

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

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

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

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 Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

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				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
---	---	------------------------------------

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	VOSHELL 3
Doc ID	1357192

Tops

Name	Top	Datum
Anhydrite	2150	+672
B Anhydrite	2183	+639
Heebner	3957	-1135
Lansing	3999	-1177
Stark Sh	4285	-1463
Pawnee	4492	-1670
Ft Scott	4539	-1717
Cher Sh	4560	-1738

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	VOSHELL 3
Doc ID	1357192

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	4453-56, 4414-16, 4405-07	250 gal 15% MCA	4453-56
		250 gal 15% MCA	4414-16, 4405-07
4	4382-88, 4332-36	250 gal 15% MCA	4382-88
		250 gal 15% MCA	4332-36
4	4279-82, 4236-48	250 gal 15% MCA	4279-82
		250 gal 15% MCA	4236-48



CHARGE TO: Kasen Engineering
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 30171

PAGE 1 OF 1

SERVICE LOCATIONS: 1. Assa City KS
 WELL/PROJECT NO. #3 LEASE Voshell COUNTY/PARISH Lavo STATE KS CITY Dighton DATE 21 MAR 17 OWNER _____
 2. TICKET TYPE SERVICE SALES CONTRACTOR _____ RIG NAME/NO. _____ SHIPPED VET DELIVERED TO location ORDER NO. _____
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE Cement surface pipe WELL PERMIT NO. _____ WELL LOCATION 13-19-29
 4. REFERRAL LOCATION _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT		UNIT PRICE	AMOUNT
		LOC	ACCT	DF			U/M				
575		1			MILEAGE TRK 114	40	mi			5.00	200.00
5765		1			Pump Charge	1	ea			800.00	800.00
325		1			Standard cement	165	sk			12.85	2021.25
279		1			Benlate gel	300	lb	3	sk	25.00	75.00
278		1			Calcium chloride	350	lb	7	sk	40.00	280.00
276		1			Floccle	50	lb			2.25	112.50
582		1			service charge	165	sk			1.50	247.50
583		1			Drayage (min)	1620	lb	324.2	TH	2.80	250.00

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 _____ A.M. P.M.
 03/20

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?				3986	25	
WE UNDERSTOOD AND MET YOUR NEEDS?				3986	63	
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				10% 0% 20%	3587	62
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Landco 7-5%	167	99
ARE YOU SATISFIED WITH OUR SERVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO				TOTAL	3755	61

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

SWIFT OPERATOR BW APPROVAL _____

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 21 MAR 17 PAGE NO. 1

CUSTOMER *Lardon Engineering* WELL NO. *3* LEASE *Voshell* JOB TYPE *Cement surface pipe* TICKET NO. *30171*

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								105 sk STANDARD cement 2% gel 3% CC #1/4 Floccula 6 jts 20" casing TD = 262'
	2130							on loc TRK 114
	2155							start 8 5/8" x 20" casing in well
	2330							circulate
	2340	4 1/4	42				200	mix STD 2% 3% cement 165 sk @ 1427 ft
	2353	4	15 1/2				200	Displace 15 1/2 bbl H ₂ O → cement to surface ←
22 MAR	0000							Kickout shut in 8 5/8" { 165 mix at 15 to pit }
	0010							wash truck
								Rack up
	0030							job complete
								Thanks Blaine, Flint & PRESTON



CHARGE TO: Lauson Engineering
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 30254

SERVICE LOCATIONS: 1. Ness City KS
 WELL/PROJECT NO. #3 LEASE Voshell COUNTY/PARISH Lane STATE KS CITY Dighton DATE 1 APR 17 OWNER _____
 2. TICKET TYPE SERVICE SALES CONTRACTOR SOUTHWIND RIG NAME/NO. _____ SHIPPED VIA DELIVERED TO location ORDER NO. _____
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE cement long string WELL PERMIT NO. _____ WELL LOCATION 13-19-21
 4. REFERRAL LOCATION _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE TRK 114	40		mi		5.00	200.00
578					Pump charge	200		sk	1.00	62.50	12500.00
325					standard cement (for #2)	200		sk		12.25	2450.00
284					calseal	900		lb	9.00	30.00	270.00
283					salt	1000		lb		0.20	200.00
292					whnd-322	200		lb	1.00	8.00	1600.00
276					florale	25		lb		2.35	56.25
277					Gilsate	1400		lb		0.75	1050.00
280					florale	500		gal		3.00	1500.00
221					KCL liquid	2		gal		25.00	50.00
290					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

DATE SIGNED: _____ TIME SIGNED: _____
 A.M.
 P.M.
 9:650

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				8710.25
WE UNDERSTOOD AND MET YOUR NEEDS?				634.88
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				1072.00
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				9345.13
ARE YOU SATISFIED WITH OUR SERVICE?				924.51
				840.62
				490.09
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL
				8900.64

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!



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

TICKET CONTINUATION

TICKET No. 30254

CUSTOMER *Wilson Engineering* WELL *Voswell #3* DATE *1 APR 17* PAGE *2* 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		
<i>581</i>						SERVICE CHARGE					<i>1</i>	<i>300</i>
<i>583</i>						MILEAGE CHARGE						<i>334</i>
						TOTAL WEIGHT	<i>22325</i>					
						LOADED MILES						
						TON MILES			<i>446.50</i>			<i>88</i>
CONTINUATION TOTAL											<i>634</i>	<i>88</i>

JOB LOG

SWIFT Services, Inc.

DATE 1 APR 17 PAGE NO. 1

CUSTOMER *Green Engineering* WELL NO. #3 LEASE *Voshell* JOB TYPE *Cement long string* TICKET NO. 30254

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								200sk st-2 cement w/ 7 th grits wite, 1/10 halol 522 4 1/2 x 11.5" casing TD = 4660' P.C. = 2129' pipesit 4647'
	0245							on loc TRK 114 start 4 1/2" pipe in well
	0430							Drop ball - circulate - ROTATE
	0530	4 1/2 4 1/2	12 20				200 200	Pump 500 gal Flocheck Pump 20 bbl KCl flush
	0544		8 8					Pump RTT - MT 30sk - 20sk
	0550	4	42					mix st-2 cement 150sk @ 15.3 gpg
								Drop latch down plug work out plug & line
	0618	6					200	Displace plug
	0630	6 6	67 71				650 1550	Land plug
								Release pressure to truck - dried up
	0632							work truck
	0650							Rack up
	0655							job complete Thanks Frank, Blaine & Ross



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

TICKET 29897

SERVICE LOCATIONS
 1. Ness City KS WELL/PROJECT NO. #3 LEASE Voshell COUNTY/PARISH Lane STATE KS CITY Dighton DATE 4-12-17 OWNER Same
 2. TICKET TYPE SERVICE SALES CONTRACTOR Cheyenne Well Service RIG NAME/NO. _____ SHIPPED VIA CT DELIVERED TO Location ORDER NO. _____
 3. WELL TYPE Oil WELL CATEGORY Development JOB PURPOSE Cement 4 1/2" Port Collar WELL PERMIT NO. _____ WELL LOCATION Dighton - 5s, 1w, 1w, E side
 4. REFERRAL LOCATION _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE		AMOUNT
		LOC	ACCT	DF			UM		UM	
575		1			MILEAGE		40	mi	5.00	200.00
576 D		1			Pump Charge- Port Collar		1 1/2	in	1250.00	1250.00
330		1			SMD Cement		165	sks	15.75	2598.75
276		1			Flocle		50	lbs	2.25	112.50
290		1			D-Air		2	gal	42.00	84.00
581		1			Service Charge Cement		250	sks	1.50	375.00
583		1			Drayage		24975	lbs	00.75	375.00

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 4-12-17 TIME SIGNED 1000 A.M. P.M.

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

SURVEY			AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?						4995.25
WE UNDERSTOOD AND MET YOUR NEEDS?						10%
OUR SERVICE WAS PERFORMED WITHOUT DELAY?						PCSA 4705.36
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?						Lane Co TAX 209.64
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES <input type="checkbox"/> NO					TOTAL 4705.36

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.
 SWIFT OPERATOR David Kuehn APPROVAL _____ Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 4-12-17 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Larson Engineering		#3		Uoshell		Cement 4 1/2" Port Collar		29897	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
	0800							on location	2 3/8" x 4 1/2"
								P.C. - 2124	
	0830	∅	∅		✓		1000	pressure test	* Hold *
								open P.C.	
		3	4		✓		400	Injection Rate	
	0845	3 1/2	91		✓		300	300 mix 165 sks SMD w/ 1/4" Flo @ 11.2 ppg	circulate cement to pit * 20 sks *
		3 1/2	7.5		✓		500	Displace Cement	
	0915	∅	∅		✓		1000	Close P.C.	* Hold *
								Run 4 Jts	
	0930	3	20		✓		350	Reverse Clean	* 165 sks total * * 20 sks pit *
								wash up truck	
	1000							Job Complete	

Thank You
 Dave Preston Kirby Wayne



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd 4
Olmitz KS 67564

ATTN: Vern Schrag

Voshell #3

13-19s-29w Lane,KS

Start Date: 2017.03.27 @ 02:26:15

End Date: 2017.03.27 @ 07:04:15

Job Ticket #: 63705 DST #: 1

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

Printed: 2017.03.31 @ 10:01:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63705

DST#: 1

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 02:26:15

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:18:45

Time Test Ended: 07:04:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 81

Interval: 4178.00 ft (KB) To 4199.00 ft (KB) (TVD)

Reference Elevations: 2822.00 ft (KB)

Total Depth: 4199.00 ft (KB) (TVD)

