



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1177236
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1177236

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

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

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
---	--

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	Cleo 1-20
Doc ID	1177236

Tops

Name	Top	Datum
Anhydrite	2177	+721
Base Anhydrite	2239	+659
Heebner	3892	-994
Lansing	3937	-1039
Stark	4216	-1318
Marmaton	4346	-1448
Pawnee	4420	-1522
Ft Scott	4472	-1574
Cherokee Sh	4494	-1596
Mississippi	4556	-1658

ALLIED OIL & GAS SERVICES, LLC 061785

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
G-cent Bend

DATE <u>9-12-13</u>	SEC. <u>20</u>	TWP. <u>18</u>	RANGE <u>30W</u>	CALLED OUT	ON LOCATION	JOB START <u>1130</u>	JOB FINISH <u>1230pm</u>
LEASE <u>Cla</u>	WELL# <u>1-20</u>	LOCATION <u>Dighton 10 west To Biso</u>			COUNTY <u>Love</u>	STATE <u>KS</u>	
OLD OR <input checked="" type="radio"/> NEW (Circle one)			RD <u>1 South To 140 1/2 west N. 30</u>				

CONTRACTOR H-O Rig 3

TYPE OF JOB Surface

HOLE SIZE <u>12 1/4</u>	T.D. <u>277</u>
CASING SIZE <u>8 1/2</u>	DEPTH
TUBING SIZE	DEPTH
DRILL PIPE	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <u>15</u>	
PERFS.	
DISPLACEMENT <u>16.50 BBLs</u>	

OWNER La-son

CEMENT
AMOUNT ORDERED 1255X CLASS A + 3 1/2 gal + 2 1/2 gal

EQUIPMENT

PUMP TRUCK # <u>398</u>	CEMENTER <u>Wayne Davis</u>	HELPER <u>Tim Dixon</u>
BULK TRUCK # <u>344/170</u>	DRIVER <u>Marlin</u>	
BULK TRUCK # _____	DRIVER _____	

COMMON	<u>175</u>	@	<u>17.90</u>	<u>3.132.50</u>
POZMIX		@		
GEL	<u>3</u>	@	<u>23.40</u>	<u>70.20</u>
CHLORIDE	<u>6</u>	@	<u>64.00</u>	<u>384.00</u>
ASC		@		
HANDLING <u>188.74</u>				
MILEAGE <u>8.62 X 15 X</u>				
		@	<u>2.48</u>	<u>468.00</u>
		@	<u>2.60</u>	<u>336.18</u>
				TOTAL <u>4.390.95</u>

REMARKS:

Spot Truck had surface meeting ran casing
to break circulation with Rin mud ran 5 BBLs water-Alcohol
Mix 175 SX cement
Displace BBLs fresh cement did circulate
shut in

SERVICE

DEPTH OF JOB	<u>277</u>		
PUMP TRUCK CHARGE			<u>1512.35</u>
EXTRA FOOTAGE		@	
MILEAGE <u>Hvm</u>	<u>15</u>	@	<u>7.70</u>
MANIFOLD		@	
	<u>Hvm</u>	<u>15</u>	@ <u>4.40</u>
		@	<u>66.00</u>
TOTAL <u>1.693.75</u>			

CHARGE TO: La-son

STREET _____

CITY _____ STATE _____ ZIP _____

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
TOTAL _____		

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

SALES TAX (If Any) _____

TOTAL CHARGES 6.084.70

DISCOUNT 1.703.52 IF PAID IN 30 DAYS

4.380.62

PRINTED NAME LEWYNE TRESNER

SIGNATURE [Signature]



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

TICKET 25709

PAGE 1 OF

SERVICE LOCATIONS: 1. **NESS CITY, KS**
 2. WELL/PROJECT NO.: **CLED 1-7** LEASE: **LANE** COUNTY: **LANE** STATE: **KS** CITY: **Amy, KS** DATE: **1 OCT 13** OWNER:
 3. TICKET TYPE: SERVICE SALES CONTRACTOR: **CHEYENNE WELL SERV** RIG NAME/NO.: SHIPPED VIA: DELIVERED TO: ORDER NO.:
 4. WELL TYPE: **OIL** WELL CATEGORY: **DEVELOPMENT** JOB PURPOSE: **CEMENT PORT COLLAR** WELL PERMIT NO.: WELL LOCATION: **3W, 1S, 3/4E, N12D**
 REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE #115	40	MIL			6.00	240.00
576D					Pump CHARGE	1	JOB			1500.00	1500.00
276					FLOCCLE	50	lbs			2.00	100.00
29D					D-AIR	2	gals			42.00	84.00
330					SMD CEMENT	195	SX			17.00	3315.00
581					CEMENT SERVICE CHARGE	225	SX			2.00	450.00
583					DRAYAGE	22330	lbs	4466	Tm	1.00	4466.00

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: **1 OCT 13** TIME SIGNED: **1400** A.M. P.M.

REMIT PAYMENT TO:

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

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				6135.00	
WE UNDERSTOOD AND MET YOUR NEEDS AND OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	6385.78

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

SWIFT OPERATOR: *[Signature]* APPROVAL:

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 10/13 PAGE NO.

CUSTOMER LARSON ENGINEERING

WELL NO.

LEASE CLEO 1-7

JOB TYPE CEMENT PORT COLLAR

TICKET NO. 25709

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1200							ON LOCATION
								PORT COLLAR @ 2167
	1221				✓		1000	TEST-HELD
	1223							OPEN PORT COLLAR
	1237	4	108	✓		400		MIX 195SX SMD
		3	7 3/4	✓		300		DISPLACE CEMENT
								CIRCULATE 20SX TO PIT
	1306				✓		1000	CLOSE PORT COLLAR - TEST-HELD
								RUN 4 TESTS
	1316	4	20		✓		200	REVERSE CLEAN
								WASH TRUCK
	1400							JOB COMPLETE
								THANKS # 115
								JASON DAVE DAVE DOUG



DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.16 @ 21:49:00

End Date: 2013.09.17 @ 02:31:09

Job Ticket #: 52938 DST #: 1

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

Printed: 2013.09.24 @ 10:09:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

GENERAL INFORMATION:

Formation: **LKC 'B'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 02:31:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3961.00 ft (KB) To 3983.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 3983.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press @ Run Depth: 40.90 psig @ 3962.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.16

End Date:

2013.09.17

Last Calib.: 2013.09.17

Start Time: 21:49:02

End Time:

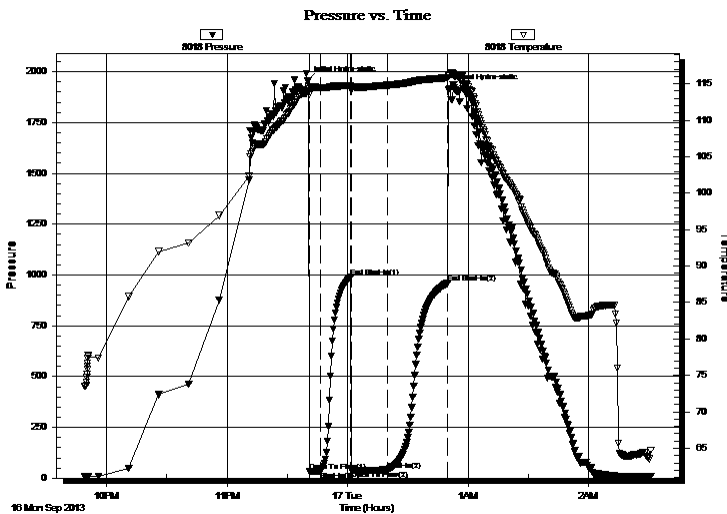
02:31:10

Time On Btm: 2013.09.16 @ 23:40:00

Time Off Btm: 2013.09.17 @ 00:51:00

TEST COMMENT: Surface blow .
No return.
Weak surface blow .
No return.

PRESSURE SUMMARY



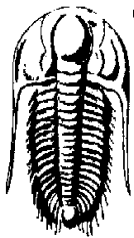
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1955.10	113.96	Initial Hydro-static
1	31.35	113.55	Open To Flow (1)
7	35.49	114.47	Shut-In(1)
22	991.11	114.71	End Shut-In(1)
22	36.74	114.10	Open To Flow (2)
40	40.90	114.79	Shut-In(2)
70	962.19	115.82	End Shut-In(2)
71	1916.98	116.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 30o 70m	0.10

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

GENERAL INFORMATION:

Formation: LKC 'B'

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 02:31:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Chuck Smith

Unit No: 62

Interval: 3961.00 ft (KB) To 3983.00 ft (KB) (TVD)

Total Depth: 3983.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ RunDepth: psig @ 3962.00 ft (KB)

Start Date: 2013.09.16

End Date:

2013.09.17

Start Time: 21:49:01

End Time:

02:31:00

Capacity: 8000.00 psig

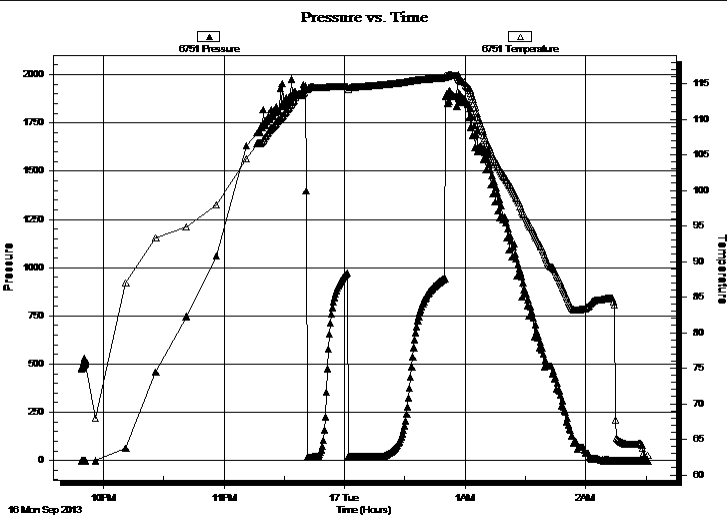
Last Calib.:

2013.09.17

Time On Btm:

Time Off Btm:

TEST COMMENT: Surface blow.
No return.
Weak surface blow.
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 30o 70m	0.10

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

Tool Information

Drill Pipe:	Length: 3794.00 ft	Diameter: 3.80 inches	Volume: 53.22 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 53.95 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.50 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3961.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	49.50 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			3934.50	
Shut In Tool	5.00			3939.50	
Hydraulic tool	5.00			3944.50	
Jars	5.00			3949.50	
Safety Joint	2.50			3952.00	
Packer	5.00			3957.00	27.50 Bottom Of Top Packer
Packer	4.00			3961.00	
Stubb	1.00			3962.00	
Perforations	0.00			3962.00	
Recorder	0.00	8018	Inside	3962.00	
Recorder	0.00	6751	Outside	3962.00	
Perforations	18.00			3980.00	
Bullnose	3.00			3983.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52938

DST#: 1

ATTN: Vern Schrag

Test Start: 2013.09.16 @ 21:49:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 30o 70m	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

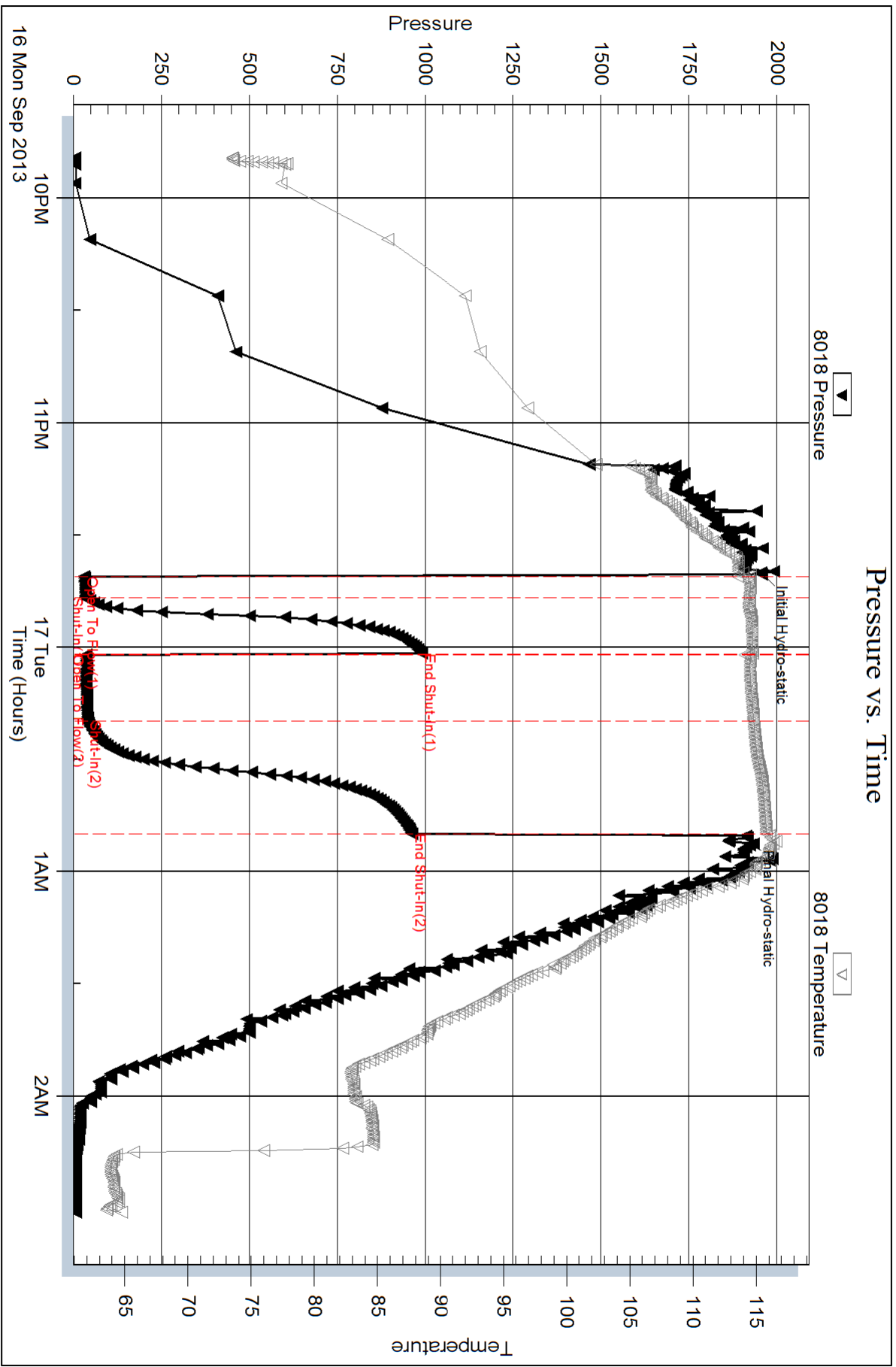
Num Gas Bombs: 0

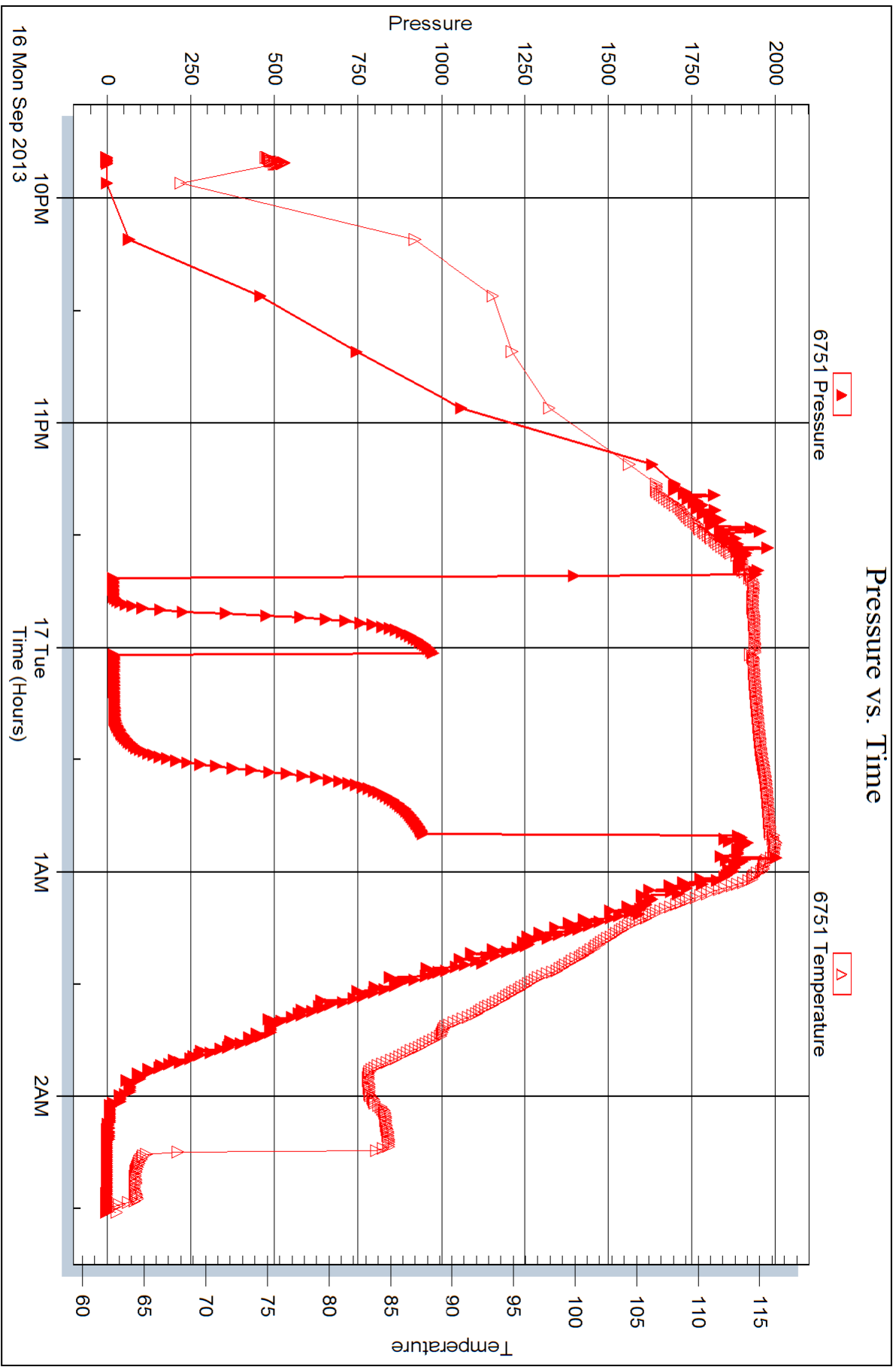
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.17 @ 23:15:09

End Date: 2013.09.18 @ 04:27:18

Job Ticket #: 52939 DST #: 2

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

Printed: 2013.09.24 @ 10:09:17

Larson Engineering, Inc.
S20-18s-30w Lane KS
Cleo #1-20
DST # 2
LKC: H
2013.09.17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

GENERAL INFORMATION:

Formation: **LKC 'H'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:51:48

Time Test Ended: 04:27:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4113.00 ft (KB) To 4135.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4135.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ RunDepth: 46.42 psig @ 4114.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.17

End Date: 2013.09.18

Last Calib.: 2013.09.18

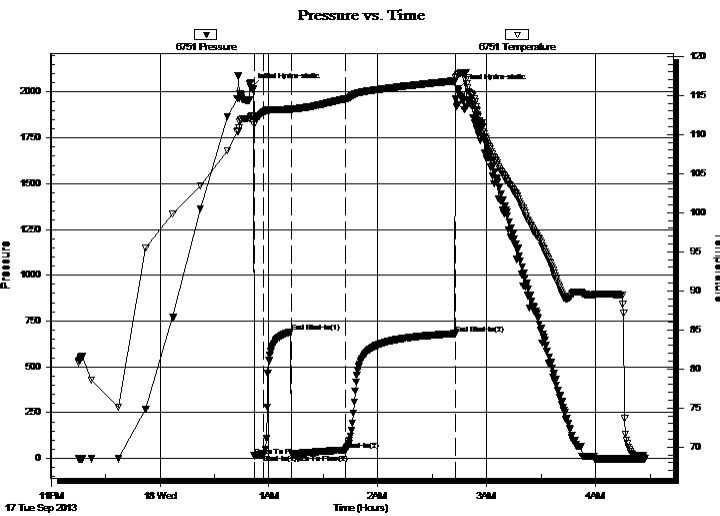
Start Time: 23:15:09

End Time: 04:27:18

Time On Btm: 2013.09.18 @ 00:50:08

Time Off Btm: 2013.09.18 @ 02:44:08

TEST COMMENT: 1/2" Blow .
No return.
3" Blow .
No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2021.73	112.28	Initial Hydro-static
2	14.64	111.25	Open To Flow (1)
7	22.36	112.91	Shut-In(1)
22	691.01	113.27	End Shut-In(1)
23	25.17	112.97	Open To Flow (2)
53	46.42	114.59	Shut-In(2)
113	681.28	116.87	End Shut-In(2)
114	2019.26	117.70	Final Hydro-static

