Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1227626

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

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

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☑ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

7/2/2014	8/5/2014	8/5/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-101-22531-00-00
Spot Description:
SW SE SE SE Sec. 20 Twp. 18 S. R. 27 ☐ East ☑ West
134 Feet from ☐ North / ☑ South Line of Section
347 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Lane
Lease Name: EM Stanley Unit Well #: 1-20
Field Name:
Producing Formation: N/A
Elevation: Ground: 2687 Kelly Bushing: 2694
Total Vertical Depth: 4640 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 262 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: 9000 ppm Fluid volume: 1400 bbls
Dewatering method used: Evaporated

Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

☑ **Confidentiality Requested**
Date: 11/25/2014
☐ **Confidential Release Date:**
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** NAOMI JAMES **Date:** 11/25/2014

1227626

Operator Name: Larson Engineering, Inc. dba Larson Operating Company Lease Name: EM Stanley Unit Well #: 1-20

Sec. 20 Twp. 18 S. R. 27 ☐ East ☑ West County: Lane

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

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

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Dual Induction
Dual Comp Porosity
Microresistivity

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

Name: Attached Top: Attached Datum: Attached

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	262	Class A	165	2% gel, 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing	-			
___ Plug Back TD				
___ Plug Off Zone	-			

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

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

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

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

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

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

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

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

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

PRODUCTION INTERVAL:
_____
_____

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

Form	ACO1 - Well Completion
Operator	Larson Engineering, Inc. dba Larson Operating Company
Well Name	EM Stanley Unit 1-20
Doc ID	1227626

Tops

Name	Top	Datum
Anhydrite	2063	+631
Base Anhydrite	2094	+600
Heebner	3936	-1242
Lansing	3971	-1276
Stark Sh	4243	-1549
Marmaton	4368	-1674
Pawnee Mkr	4433	-1739
Ft Scott	4500	-1806
Cherokee Sh	4524	-1830
Mississippi	4604	-1910

QUALITY WELL SERVICE, INC.

6193

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

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

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

Date	Sec.	Twp.	Range	County	State	On Location	Finish
07-26-14	20	18s	27w	Lane	KS	6:00PM	7:30PM

Lease EM Stanely Unit | Well No. 1-20 | Location Dighton KS, 8E, 1S, 4W into

Contractor H D | Owner Lawson Eng.

Type Job Surface | To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size 12 1/4 | T.D. 264

Csg. 8 5/8 24# | Depth 264 | Charge To Lawson

Tbg. Size | Depth | Street

Tool | Depth | City | State

Cement Left in Csg. 20' | Shoe Joint N/A | The above was done to satisfaction and supervision of owner agent or contractor.

Meas Line | Displace 15 1/2 BBls Fresh | Cement Amount Ordered 165sx class A + 2% gel + 3% cc

EQUIPMENT

Pumptrk 8	No. David F	
Bulktrk 10	No. Mike B.	
Bulktrk	No.	
Pickup	No.	

JOB SERVICES & REMARKS

Pipe on Bttm, Break Circ, Pump Spacer Mix 165 sx A 3#2 cem Start Disp. w/ Fresh H20, Wash up Truck, See Steady increase in PSI Slow Rate, Stop Pump at 15 1/2 BBls total Disp., Shut in, Cem at Did Circ.

Common	165
Poz. Mix	
Gel.	3
Calcium	6
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	174
Mileage	35

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
LMV	35
Service Supervisor	
Pumptrk Charge	Surface
Mileage	35 X 2
Tax	
Discount	
Total Charge	

X Signature

Taylor Printing, Inc.

QUALITY WELL SERVICE, INC.

6194

Federal Tax I.D. # 481187368

Home Office 324 Simpson St., Pratt, KS 67124

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

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

Date	Sec.	Twp.	Range	County	State	On Location	Finish
08-05-14	20	18s	27w	Lane	KS	1:00 Am	4:30 AM

Lease EM Stanley Unit Well No. 1-20 Location Dighton KS, 8E, 1¼S, W/into

Contractor H-D

Type Job Rotary Plug +A

Hole Size 7⅞ T.D. 4644'

Csg. 8⅝ Depth 262'

Tbg. Size 4½ Drill Pipe Depth 2100'

Tool Depth

Cement Left in Csg. Shoe Joint n/a

Meas Line Displace Fresh & Mud

Owner Larson

To Quality Well Service, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To Larson

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 280 sx 60:40:4 %gel +¼ #FS

EQUIPMENT

Pumptrk 8	No.	David F
Bulktrk 10	No.	Mike B
Bulktrk	No.	
Pickup	No.	

JOB SERVICES & REMARKS

Rat Hole 30sx = 7.48 BBls Slurry

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Drill Pipe at 2100', Load Hole, Pump 8 BBls Fresh H20, Spacer, Mix 50sx 60:40 Cement Blend = 12.47 BBls Slurry, Disp w/ 3 BBls Fresh & 23½ BBls Mud, Drill Pipe at 1260', load Hole, Pump Spacer Mix 80 Sx cement, = 19¾ BBls Slurry, Disp. w/ 3 Fresh & 9½ mud, Drill Pipe at 630', load Hole, Pump Spacer, Mix 50sx, Disp w/ .5 Fresh, Drill Pipe at 300', Pump Spacer Mix 50sx Disp. w/ 1¼ water, Pipe at 60', Mix 20sx cement Did Circ., Plug Rat Hole w/ 30sx.