2812.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 6749 Outside

Press@RunDepth: 73.14 psig @ 4179.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.27

End Date:

2017.03.27

Last Calib.:

2017.03.27

Start Time:

02:26:15

End Time:

07:04:15

Time On Btm:

2017.03.27 @ 04:18:30

Time Off Btm:

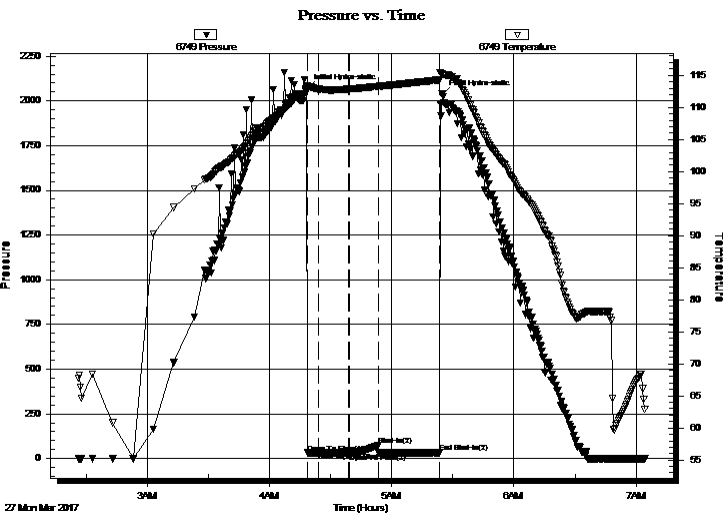
2017.03.27 @ 05:24:45

TEST COMMENT: IF: Built to 1/8" blow

IS: No return blow

FF: No blow

FS: No return blow



PRESSURE SUMMARY

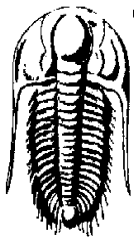
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2068.96	113.40	Initial Hydro-static
1	31.72	112.73	Open To Flow (1)
6	32.34	112.83	Shut-In(1)
21	32.36	112.85	End Shut-In(1)
21	28.00	112.86	Open To Flow (2)
35	73.14	113.28	Shut-In(2)
65	32.79	114.29	End Shut-In(2)
67	2037.41	115.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	mud 100% m	0.77

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63705

DST#: 1

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 02:26:15

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 04:18:45

Tester: Mike Roberts

Time Test Ended: 07:04:15

Unit No: 81

Interval: **4178.00 ft (KB) To 4199.00 ft (KB) (TVD)**

Reference Elevations: 2822.00 ft (KB)

Total Depth: 4199.00 ft (KB) (TVD)

2812.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: **8672**

Inside

Press@RunDepth: psig @ 4179.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.27

End Date:

2017.03.27

Last Calib.:

2017.03.27

Start Time: 02:26:15

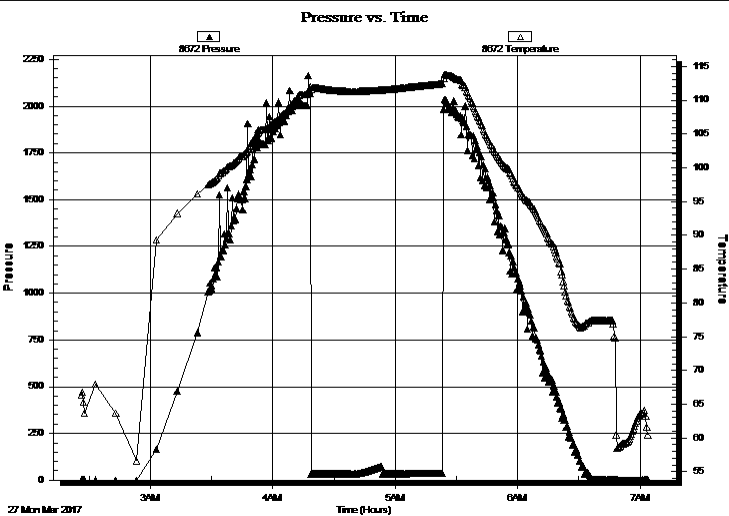
End Time:

07:04:00

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to 1/8" blow
IS: No return blow
FF: No blow
FS: No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
55.00	mud 100% m	0.77

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

13-19s-29w Lane,KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63705

DST#: 1

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 02:26:15

Tool Information

Drill Pipe:	Length: 4162.00 ft	Diameter: 3.80 inches	Volume: 58.38 bbl	Tool Weight: 1500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 58.38 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4178.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	44.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4156.00	
Shut In Tool	5.00			4161.00	
Hydraulic tool	5.00			4166.00	
Safety Joint	3.00			4169.00	
Packer	5.00			4174.00	23.00 Bottom Of Top Packer
Packer	4.00			4178.00	
Stubb	1.00			4179.00	
Recorder	0.00	8672	Inside	4179.00	
Recorder	0.00	6749	Outside	4179.00	
Perforations	15.00			4194.00	
Bullnose	5.00			4199.00	21.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63705

DST#: 1

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 02:26:15

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.54 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	mud 100%m	0.772