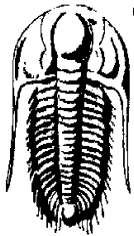
Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 20o 80m	0.30
40.00	GO 10g 90o	0.20

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

GENERAL INFORMATION:

Formation: **LKC 'H'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:51:48

Time Test Ended: 04:27:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4113.00 ft (KB) To 4135.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4135.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8018 **Inside**

Press @ RunDepth: psig @ 4114.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.17

End Date: 2013.09.18

Last Calib.: 2013.09.18

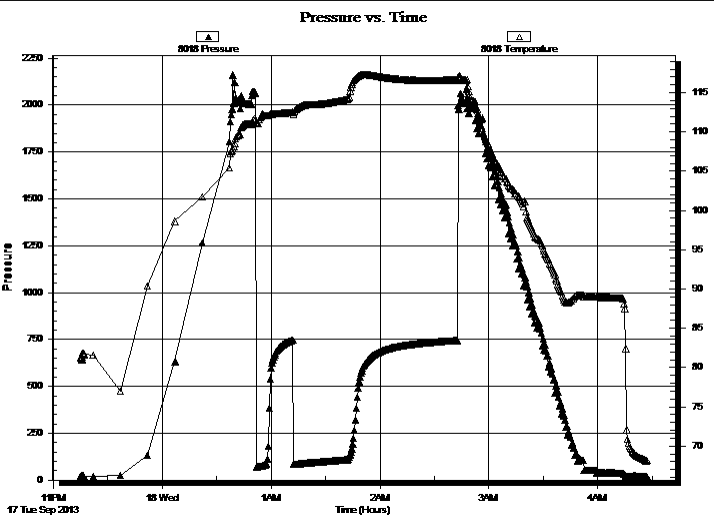
Start Time: 23:15:02

End Time: 04:27:10

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/2" Blow .
No return.
3" Blow .
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 20o 80m	0.30
40.00	GO 10g 90o	0.20

* 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.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

Tool Information

Drill Pipe:	Length: 3948.00 ft	Diameter: 3.80 inches	Volume: 55.38 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 56.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.50 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4113.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	49.50 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			4086.50	
Shut In Tool	5.00			4091.50	
Hydraulic tool	5.00			4096.50	
Jars	5.00			4101.50	
Safety Joint	2.50			4104.00	
Packer	5.00			4109.00	27.50 Bottom Of Top Packer
Packer	4.00			4113.00	
Stubb	1.00			4114.00	
Perforations	0.00			4114.00	
Recorder	0.00	8018	Inside	4114.00	
Recorder	0.00	6751	Outside	4114.00	
Perforations	18.00			4132.00	
Bullnose	3.00			4135.00	22.00 Bottom Packers & Anchor

Total Tool Length: 49.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52939

DST#: 2

ATTN: Vern Schrag

Test Start: 2013.09.17 @ 23:15:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM 20o 80m	0.295
40.00	GO 10g 90o	0.197

Total Length: 100.00 ft Total Volume: 0.492 bbl

Num Fluid Samples: 0

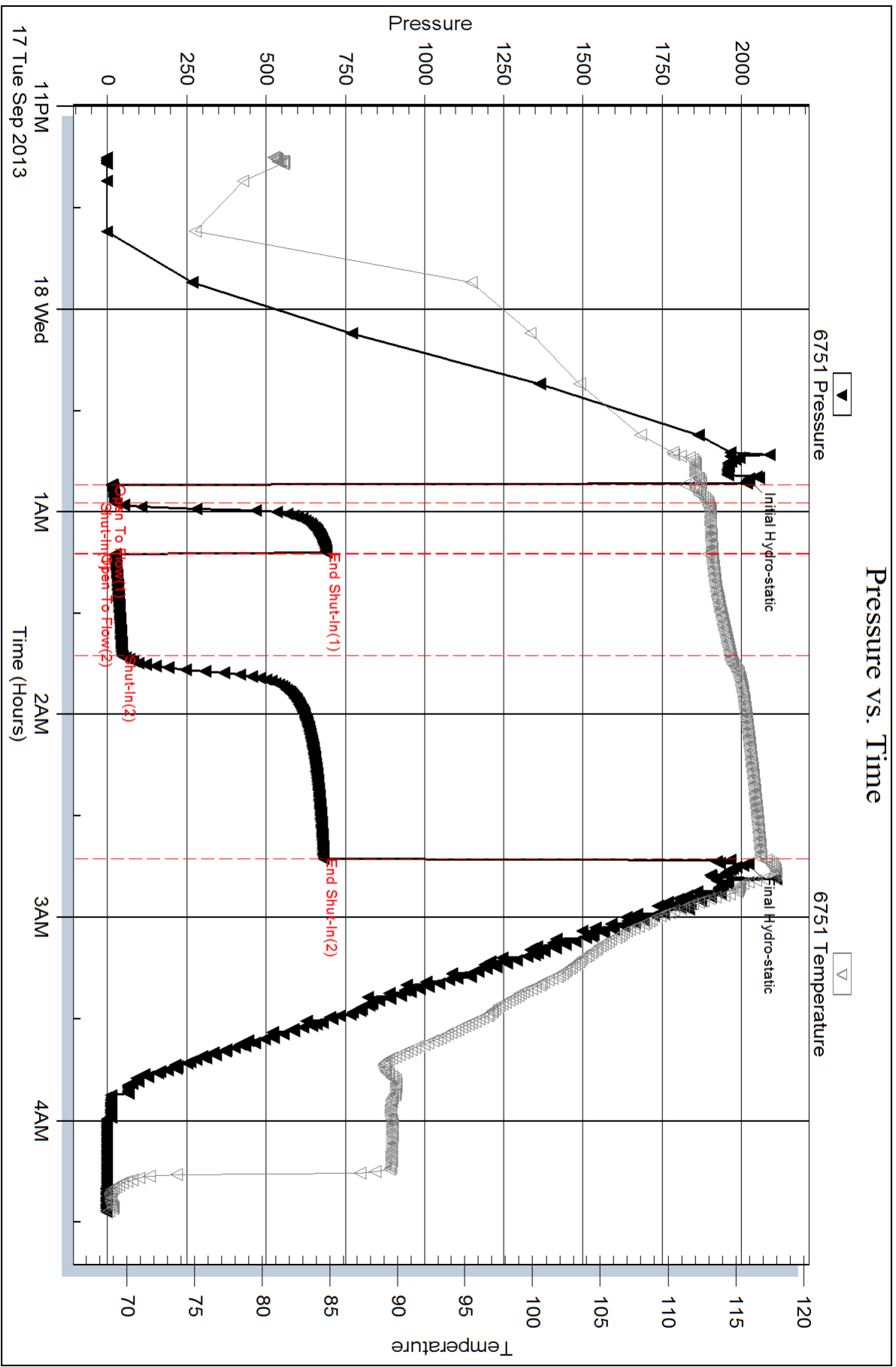
Num Gas Bombs: 0

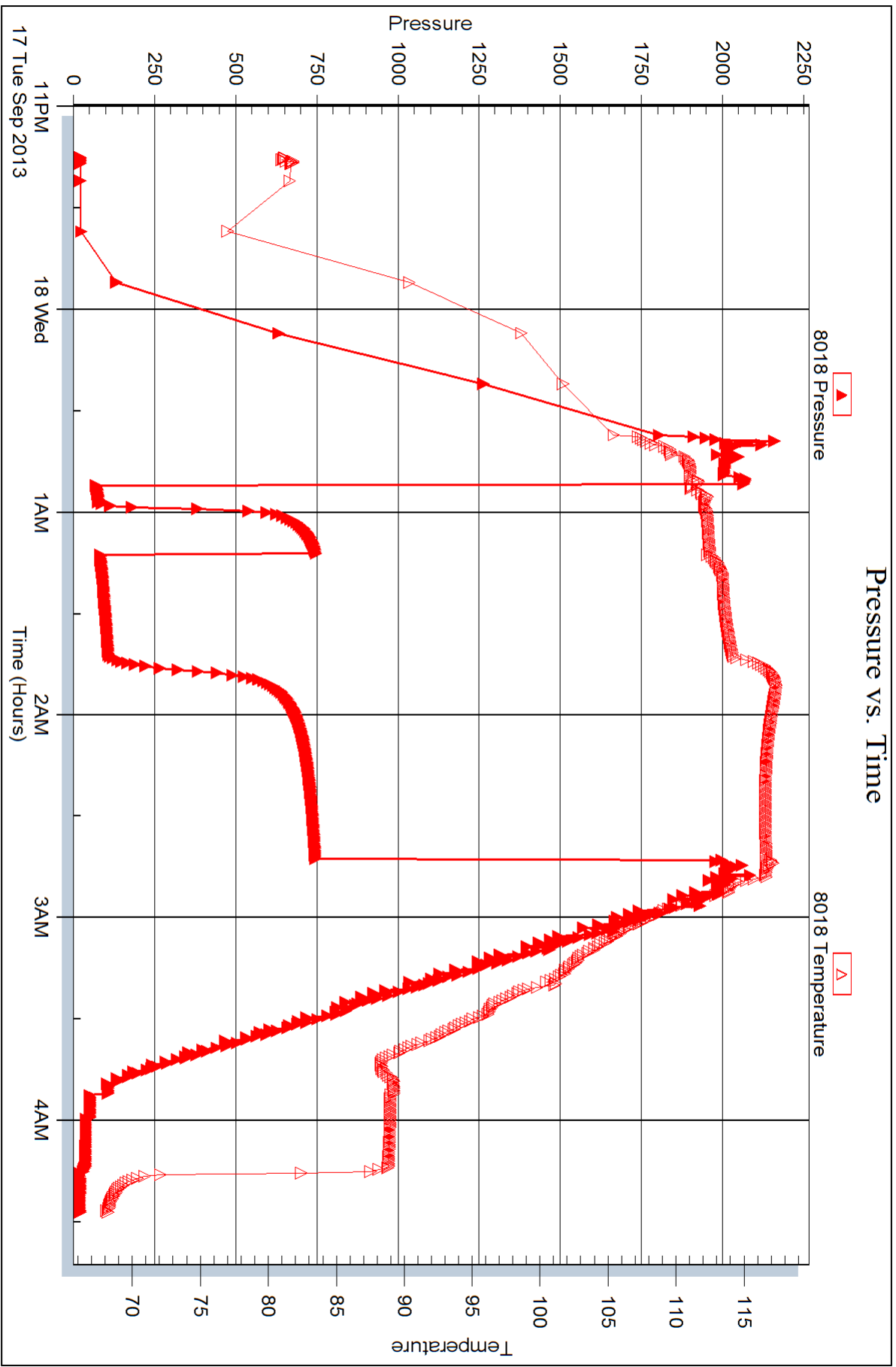
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 34 @ 70 Degrees F = 33.







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.18 @ 14:10:00

End Date: 2013.09.18 @ 19:15:09

Job Ticket #: 52940 DST #: 3

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

Printed: 2013.09.24 @ 10:08:52



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'I'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:48:20
 Time Test Ended: 19:15:09
 Interval: **4160.00 ft (KB) To 4185.00 ft (KB) (TVD)**
 Total Depth: 4185.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chuck Smith
 Unit No: 62
 Reference Elevations: 2898.00 ft (KB)
 2891.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

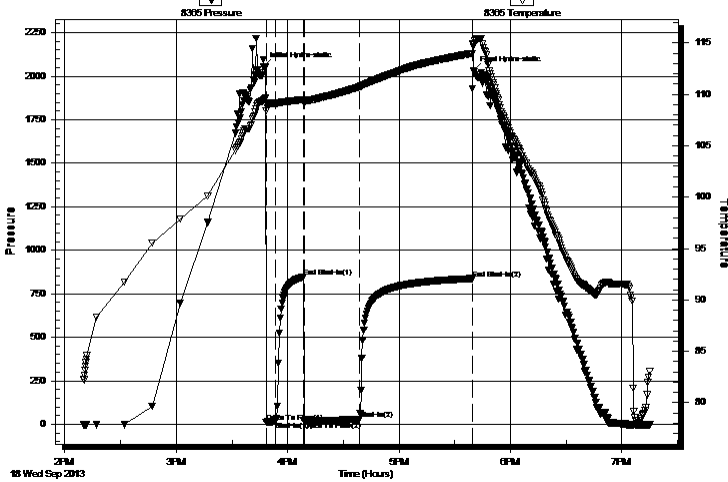
Press @ Run Depth: 27.97 psig @ 4162.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.18 End Date: 2013.09.18 Last Calib.: 2013.09.18
 Start Time: 14:10:05 End Time: 19:15:10 Time On Btm: 2013.09.18 @ 15:47:10
 Time Off Btm: 2013.09.18 @ 17:40:10

TEST COMMENT: Weak surface blow .
 No return.
 1/2" Blow .
 Weak surface return died @ 14 min.

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2053.02	109.43	Initial Hydro-static
2	13.23	108.38	Open To Flow (1)
7	16.54	109.09	Shut-In(1)
22	846.19	109.50	End Shut-In(1)
22	17.42	109.13	Open To Flow (2)
52	27.97	110.71	Shut-In(2)
113	836.95	113.99	End Shut-In(2)
113	2030.06	114.94	Final Hydro-static

Pressure vs. Time



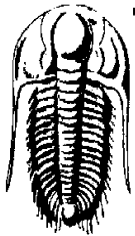
Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 8o 92m	0.15

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 52940

DST#: 3

Test Start: 2013.09.18 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'I'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:48:20

Time Test Ended: 19:15:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4160.00 ft (KB) To 4185.00 ft (KB) (TVD)

Total Depth: 4185.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press @ RunDepth: psig @ 4162.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.18

End Date:

2013.09.18

Last Calib.:

2013.09.18

Start Time: 14:09:55

End Time:

19:15:04

Time On Btm:

Time Off Btm:

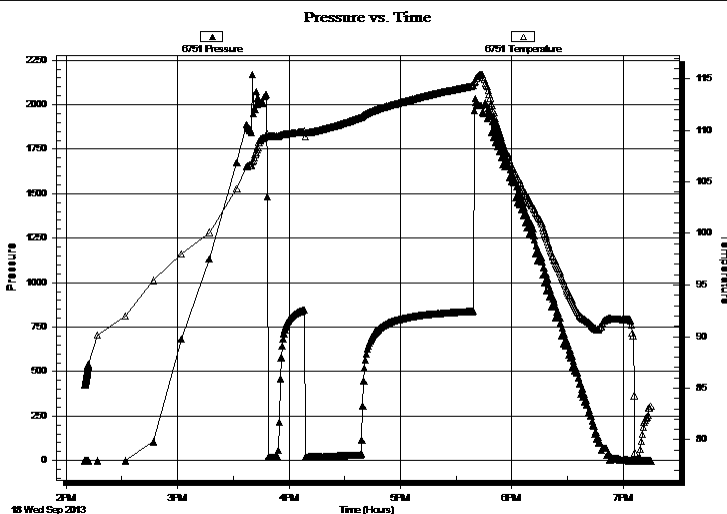
TEST COMMENT: Weak surface blow .

No return.

1/2" Blow .

Weak surface return died @ 14 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 8o 92m	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

Tool Information

Drill Pipe:	Length: 4010.00 ft	Diameter: 3.80 inches	Volume: 56.25 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 56.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.50 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4160.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	52.50 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			4133.50	
Shut In Tool	5.00			4138.50	
Hydraulic tool	5.00			4143.50	
Jars	5.00			4148.50	
Safety Joint	2.50			4151.00	
Packer	5.00			4156.00	27.50 Bottom Of Top Packer
Packer	4.00			4160.00	
Stubb	1.00			4161.00	
Perforations	1.00			4162.00	
Recorder	0.00	8365	Inside	4162.00	
Recorder	0.00	6751	Outside	4162.00	
Perforations	20.00			4182.00	
Bullnose	3.00			4185.00	25.00 Bottom Packers & Anchor

Total Tool Length: 52.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52940

DST#: 3

ATTN: Vern Schrag

Test Start: 2013.09.18 @ 14:10:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.56 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OCM 8o 92m	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