Common	170
Poz. Mix	110
Gel.	10
Calcium	
Hulls	
Salt	
Flowseal	70
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	290
Mileage	35

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	

Service Supervisor
LMV 35

Pumptrk Charge	Rotary Plug
Mileage	35 x 2
Tax	
Discount	
Total Charge	

X Signature

Taylor Printing, Inc.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.07.31 @ 22:30:00
End Date: 2014.08.01 @ 03:13:15
Job Ticket #: 59137 DST #: 1

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

Printed: 2014.08.06 @ 11:46:56

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59137 **DST#: 1**

Test Start: 2014.07.31 @ 22:30:00

GENERAL INFORMATION:

Formation: **LKC - K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:26:30
Time Test Ended: 03:13:15

Test Type: Conventional Bottom Hole (Initial)
Tester: Bradley Walter
Unit No: 69

Interval: 4242.00 ft (KB) To 4256.00 ft (KB) (TVD)
Total Depth: 4256.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

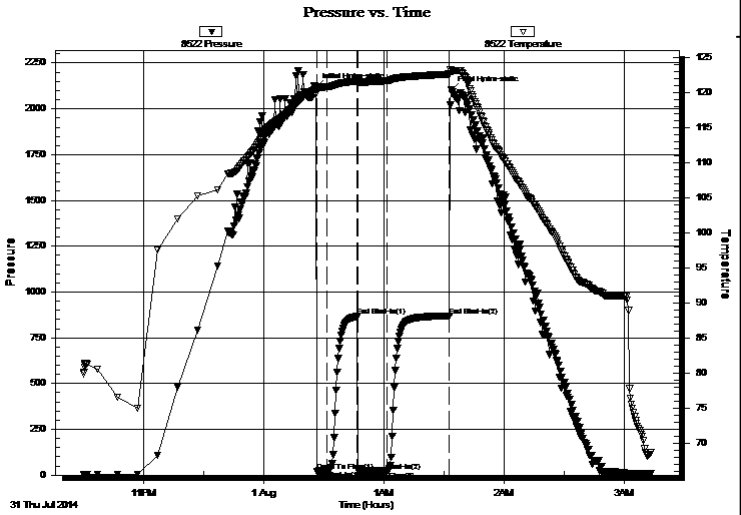
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8522 **Outside**

Press@RunDepth: 23.41 psig @ 4243.00 ft (KB)
Start Date: 2014.07.31 End Date: 2014.08.01
Start Time: 22:30:05 End Time: 03:13:14

Capacity: 8000.00 psig
Last Calib.: 2014.08.01
Time On Btm: 2014.08.01 @ 00:26:15
Time Off Btm: 2014.08.01 @ 01:33:45

TEST COMMENT: IF: Surface blow , died @ 15 min.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2113.74	120.85	Initial Hydro-static
1	21.81	119.98	Open To Flow (1)
6	23.81	120.83	Shut-In(1)
21	866.38	121.63	End Shut-In(1)
21	23.16	121.38	Open To Flow (2)
36	23.41	121.73	Shut-In(2)
67	869.95	122.66	End Shut-In(2)
68	2102.06	123.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud 100m	0.01

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59137 **DST#: 1**

Test Start: 2014.07.31 @ 22:30:00

GENERAL INFORMATION:

Formation: **LKC - K**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:26:30
Time Test Ended: 03:13:15

Test Type: Conventional Bottom Hole (Initial)
Tester: Bradley Walter
Unit No: 69

Interval: 4242.00 ft (KB) To 4256.00 ft (KB) (TVD)
Total Depth: 4256.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

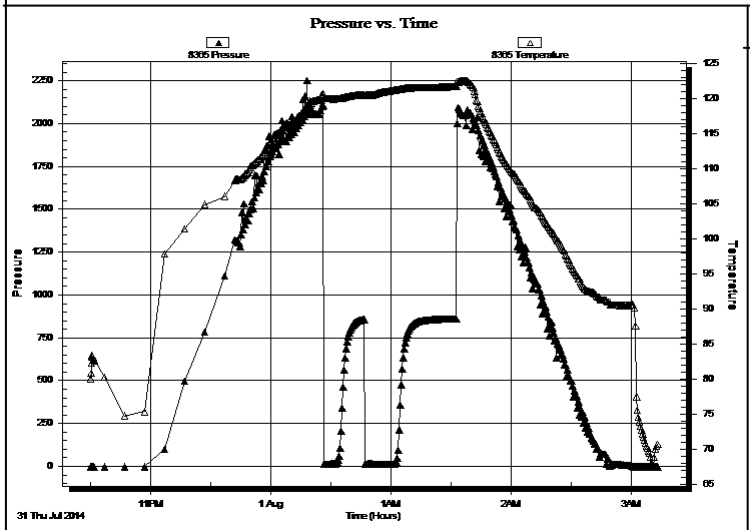
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: psig @ 4243.00 ft (KB)
Start Date: 2014.07.31 End Date: 2014.08.01
Start Time: 22:30:05 End Time: 03:13:14

Capacity: 8000.00 psig
Last Calib.: 2014.08.01
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Surface blow , died @ 15 min.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud 100m	0.01

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59137 **DST#: 1**

Test Start: 2014.07.31 @ 22:30:00

Tool Information

Drill Pipe:	Length:	4113.00 ft	Diameter:	3.80	inches	Volume:	57.69	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	124.00 ft	Diameter:	2.25	inches	Volume:	0.61	bbl	
						Total Volume:	58.30	bbl	