Total Length: 55.00 ft Total Volume: 0.772 bbl

Num Fluid Samples: 0

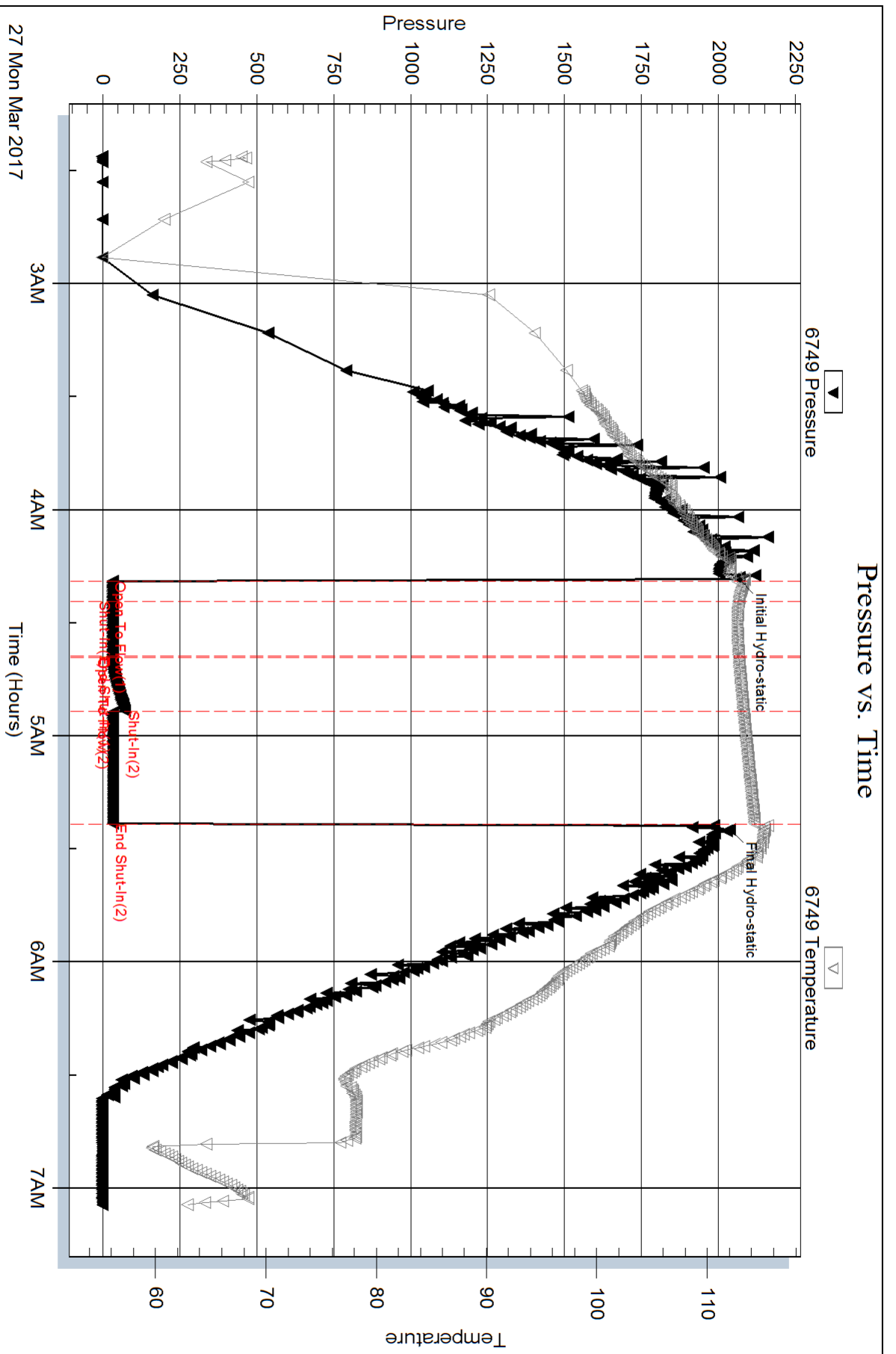
Num Gas Bombs: 0

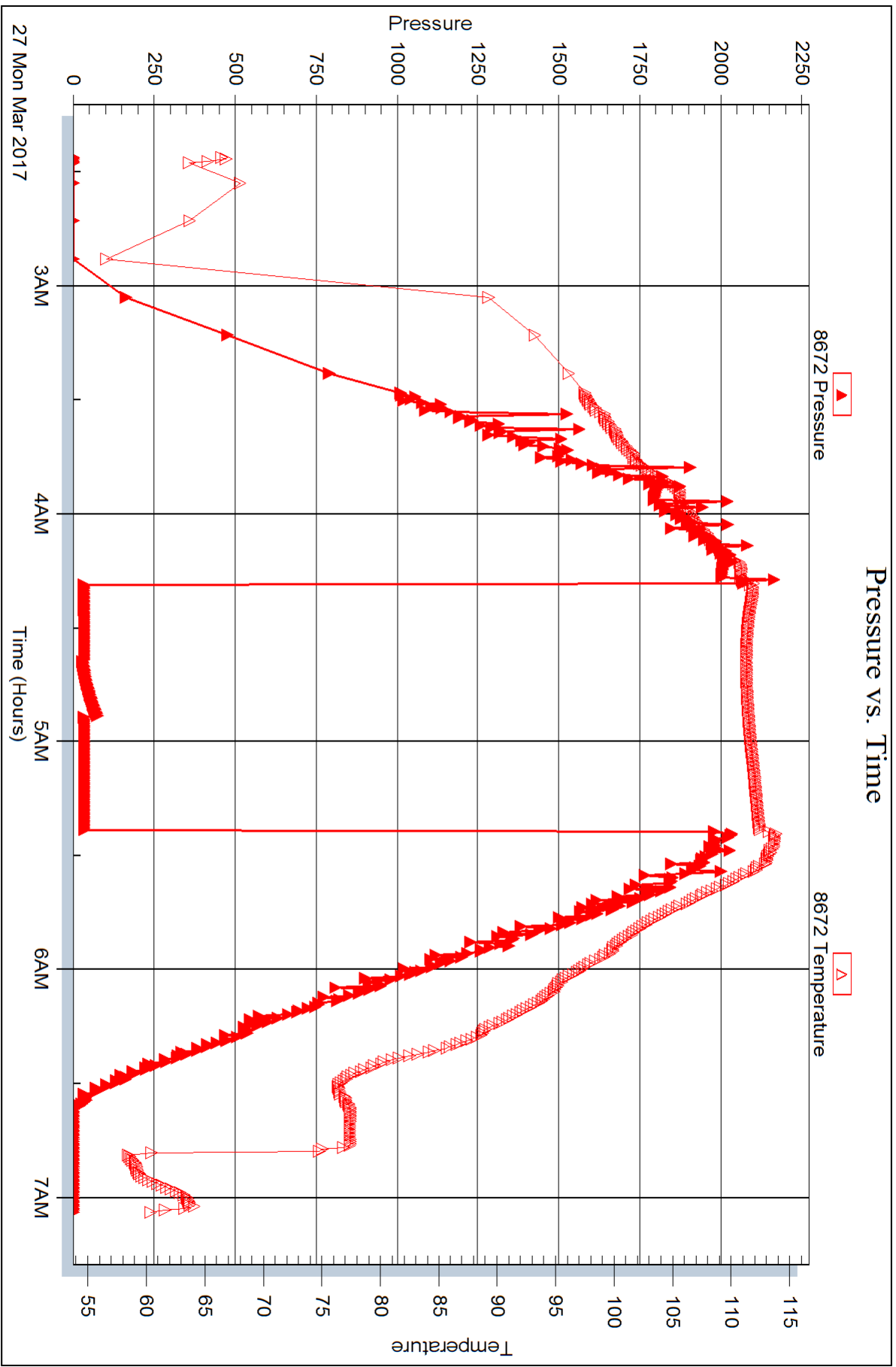
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd 4
Olmitz KS 67564

ATTN: Vern Schrag

Voshell #3

13-19s-29w Lane,KS

Start Date: 2017.03.27 @ 17:42:15

End Date: 2017.03.28 @ 11:24:30

Job Ticket #: 63706 DST #: 2

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

Printed: 2017.03.31 @ 10:00:37



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd 4
 Olmitz KS 67564
 ATTN: Vern Schrag

13-19s-29w Lane, KS
Voshell #3
 Job Ticket: 63706 **DST#: 2**
 Test Start: 2017.03.27 @ 17:42:15

GENERAL INFORMATION:

Formation: **LKC I**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened:
 Tester: Mike Roberts
 Time Test Ended: 11:24:30
 Unit No: 81
Interval: 4217.00 ft (KB) To 4238.00 ft (KB) (TVD)
 Reference Elevations: 2822.00 ft (KB)
 Total Depth: 4238.00 ft (KB) (TVD) 2812.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

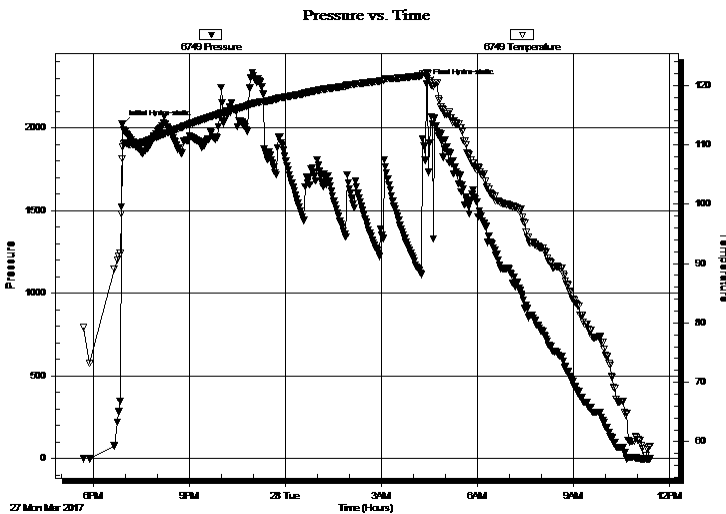
Serial #: 6749

Outside

Press@RunDepth: psig @ 4218.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.27 End Date: 2017.03.28 Last Calib.: 2017.03.28
 Start Time: 17:42:15 End Time: 11:24:30 Time On Btm: 2017.03.27 @ 18:54:15
 Time Off Btm: 2017.03.28 @ 04:24:30

TEST COMMENT: IF:Dropped tool down the hole.
 IS:FISHING FOR TOOL
 FF:
 FS:

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2023.51	107.68	Initial Hydro-static
571	2270.10	122.14	Final Hydro-static

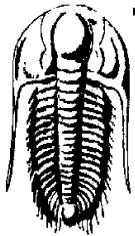
Recovery

Length (ft)	Description	Volume (bbl)

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

562 West State Rd 4
Olmitz KS 67564

ATTN: Vern Schrag

13-19s-29w Lane,KS

Voshell #3

Job Ticket: 63706

DST#: 2

Test Start: 2017.03.27 @ 17:42:15

GENERAL INFORMATION:

Formation: **LKC I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 11:24:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4217.00 ft (KB) To 4238.00 ft (KB) (TVD)

Total Depth: 4238.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2822.00 ft (KB)

2812.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8672 Inside

Press@RunDepth: psig @ 4218.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.27 End Date: 2017.03.28

Last Calib.: 2017.03.28

Start Time: 17:42:15 End Time: 11:24:30

Time On Btm:

Time Off Btm:

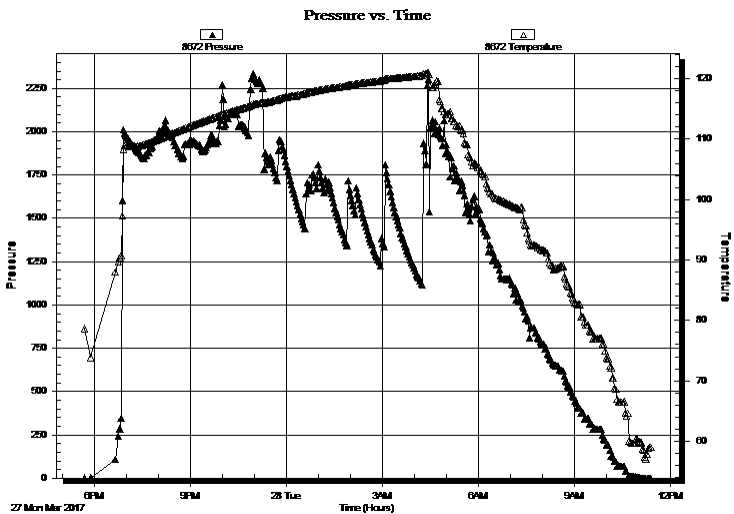
TEST COMMENT: IF:Dropped tool dow n the hole.