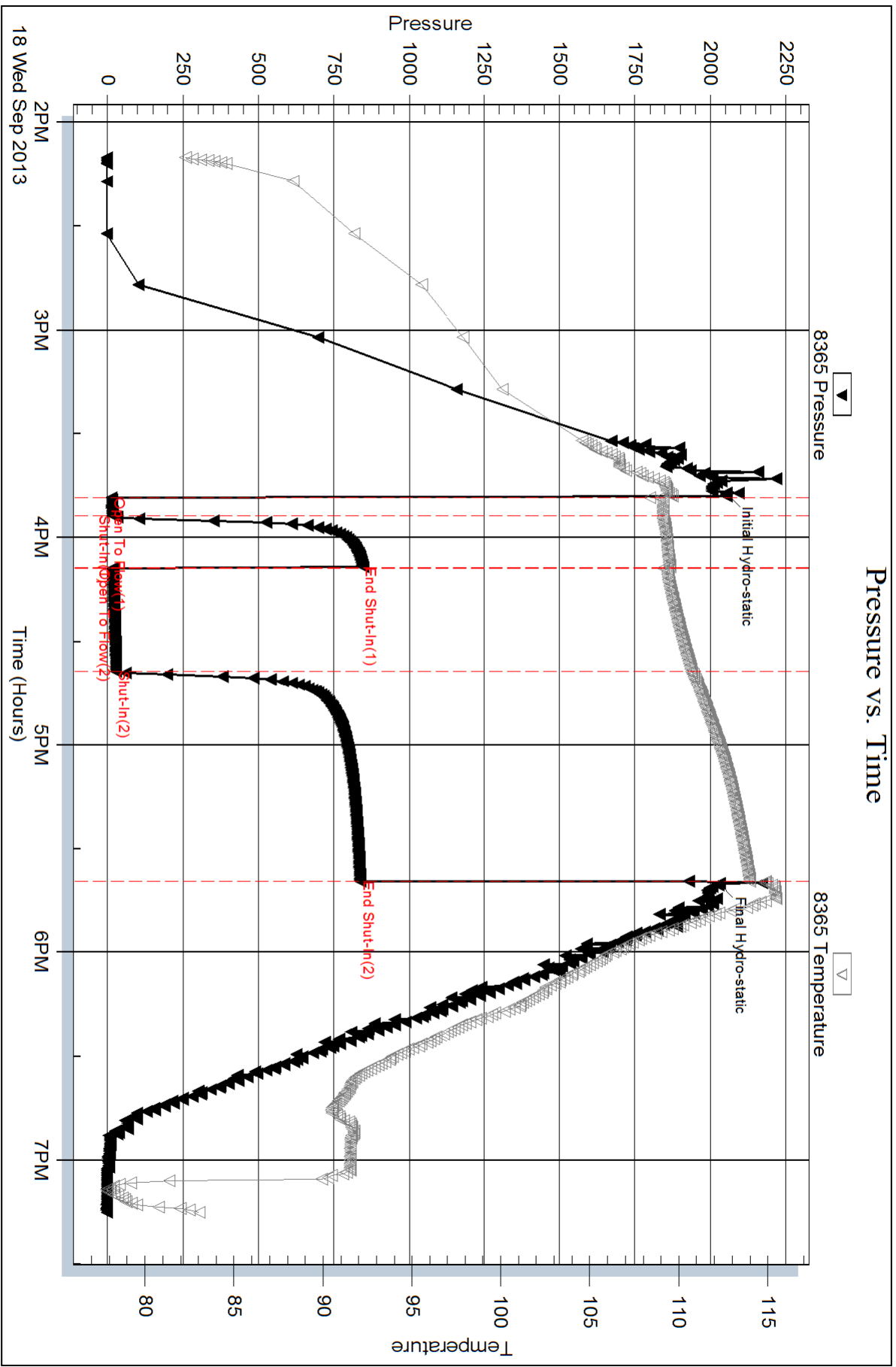
Num Gas Bombs: 0

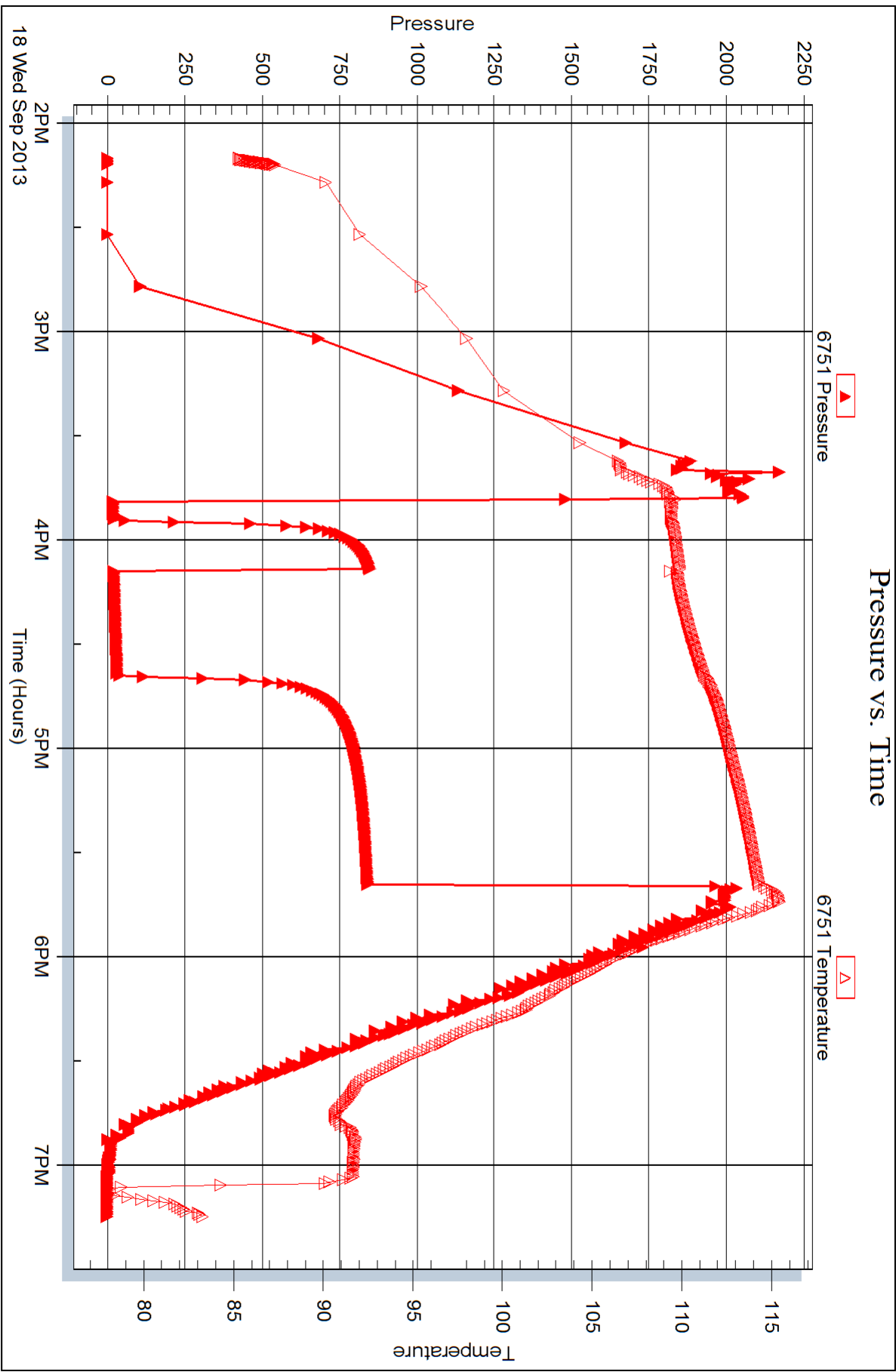
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.19 @ 05:40:00

End Date: 2013.09.19 @ 10:28:00

Job Ticket #: 52941 DST #: 4

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

Printed: 2013.09.24 @ 10:08:26



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:49:10

Time Test Ended: 10:28:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4202.00 ft (KB) To 4218.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4218.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365 Inside

Press @ Run Depth: 22.82 psig @ 4205.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.19

End Date: 2013.09.19

Last Calib.: 2013.09.19

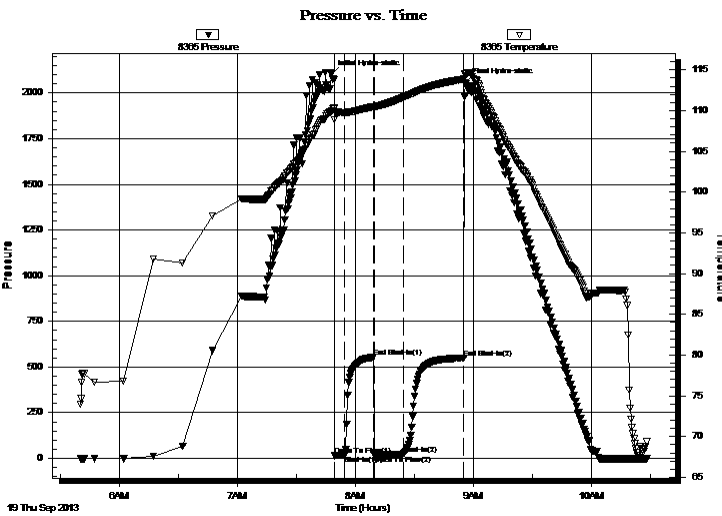
Start Time: 05:40:05

End Time: 10:27:59

Time On Btm: 2013.09.19 @ 07:47:40

Time Off Btm: 2013.09.19 @ 08:55:50

TEST COMMENT: 1/4" Blow .
No return.
Surface blow .
No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2100.92	109.86	Initial Hydro-static
2	14.25	108.93	Open To Flow (1)
7	17.83	109.74	Shut-In(1)
22	552.86	110.51	End Shut-In(1)
22	18.47	110.48	Open To Flow (2)
37	22.82	111.61	Shut-In(2)
68	548.52	113.87	End Shut-In(2)
69	2057.00	114.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20o 80m	0.05

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 52941

DST#: 4

Test Start: 2013.09.19 @ 05:40:00

GENERAL INFORMATION:

Formation: **LKC 'J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:49:10

Time Test Ended: 10:28:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: **4202.00 ft (KB) To 4218.00 ft (KB) (TVD)**

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4218.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ RunDepth: psig @ 4205.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.19

End Date: 2013.09.19

Last Calib.: 2013.09.19

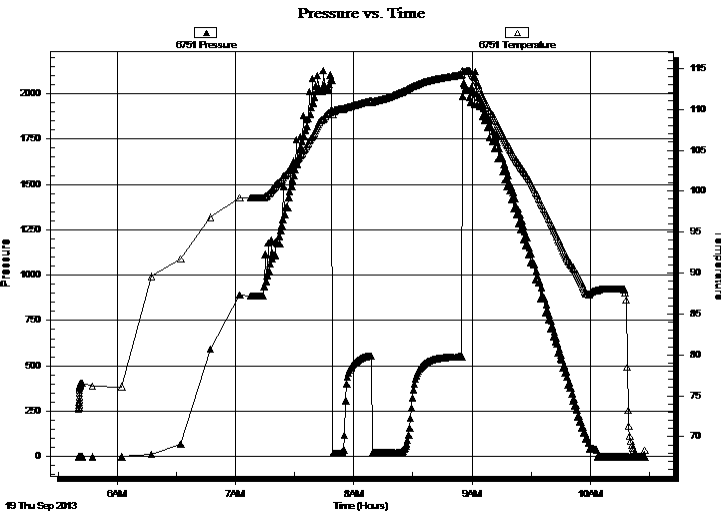
Start Time: 05:40:01

End Time: 10:28:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/4" Blow.
No return.
Surface blow.
No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20o 80m	0.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

Tool Information

Drill Pipe:	Length: 4042.00 ft	Diameter: 3.80 inches	Volume: 56.70 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 57.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4202.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	43.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4175.50	
Shut In Tool	5.00			4180.50	
Hydraulic tool	5.00			4185.50	
Jars	5.00			4190.50	
Safety Joint	2.50			4193.00	
Packer	5.00			4198.00	27.50 Bottom Of Top Packer
Packer	4.00			4202.00	
Stubb	1.00			4203.00	
Perforations	2.00			4205.00	
Recorder	0.00	8365	Inside	4205.00	
Recorder	0.00	6751	Outside	4205.00	
Perforations	10.00			4215.00	
Bullnose	3.00			4218.00	16.00 Bottom Packers & Anchor

Total Tool Length: 43.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52941

DST#: 4

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 05:40:00

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:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: 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	OCM 20o 80m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

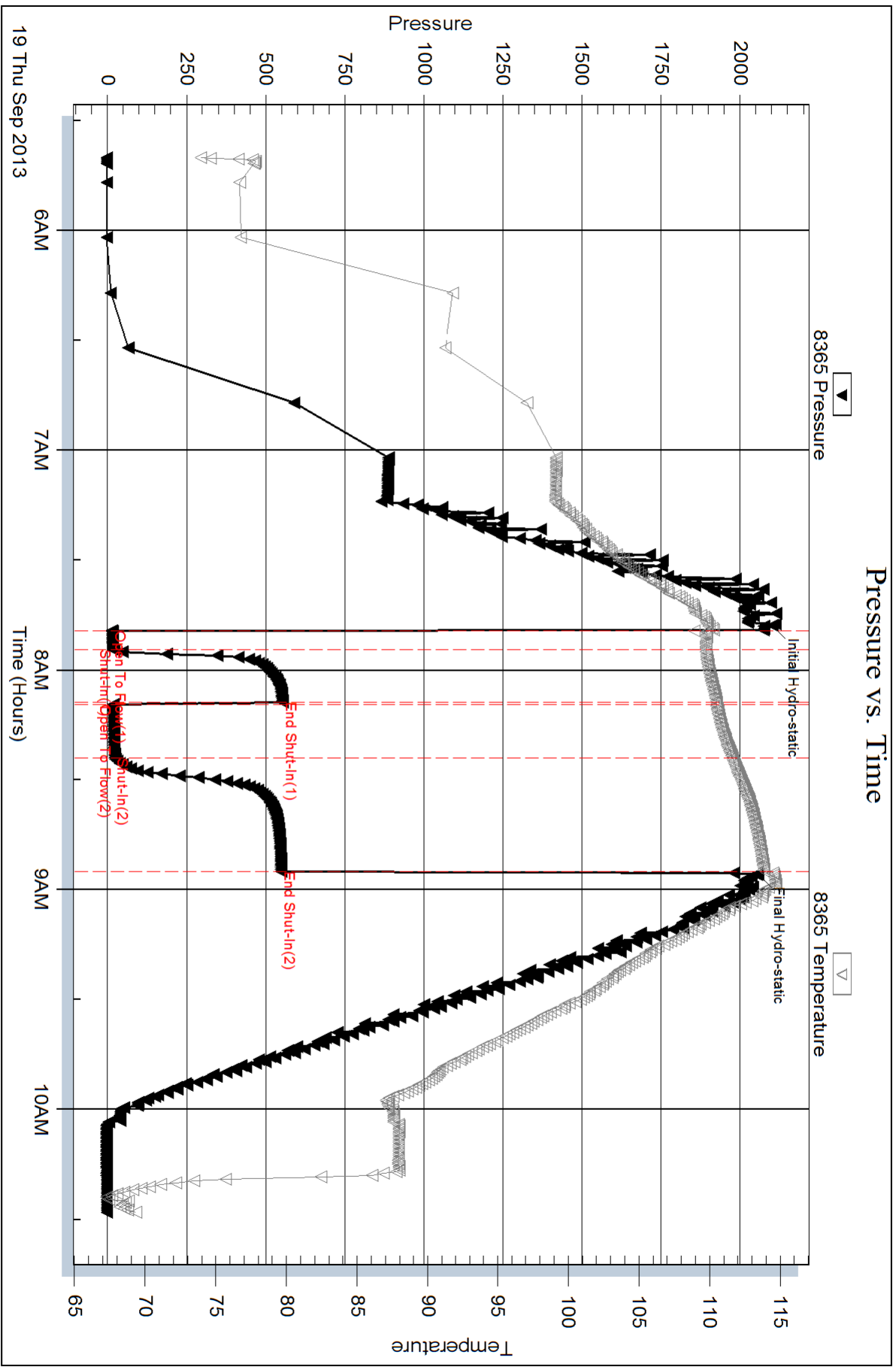
Num Gas Bombs: 0

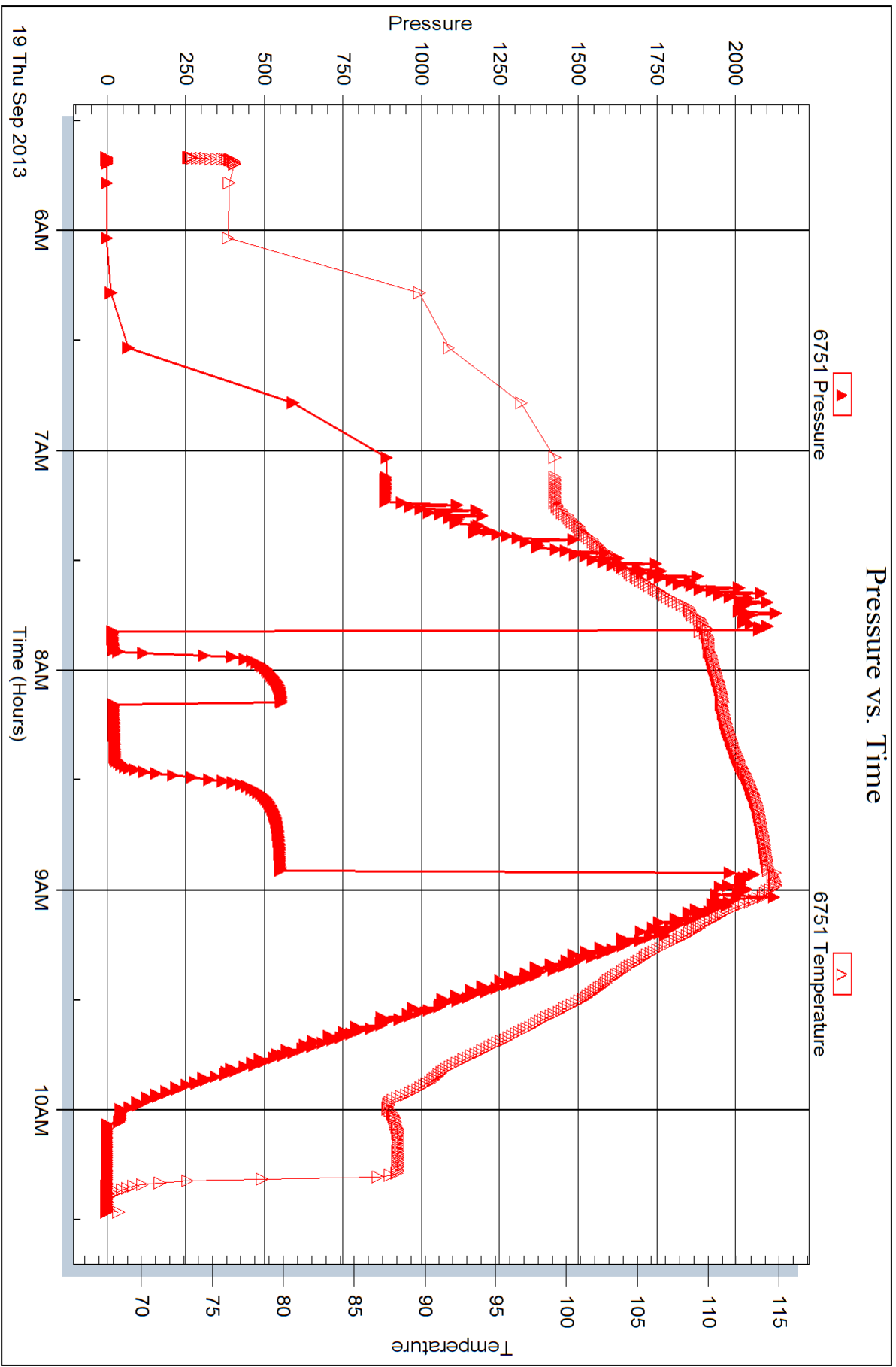
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.19 @ 17:30:00

End Date: 2013.09.19 @ 23:14:50

Job Ticket #: 52942 DST #: 5

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

Printed: 2013.09.24 @ 10:08:00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

GENERAL INFORMATION:

Formation: **LKC "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:28:50

Time Test Ended: 23:14:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4216.00 ft (KB) To 4232.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4232.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ RunDepth: 155.89 psig @ 4217.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.19

End Date:

2013.09.19

Last Calib.:

2013.09.19

Start Time: 17:30:05

End Time:

23:14:50

Time On Btm:

2013.09.19 @ 19:26:40

Time Off Btm:

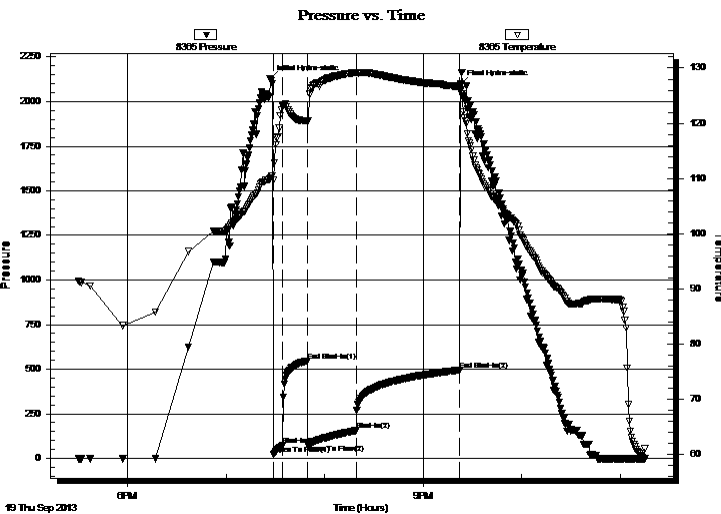
2013.09.19 @ 21:22:30

TEST COMMENT: 6" Blow.

No return.