Drill Pipe Above KB:	22.00 ft
Depth to Top Packer:	4242.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	14.00 ft
Tool Length:	41.00 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		70000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	58000.00 lb
	Final	58000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4216.00		
Shut In Tool	5.00			4221.00		
Hydraulic tool	5.00			4226.00		
Jars	5.00			4231.00		
Safety Joint	2.00			4233.00		
Packer	5.00			4238.00	27.00	Bottom Of Top Packer
Packer	4.00			4242.00		
Stubb	1.00			4243.00		
Recorder	0.00	8365	Inside	4243.00		
Recorder	0.00	8522	Outside	4243.00		
Perforations	10.00			4253.00		
Bullnose	3.00			4256.00	14.00	Bottom Packers & Anchor
Total Tool Length:	**41.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59137 **DST#: 1**

Test Start: 2014.07.31 @ 22:30:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.78 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3000.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

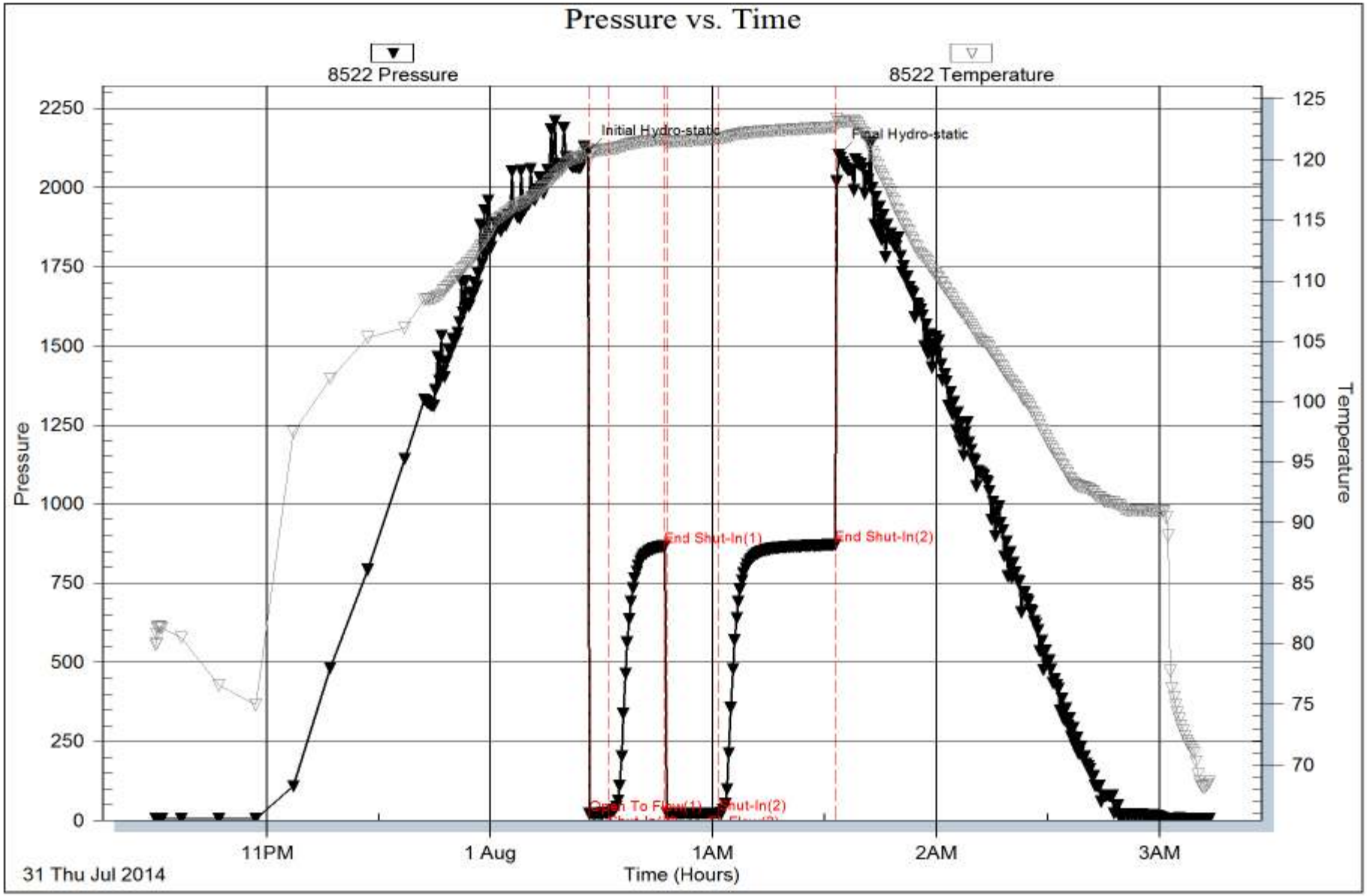
Recovery Table

Length ft	Description	Volume bbl
3.00	Mud 100m	0.015

Total Length: 3.00 ft Total Volume: 0.015 bbl