IS:FISHING FOR TOOL

FF:

FS:

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

13-19s-29w Lane,KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63706

DST#: 2

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 17:42:15

Tool Information

Drill Pipe:	Length: 4227.00 ft	Diameter: 3.80 inches	Volume: 59.29 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume: 59.29 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4217.00 ft			Final	77000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	44.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: FISHING FOR TOOL

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

Change Over Sub	1.00			4195.00	
Shut In Tool	5.00			4200.00	
Hydraulic tool	5.00			4205.00	
Safety Joint	3.00			4208.00	
Packer	5.00			4213.00	23.00 Bottom Of Top Packer
Packer	4.00			4217.00	
Stubb	1.00			4218.00	
Recorder	0.00	8672	Inside	4218.00	
Recorder	0.00	6749	Outside	4218.00	
Perforations	15.00			4233.00	
Bullnose	5.00			4238.00	21.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63706

DST#: 2

ATTN: Vern Schrag

Test Start: 2017.03.27 @ 17:42:15

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: 83.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.56 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

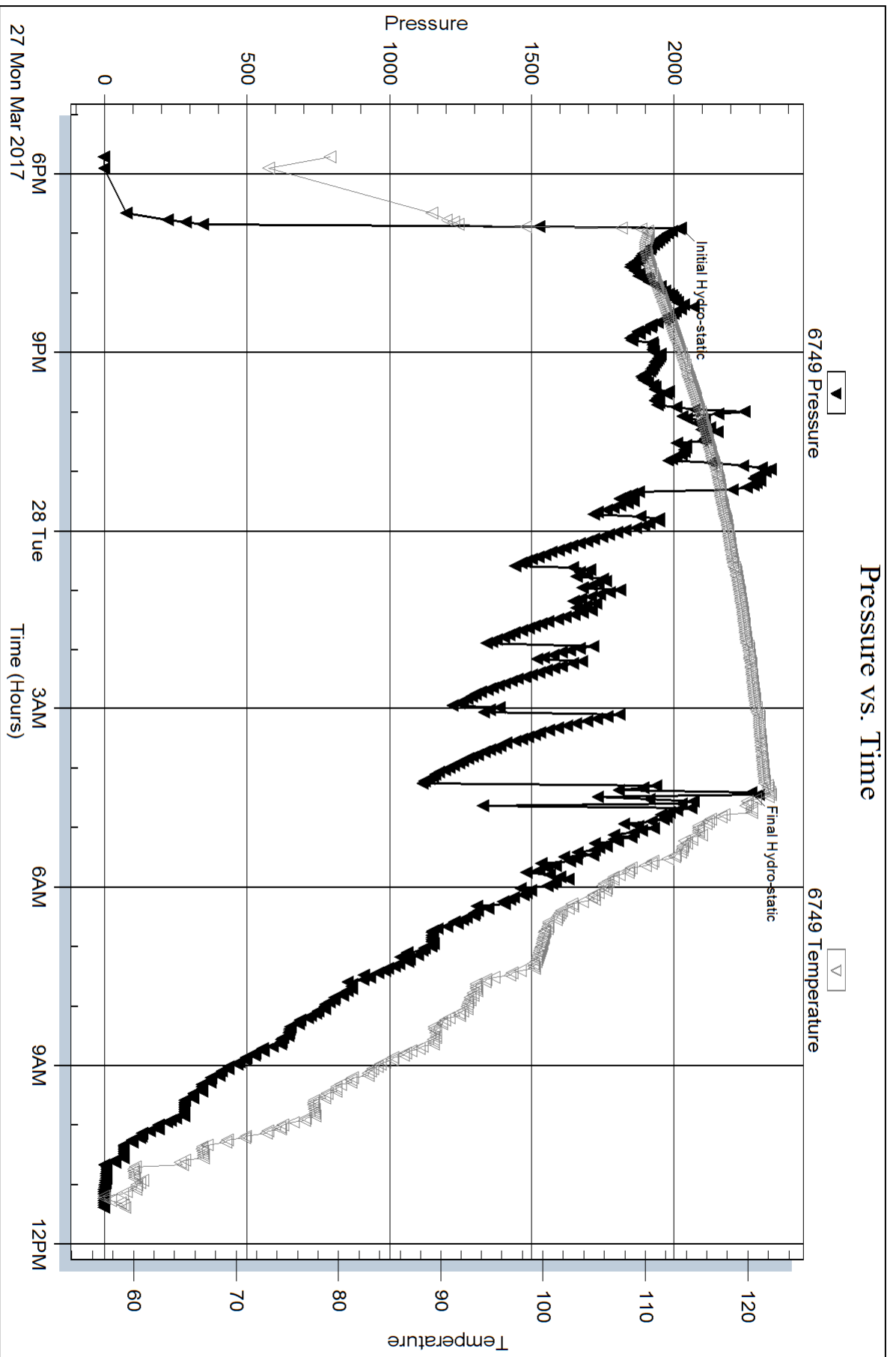
Length ft	Description	Volume bbbl

Total Length: ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:



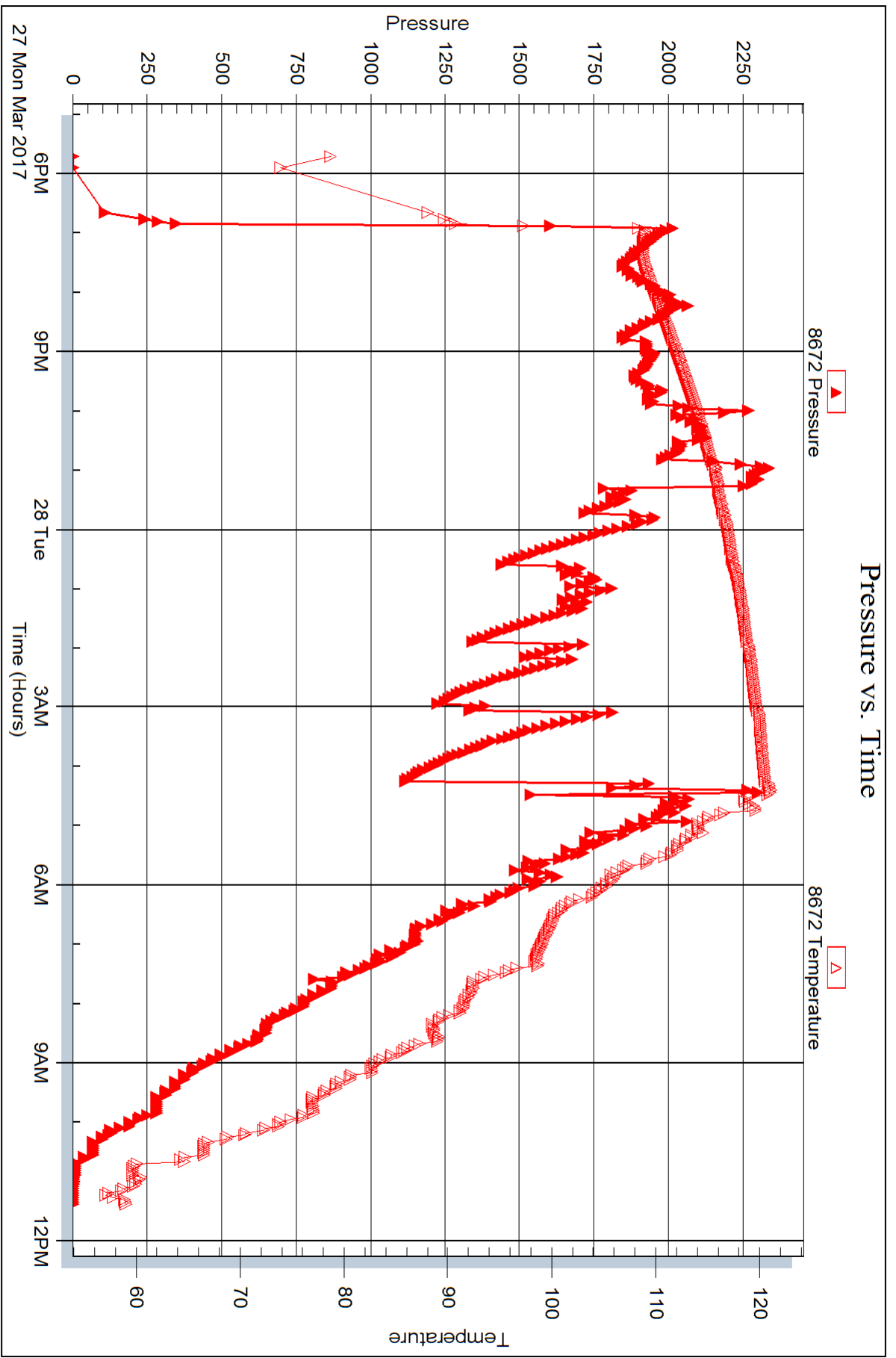
Serial #: 8672

Inside

Larson Engineering Inc.

Voshell#3

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63706

Printed: 2017.03.31 @ 10:00:38



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd 4
Olmitz KS 67564

ATTN: Vern Schrag

Voshell #3

13-19s-29w Lane,KS

Start Date: 2017.03.29 @ 08:39:15

End Date: 2017.03.29 @ 14:49:00

Job Ticket #: 63707 DST #: 3

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

Printed: 2017.03.31 @ 10:00:15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd 4
 Olmitz KS 67564
 ATTN: Vern Schrag

13-19s-29w Lane, KS
Voshell #3
 Job Ticket: 63707 **DST#: 3**
 Test Start: 2017.03.29 @ 08:39:15

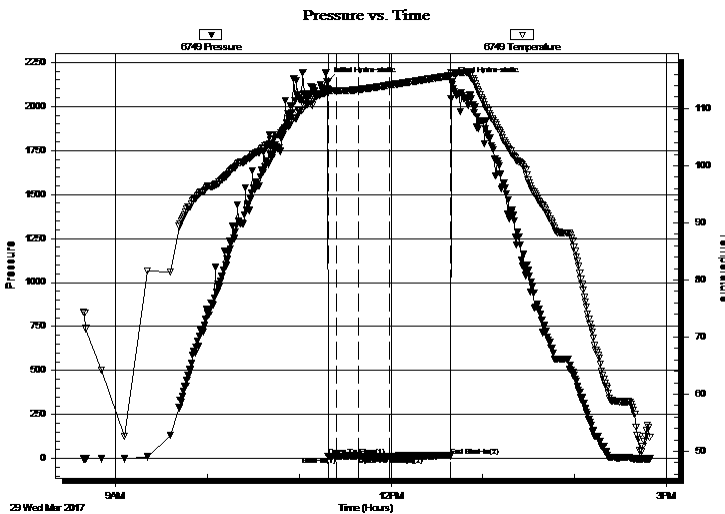
GENERAL INFORMATION:

Formation: **Middle Creek**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:19:00
 Time Test Ended: 14:49:00
 Interval: **4327.00 ft (KB) To 4336.00 ft (KB) (TVD)**
 Total Depth: 4327.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 2822.00 ft (KB)
 2812.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6749 Outside
 Press@RunDepth: 14.34 psig @ 4328.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.29 End Date: 2017.03.29 Last Calib.: 2017.03.29
 Start Time: 08:39:15 End Time: 14:49:00 Time On Btm: 2017.03.29 @ 11:18:45
 Time Off Btm: 2017.03.29 @ 12:39:45

TEST COMMENT: IF: Built to weak surface blow
 IS: No return blow
 FF: Built to weak surface blow and died in 15 min.
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2139.85	113.36	Initial Hydro-static
1	13.15	112.76	Open To Flow (1)
6	13.36	113.10	Shut-In(1)
20	16.03	113.31	End Shut-In(1)
20	13.86	113.32	Open To Flow (2)
41	14.34	114.10	Shut-In(2)
80	12.98	115.74	End Shut-In(2)
81	2142.68	116.10	Final Hydro-static

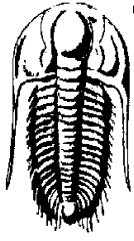
Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%m	0.03

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63707

DST#: 3

ATTN: Vern Schrag

Test Start: 2017.03.29 @ 08:39:15

GENERAL INFORMATION:

Formation: **Middle Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:19:00

Time Test Ended: 14:49:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: **4327.00 ft (KB) To 4336.00 ft (KB) (TVD)**

Reference Elevations: 2822.00 ft (KB)

Total Depth: 4327.00 ft (KB) (TVD)

2812.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8672 Inside

Press@RunDepth: psig @ 4328.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.29 End Date: 2017.03.29

Last Calib.: 2017.03.29

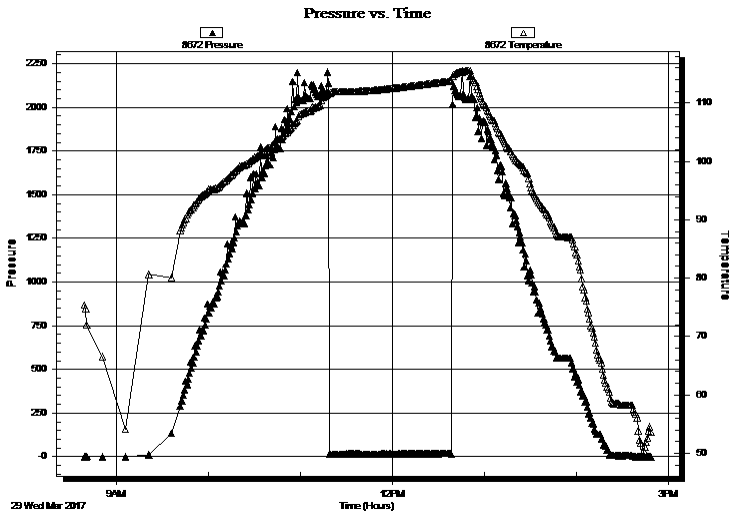
Start Time: 08:39:15 End Time: 14:48:45

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Built to weak surface blow
IS: No return blow
FF: Built to weak surface blow and died in 15 min.
FS: No return blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100%m	0.03

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

13-19s-29w Lane,KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63707

DST#: 3

ATTN: Vern Schrag

Test Start: 2017.03.29 @ 08:39:15

Tool Information

Drill Pipe:	Length: 4321.00 ft	Diameter: 3.80 inches	Volume: 60.61 bbl	Tool Weight: 1500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4327.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4305.00	
Shut In Tool	5.00			4310.00	
Hydraulic tool	5.00			4315.00	
Safety Joint	3.00			4318.00	
Packer	5.00			4323.00	23.00 Bottom Of Top Packer
Packer	4.00			4327.00	
Stubb	1.00			4328.00	
Recorder	0.00	8672	Inside	4328.00	
Recorder	0.00	6749	Outside	4328.00	
Perforations	3.00			4331.00	
Bullnose	5.00			4336.00	9.00 Bottom Packers & Anchor

Total Tool Length: 32.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63707

DST#: 3

ATTN: Vern Schrag

Test Start: 2017.03.29 @ 08:39:15

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: 40.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 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
2.00	mud 100%m	0.028

Total Length: 2.00 ft Total Volume: 0.028 bbl

Num Fluid Samples: 0

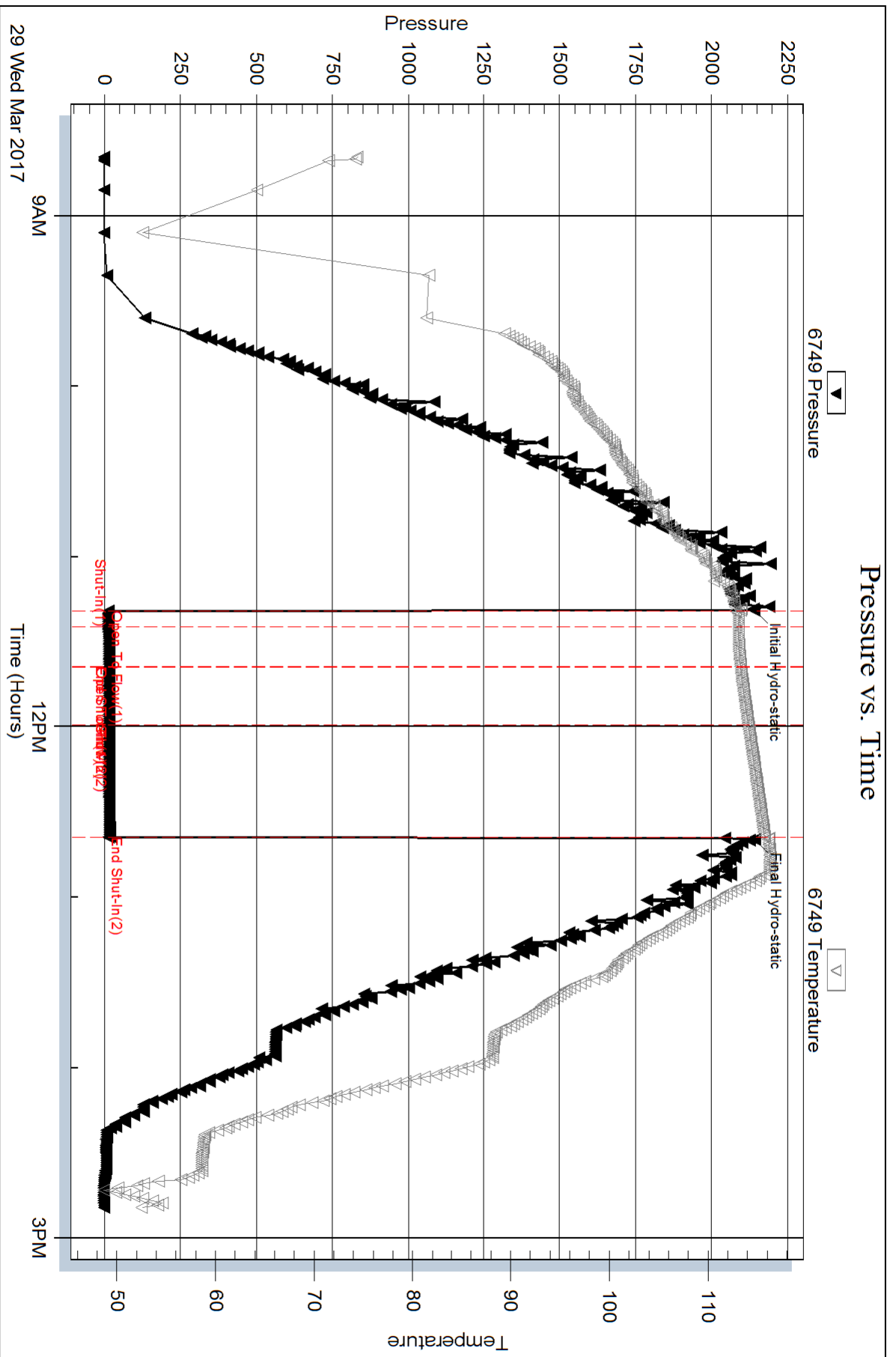
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



