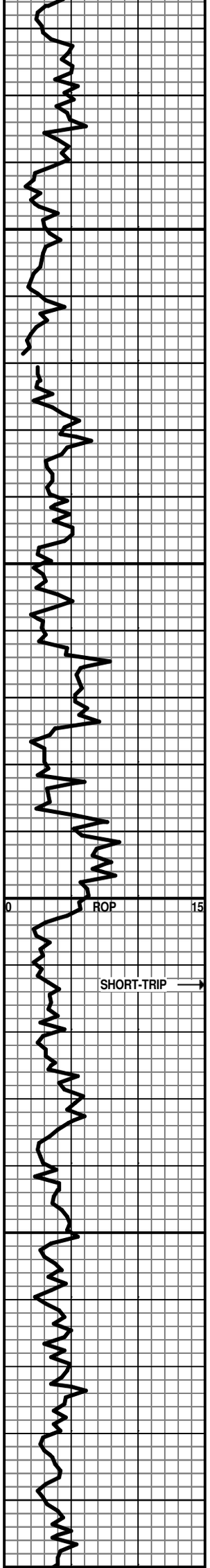
Pawnee thru Ft. Scott: Interval: 4415-4539 (124'): Blow: no blow IFP, no RB, weak surf FFP, no RB; Times: 5-15-15-30; Recovery: 5' mud (100%M), Pressures: HP: 2255-2214, SIP: 1995-452, FP: 1894-1918, 69-203; BHT: 115 F; Trilobite Testing Co., Inc., Ellis, KS, Bob Hamel.

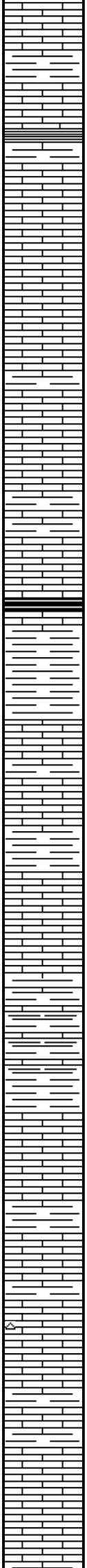
Pressures are abnormal probably due to plugging. Roughnecks say there was a 2' plug of ice that fell out of one of the test stands during T.I.H.

DRILL STEM TEST #5

Cherokee/Johnson: Interval: 4538-4600 (62'): Blow: 1/4" IFP, no RB, weak surf FFP, no RB; Times: 5-15-30-60; Recovery: 10' mud (100%M); Pressures: HP: 2282-2214, SIP: 41-154, FP: 16-16, 15-16; BHT: 113 F; Trilobite Testing Co., Inc., Ellis, KS, Sam Esparza.







3900

3950

4000

4050

LS: lt-md brown; mic-vf xtal; fos-frag in part; sli chalky; poor porosity; N.S.

LS: as above;

SAMPLES CONTAIN 15-20% SLOUGH DOWN TO ABOUT 3890 WHEN QUALITY WORSENED, BECOMMING NON-DESCRIPT BY 3960.

LS: lt-md grayish brown; vf-xtal; sli ool to fos-frag; rough; poor apparent porosity; N.S., much slough.

LS: lt-md grayish brown; vf-xtal; fos-frag in part; poor apparent porosity; N.S., much slough.

LS: lt-grayish brown; mic-vf xtal; mostly dense; no visible porosity; N.S., incr slough.

LS: as above w/again more slough;

HEEBNER 3955 (-1228)

Shale, black; not found, poor samples.

Shale: indistinct due to slough;

LS: white to lt brown; vf-xtal; chalky; poor apparent porosity; N.S., trc mineral fluor indicates Toronto, 3990, 4000.

VIS 59, WT 9.1, FIL 6.8, CHL 1800, LCM 1#

LANSING 3996 (-1269)

Samples very poor; no valid description can be given for Lansing Top Zone. Mostly elongate flakes orange-red, gray-green shale & minor anhydrites;

0 Hot-Wire 100

PERFORM 15 STAND SHORT-TRIP 4013, CIRC 15 MIN PRIOR, 30 MIN AFTER.

LS: lt brown; vf-xtal; appears silty in part; poor apparent porosity; N.S., much slough.

THERE ARE POOR TOTAL RETURNS FOR SAMPLES FOLLOWING SHORT TRIP AND ONLY MINOR IMPROVMENT IN REPRESENTATION.