B.O.B. @ 19 min

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2126.26	109.90	Initial Hydro-static
3	21.51	109.68	Open To Flow (1)
8	71.61	123.31	Shut-In(1)
23	546.21	120.42	End Shut-In(1)
23	78.06	120.28	Open To Flow (2)
53	155.89	129.18	Shut-In(2)
116	494.95	126.53	End Shut-In(2)
116	2094.56	127.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	WM35w 65m	2.02
70.00	OSWM 15w 85m	0.98
2.00	O 100o	0.03

* 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.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

Tool Information

Drill Pipe:	Length: 4044.00 ft	Diameter: 3.80 inches	Volume: 56.73 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.46 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4216.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	16.00 ft			
Tool Length:	43.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4189.50	
Shut In Tool	5.00			4194.50	
Hydraulic tool	5.00			4199.50	
Jars	5.00			4204.50	
Safety Joint	2.50			4207.00	
Packer	5.00			4212.00	27.50 Bottom Of Top Packer
Packer	4.00			4216.00	
Stubb	1.00			4217.00	
Perforations	0.00			4217.00	
Recorder	0.00	8365	Inside	4217.00	
Recorder	0.00	6751	Outside	4217.00	
Perforations	12.00			4229.00	
Bullnose	3.00			4232.00	16.00 Bottom Packers & Anchor

Total Tool Length: 43.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52942

DST#: 5

ATTN: Vern Schrag

Test Start: 2013.09.19 @ 17:30:00

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:

43000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.95 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	WM 35w 65m	2.018
70.00	OSWM 15w 85m	0.982
2.00	O 100o	0.028

Total Length: 312.00 ft Total Volume: 3.028 bbl

Num Fluid Samples: 0

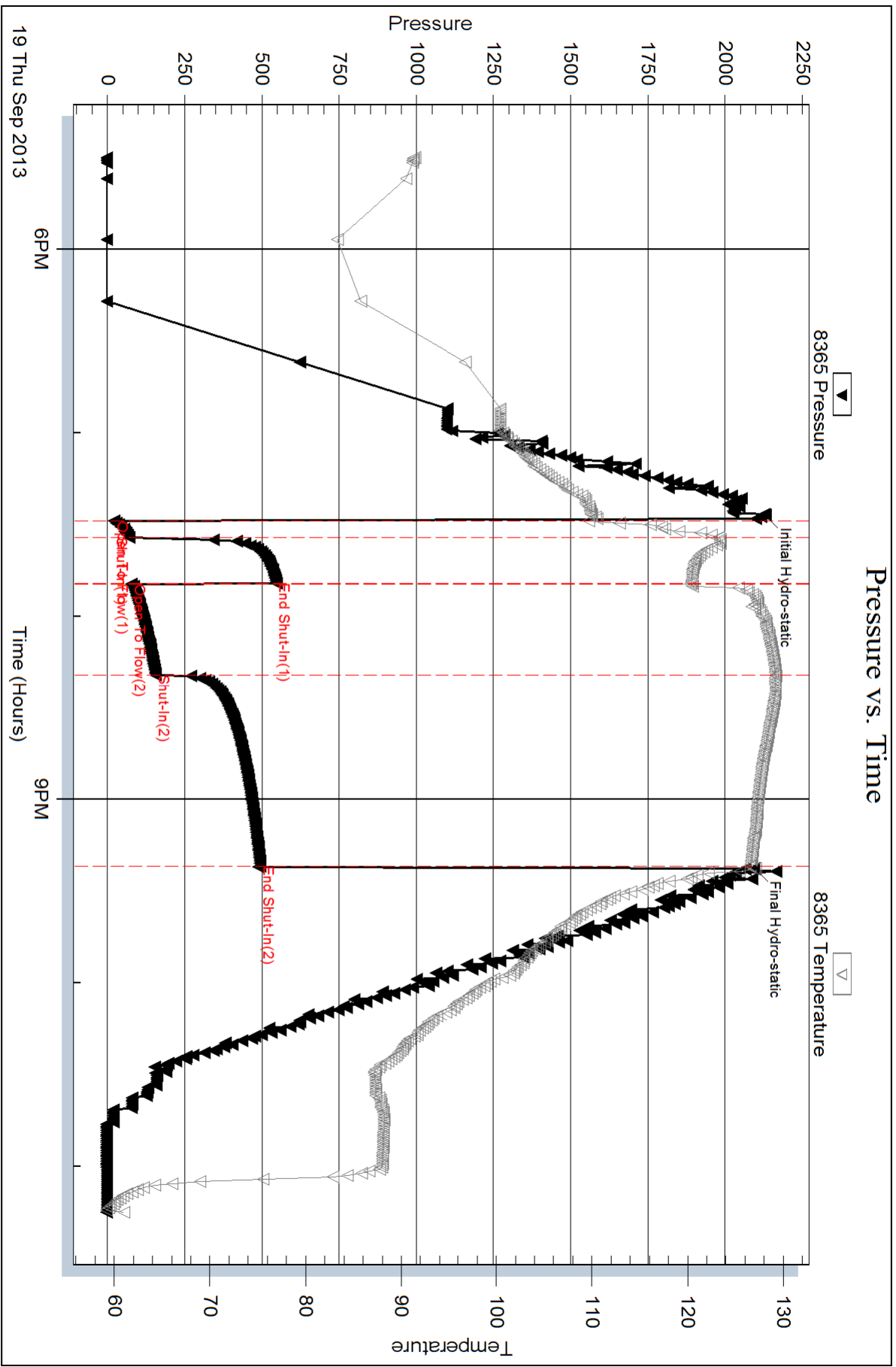
Num Gas Bombs: 0

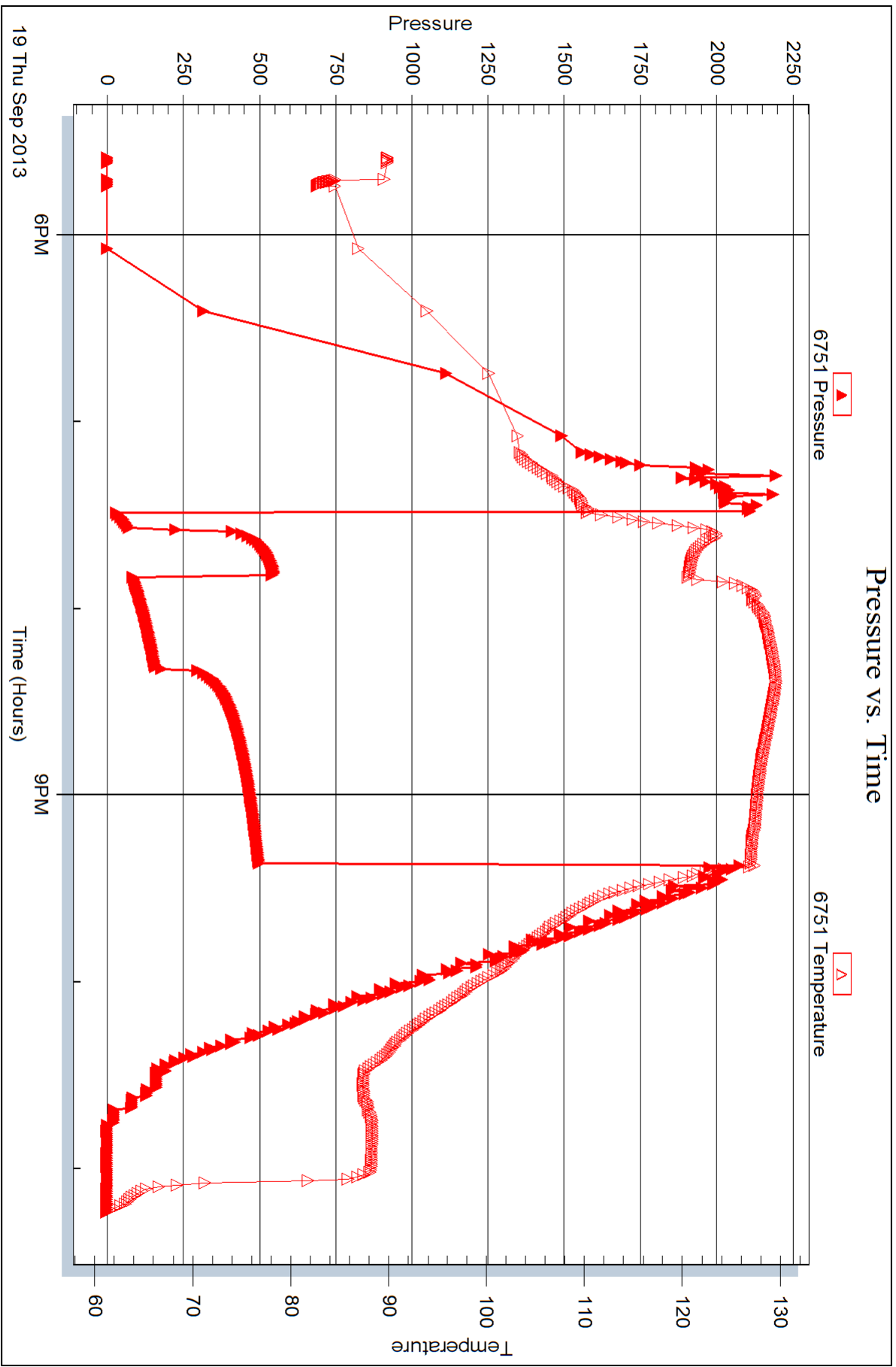
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .221 @ 55 Degrees F = 43000 PPM







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.20 @ 06:49:00

End Date: 2013.09.20 @ 11:22:09

Job Ticket #: 52943 DST #: 6

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

Printed: 2013.09.24 @ 10:07:08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

GENERAL INFORMATION:

Formation: **Middle Creek**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:38:20

Time Test Ended: 11:22:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4256.00 ft (KB) To 4265.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4265.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: 24.52 psig @ 4257.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.20

End Date: 2013.09.20

Last Calib.: 2013.09.20

Start Time: 06:49:05

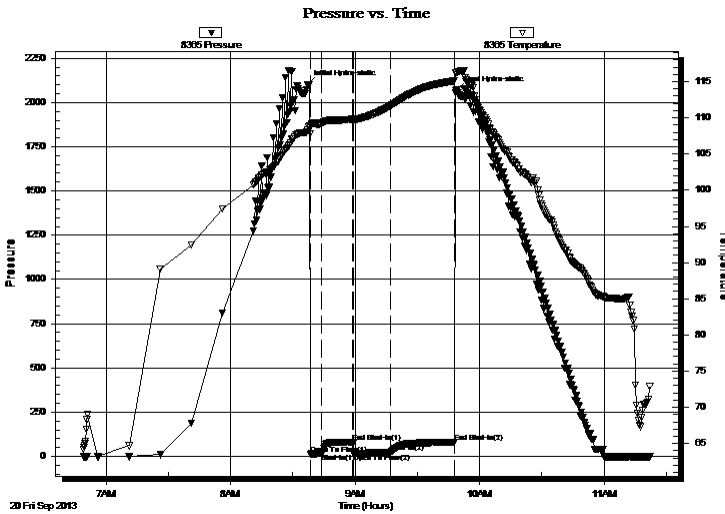
End Time: 11:22:10

Time On Btm: 2013.09.20 @ 08:37:00

Time Off Btm: 2013.09.20 @ 09:48:40

TEST COMMENT: 1/2" Blow .
No return.
3/4" Blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2103.28	108.38	Initial Hydro-static
2	13.55	107.84	Open To Flow (1)
7	16.81	109.17	Shut-In(1)
22	81.79	109.80	End Shut-In(1)
23	17.58	109.79	Open To Flow (2)
40	24.52	111.66	Shut-In(2)
71	79.14	115.10	End Shut-In(2)
72	2064.39	116.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 7o 93m	0.15

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 52943

DST#: 6

Test Start: 2013.09.20 @ 06:49:00

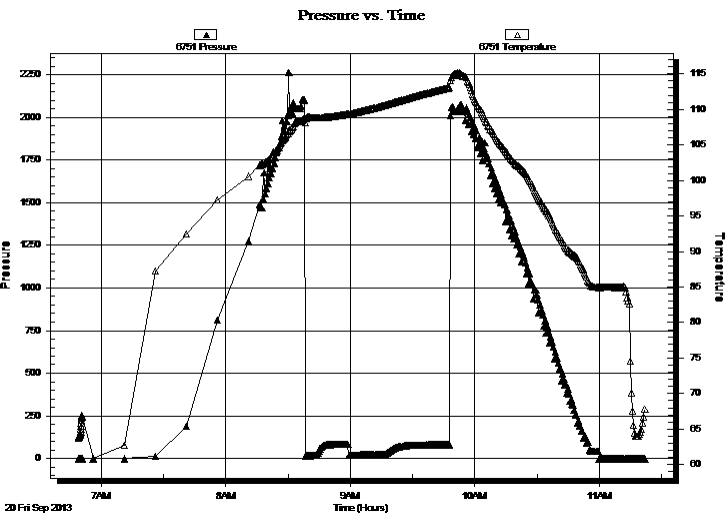
GENERAL INFORMATION:

Formation: **Middle Creek**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 08:38:20 Tester: Chuck Smith
 Time Test Ended: 11:22:09 Unit No: 62
 Interval: **4256.00 ft (KB) To 4265.00 ft (KB) (TVD)** Reference Elevations: 2898.00 ft (KB)
 Total Depth: 4265.00 ft (KB) (TVD) 2891.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: psig @ 4257.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.20 End Date: 2013.09.20 Last Calib.: 2013.09.20
 Start Time: 06:49:01 End Time: 11:22:10 Time On Btm:
 Time Off Btm:

TEST COMMENT: 1/2" Blow .
 No return.
 3/4" Blow .
 No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 7o 93m	0.15

* 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.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

Tool Information

Drill Pipe:	Length: 4105.00 ft	Diameter: 3.80 inches	Volume: 57.58 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.31 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4256.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	36.50 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4229.50	
Shut In Tool	5.00			4234.50	
Hydraulic tool	5.00			4239.50	
Jars	5.00			4244.50	
Safety Joint	2.50			4247.00	
Packer	5.00			4252.00	27.50 Bottom Of Top Packer
Packer	4.00			4256.00	
Stubb	1.00			4257.00	
Perforations	0.00			4257.00	
Recorder	0.00	8365	Inside	4257.00	
Recorder	0.00	6751	Outside	4257.00	
Perforations	5.00			4262.00	
Bullnose	3.00			4265.00	9.00 Bottom Packers & Anchor

Total Tool Length: 36.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52943

DST#: 6

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 06:49:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OCM 7o 93m	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

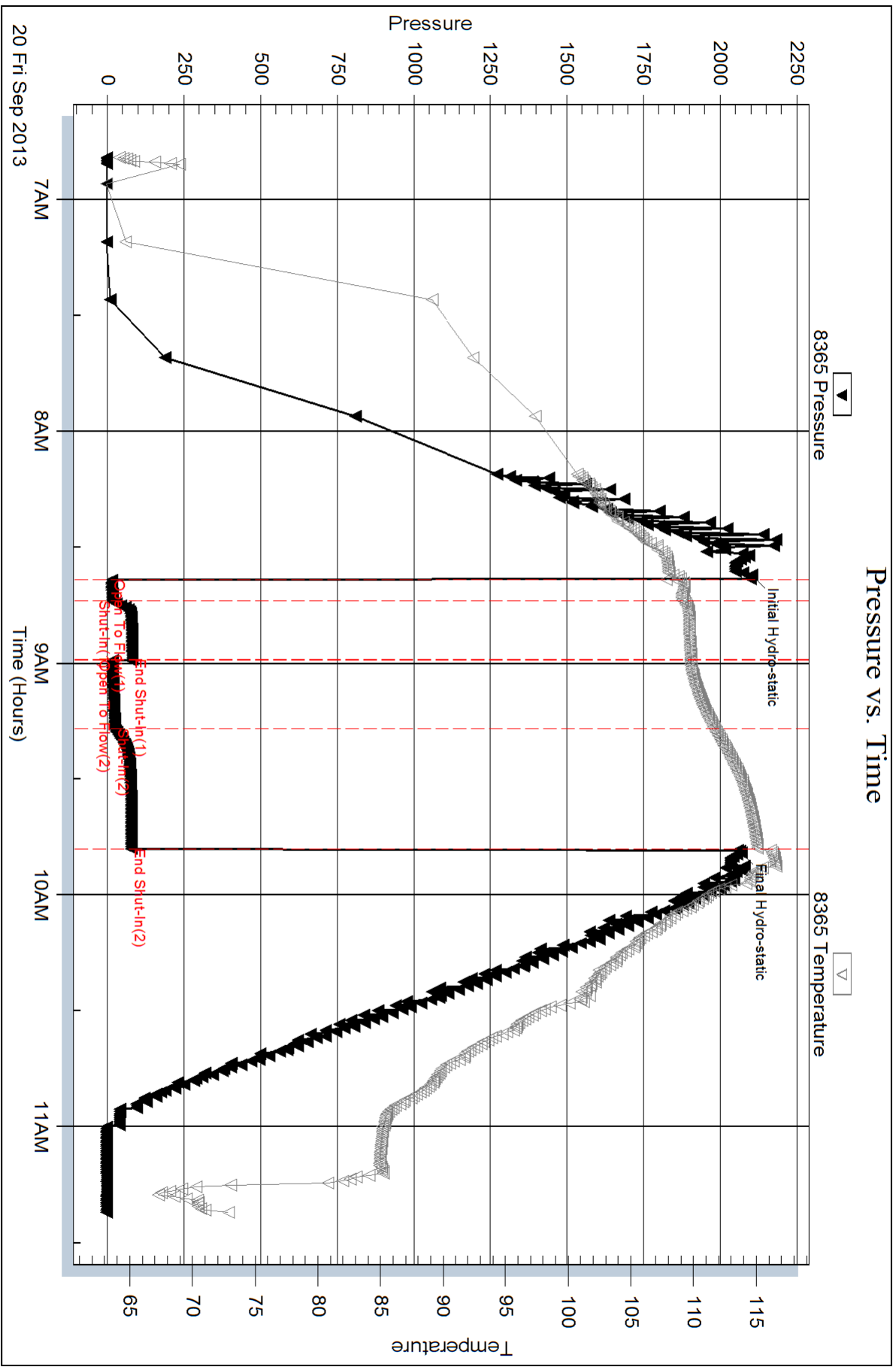
Num Gas Bombs: 0

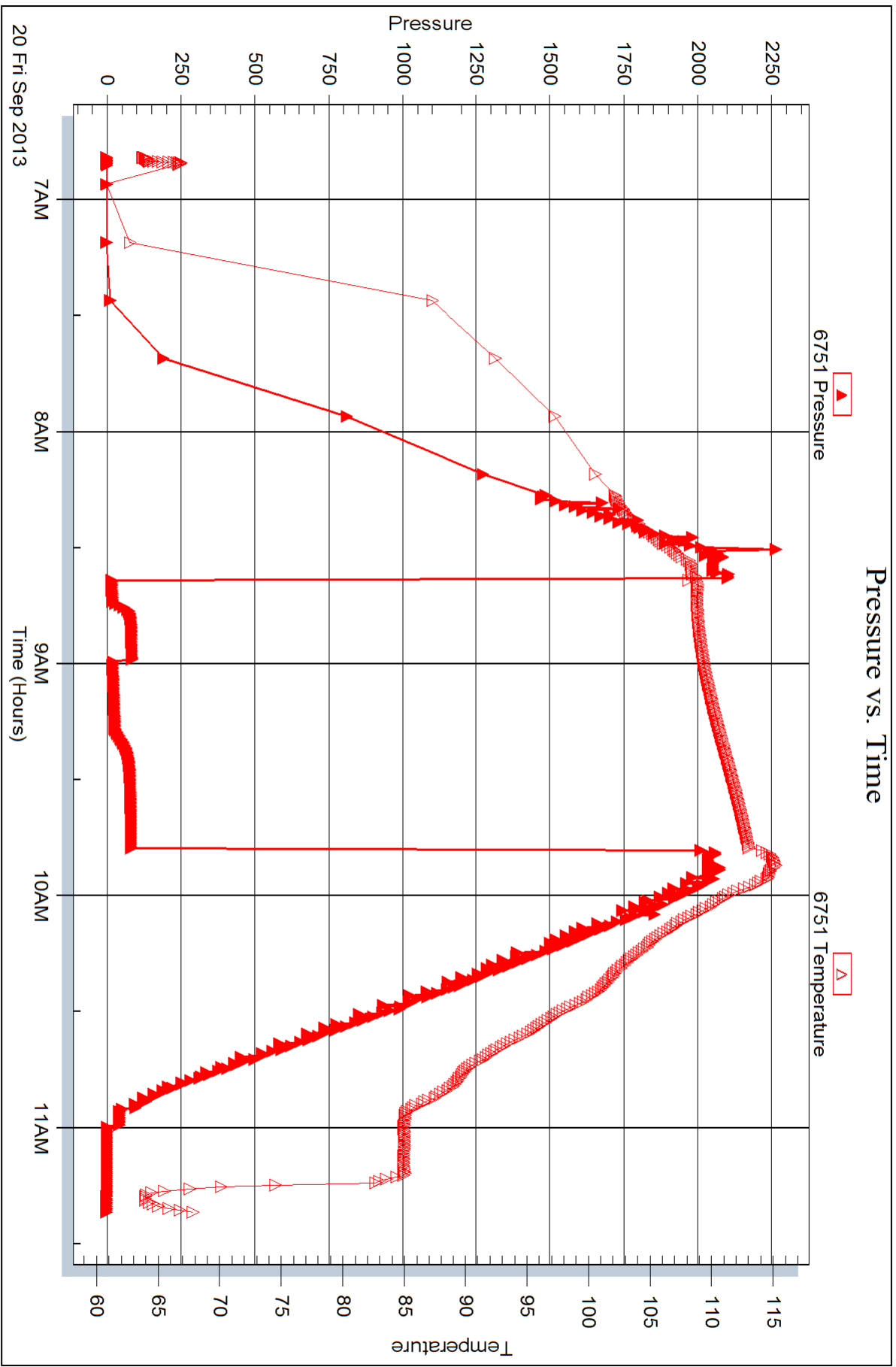
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.20 @ 20:00:00

End Date: 2013.09.21 @ 01:52:20

Job Ticket #: 52944 DST #: 7

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

Printed: 2013.09.24 @ 10:06:40

Larson Engineering, Inc.
S20-18s-30w Lane KS
Cleo #1-20
DST # 7
LKC: L
2013.09.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

GENERAL INFORMATION:

Formation: **LKC 'L'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:10

Time Test Ended: 01:52:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4274.00 ft (KB) To 4287.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4287.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @ Run Depth: 125.04 psig @ 4275.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.20

End Date: 2013.09.21

Last Calib.: 2013.09.21

Start Time: 20:00:01

End Time: 01:52:20

Time On Btm: 2013.09.20 @ 21:48:30

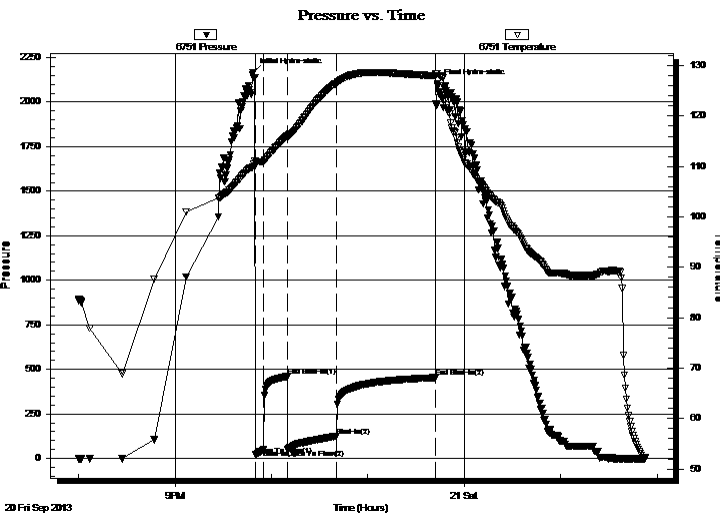
Time Off Btm: 2013.09.20 @ 23:43:20

TEST COMMENT: 3" Blow.