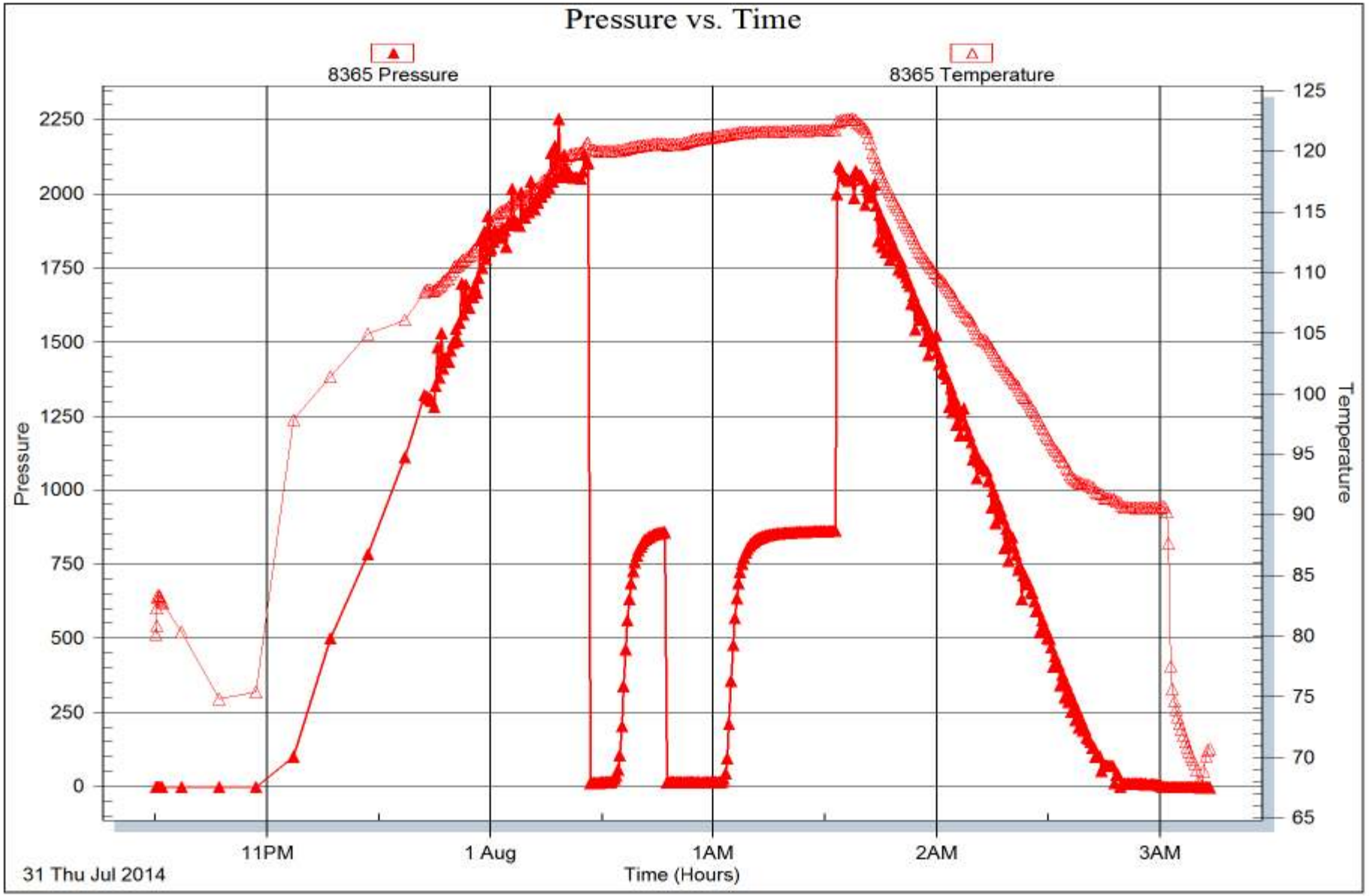
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8522 **Outside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 59137 Printed: 2014.08.06 @ 11:46:57

Serial #: 8365 **Inside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 59137 Printed: 2014.08.06 @ 11:46:58

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.01 @ 16:57:00
End Date: 2014.08.01 @ 21:35:45
Job Ticket #: 59138 DST #: 2

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

Printed: 2014.08.06 @ 11:46:36

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59138 **DST#: 2**

Test Start: 2014.08.01 @ 16:57:00

GENERAL INFORMATION:

Formation: **LKC -L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:47:30
Time Test Ended: 21:35:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4278.00 ft (KB) To 4298.00 ft (KB) (TVD)
Total Depth: 4298.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

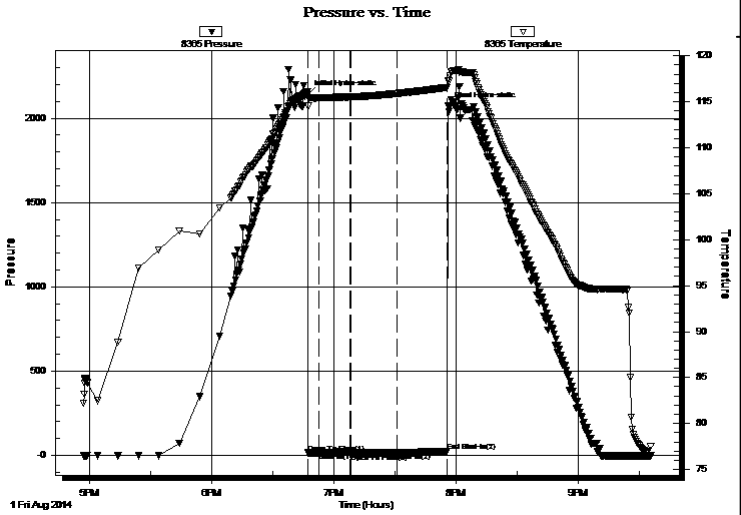
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 17.26 psig @ 4279.00 ft (KB)
Start Date: 2014.08.01 End Date: 2014.08.01
Start Time: 16:57:05 End Time: 21:35:44