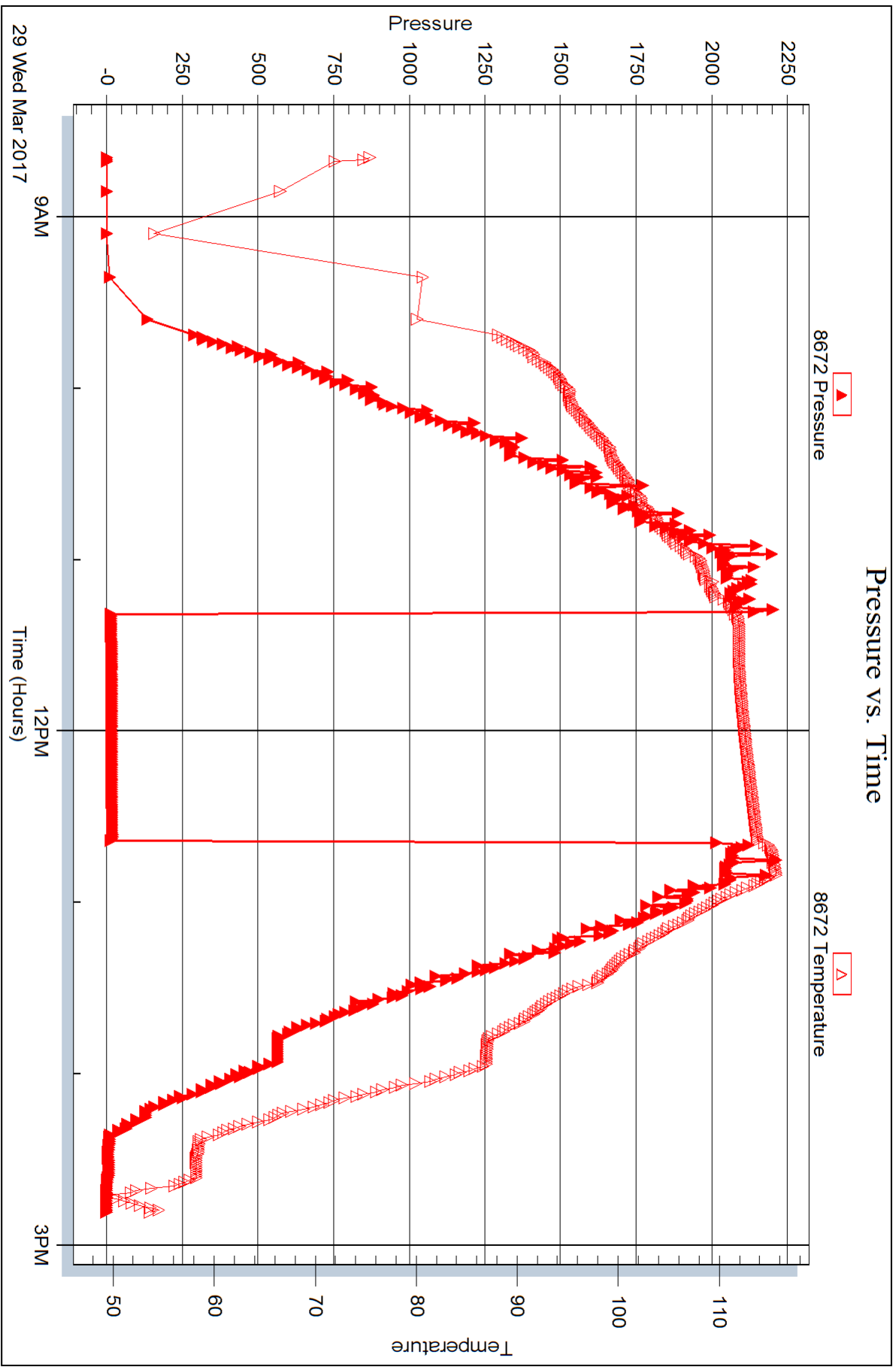
Serial #: 8672

Inside

Larson Engineering Inc.

Voshell#3

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 63707

Printed: 2017.03.31 @ 10:00:16



DRILL STEM TEST REPORT

Prepared For: **Larson Engineering Inc.**

562 West State Rd 4
Olmitz KS 67564

ATTN: Vern Schrag

Voshell #3

13-19s-29w Lane,KS

Start Date: 2017.03.30 @ 10:58:15

End Date: 2017.03.30 @ 16:40:45

Job Ticket #: 63708 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.31 @ 09:56:48



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.
 562 West State Rd 4
 Olmitz KS 67564
 ATTN: Vern Schrag

13-19s-29w Lane, KS
Voshell #3
 Job Ticket: 63708 **DST#: 4**
 Test Start: 2017.03.30 @ 10:58:15

GENERAL INFORMATION:

Formation: **Altamont**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:20:30
 Time Test Ended: 16:40:45
 Interval: **4368.00 ft (KB) To 4460.00 ft (KB) (TVD)**
 Total Depth: 4460.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 2822.00 ft (KB)
 2812.00 ft (CF)
 KB to GR/CF: 10.00 ft

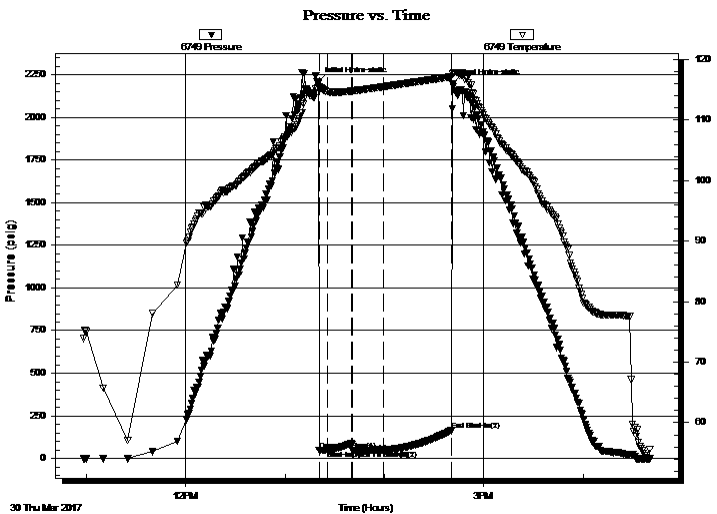
Serial #: 6749

Outside

Press@RunDepth: 50.37 psig @ 4455.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.30 End Date: 2017.03.30 Last Calib.: 2017.03.30
 Start Time: 10:58:15 End Time: 16:40:45 Time On Btm: 2017.03.30 @ 13:20:15
 Time Off Btm: 2017.03.30 @ 14:41:15

TEST COMMENT: IF: Built to 1/8" blow
 IS: No return blow
 FF: No blow
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2208.35	116.06	Initial Hydro-static
1	48.68	115.35	Open To Flow (1)
6	49.45	114.68	Shut-In(1)
20	90.98	114.77	End Shut-In(1)
21	49.57	114.77	Open To Flow (2)
39	50.37	115.48	Shut-In(2)
81	163.94	117.13	End Shut-In(2)
81	2198.89	117.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.07

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63708

DST#: 4

ATTN: Vern Schrag

Test Start: 2017.03.30 @ 10:58:15

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:20:30

Time Test Ended: 16:40:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4368.00 ft (KB) To 4460.00 ft (KB) (TVD)

Total Depth: 4460.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2822.00 ft (KB)

2812.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8672 Inside

Press@RunDepth: psig @ 4455.00 ft (KB)

Start Date: 2017.03.30

End Date:

2017.03.30

Start Time: 10:58:15

End Time:

16:40:30

Capacity: 8000.00 psig

Last Calib.:

2017.03.30

Time On Btm:

Time Off Btm:

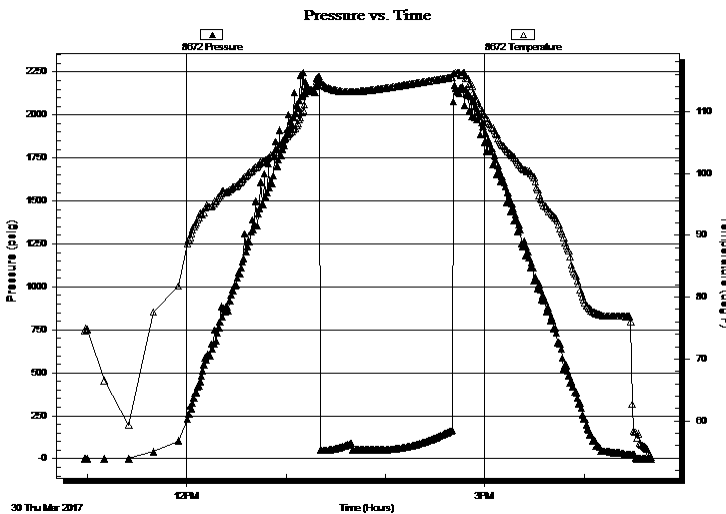
TEST COMMENT: IF: Built to 1/8" blow

IS: No return blow

FF: No blow

FS: No return blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering Inc.

13-19s-29w Lane,KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63708

DST#: 4

ATTN: Vern Schrag

Test Start: 2017.03.30 @ 10:58:15

Tool Information

Drill Pipe:	Length: 4347.00 ft	Diameter: 3.80 inches	Volume: 60.98 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	4368.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	92.00 ft			
Tool Length:	120.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4341.00	
Shut In Tool	5.00			4346.00	
Hydraulic tool	5.00			4351.00	
Jars	5.00			4356.00	
Safety Joint	3.00			4359.00	
Packer	5.00			4364.00	28.00 Bottom Of Top Packer
Packer	4.00			4368.00	
Stubb	1.00			4369.00	
Perforations	5.00			4374.00	
Change Over Sub	1.00			4375.00	
Drill Pipe	64.00			4439.00	
Change Over Sub	1.00			4440.00	
Perforations	15.00			4455.00	
Recorder	0.00	8672	Inside	4455.00	
Recorder	0.00	6749	Outside	4455.00	
Bullnose	5.00			4460.00	92.00 Bottom Packers & Anchor
Total Tool Length:	120.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering Inc.