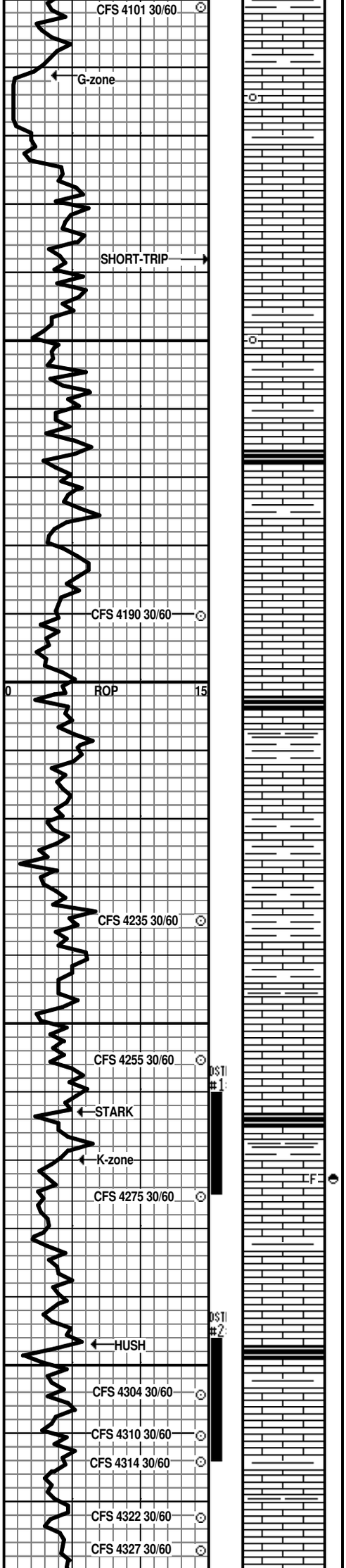
Mostly few chips dense lime & slough;

DECREASE PUMP STROKES FROM 60 DOWN TO 54, SPM, 700 PSI AT 4050. REALIZE A POSITIVE IMPACT AT 4080 SAMPLE, BUT LIME IS BELOW 12/64", SO SOMEWHAT SMALL.

LS: lt brown to grayish-brown; vf-xtal; sli oolitic; trc opaq white & orange chert; mostly dense; poor porosity; N.S., 4080.

LS: lt brown; vf-xtal; dense, smooth; few grains; minor cherts; poor porosity; N.S.

LS: lt brown; vf-xtal; mostly dense; sli gran; trc siliceous & cherty; poor porosity; N.S.



4100

LS: lt brown; vf-xtal; fos-frag; poor-fair int frag porosity; dull fluor; N.S.

LS: lt brown; vf-xtal; typical md-crs oomoldic; re-xtalized in part; good oom porosity; dull fluor; N.S., 4130.

LS: lt brown; vf-xtal; trc semi-trans to opaq cherts; minor soft chalk; mostly dense; no visible porosity; N.S.

PERFORM 15 STAND SHORT-TRIP AT 4138, CIRC 15 MIN PRIOR, 30 MIN AFTER.

4150

LS: lt brown; vf-xtal; f-coarse oom & minor vug porosity; N.S.

4160 SAMPLE AND AFTER GREATLY IMPROVED, 1/4" CHIPS, MINOR SLOUGH. BUT SLOWLY DEGRADE AGAIN DOWNWARD.

MUNCIE CREEK 4156 (-1429)

Shale: dk-gray, black; poorly expressed;
LS: md-dk grayish brown; vf-xtal; dense; no visible porosity; N.S.

LS: lt grayish brown; mic-vf xtal; dense to chalky in part; scattered pin-point, or very fine oom porosity; N.S.

LS: lt grayish brown; vf-xtal; mostly dense; sli chert; chalky in part; no visible porosity; N.S.

4200

0 Hot-Wire 100

Shale: dk gray to black; 4220.

LS: lt grayish brown; vf-xtal; dense; no visible porosity; N.S.

VIS 55, WT 9.1, FIL 7.2, CHL 2100, LCM 1#

LS: lt grayish brown; vf-xtal; trc oomoldic porosity; N.S., possible float?

SAMPLES INCR SLOUGH ABOUT 4240 UNTIL 4255-60 MIN IS 95% SOFT DK GRAY SHALE;

4250

LS: lt brown; vf-xtal; few chips; med oomoldic porosity; N.S. 4255, samples after are degraded.

BIT TRIP 4255 TO CONDITION HOLE BROUGHT ONLY MINOR IMPROVMENT;

STARK SH 4263 (-1536)

Shale: black; carbon; trace 4275 stop samp.
LS: lt gray to lt brown; vf-xtal; dense; no visible porosity; trc soft chalk w/specks bright fluor; no visible show oil or dry stains; lime chips are subsized < 12/64", much slough; poor representation;

DST #1: K-ZONE: 4260-4275: BOB 3 MIN; 5-15-15-30; 63' GIP, 283' GMO; SIP: 510-505; FP: 43-63, 72-103.