Very weak return.

B.O.B. @ 28 min.

No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2166.65	109.84	Initial Hydro-static
2	20.81	110.09	Open To Flow (1)
7	48.67	110.97	Shut-In(1)
22	459.99	116.08	End Shut-In(1)
22	53.18	115.86	Open To Flow (2)
52	125.04	126.49	Shut-In(2)
114	453.62	127.95	End Shut-In(2)
115	2103.78	128.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW 20m 80w	1.18
64.00	OSWM 30w 70m	0.90
1.00	O 100o	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

GENERAL INFORMATION:

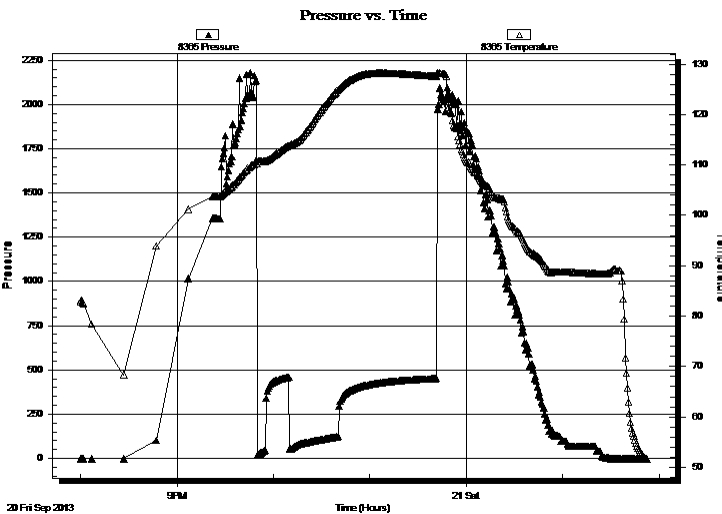
Formation: **LKC 'L'**
 Deviased: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:50:10 Tester: Chuck Smith
 Time Test Ended: 01:52:20 Unit No: 62
Interval: 4274.00 ft (KB) To 4287.00 ft (KB) (TVD)
 Reference Elevations: 2898.00 ft (KB)
 Total Depth: 4287.00 ft (KB) (TVD) 2891.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 8365

Inside

Press @ Run Depth: psig @ 4275.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.09.20 End Date: 2013.09.21	Last Calib.: 2013.09.21
Start Time: 20:00:05 End Time: 01:52:29	Time On Btm:
	Time Off Btm:

TEST COMMENT: 3" Blow.
 Very weak return.
 B.O.B. @ 28 min.
 No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW 20m 80w	1.18
64.00	OSWM 30w 70m	0.90
1.00	O 100o	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

Tool Information

Drill Pipe:	Length: 4107.00 ft	Diameter: 3.80 inches	Volume: 57.61 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.50 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4274.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	40.50 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			4247.50	
Shut In Tool	5.00			4252.50	
Hydraulic tool	5.00			4257.50	
Jars	5.00			4262.50	
Safety Joint	2.50			4265.00	
Packer	5.00			4270.00	27.50 Bottom Of Top Packer
Packer	4.00			4274.00	
Stubb	1.00			4275.00	
Perforations	0.00			4275.00	
Recorder	0.00	8365	Inside	4275.00	
Recorder	0.00	6751	Outside	4275.00	
Perforations	9.00			4284.00	
Bullnose	3.00			4287.00	13.00 Bottom Packers & Anchor

Total Tool Length: 40.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 52944

DST#: 7

ATTN: Vern Schrag

Test Start: 2013.09.20 @ 20:00:00

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:

55000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	MW 20m 80w	1.177
64.00	OSWM 30w 70m	0.898
1.00	O 100o	0.014

Total Length: 245.00 ft Total Volume: 2.089 bbl

Num Fluid Samples: 0

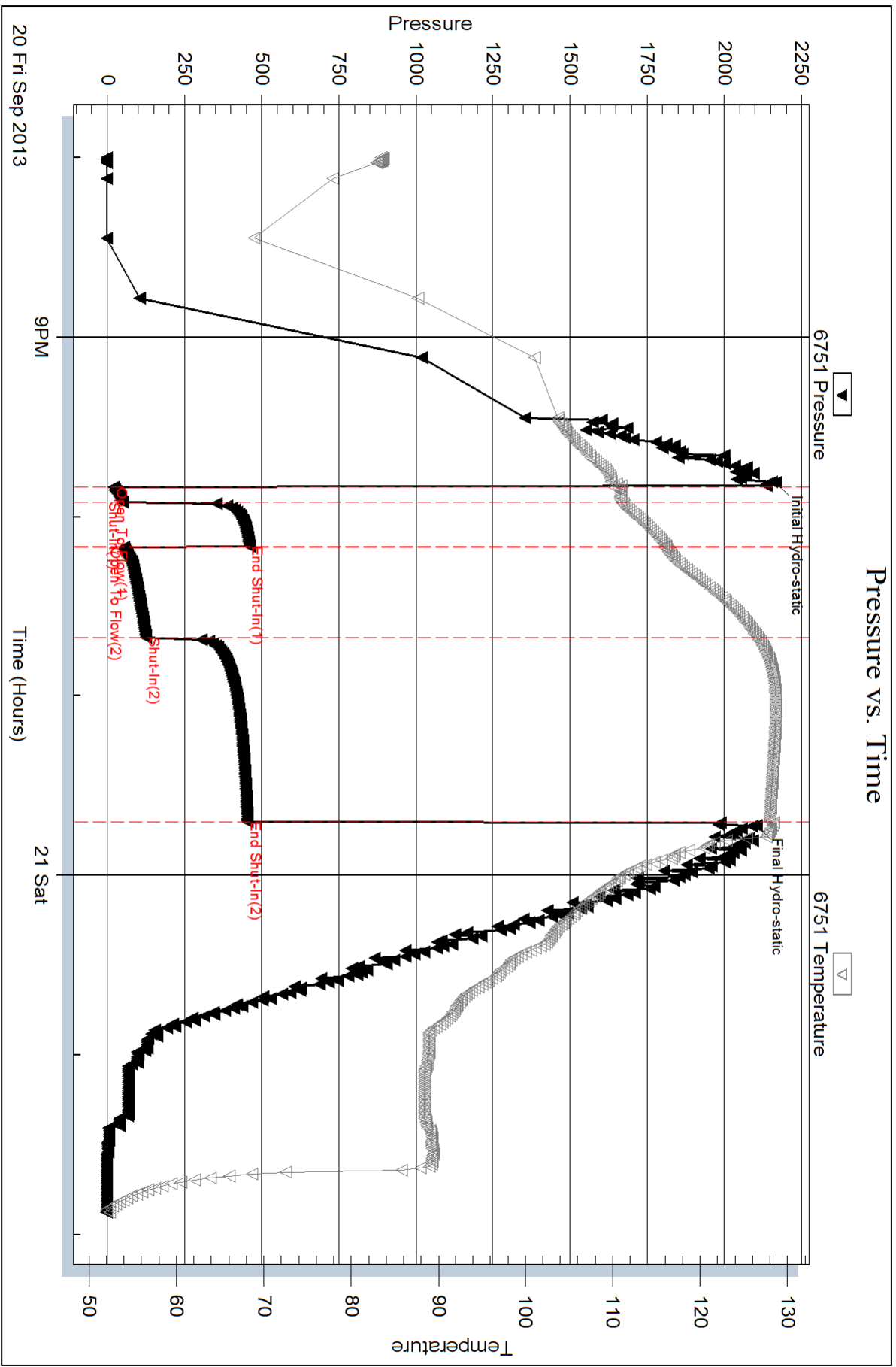
Num Gas Bombs: 0

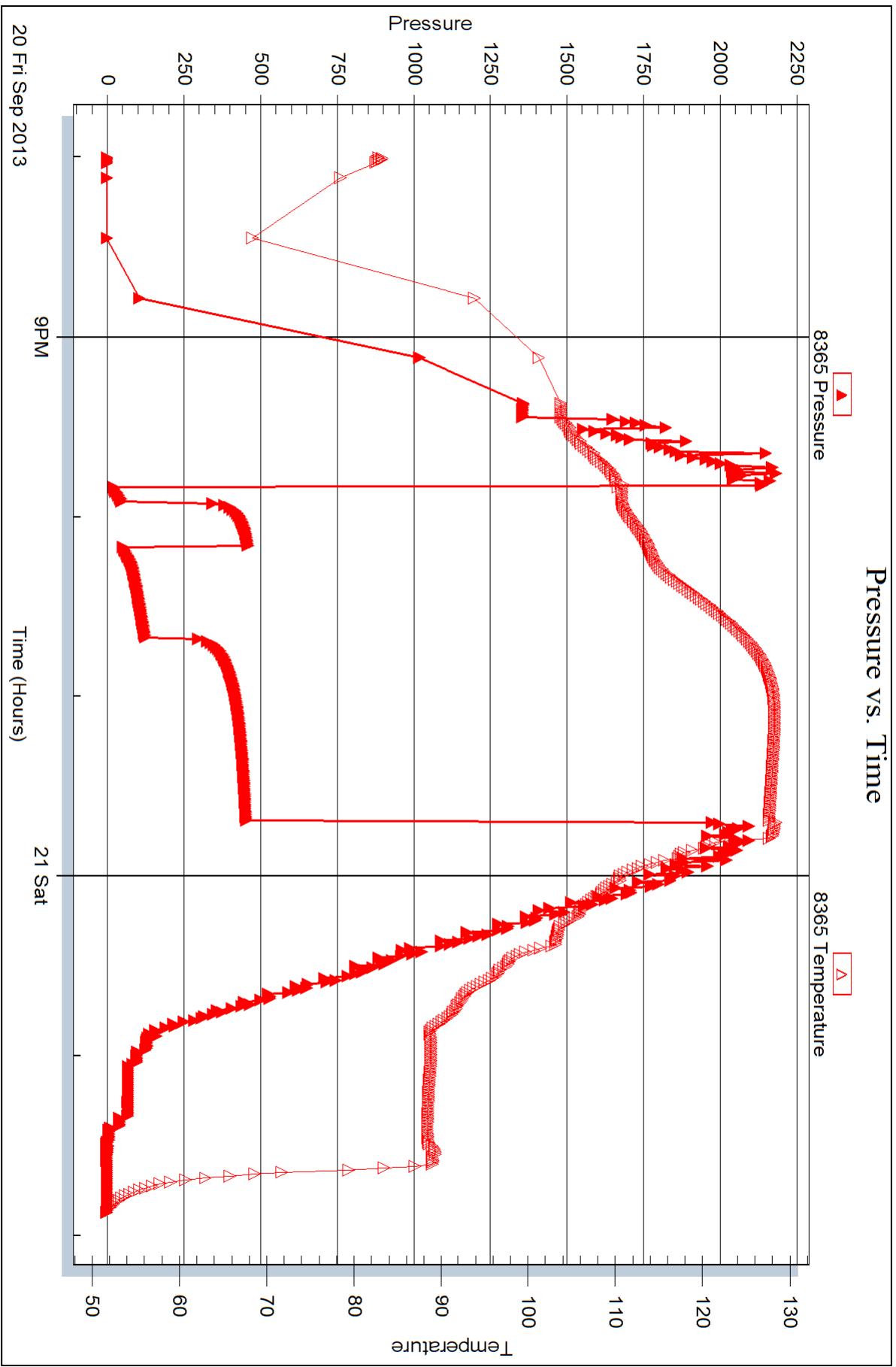
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .220 @ 45 Degrees F = 55000 PPM







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

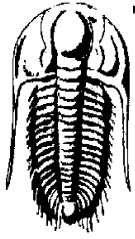
Start Date: 2013.09.21 @ 11:13:00

End Date: 2013.09.21 @ 18:57:50

Job Ticket #: 54945 DST #: 8

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

Printed: 2013.09.24 @ 10:06:14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 54945

DST#: 8

Test Start: 2013.09.21 @ 11:13:00

GENERAL INFORMATION:

Formation:	Pleasanton				
Deviated:	No Whipstock:	ft (KB)	Test Type:	Conventional Bottom Hole (Reset)	
Time Tool Opened:	13:10:40		Tester:	Chuck Smith	
Time Test Ended:	18:57:50		Unit No:	62	
Interval:	4299.00 ft (KB) To 4336.00 ft (KB) (TVD)		Reference Elevations:	2898.00 ft (KB)	
Total Depth:	4336.00 ft (KB) (TVD)			2891.00 ft (CF)	
Hole Diameter:	7.88 inches	Hole Condition: Good	KB to GR/CF:	7.00 ft	

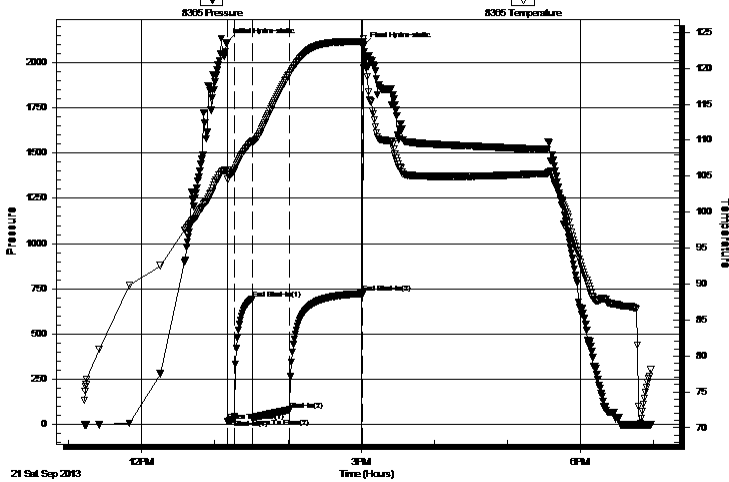
Serial #: 8365

Inside

Press @ Run Depth:	80.20 psig @	4301.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.09.21	End Date:	2013.09.21	Last Calib.:	2013.09.21
Start Time:	11:13:05	End Time:	18:57:50	Time On Btm:	2013.09.21 @ 13:09:10
				Time Off Btm:	2013.09.21 @ 15:02:00

TEST COMMENT: 2 1/2" Blow .
No return.
5" Blow .
No return.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2108.55	105.84	Initial Hydro-static
2	17.51	104.55	Open To Flow (1)
7	29.23	105.81	Shut-In(1)
22	694.46	109.89	End Shut-In(1)
22	34.41	109.58	Open To Flow (2)
52	80.20	119.13	Shut-In(2)
113	723.97	123.66	End Shut-In(2)
113	2091.73	123.25	Final Hydro-static

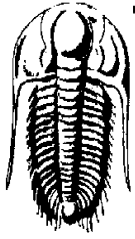
Recovery

Length (ft)	Description	Volume (bbl)
118.00	WM 40w 60m	0.58
40.00	WM 10w 90m	0.29

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 54945 **DST#: 8**
 Test Start: 2013.09.21 @ 11:13:00

GENERAL INFORMATION:

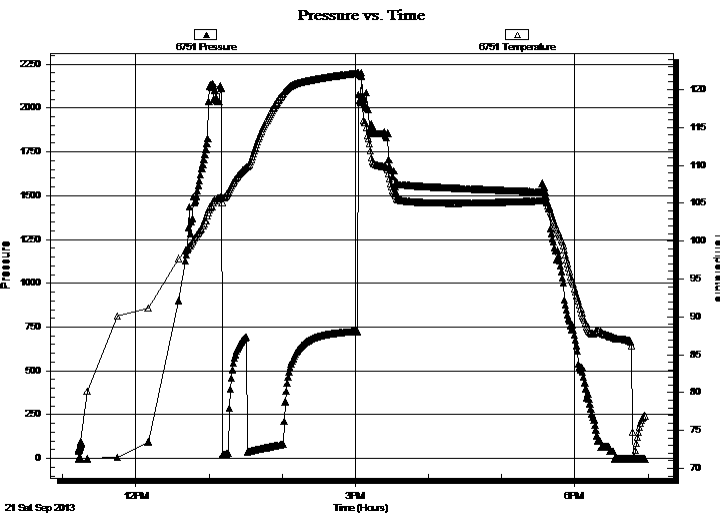
Formation: **Pleasanton**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 13:10:40 Tester: Chuck Smith
 Time Test Ended: 18:57:50 Unit No: 62
 Interval: **4299.00 ft (KB) To 4336.00 ft (KB) (TVD)** Reference Elevations: 2898.00 ft (KB)
 Total Depth: 4336.00 ft (KB) (TVD) 2891.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press@RunDepth: psig @ 4301.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.21 End Date: 2013.09.21 Last Calib.: 2013.09.21
 Start Time: 11:13:01 End Time: 18:57:40 Time On Btm:
 Time Off Btm:

TEST COMMENT: 2 1/2" Blow .
 No return.
 5" Blow .
 No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
118.00	WM 40w 60m	0.58
40.00	WM 10w 90m	0.29