13-19s-29w Lane, KS

562 West State Rd 4
Olmitz KS 67564

Voshell #3

Job Ticket: 63708

DST#: 4

ATTN: Vern Schrag

Test Start: 2017.03.30 @ 10:58:15

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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 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
5.00	mud 100%m	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

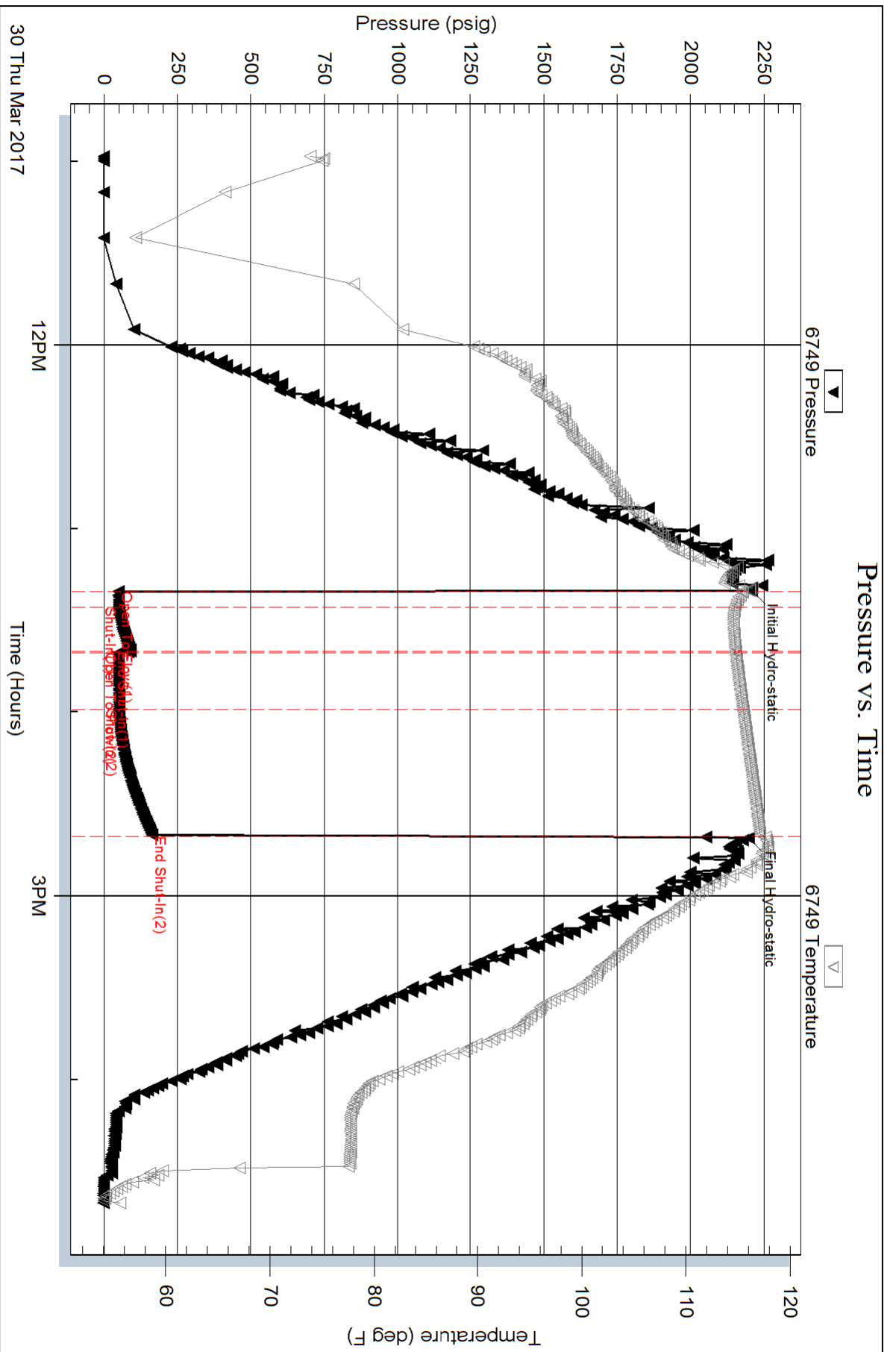
Num Gas Bombs: 0

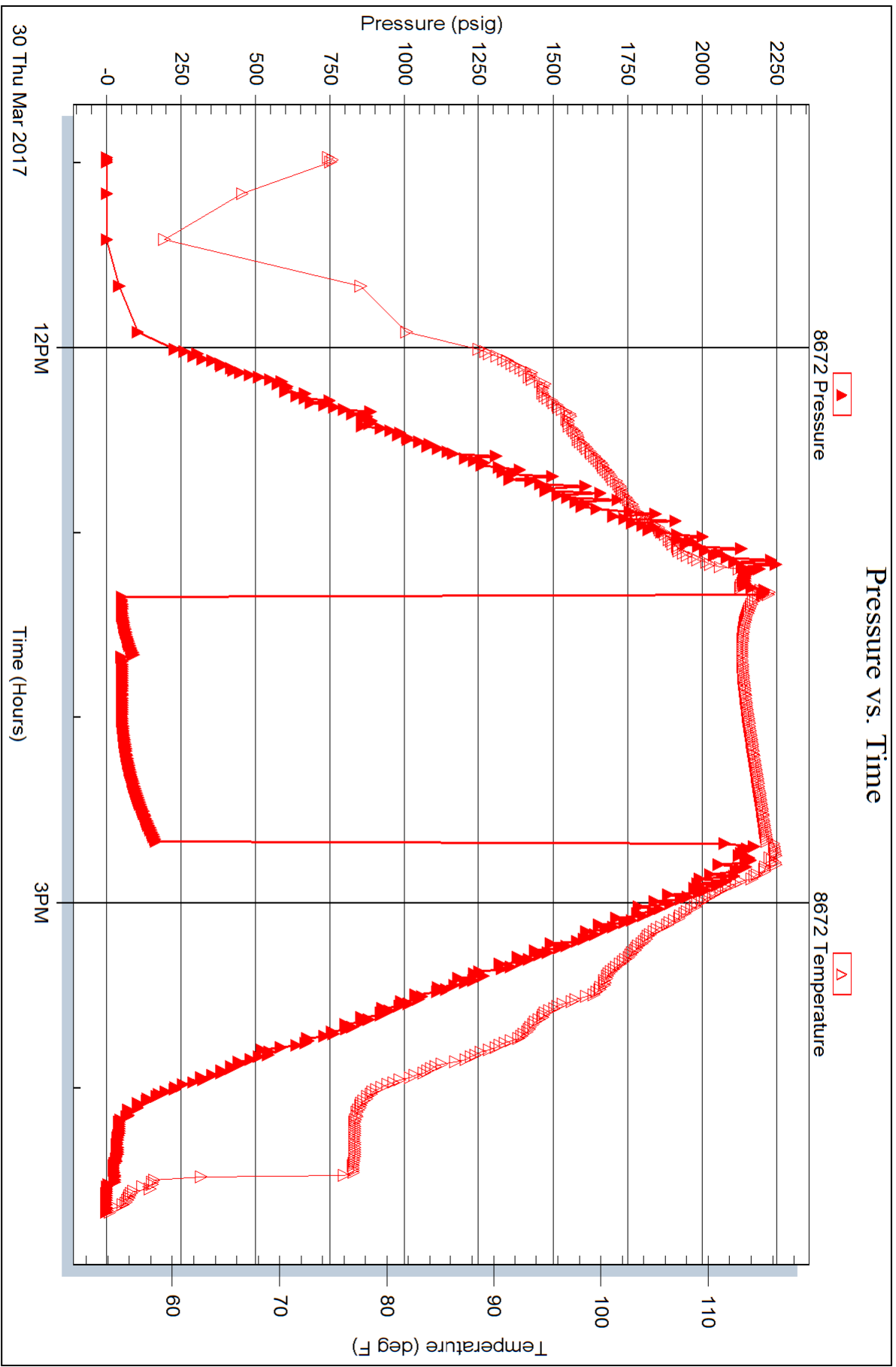
Serial #:

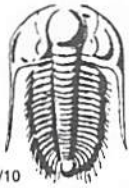
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63705**

Well Name & No. Noshell #3 Test No. 1 Date 3-27-17
 Company Larson Engineering Inc Elevation 2822 KB 2812 GL
 Address 562 W State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 13 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4178-4199 Zone Tested H
 Anchor Length 21 Drill Pipe Run 4162 Mud Wt. 9.1
 Top Packer Depth 4173 Drill Collars Run 0 Vis 57
 Bottom Packer Depth 4178 Wt. Pipe Run 0 WL 6.6
 Total Depth 4199 Chlorides 3200 ppm System LCM 3
 Blow Description IF: Built to 1/8" Blow
IS: No Return Blow
FF: No Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>55</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 55 BHT 115 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 2068 Test \$1150.00/- T-On Location 01:15
 (B) First Initial Flow 31 Jars T-Started 02:26
 (C) First Final Flow 32 Safety Joint \$75.00/- T-Open 04:19
 (D) Initial Shut-In 32 Circ Sub NC T-Pulled 05:24
 (E) Second Initial Flow 28 Hourly Standby T-Out 07:04
 (F) Second Final Flow 73 Mileage 70RT = \$52.50/- Comments _____
 (G) Final Shut-In 32 Sampler _____
 (H) Final Hydrostatic 2037 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

Sub Total \$1277.50/-

Approved By Vern Schrag Our Representative Mike Roberts
 Total 1277.50 MP/DST Disc't _____

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63706**

Well Name & No. Voshell #3 Test No. 2 Date 3-28-17
 Company Larson Engineering Inc. Elevation 2822 KB 2812 GL
 Address 562 W. State Rd 04 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 13 Twp. 19s Rge. 29w Co. LANE State KS

Interval Tested 4217-4238 Zone Tested I
 Anchor Length 21 Drill Pipe Run 4227 Mud Wt. 9.3
 Top Packer Depth 4212 Drill Collars Run Ø Vis 83
 Bottom Packer Depth 4217 Wt. Pipe Run Ø WL 2.6
 Total Depth 4238 Chlorides 3400 ppm System LCM 2