VIS 52, WT 9.1, FIL 7.2, CHL 2500, LCM 1#

LF

LS: lt gray, vf-xtal; dense w/much soft, white chalk; N.S.

HUSHPUCKNEY 4297 (-1570)

Shale: black; carbon; several chips 1/2 hour.
LS: lt-dk grayish brown; vf-xtal; dense; no vis porosity; N.S., seems poorly represented?

4300

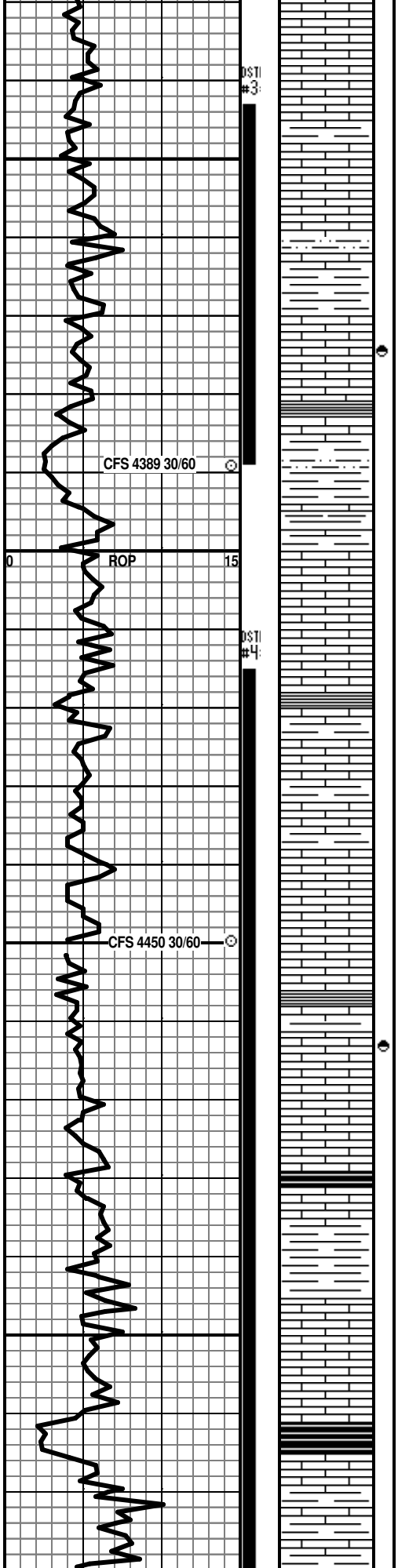
SAMPLES IMPROVED TO GOOD CONDITION AT 4310-30 MIN AND AFTER.

LS: lt grayish brown; mic-vf xtal; dense to chalky; few grains; poor apparent por; N.S.
LS: v-lt brown; vf-xtal; dense oolite; siliceous; oolitic chert; v-poor int ool por, dull fluor, N.S., 4322 30/60, good samples.

DST #2: L-ZONE: 4296-4314: WEAK BLOW; 5-15-15-30; 5' MUD; SIP: 405-400; FP: 14-16, 17-22.

LS: as above, much soft chalk; N.S.

VIS 52, WT 9.1, FIL 6.8, CHL 2400, LCM 1#



4350

LS: white to lt brown; mic-vf xtal; much soft chalk; white opaq oolitic chert, dark oolites; no visible porosity; N.S.

LS: lt-md grayish brown; vf-xtal; dense to chalky in part; poor apparent porosity; N.S.

Shale: green, gray; limey; sli silty;

LS: lt grayish brown; vf-xtal; trace drusy vug porosity w/lt brown spotted stain & fluor; no visible oil;

DST #3: PLEASANTON: 4343-4389: WEAK BLOW; 5-15-30-60; 3' MUD; SIP: 66-108; FP: 32-32, 32-32.

4400

MARMATON 4396 (-1669)

LS: white to lt grayish brown, green, maroon streaks & spots; f-c glauc; coarsely granular; no visible porosity; N.S.

0 Hot-Wire 100

LS: mostly lt brown to lt gray; vf-xtal; granular; tight int gran porosity; N.S., cleaner than above;

LS: lt brown to lt gray; vf-xtal; dense; sli granular; no visible porosity; N.S.

LS: indistinct from above;

LS: lt brown; vf-xtal; minor pink tinted, semi- trans chert; poor apparent porosity; N.S.

VIS 57, WT 9.0, FIL 6.8, CHL 2500, LCM 1.5#

4450

PAWNEE 4459 (-1732)

LS: lt brown; vf-xtal; mostly dense; traces bright fluor, v-fine vug por w/sli oil stain; 4470, 4480.