Capacity: 8000.00 psig
Last Calib.: 2014.08.01
Time On Btm: 2014.08.01 @ 18:47:15
Time Off Btm: 2014.08.01 @ 19:56:15

TEST COMMENT: IF: Surface blow , died @ 4 min.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2142.14	116.10	Initial Hydro-static
1	14.64	114.52	Open To Flow (1)
6	15.77	115.42	Shut-In(1)
21	23.73	115.53	End Shut-In(1)
21	14.37	115.53	Open To Flow (2)
44	17.26	115.90	Shut-In(2)
69	23.87	116.56	End Shut-In(2)
69	2072.10	117.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100m	0.01

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59138 **DST#: 2**

Test Start: 2014.08.01 @ 16:57:00

GENERAL INFORMATION:

Formation: **LKC -L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:47:30
Time Test Ended: 21:35:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4278.00 ft (KB) To 4298.00 ft (KB) (TVD)
Total Depth: 4298.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

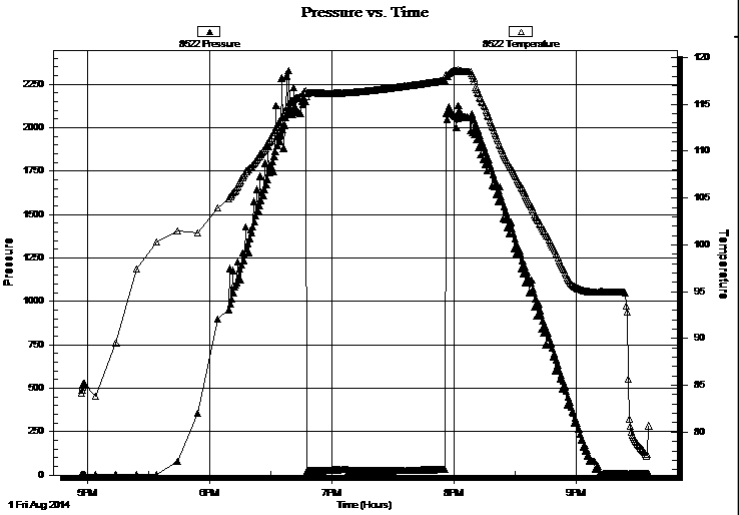
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8522 **Outside**

Press@RunDepth: psig @ 4279.00 ft (KB)
Start Date: 2014.08.01 End Date: 2014.08.01
Start Time: 16:57:05 End Time: 21:35:44

Capacity: 8000.00 psig
Last Calib.: 2014.08.01
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Surface blow , died @ 4 min.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100m	0.01

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59138 **DST#: 2**

Test Start: 2014.08.01 @ 16:57:00

Tool Information

Drill Pipe:	Length:	4145.00 ft	Diameter:	3.80 inches	Volume:	58.14 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	124.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	
					Total Volume:	58.75 bbl	

Drill Pipe Above KB:	18.00 ft
Depth to Top Packer:	4278.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	20.00 ft
Tool Length:	47.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		72000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	59000.00 lb
	Final	59000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4252.00		
Shut In Tool	5.00			4257.00		
Hydraulic tool	5.00			4262.00		
Jars	5.00			4267.00		
Safety Joint	2.00			4269.00		
Packer	5.00			4274.00	27.00	Bottom Of Top Packer
Packer	4.00			4278.00		
Stubb	1.00			4279.00		
Recorder	0.00	8365	Inside	4279.00		
Recorder	0.00	8522	Outside	4279.00		
Perforations	16.00			4295.00		
Bullnose	3.00			4298.00	20.00	Bottom Packers & Anchor
Total Tool Length:	**47.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59138 **DST#: 2**

Test Start: 2014.08.01 @ 16:57:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.38 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3300.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