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

Tool Information

Drill Pipe:	Length: 4136.00 ft	Diameter: 3.80 inches	Volume: 58.02 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 58.75 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.50 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4299.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	64.50 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			4272.50	
Shut In Tool	5.00			4277.50	
Hydraulic tool	5.00			4282.50	
Jars	5.00			4287.50	
Safety Joint	2.50			4290.00	
Packer	5.00			4295.00	27.50 Bottom Of Top Packer
Packer	4.00			4299.00	
Stubb	1.00			4300.00	
Perforations	1.00			4301.00	
Recorder	0.00	8365	Inside	4301.00	
Recorder	0.00	6751	Outside	4301.00	
Perforations	0.00			4301.00	
Change Over Sub	0.50			4301.50	
Drill Pipe	31.00			4332.50	
Change Over Sub	0.50			4333.00	
Bullnose	3.00			4336.00	37.00 Bottom Packers & Anchor
Total Tool Length:	64.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54945

DST#: 8

ATTN: Vern Schrag

Test Start: 2013.09.21 @ 11:13:00

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:

38000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
118.00	WM 40w 60m	0.580
40.00	WM 10w 90m	0.288

Total Length: 158.00 ft Total Volume: 0.868 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

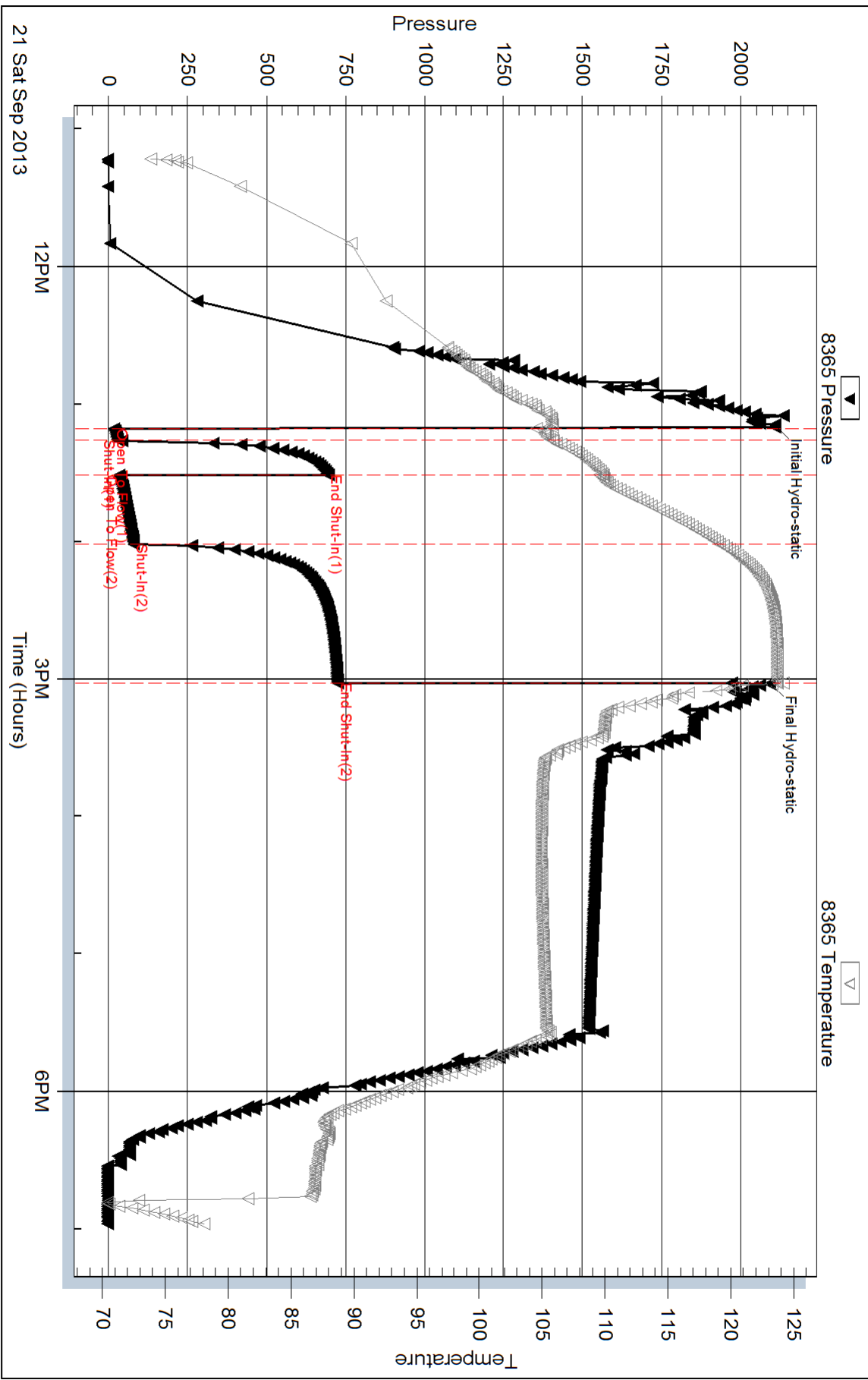
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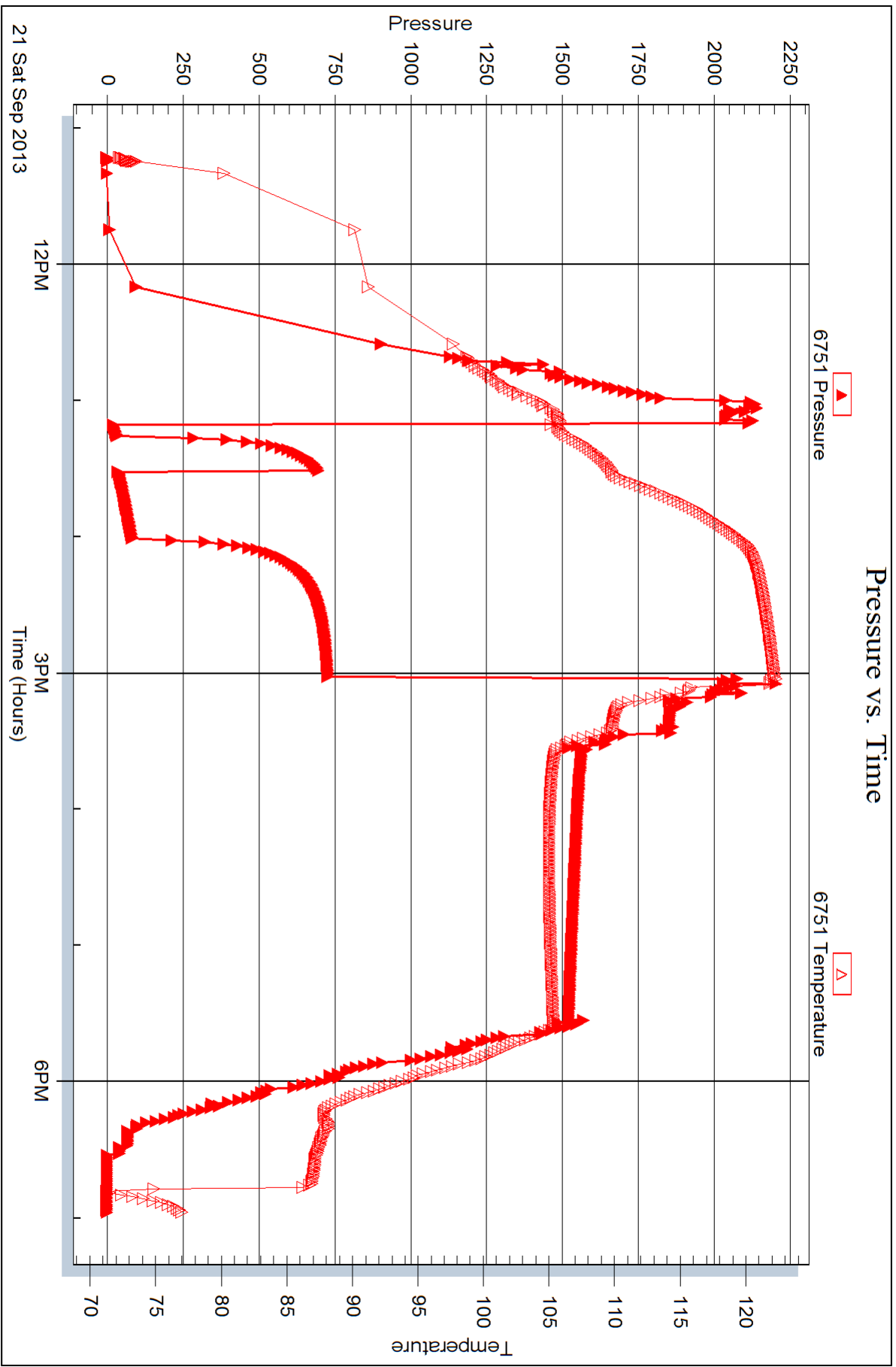
Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .185 @ 73 Degrees F = 38000 PPM

Pressure vs. Time







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.22 @ 03:16:00

End Date: 2013.09.22 @ 08:31:39

Job Ticket #: 54946 DST #: 9

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

Printed: 2013.09.24 @ 10:05:46



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:40

Time Test Ended: 08:31:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4319.00 ft (KB) To 4360.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4360.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365 Inside

Press @ Run Depth: 97.61 psig @ 4320.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.22

End Date: 2013.09.22

Last Calib.: 2013.09.22

Start Time: 03:16:05

End Time: 08:31:40

Time On Btm: 2013.09.22 @ 05:10:20

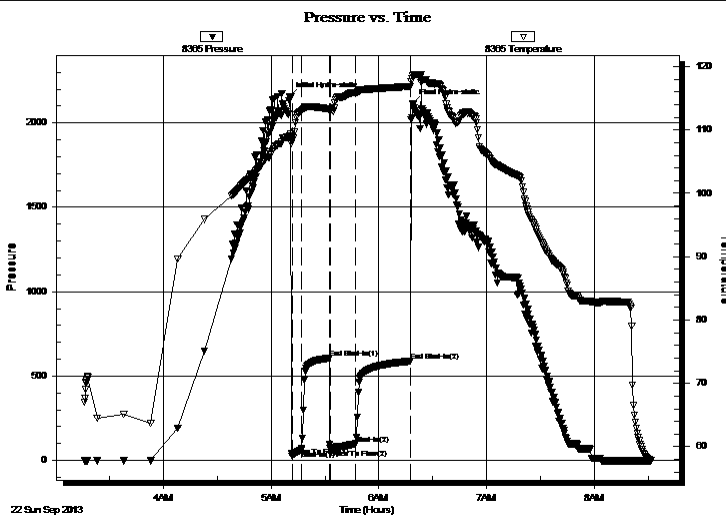
Time Off Btm: 2013.09.22 @ 06:18:50

TEST COMMENT: 7" Blow.

Weak return.

B.O.B. @ 8 1/2 min.

3 1/2" Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2157.36	108.99	Initial Hydro-static
2	26.06	108.50	Open To Flow (1)
7	62.64	112.93	Shut-In(1)
22	606.06	113.34	End Shut-In(1)
23	68.28	113.25	Open To Flow (2)
37	97.61	115.86	Shut-In(2)
68	587.44	116.89	End Shut-In(2)
69	2116.78	118.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOCM 15g 20o 65m	0.58
60.00	GMCO 30g 35m 35o	0.57
30.00	GO 25g 75o	0.42

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

S20-18s-30w Lane KS

Cleo #1-20

Job Ticket: 54946

DST#: 9

Test Start: 2013.09.22 @ 03:16:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:40

Time Test Ended: 08:31:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4319.00 ft (KB) To 4360.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4360.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 6751

Outside

Press @ Run Depth: psig @ 4320.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.22

End Date:

2013.09.22

Last Calib.:

2013.09.22

Start Time: 03:16:01

End Time:

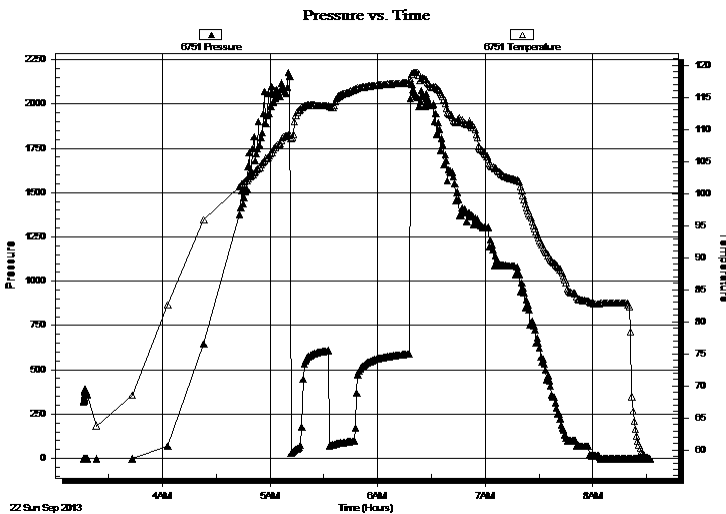
08:31:50

Time On Btm:

Time Off Btm:

TEST COMMENT: 7" Blow.
Weak return.
B.O.B. @ 8 1/2 min.
3 1/2" Return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOCM 15g 20o 65m	0.58
60.00	GMCO 30g 35m 35o	0.57
30.00	GO 25g 75o	0.42

* 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.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

Tool Information

Drill Pipe:	Length: 4169.00 ft	Diameter: 3.80 inches	Volume: 58.48 bbl	Tool Weight: 2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 59.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.50 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4319.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	68.50 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			4292.50	
Shut In Tool	5.00			4297.50	
Hydraulic tool	5.00			4302.50	
Jars	5.00			4307.50	
Safety Joint	2.50			4310.00	
Packer	5.00			4315.00	27.50 Bottom Of Top Packer
Packer	4.00			4319.00	
Stubb	1.00			4320.00	
Perforations	0.00			4320.00	
Recorder	0.00	8365	Inside	4320.00	
Recorder	0.00	6751	Outside	4320.00	
Perforations	4.00			4324.00	
Change Over Sub	1.00			4325.00	
Drill Pipe	31.00			4356.00	
Change Over Sub	1.00			4357.00	
Bullnose	3.00			4360.00	41.00 Bottom Packers & Anchor
Total Tool Length:	68.50				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54946

DST#: 9

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 03:16:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
118.00	GOCM 15g 20o 65m	0.580
60.00	GMCO 30g 35m 35o	0.568
30.00	GO 25g 75o	0.421

Total Length: 208.00 ft Total Volume: 1.569 bbl

Num Fluid Samples: 0

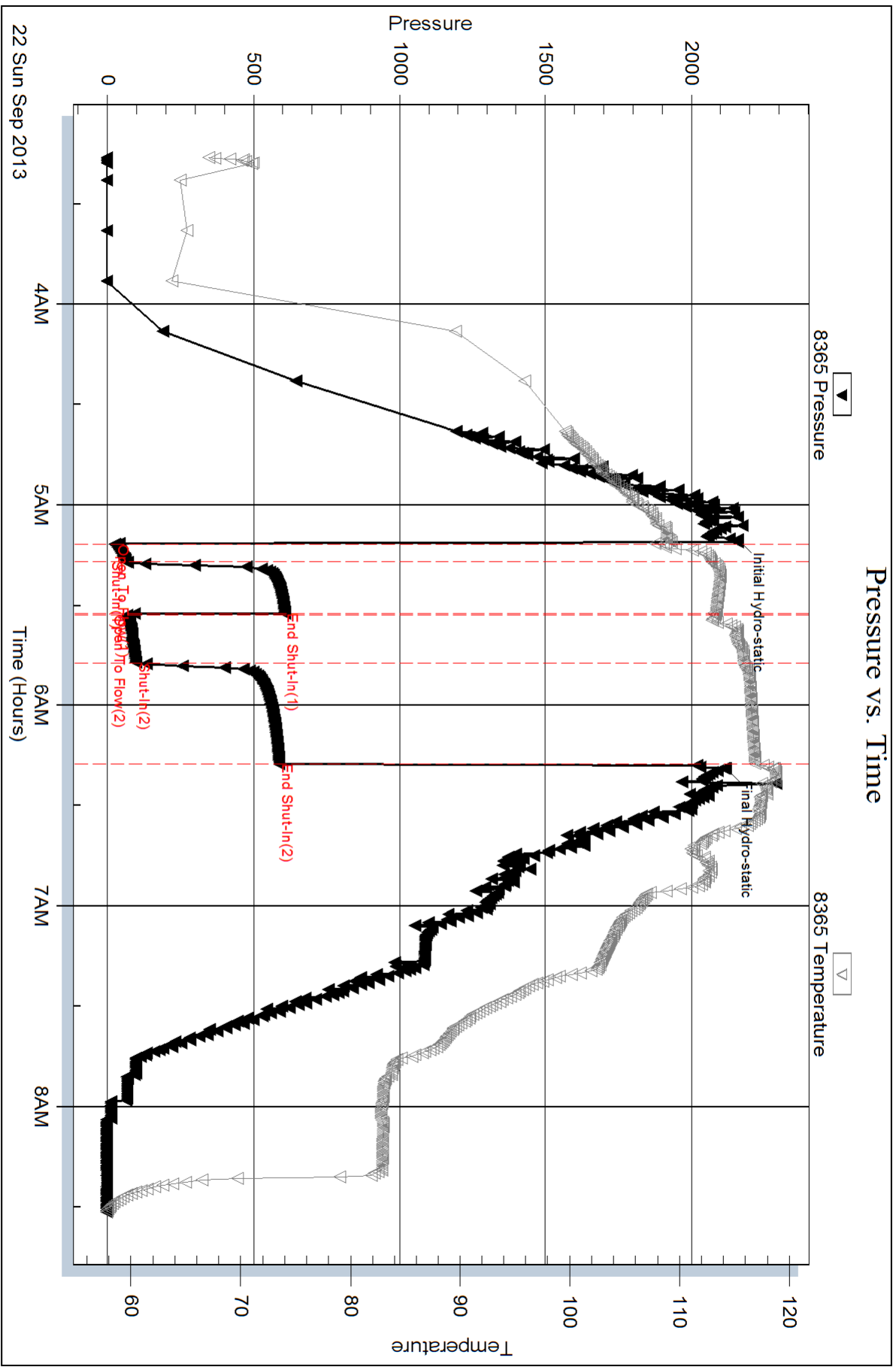
Num Gas Bombs: 0

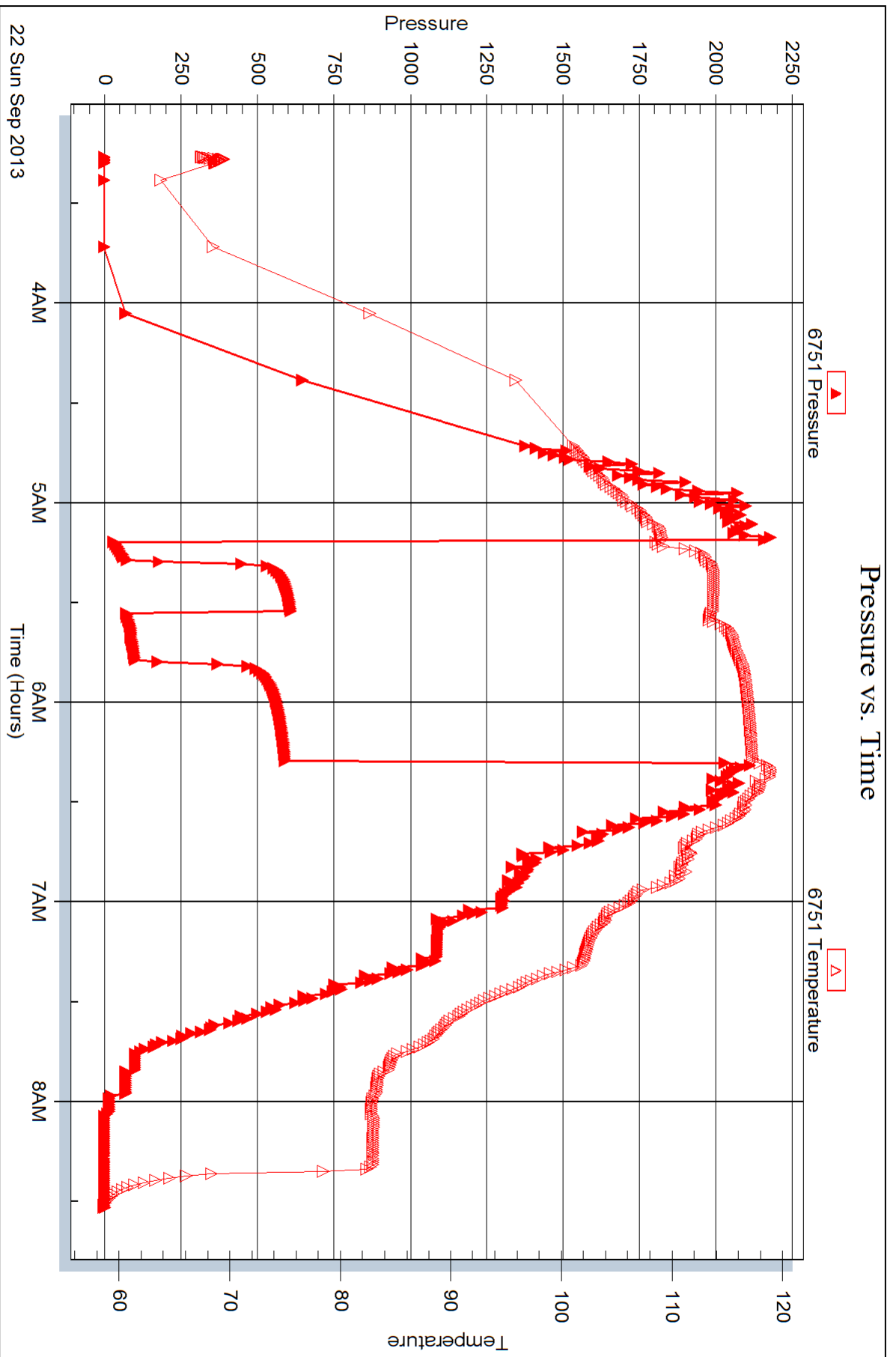
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API: 36 @ 60 Degrees F = 36.