Blow Description IF: Fishing
IS: Fishing
FF: Fishing
FS: Fishing

Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic 2023 Test \$ 1150.00/- T-On Location 16:30
 (B) First Initial Flow _____ Jars _____ T-Started 17:42
 (C) First Final Flow _____ Safety Joint \$ 250.00/- T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled Fishing for
 (E) Second Initial Flow _____ Hourly Standby 11:24 T-Out Tool 18:30
 (F) Second Final Flow _____ Mileage 70 RT = \$52.50/- Comments Wait on Pumper
 (G) Final Shut-In _____ Sampler _____ from - 18:30 - 21:30
 (H) Final Hydrostatic 2270 Straddle _____ Stayed on location
 Shale Packer _____ Ruined Shale Packer whole
 Extra Packer _____ Ruined Packer 320 TIME
 Extra Recorder _____ Extra Copies _____
 Sub Total _____ Total _____
 Day Standby _____ MP/DST Disc't _____
 Accessibility _____
 Sub Total \$127.50/-

Approved By _____ Our Representative Mike Roberts

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63707**

Well Name & No. Voshell #3 Test No. 3 Date 3-29-17
 Company Larson Engineering Inc Elevation 2822 KB 2812 GL
 Address 562 W. State Rd 4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 13 Twp. 19S Rge. 29W Co. Lane State KS

Interval Tested 4327-4336 Zone Tested Middle Creek
 Anchor Length 9 Drill Pipe Run 4321 Mud Wt. 9.1
 Top Packer Depth 4322 Drill Collars Run 0 Vis 40
 Bottom Packer Depth 4327 Wt. Pipe Run 0 WL 8.0
 Total Depth 4336 Chlorides 3000 ppm System LCM 2

Blow Description IF: Weak Surface Blow
IS: ~~Weak Surface Blow~~ NO Return Blow
FF: ~~Weak Surface Blow~~ died in 15 Min.
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>MUD</u>			<u>100</u>	

Rec Total 2 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2139</u>	<input checked="" type="checkbox"/> Test <u>\$1150.00/-</u>	T-On Location <u>07:30</u>
(B) First Initial Flow <u>13</u>	<input type="checkbox"/> Jars	T-Started <u>08:39</u>
(C) First Final Flow <u>13</u>	<input checked="" type="checkbox"/> Safety Joint <u>751.00/-</u>	T-Open <u>11:18</u>
(D) Initial Shut-In <u>16</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>12:38</u>
(E) Second Initial Flow <u>13</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>14:49</u>
(F) Second Final Flow <u>14</u>	<input checked="" type="checkbox"/> Mileage <u>70 RT = \$52.00/-</u>	Comments
(G) Final Shut-In <u>12</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2142</u>	<input type="checkbox"/> Straddle	

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

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1277.50
 MP/DST Disc't

Approved By Vern Schrag Our Representative Mike Roberts
 Sub Total \$1277.50/-

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63708**

Well Name & No. Voshell # 3 Test No. 4 Date 3-30-17
 Company Larson Engineering Inc. Elevation 2822 KB 2812 GL
 Address 562 W. State Rd #4 Olmitz KS 67564
 Co. Rep / Geo. Vern Schrag Rig Southwind 8
 Location: Sec. 13 Twp. 1908 Rge. 29W Co. Lane State KS

Interval Tested 4368-4460 Zone Tested Altamont
 Anchor Length 92 Drill Pipe Run 4347 Mud Wt. 9.3
 Top Packer Depth 4363 Drill Collars Run 0 Vis 49
 Bottom Packer Depth 4368 Wt. Pipe Run 0 WL 8.0
 Total Depth 4460 Chlorides 2800 ppm System LCM 2

Blow Description IF: Built to 1/8" Blow
IS: No Return Blow
FF: No Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</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 5 BHT 117 Gravity — API RW — @ — F Chlorides — ppm

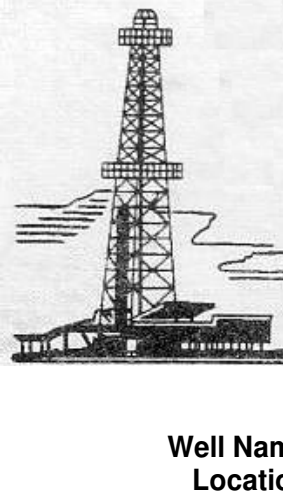
(A) Initial Hydrostatic <u>2208</u>	<input checked="" type="checkbox"/> Test <u>\$1150.00/-</u>	T-On Location <u>09:45</u>
(B) First Initial Flow <u>48</u>	<input type="checkbox"/> Jars	T-Started <u>10:58</u>
(C) First Final Flow <u>49</u>	<input checked="" type="checkbox"/> Safety Joint <u>\$75.00/-</u>	T-Open <u>13:20</u>
(D) Initial Shut-In <u>90</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>14:20</u>
(E) Second Initial Flow <u>49</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:40</u>
(F) Second Final Flow <u>50</u>	<input checked="" type="checkbox"/> Mileage <u>20RT = \$52.50/-</u>	Comments
(G) Final Shut-In <u>163</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2198</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1277.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>\$1277.50/-</u>	

Approved By Jessie Achry Our Representative Mike Roberts

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: VOSHELL #3
 Location: NW SW NE SW SEC. 13-19S-29W
 Licence Number: API: 15-101-22590
 Spud Date: March 21, 2017
 Surface Coordinates: 1813' FSL & 1646' FWL

Region: Lane Co., KS
 Drilling Completed: March 31, 2017

Bottom Hole Coordinates: 2812' K.B. Elevation (ft): 2822'
 Ground Elevation (ft): 3800' To: RTD Total Depth (ft): 4660'
 Logged Interval (ft): 3800'
 Formation: Mississippian
 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:

Southwind Drilling Co., Rig #8

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8", Kelly 40.00', Tool Joint 5.5" ; Bit: Reed S53-P, 7-7/8", standard jets 14-14-14; rpm 80, WOB 35k; Kelly Bushing 10' above ground level; Bill Sanders (tool pusher).

CASING:

Ran 6 jts new 8-5/8" 20# R3 STC csg. Tallied 249', set @ 261' KB.

Ran 114 jts new 4-1/2" 11.6# N-80 R3 LTC 8rd csg. Tallied 4647.03' KB, set @ 4645' KB.

CIRCULATION SYSTEM:

Continental EMSCO D-350, duplex, 6 x 14, 58 spm, Chemical, premix, earth pits, MudCo/Service Mud, Inc., Jason Whiting

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, J. Hendrickson, LTD 4661', RTD 4660'.

DRILL STEM TEST #1:

Kansas City "H-zone": Interval: 4178-4199 (21' anchor): Blow was weak 1/8" IFP, no RB, no blow at 2nd open; Times: 5-15-30; Recovery: 55' mud (100%, no show); HP: 2068-2037; SIP: 32-32; FP: 31-32, 28-73; BHT: 155 deg. F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.

DRILL STEM TEST #2:

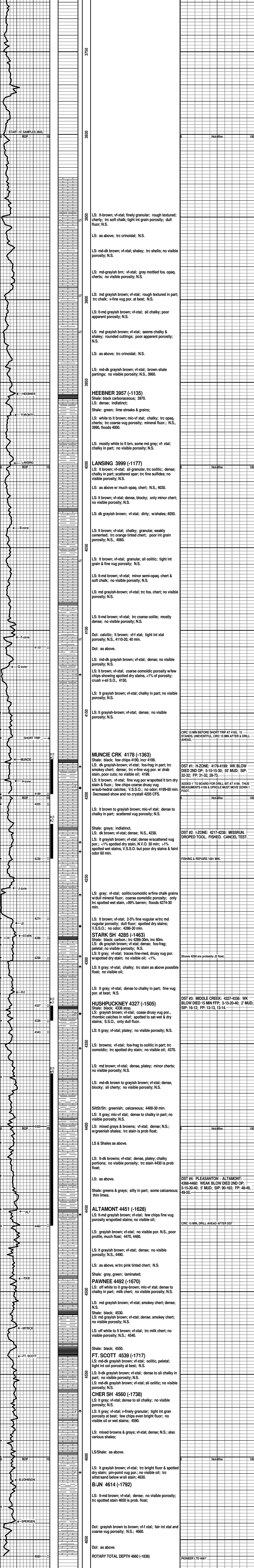
Kansas City "I-zone": Interval: 4217-4238 (21' anchor): Missrun. On trip in hole, dropped 13 stands drill pipe and tool about 6:30 pm 03/27. Hung part way down. Push to bottom. Screw in. Recover fish about 11 am 03/28. Abandon test.

DRILL STEM TEST #3:

Kansas City "Middle Creek": Interval: 4327-4336 (9' anchor): Blow was weak, 1/8" IFP, no RB, blow died 15 min FFP, no RB; Times: 5-15-20-40; Recovery: 5' mud (100%, no show); HP: 2139-2142; SIP: 16-12; FP: 13-13, 13-14; BHT: 116 deg. F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.

DRILL STEM TEST #4:

Pleasanton thru Altamont Thin Bed: Interval: 4368-4460 (92' anchor): Weak blow 1/4" IFP, no RB, no blow FFP; Times: 5-15-20-40; Recovery: 5' mud (100%, no show); HP: 2208-2198, SIP: 90-163; FP: 48-49, 49-50; BHT: 117 deg. F; Trilobite Testing, Inc., Scott City, KS, Mike Roberts.



RTD 8:51 am
03/31/2017

PIONEER LTD 4661'