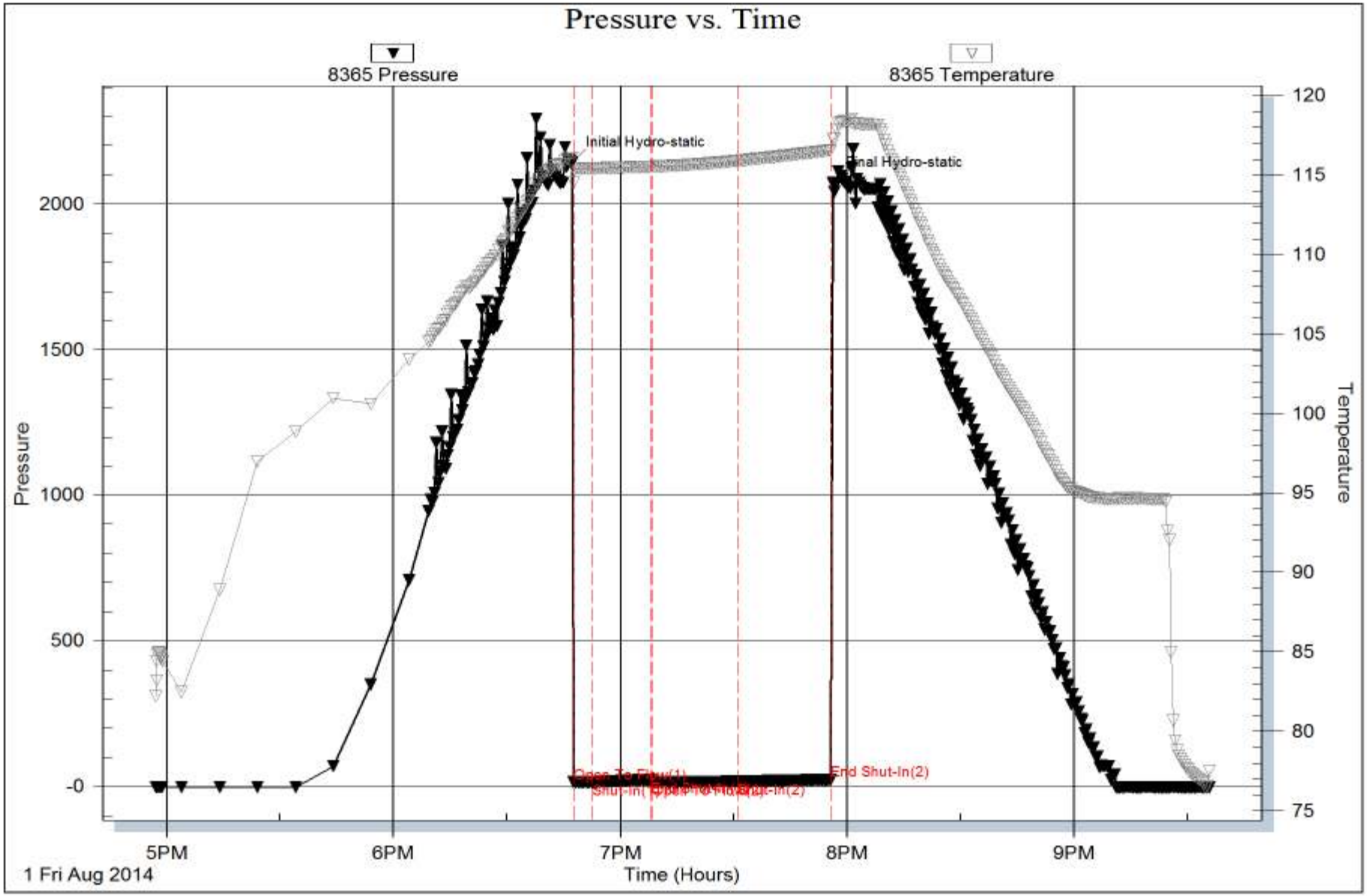
Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

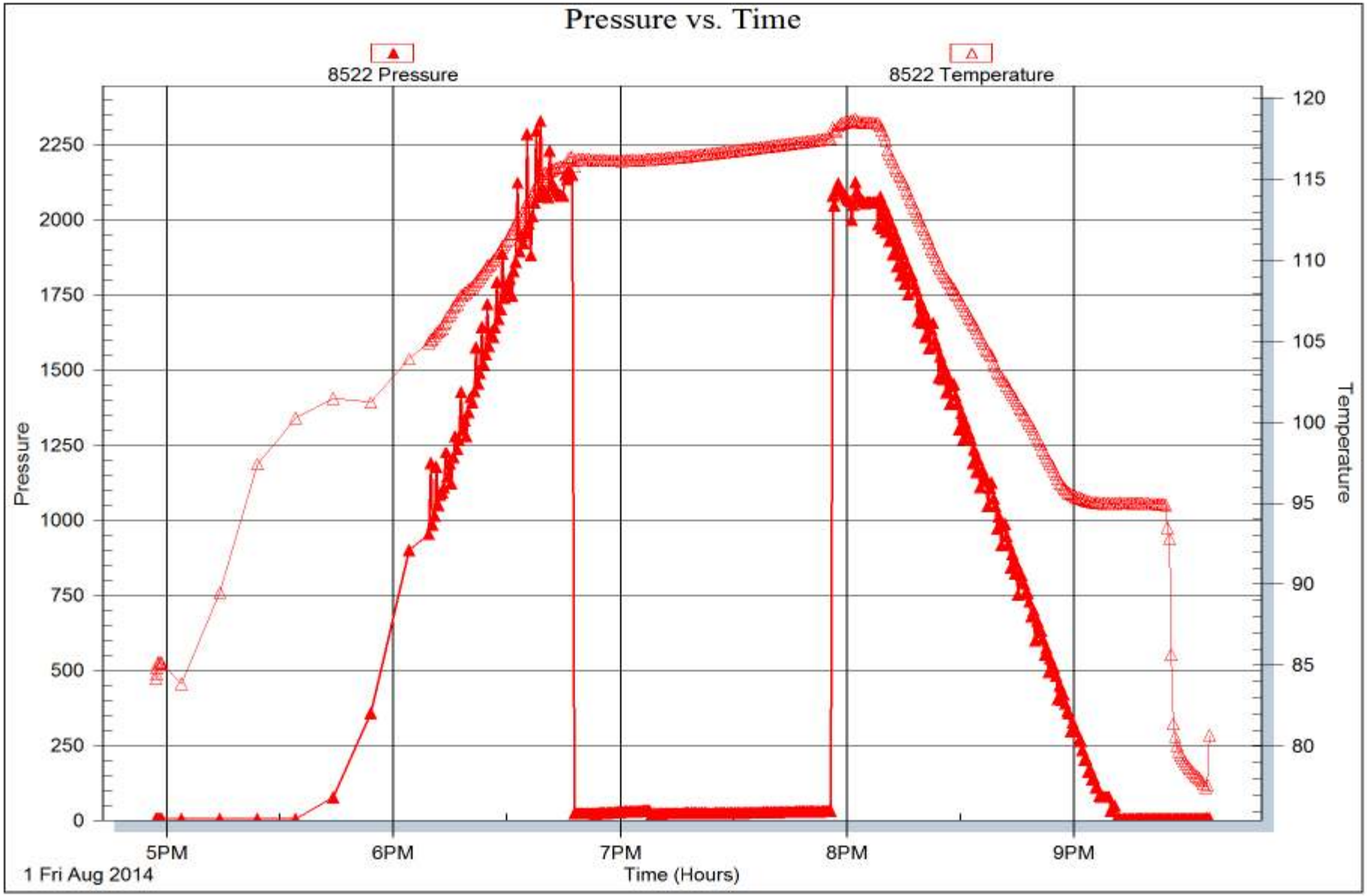
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8365 **Inside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 59138 Printed: 2014.08.06 @ 11:46:37