DRILL STEM TEST REPORT

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

562 W. State Rd. 4
Olmitz, KS 67564

ATTN: Vern Schrag

Cleo #1-20

S20-18s-30w Lane KS

Start Date: 2013.09.22 @ 17:03:00

End Date: 2013.09.22 @ 22:08:50

Job Ticket #: 54947 DST #: 10

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

Printed: 2013.09.24 @ 10:05:16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:01:40

Time Test Ended: 22:08:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4359.00 ft (KB) To 4383.00 ft (KB) (TVD)

Reference Elevations: 2898.00 ft (KB)

Total Depth: 4383.00 ft (KB) (TVD)

2891.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 7.00 ft

Serial #: 8365 Inside

Press @ Run Depth: 17.56 psig @ 4362.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.09.22

End Date: 2013.09.22

Last Calib.: 2013.09.22

Start Time: 17:03:05

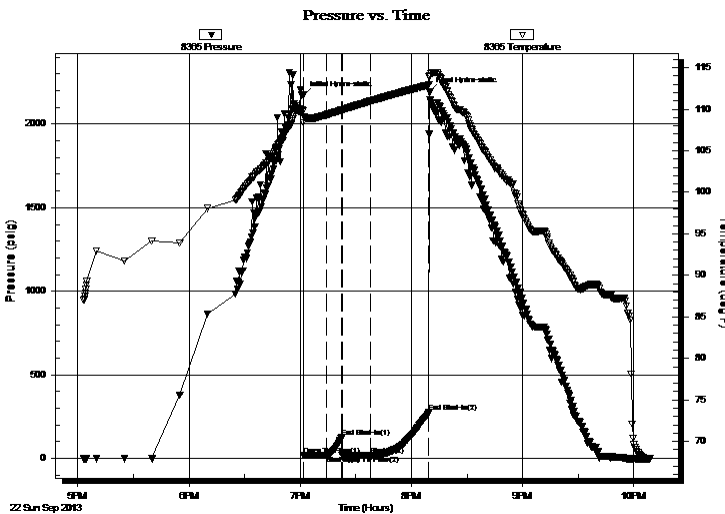
End Time: 22:08:50

Time On Btm: 2013.09.22 @ 19:01:30

Time Off Btm: 2013.09.22 @ 20:09:50

TEST COMMENT: Surface blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2172.58	109.87	Initial Hydro-static
1	16.95	108.36	Open To Flow (1)
13	18.24	109.33	Shut-In(1)
21	124.92	109.91	End Shut-In(1)
21	17.21	109.89	Open To Flow (2)
37	17.56	110.98	Shut-In(2)
68	273.38	112.93	End Shut-In(2)
69	2192.03	113.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	SOCM 2o 98m	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Larson Engineering, Inc.

S20-18s-30w Lane KS562 W. State Rd. 4
Olmitz, KS 67564**Cleo #1-20**

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:01:40

Time Test Ended: 22:08:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 4359.00 ft (KB) To 4383.00 ft (KB) (TVD)

Total Depth: 4383.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2898.00 ft (KB)

2891.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 6751 Outside

Press @RunDepth: psig @ 4362.00 ft (KB)

Start Date: 2013.09.22

End Date:

2013.09.22

Start Time: 17:02:52

End Time:

22:08:41

Capacity: 8000.00 psig

Last Calib.:

2013.09.22

Time On Btm:

Time Off Btm:

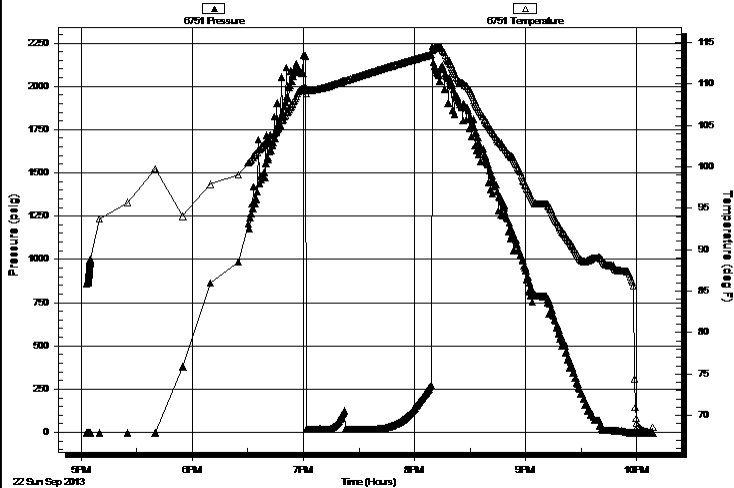
TEST COMMENT: Surface blow .

No return.

No blow .

No return.

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	SOCM 2o 98m	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

Tool Information

Drill Pipe:	Length: 4199.00 ft	Diameter: 3.80 inches	Volume: 58.90 bbl	Tool Weight:	2300.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	22000.00 lb
Drill Collar:	Length: 148.00 ft	Diameter: 2.25 inches	Volume: 0.73 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 59.63 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.50 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4359.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	51.50 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

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

Change Over Sub	1.00			4332.50	
Shut In Tool	5.00			4337.50	
Hydraulic tool	5.00			4342.50	
Jars	5.00			4347.50	
Safety Joint	2.50			4350.00	
Packer	5.00			4355.00	27.50 Bottom Of Top Packer
Packer	4.00			4359.00	
Stubb	1.00			4360.00	
Perforations	2.00			4362.00	
Recorder	0.00	8365	Inside	4362.00	
Recorder	0.00	6751	Outside	4362.00	
Perforations	18.00			4380.00	
Bullnose	3.00			4383.00	24.00 Bottom Packers & Anchor

Total Tool Length: 51.50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc.

S20-18s-30w Lane KS

562 W. State Rd. 4
Olmitz, KS 67564

Cleo #1-20

Job Ticket: 54947

DST#: 10

ATTN: Vern Schrag

Test Start: 2013.09.22 @ 17:03:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	SOCM 2o 98m	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

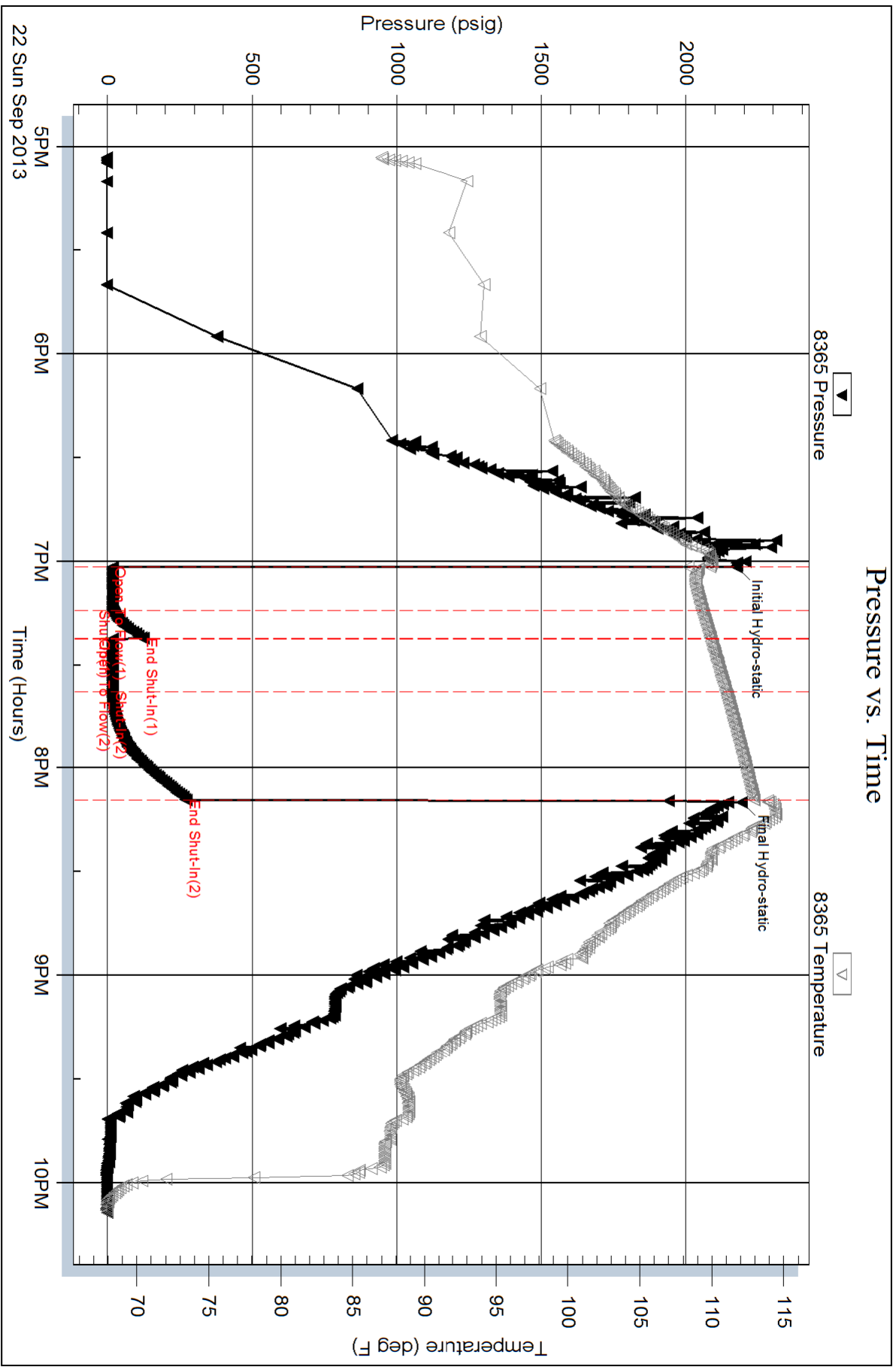
Num Gas Bombs: 0

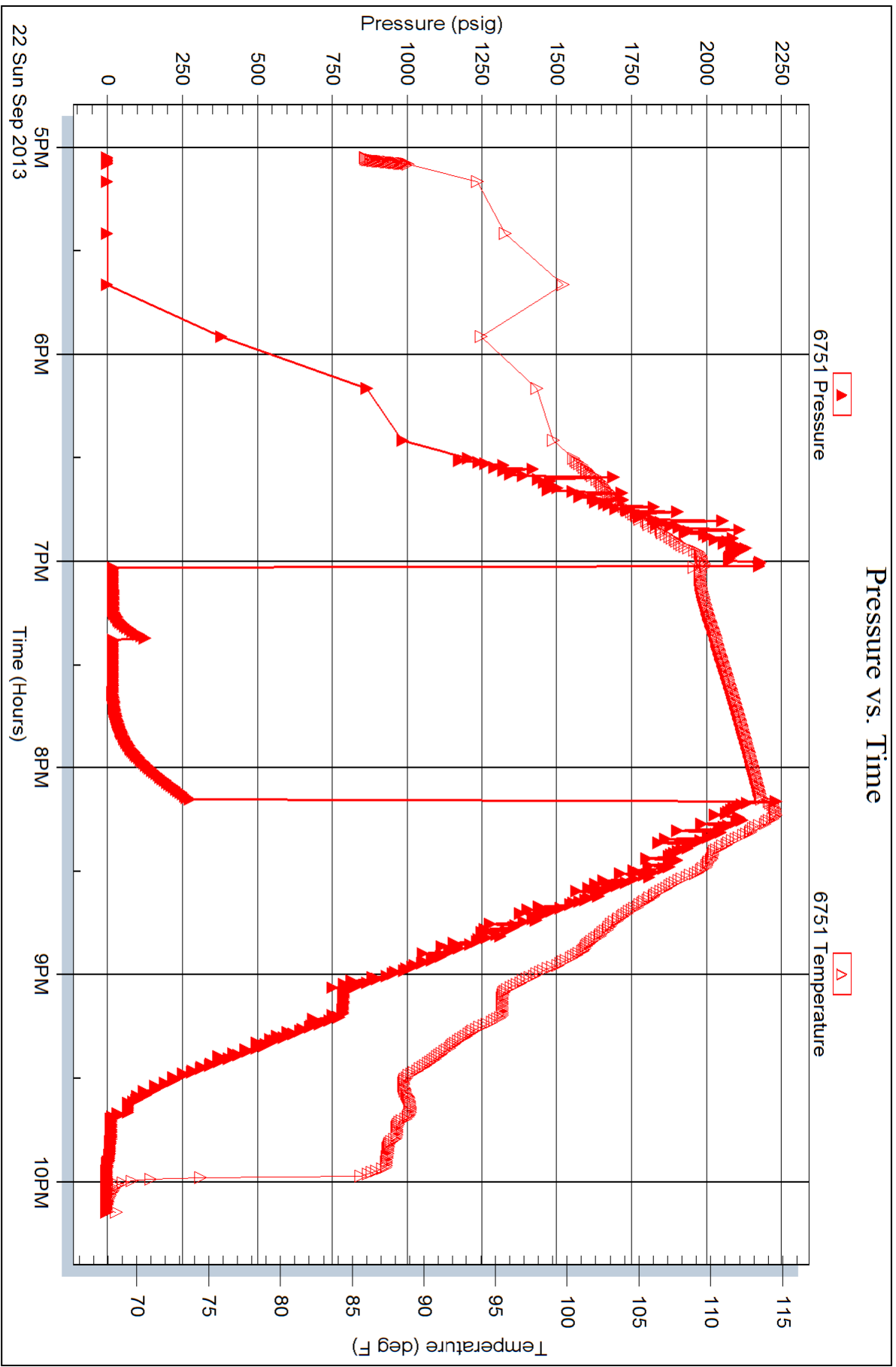
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52938

Well Name & No. Cleo #1-20 Test No. 1 Date 9-15-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 3961 - 3983 Zone Tested LKC 'B'
 Anchor Length 22 Drill Pipe Run 3794 Mud Wt. 8.7
 Top Packer Depth 3957 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 3961 Wt. Pipe Run 0 WL 6.8
 Total Depth 3983 Chlorides 1900 ppm System LCM 2#
 Blow Description Surface blow
No return.
Weak surface blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>20</u>	Feet of <u>OCN</u>	%gas	<u>30</u> %oil	%water <u>70</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 116 Gravity - API RW @ °F Chlorides - ppm
 (A) Initial Hydrostatic 1955 Test 1150 T-On Location 18:00
 (B) First Initial Flow 31 Jars 250 T-Started 21:49
 (C) First Final Flow 35 Safety Joint 75 T-Open 23:41
 (D) Initial Shut-In 991 Circ Sub NIC T-Pulled 00:50
 (E) Second Initial Flow 37 Hourly Standby _____ T-Out 2:31
 (F) Second Final Flow 41 Mileage 33RT 51.15 Comments _____
 (G) Final Shut-In 962 Sampler _____
 (H) Final Hydrostatic 1917 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Initial Open 5
 Initial Shut-In 15
 Final Flow 18
 Final Shut-In 30
 Sub Total 1526.15
 Total 1526.15
 MP/DST Disc't _____

Approved By Jeron C. Selby Our Representative Chuck Smith

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. 52939

Well Name & No. Cleo #1-20 Test No. 2 Date 9-16-13¹⁷
 Company Larson Engineering Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

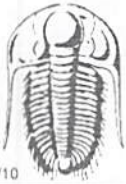
Interval Tested 4113-4135 Zone Tested LKC 'H'
 Anchor Length 22 Drill Pipe Run 3948 Mud Wt. 8.9
 Top Packer Depth 4109 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 4113 Wt. Pipe Run 0 WL 8.0
 Total Depth 4135 Chlorides 2400 ppm System LCM 2"
 Blow Description 1/2" Blow.
No return.
3" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>60</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>OCM</u>		<u>20</u>		<u>80</u>

Rec Total 100 BHT 117 Gravity 33 API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 2082023 Test 1250 T-On Location 23:13
 (B) First Initial Flow 15 Jars 250 T-Started 23:15
 (C) First Final Flow 22 Safety Joint 75 T-Open 00:52
 (D) Initial Shut-In 691 Circ Sub NIC T-Pulled 2:43
 (E) Second Initial Flow 25 Hourly Standby _____ T-Out 4:27
 (F) Second Final Flow 46 Mileage 51.15 Comments _____
 (G) Final Shut-In 681 Sampler _____
 (H) Final Hydrostatic 2019 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Sub Total 1626.15
 Total 1626.15
 MP/DST Disc't _____

Approved By Vernon C Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52940

Well Name & No. Cleo #1-20 Test No. 3 Date 9-18-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD# 3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4160 - 4185 Zone Tested LKC I'
 Anchor Length 25 Drill Pipe Run 4010 Mud Wt. 9.0
 Top Packer Depth 4156 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4160 Wt. Pipe Run 0 WL 7.6
 Total Depth 4185 Chlorides 2800 ppm System LCM 2#

Blow Description Weak surface blow.
No return.
1/2" Blow.
Weak surface return, died @ 14 min.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>30</u>	Feet of <u>OCM</u>	%gas <u>8</u>	%oil	%water <u>92</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 114 Gravity — API RW @ °F Chlorides — ppm

(A) Initial Hydrostatic 2053 Test 1250 T-On Location 14:10
 (B) First Initial Flow 13 Jars 250 T-Started 14:10
 (C) First Final Flow 17 Safety Joint 75 T-Open 15:48
 (D) Initial Shut-In 846 Circ Sub NIC T-Pulled 17:39
 (E) Second Initial Flow 17 Hourly Standby T-Out 19:15
 (F) Second Final Flow 28 Mileage 51.15 Comments _____
 (G) Final Shut-In 837 Sampler _____
 (H) Final Hydrostatic 2030 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Sub Total 1626.15
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1626.15
 MP/DST Disc't _____

Approved By Jessal Selby Our Representative Chuck Smith

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52941

Well Name & No. Cleo #1-20 Test No. 4 Date 9-19-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4202 - 4218 Zone Tested LKC'J'
 Anchor Length 16 Drill Pipe Run 4042 Mud Wt. 9.0
 Top Packer Depth 4198 Drill Collars Run 148 Vis 52
 Bottom Packer Depth 4202 Wt. Pipe Run - WL 7.2
 Total Depth 4218 Chlorides 2800 ppm System LCM 2"
 Blow Description 1/4" Blow.
No return.
Surface blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>10</u>	Feet of <u>OCM</u>	%gas <u>20</u>	%oil	%water <u>80</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 114 Gravity - API RW @ °F Chlorides - ppm
 (A) Initial Hydrostatic 2101 Test 1250 T-On Location 5:15
 (B) First Initial Flow 14 Jars 250 T-Started 5:40
 (C) First Final Flow 18 Safety Joint 75 T-Open 7:49
 (D) Initial Shut-In 553 Circ Sub N/C T-Pulled 8:55
 (E) Second Initial Flow 18 Hourly Standby T-Out 10:28
 (F) Second Final Flow 23 Mileage 51.15 Comments _____
 (G) Final Shut-In 549 Sampler _____
 (H) Final Hydrostatic 2057 Straddle _____
 Initial Open 5 Shale Packer _____
 Initial Shut-In 15 Shale Packer _____
 Final Flow 15 Extra Packer _____
 Final Shut-In 30 Extra Recorder _____
 Sub Total 1626.15 Day Standby _____
 Total 1626.15 Accessibility _____
 MP/DST Disc't _____

Approved By Jerron C. Achey Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52942

Well Name & No. Cleo #1-20 Test No. 5 Date 9-19-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30W Co. Lane State KS

Interval Tested 4216-4232 Zone Tested LKC 'K'
 Anchor Length 16 Drill Pipe Run 4044 Mud Wt. 9.1
 Top Packer Depth 4212 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4216 Wt. Pipe Run - WL 8.0
 Total Depth 4232 Chlorides 2900 ppm System LCM 2*

Blow Description 6" Blow
No return.
B.O.B. @ 19 min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>0</u>	<u>100</u>			
<u>70</u>	<u>OSWM</u>		<u>15</u>	<u>85</u>	
<u>240</u>	<u>WM</u>		<u>35</u>	<u>65</u>	

Rec Total 312 BHT 127 Gravity API RW, 221 @ 55° F Chlorides 43,000 ppm

(A) Initial Hydrostatic 2126 Test 1250 T-On Location 17:15
 (B) First Initial Flow 22 Jars 250 T-Started 17:30
 (C) First Final Flow 72 Safety Joint 75 T-Open 19:29
 (D) Initial Shut-In 546 Circ Sub N/C T-Pulled 21:22
 (E) Second Initial Flow 78 Hourly Standby _____ T-Out 23:15
 (F) Second Final Flow 156 Mileage 51.15 Comments _____
 (G) Final Shut-In 495 Sampler _____
 (H) Final Hydrostatic 2095 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 1626.15
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____

Sub Total 1626.15
 Approved By Vern Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52943

Well Name & No. Cleo #1-20 Test No. 6 Date 9-20-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4256 - 4265 Zone Tested Middle Creek
 Anchor Length 9 Drill Pipe Run 4105 Mud Wt. 8.9
 Top Packer Depth 4252 Drill Collars Run 148 Vis 60
 Bottom Packer Depth 4256 Wt. Pipe Run - WL 8.0
 Total Depth 4265 Chlorides 2900 ppm System LCM 2nd
 Blow Description 1/2" Blow.
No return.
3/4" Blow.
No return.