LS: lt brown; vf-xtal; dense; no visible porosity; N.S.

Shele: black; indistinct;

LS: lt-md brown; vf-xtal; dense; N.S.

Shale: green, gray;

4500

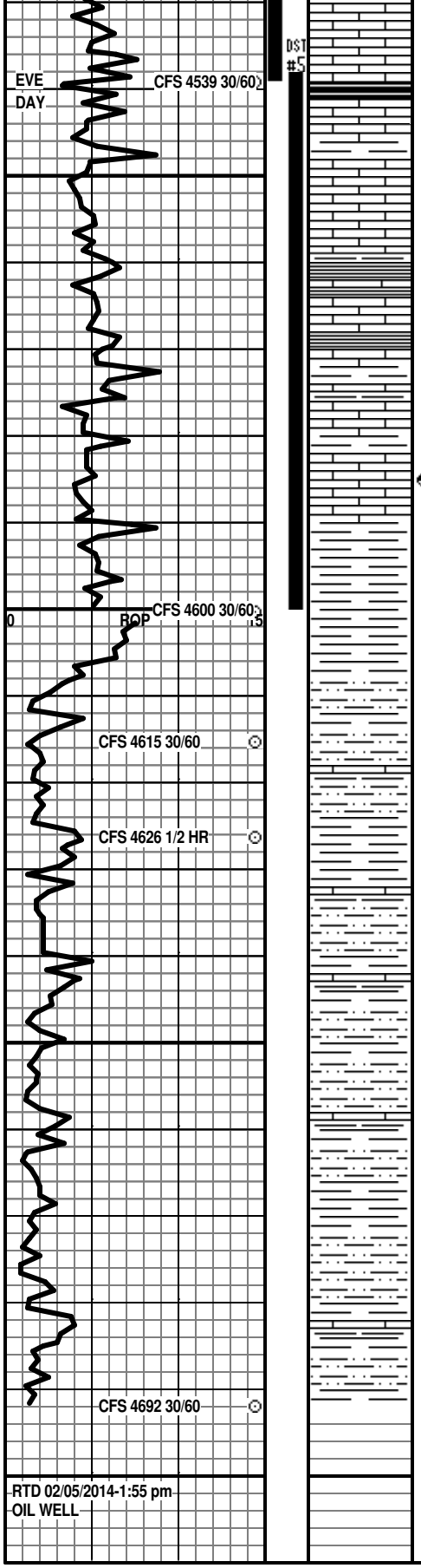
LS: lt brown; vf-xtal; dense; no visible porosity; N.S.

Shale: black; carbon; 4530.

FT SCOTT 4545 (-1788)

LS: lt brown matrix w/dk brown, spherical oolites; tight int oolite porosity; N.S.

Shale: green, gray, very limey;



4550

LS: md-dk brown; vf-xtal; dense; no visible porosity; N.S.

CHER SH 4539 (-1812)

LS: lt grayish brown; vf-xtal; dense; no vis porosity; N.S., samples mostly shale & subsized lime;

SAMPLES AFTER DST #4 ARE IN VERY POOR CONDITION, BEING 95% SLOUGH SHALE.

BRUTALLY COLD WORKING CONDITIONS, -15 F, DIFFICULTIES KEEPING RIG THAWED OUT.

LS: as above as best as can tell;

VIS 53, WT 9.1, FIL 7.2, CHL 2800, LCM 1#

LS & Shale;

LS: lt grayish brown; vf-xtal; mostly dense, no visible porosity; trace vf vug porosity w/sli oil stain; no fluor; 4600 30 min; much slough;

SAMPLES ONLY SLIGHTLY IMPROVED AT CIRCULATION.

B/JOHNSON 4590 (-1863)

DST #5: CHEROKEE: 4538-4600: WEAK BLOW; 5-15-30-60, 10' MUD; SIP: 41-154, FP: 16-16, 15-16.

4600

Shale: gray, green, maroon; minor SiltSt.

0 Hot-Wire 100

Shale: as above, trace various weathered & oxidized cherts;

SiltSt: green, gray; v-dirty; various coarse, rounded grains; minor various, chert & lime;

CALIBRATE & ADJUST RPM FROM 80 ? DOWN TO 70 SEEMED TO BRING GOOD SAMPLES, CUTTINGS AS LARGE AS 18/64" & NO PERMIAN.

SiltSt & Shale as above;

SiltSt: white to green; Shale: gray, green, maroon; silty; minor various lime: browns, grays; rough; N.S.

VIS 55, WT 9.3, FIL 7.6, CHL 2700, LCM 1#

4650

SiltSt, Shale and various as above;

SiltSt, Shale, minor Lime as above;

PIONEER ENERGY SERVICES LTD 4695

4700