Serial #: 8522 **Outside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 59138 Printed: 2014.08.06 @ 11:46:37

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.02 @ 12:31:00
End Date: 2014.08.02 @ 17:29:15
Job Ticket #: 59139 DST #: 3

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

Printed: 2014.08.06 @ 11:46:15

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59139 **DST#: 3**

Test Start: 2014.08.02 @ 12:31:00

GENERAL INFORMATION:

Formation: **Marmaton**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:34:45
Time Test Ended: 17:29:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4324.00 ft (KB) To 4420.00 ft (KB) (TVD)
Total Depth: 4420.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

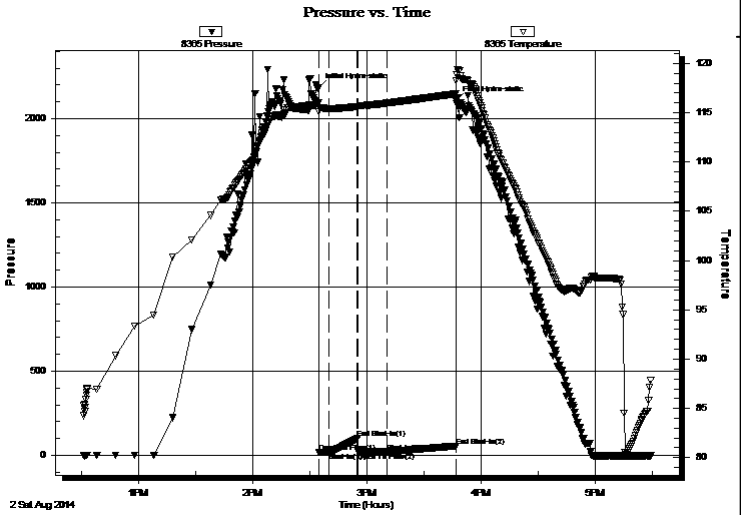
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 21.28 psig @ 4325.00 ft (KB)
Start Date: 2014.08.02 End Date: 2014.08.02
Start Time: 12:31:05 End Time: 17:29:14

Capacity: 8000.00 psig
Last Calib.: 2014.08.02
Time On Btm: 2014.08.02 @ 14:34:30
Time Off Btm: 2014.08.02 @ 15:47:00

TEST COMMENT: IF: Surface blow .
ISI: No return.
FF: No blow .
FSI: No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2184.50	116.01	Initial Hydro-static
1	17.00	115.14	Open To Flow (1)
6	18.83	115.42	Shut-In(1)
21	101.18	115.62	End Shut-In(1)
21	20.26	115.62	Open To Flow (2)
37	21.28	115.98	Shut-In(2)
73	55.87	116.93	End Shut-In(2)
73	2108.82	118.27	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59139 **DST#: 3**

Test Start: 2014.08.02 @ 12:31:00

GENERAL INFORMATION:

Formation: **Marmaton**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:34:45
Time Test Ended: 17:29:15

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

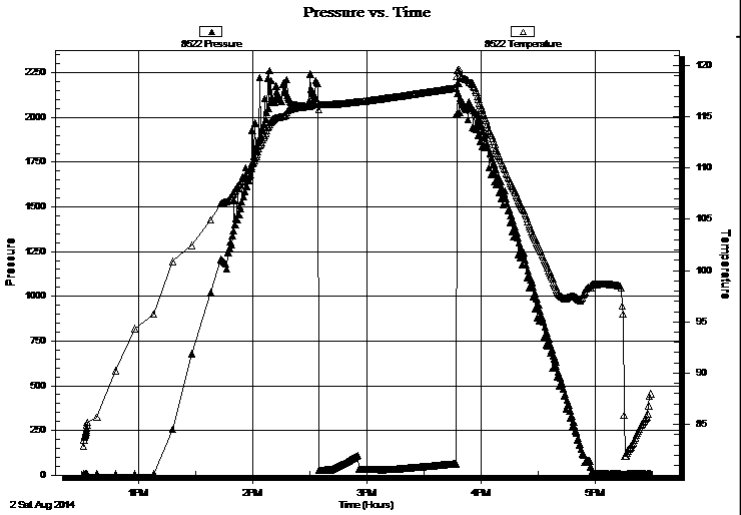
Interval: 4324.00 ft (KB) To 4420.00 ft (KB) (TVD)
Total Depth: 4420.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8522 **Outside**
Press@RunDepth: psig @ 4325.00 ft (KB)
Start Date: 2014.08.02 End Date: 2014.08.02
Start Time: 12:31:05 End Time: 17:29:14