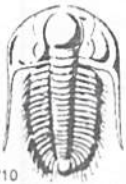
Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>30</u>	Feet of <u>0cm</u>	%gas	<u>7</u> %oil	%water	<u>93</u> %mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 116 Gravity - API RW @ ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2103</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:30</u>
(B) First Initial Flow <u>14</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:49</u>
(C) First Final Flow <u>17</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:38</u>
(D) Initial Shut-In <u>82</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>9:48</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:22</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>51.15</u>	Comments
(G) Final Shut-In <u>79</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2064</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>17</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1626.15</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't

Sub Total 1626.15
 Approved By Damon C Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52944

Well Name & No. Cleo #1-20 Test No. 7 Date 9-20-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4274-4287 Zone Tested LKC 2'
 Anchor Length 13 Drill Pipe Run 4107 Mud Wt. 9.1
 Top Packer Depth 4270 Drill Collars Run 148 Vis 56
 Bottom Packer Depth 4274 Wt. Pipe Run - WL 7.6
 Total Depth 4287 Chlorides 3200 ppm System LCM 2
 Blow Description 3" Blow.
Very weak return.
B.O.B. @ 28 min.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
#1	0	100			
64	OS WM		30	70	
180	MW		80	20	

Rec Total 245 BHT 128 Gravity - API RW .220 @ 45° F Chlorides 55000 ppm
 (A) Initial Hydrostatic 2167 Test 1250 T-On Location 20:00
 (B) First Initial Flow 21 Jars 250 T-Started 20:00
 (C) First Final Flow 49 Safety Joint 75 T-Open 21:50
 (D) Initial Shut-In 460 Circ Sub NIC T-Pulled 23:42
 (E) Second Initial Flow 53 Hourly Standby _____ T-Out 1:52
 (F) Second Final Flow 125 Mileage 51.15 Comments _____
 (G) Final Shut-In 454 Sampler _____
 (H) Final Hydrostatic 2104 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1626.15
 MP/DST Disc't _____

Approved By Vern Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52945

Well Name & No. Cleo #1-20 Test No. 8 Date 9-21-13
 Company Larson Engineering Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD #3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4299 - 4336 Zone Tested Pleasanton
 Anchor Length 37 Drill Pipe Run 4136 Mud Wt. 9.1
 Top Packer Depth 4295 Drill Collars Run 148 Vis 54
 Bottom Packer Depth 4299 Wt. Pipe Run - WL 7.6
 Total Depth 4336 Chlorides 3000 ppm System LCM 2⁺
 Blow Description 2 1/2" Blow.
No return.
5" Blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>40</u>	Feet of <u>WM</u>	%gas	%oil	<u>10</u> %water	<u>90</u> %mud
Rec <u>118</u>	Feet of <u>WM</u>	%gas	%oil	<u>40</u> %water	<u>60</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 158 BHT 124 Gravity - API RW .185 @ 73 ° F Chlorides 38,000 ppm
 (A) Initial Hydrostatic 2109 Test 1250 T-On Location 11:00
 (B) First Initial Flow 18 Jars 250 T-Started 11:13
 (C) First Final Flow 29 Safety Joint 75 T-Open 13:11
 (D) Initial Shut-In 694 Circ Sub NIC T-Pulled 15:02
 (E) Second Initial Flow 34 Hourly Standby _____ T-Out 18:58
 (F) Second Final Flow 80 Mileage 51.15 Comments _____
 (G) Final Shut-In 724 Sampler _____
 (H) Final Hydrostatic 2092 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15

Initial Open 5
 Initial Shut-In 15
 Final Flow 30
 Final Shut-In 60
 Approved By Vern Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52946

Well Name & No. Cleo #1-20 Test No. 9 Date 9-22-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4319-4360 Zone Tested Marmaton
 Anchor Length 41 Drill Pipe Run 4169 Mud Wt. 9.0
 Top Packer Depth 4315 Drill Collars Run 178 Vis 60
 Bottom Packer Depth 4319 Wt. Pipe Run - WL 7.6
 Total Depth 4360 Chlorides 3000 ppm System LCM 2#

Blow Description 7" Blow.
Weak return.
B.O.B. @ 8 1/2 min.
3 1/2" Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>GO</u>	<u>25</u>	<u>75</u>		
<u>60</u>	<u>GMCO</u>	<u>30</u>	<u>35</u>		<u>35</u>
<u>118</u>	<u>GOCM</u>	<u>15</u>	<u>20</u>		<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 208 BHT 117 Gravity 36 API RW @ ° F Chlorides - ppm

(A) Initial Hydrostatic 2157 Test 1250 T-On Location 3:15
 (B) First Initial Flow 26 Jars 250 T-Started 3:16
 (C) First Final Flow 63 Safety Joint 75 T-Open 5:12
 (D) Initial Shut-In 606 Circ Sub _____ T-Pulled 6:18
 (E) Second Initial Flow 68 Hourly Standby _____ T-Out 8:32
 (F) Second Final Flow 98 Mileage 51.15 Comments _____
 (G) Final Shut-In 587 Sampler _____
 (H) Final Hydrostatic 2117 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1626.15 Total 1626.15 MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 15
 Final Flow 15
 Final Shut-In 30
 Approved By Vern C Schrag Our Representative Chuck Smith

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52947

Well Name & No. Cleo #1-20 Test No. 10 Date 9-22-13
 Company Larson Engineering, Inc. Elevation 2898 KB 2891 GL
 Address 562 W. State Rd. 4 Olmitz, KS 67564
 Co. Rep / Geo. Vern Schrag Rig HD#3
 Location: Sec. 20 Twp. 18s Rge. 30w Co. Lane State KS

Interval Tested 4359-4383 Zone Tested Altament
 Anchor Length 24 Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4355 Drill Collars Run 148 Vis 55
 Bottom Packer Depth 4359 Wt. Pipe Run - WL 7.2
 Total Depth 4383 Chlorides 3900 ppm System LCM 1"
 Blow Description Surface blow.
No return.
No blow.
No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>1</u>	Feet of <u>500M</u>	%gas	<u>2</u> %oil	%water <u>98</u>	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 1 BHT 113 Gravity - API RW _____ @ _____ °F Chlorides _____ ppm

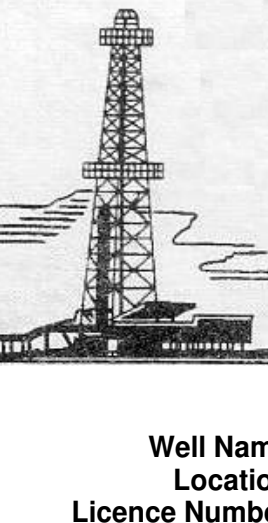
(A) Initial Hydrostatic <u>2173</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>16:45</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>17:03</u>
(C) First Final Flow <u>18</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>19:02</u>
(D) Initial Shut-In <u>125</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>20:09</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>22:09</u>
(F) Second Final Flow <u>18</u>	<input checked="" type="checkbox"/> Mileage <u>51.15</u>	Comments _____
(G) Final Shut-In <u>273</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2192</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>5</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>15</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1626.12</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1626.15</u>	

Approved By [Signature] Our Representative Chuck Smith
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WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

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



Well Name: Cleo #1-20
 Location: NE SE SW SE SEC. 20-18s-30w
 Licence Number: API: 15-101-22460
 Spud Date: September 11, 2013
 Surface Coordinates: 345' FSL & 1397' FEL

Region: Lane Co., KS
 Drilling Completed: September 23, 2013

Bottom Hole Coordinates:
 Ground Elevation (ft): 2891' K.B. Elevation (ft): 2898'
 Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4614'
 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

DP 4.5" XH (16.6#); DC 6.25" x 2.25" x 560', Kelly 40.30', Tool Joint 5.5"; Bit: JZ-HA20-Q, 7-7/8", jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).

CASING:

Set 8-5/8" casing at 276'
 Set 5-1/2" production casing

CIRCULATION SYSTEM:

Continental EMSCO D-300, duplex, 6 x 14, 60-62 spm, Chemical, premix, displaced 3453'; earth pits, Morgan Mud, Inc., McCook, Neb., Cade Lines.

OPEN HOLE LOGS:

DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Dennis Kerr, Log total depth (4614') was two feet short to rotary total depth (4612').

DRILL STEM TEST #1:

LKC "B-zone": Interval: 3961-3983 (22') Blow: weak surf thru IFP, no RB, no blow at 2nd open, but weak surf blow by end of FFP, no RB; Times: 5-15-30; Recovery: 20' OCM (30%O, 70%M); Pressures: HP: 1955-1917, SIP: 991-962, FP: 31-35, 37-41; BHT: 116 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #2:

LKC "H-zone": Interval: 4113-4135 (22') Blow: weak incr to 1/2" IFP, no RB, weak incr to 3" FFP, no RB; Times: 5-15-30-60; Recovery: 100' TF, no GIP; 40' GO (100%O, 70' OSWM (15%W, 85%M), 240' WM (35%W, 65%M, Rw 0.221 at 55 F); Pressures: HP: 2126-2095, SIP: 546-495, FP: 22-72, 78-256; BHT: 127 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #3:

LKC "I-zone": Interval: 4160-4185 (25') Blow: weak surf IFP, no RB, weak incr 1/2" FFP, surf RB died 14 min FSIP; Times: 5-15-30-60; Recovery: 30' SOCM (8%O, 92%M); Pressures: HP: 2053-2030, SIP: 846-837, FP: 13-17, 17-28; BHT: 114 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #4:

LKC "J-zone": Interval: 4202-4218 (16') Blow: weak incr 1/4" IFP, no RB, weak surf blow FFP, no RB; Times: 5-15-30-60; Recovery: 10' OCM (20%O, 80%M); Pressures: HP: 2101-2057, SIP: 553-549, FP: 14-18, 18-23; BHT: 114 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #5:

LKC "K-zone": Interval: 4216-4232 (16') Blow: weak incr 6" IFP, no RB, BOB 19 min FFP, no RB; Times: 5-15-30-60; Recovery: 312' TF, no GIP; 2' oil (100%O), 64' OSWM (15%W, 85%M), 240' WM (35%W, 65%M, Rw 0.221 at 55 F); Pressures: HP: 2126-2095, SIP: 546-495, FP: 22-72, 78-256; BHT: 127 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #6:

LKC "Middle Creek": Interval: 4256-4265 (9') Blow: weak 1/2" IFP, no RB, weak 3/4" FFP, no RB; Times: 5-15-30-60; Recovery: 30' SOCM (7%O, 93%M); Pressures: HP: 2103-2064, SIP: 82-79, FP: 14-17, 18-25; BHT: 116 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #7:

LKC "L-zone": Interval: 4274-4287 (13') Blow: weak incr 3" IFP, very weak surf RB, BOB 28 min FFP, no RB; Times: 5-15-30-60; Recovery: 245' TF, no GIP; 1' oil (100%O), 64' OSWM (30%W, 70%M), 180' WM (80%W, 20%M, Rw 0.22 at 45 F); Pressures: HP: 2167-2104, SIP: 460-454, FP: 21-49, 53-125; BHT: 128 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #8:

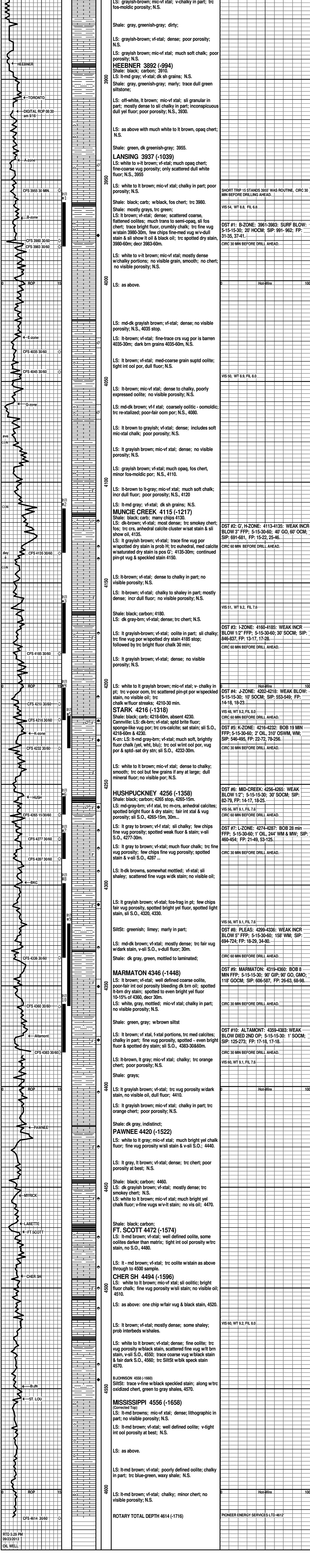
Pleasanton: Interval: 4299-4336 (37') Blow: weak incr 2-1/2" IFP, no RB, weak incr 5" FFP, no RB; Times: 5-15-30-60; Recovery: 158' TF, no GIP; 40' WM (10%W, 90%M), 118' WM (40%W, 60%M, Rw 0.185 at 73 F, chloride 38k); Pressures: HP: 2109-2092, SIP: 694-724, FP: 18-29, 34-80; BHT: 124 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #9:

Marmaton: Interval: 4319-4360 (41') Blow: weak incr 7" IFP, very weak RB ISIP, BOB 28 min FFP, 3-1/2" RB FSIP; Times: 5-15-30-60; Recovery: 208' TF, 90' GIP; 30' GO (25%G, 75%O, 36 grav.), 60' GCM (30%G, 35%O, 35%M), 118' HGOCM (15%G, 20%O, 65%M); Pressures: HP: 2157-2117, SIP: 606-587, FP: 26-63, 68-98; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.

DRILL STEM TEST #10:

Marmaton: Interval: 4359-4383 (24') Blow: weak surf IFP, no RB, no blow FFP, no RB; Times: 5-15-30-60; Recovery: 1' SOCM (2%O, 98%M); Pressures: HP: 2173-2192, SIP: 125-273, FP: 17-18, 17-18; BHT: 113 F; Trilobite Testing, Inc., Scott City, KS, Chuck Smith.



RTD 5:28 PM
 09/23/2013
 OIL WELL



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

TICKET
 No 24729

PAGE 1 OF 2

SERVICE LOCATION: Wesley KS WELL/PROJECT NO: 1-20 LEASE: Cleo COUNTY/PARISH: Lane STATE: KS CITY: Amey DATE: 24 Sep 13 OWNER: _____
 TICKET TYPE: SERVICE SALES CONTRACTOR: _____ RIG NAME/NO: _____ SHIPPED: DELIVERED TO: location ORDER NO.: _____
 WELL TYPE: oil WELL CATEGORY: Development JOB PURPOSE: cement log string 5 1/2" WELL PERMIT NO.: _____ WELL LOCATION: 20-18-30
 REFERRAL LOCATION: _____ INVOICE INSTRUCTIONS: _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE TRK 114	50	mi			6.00	300.00
578		1			Pump Charge	1	ea			1500.00	1500.00
325		1			Standard cement (For EA-2)	155	mi			14.00	2170.00
284		1			coal seal	700	lb	7	sk	35.00	2450.00
283		1			salt	800	lb			0.20	160.00
277		1			coal seal	1085	lb			0.75	813.75
292		1			hald-322	100	lb			7.75	775.00
276		1			flocels	25	00			2.00	50.00
280		1			flocelk 21	500	gal			3.00	1500.00
221		1			Liquid KCl	2	gal			2500.00	50.00
290		1			D-AIR	2	gal			42.00	84.00
419		1			Rotating head rental	52	in	1	ea	2000.00	200.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X
 DATE SIGNED: _____ TIME SIGNED: _____ 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		AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				PAGE TOTAL	7847.75
WE UNDERSTOOD AND MET YOUR NEEDS?				2	742.00
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				Subtotal	8589.75
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Lane TAX 7.15%	432.41
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		TOTAL	9022.16
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					

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

SWIFT OPERATOR: [Signature] APPROVAL: _____

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 4-24-13 PAGE NO. 7

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
Larson Engineering		1-20		Clea		Cement 5 1/2" Longstring		24729	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS	
				T	C	TUBING	CASING		
								TD - 4614	TP - 4614 5 1/2" 15.5"
								SJ - 42.21	P.C. - 2166
								155 sks EA-2 w/ 1/4" Flo, 7# Gilsinite	
	1315							on Location - Rig running pipe	
	1330							Drop Ball Circulate - Rotate -	
	1415	6 3/4	15		✓	350		Pump 15 bbls KCL Flush	
		6 3/4	12		✓	350		Pump 500 gal Flochecks 21	
		6 3/4	5		✓	350		Pump 5 bbls KCL Flush	
	1423		7					Plug RH (30 sks)	
	1428	4 1/2	30		✓	200		mix (125 sks) EA-2 @ 15.2 ppg	
								wash out Pump + Lines	
								Release Latch Down Plug	
	1445	6 3/4	Ø		✓	100		Start Displacement	
		6 3/4			✓			Lift PSI	
		6 3/4			✓	850		Max Lift PSI	
	1500	6 3/4	108.8		✓	1500		Land Latch Down Plug	
	1503							Release Pressure - Hold -	
	1505							Wash up truck	
	1535							Job Complete	
								Thank You	
								Blaine Dave Flint John	