Capacity: 8000.00 psig
Last Calib.: 2014.08.02
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Surface blow .
ISI: No return.
FF: No blow .
FSI: No return



PRESSURE SUMMARY

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

Recovery

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

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59139 **DST#: 3**

Test Start: 2014.08.02 @ 12:31:00

Tool Information

Drill Pipe:	Length:	4205.00 ft	Diameter:	3.80 inches	Volume:	58.99 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	124.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	
					Total Volume:	59.60 bbl	

Drill Pipe Above KB:	32.00 ft
Depth to Top Packer:	4324.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	96.00 ft
Tool Length:	123.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		70000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	59000.00 lb
	Final	59000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4298.00		
Shut In Tool	5.00			4303.00		
Hydraulic tool	5.00			4308.00		
Jars	5.00			4313.00		
Safety Joint	2.00			4315.00		
Packer	5.00			4320.00	27.00	Bottom Of Top Packer
Packer	4.00			4324.00		
Stubb	1.00			4325.00		
Recorder	0.00	8365	Inside	4325.00		
Recorder	0.00	8522	Outside	4325.00		
Perforations	28.00			4353.00		
Change Over Sub	1.00			4354.00		
Drill Pipe	62.00			4416.00		
Change Over Sub	1.00			4417.00		
Bullnose	3.00			4420.00	96.00	Bottom Packers & Anchor
Total Tool Length:	**123.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59139 **DST#: 3**

Test Start: 2014.08.02 @ 12:31:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	63.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.79 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2900.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

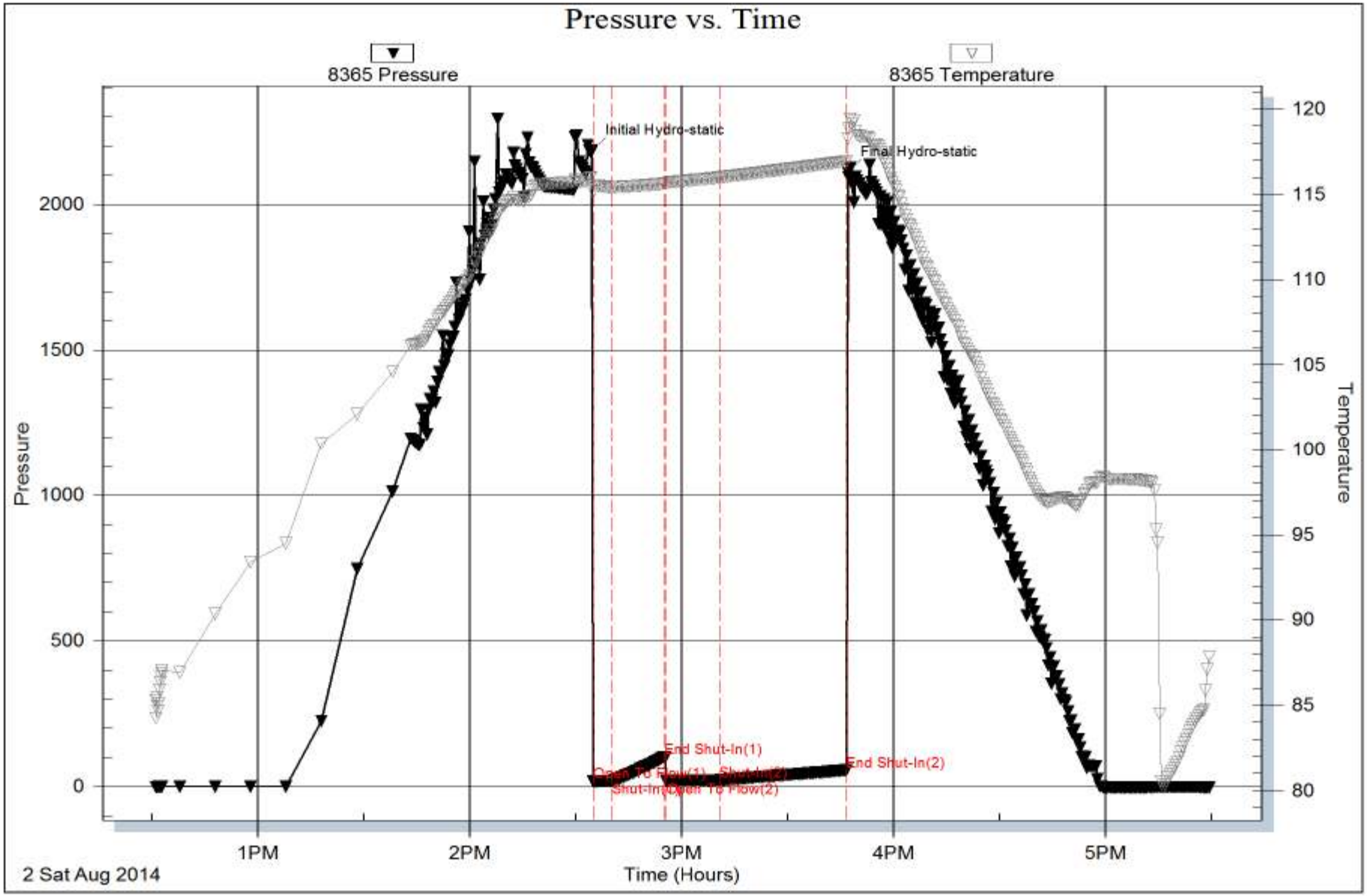
Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100m (oil spots)	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

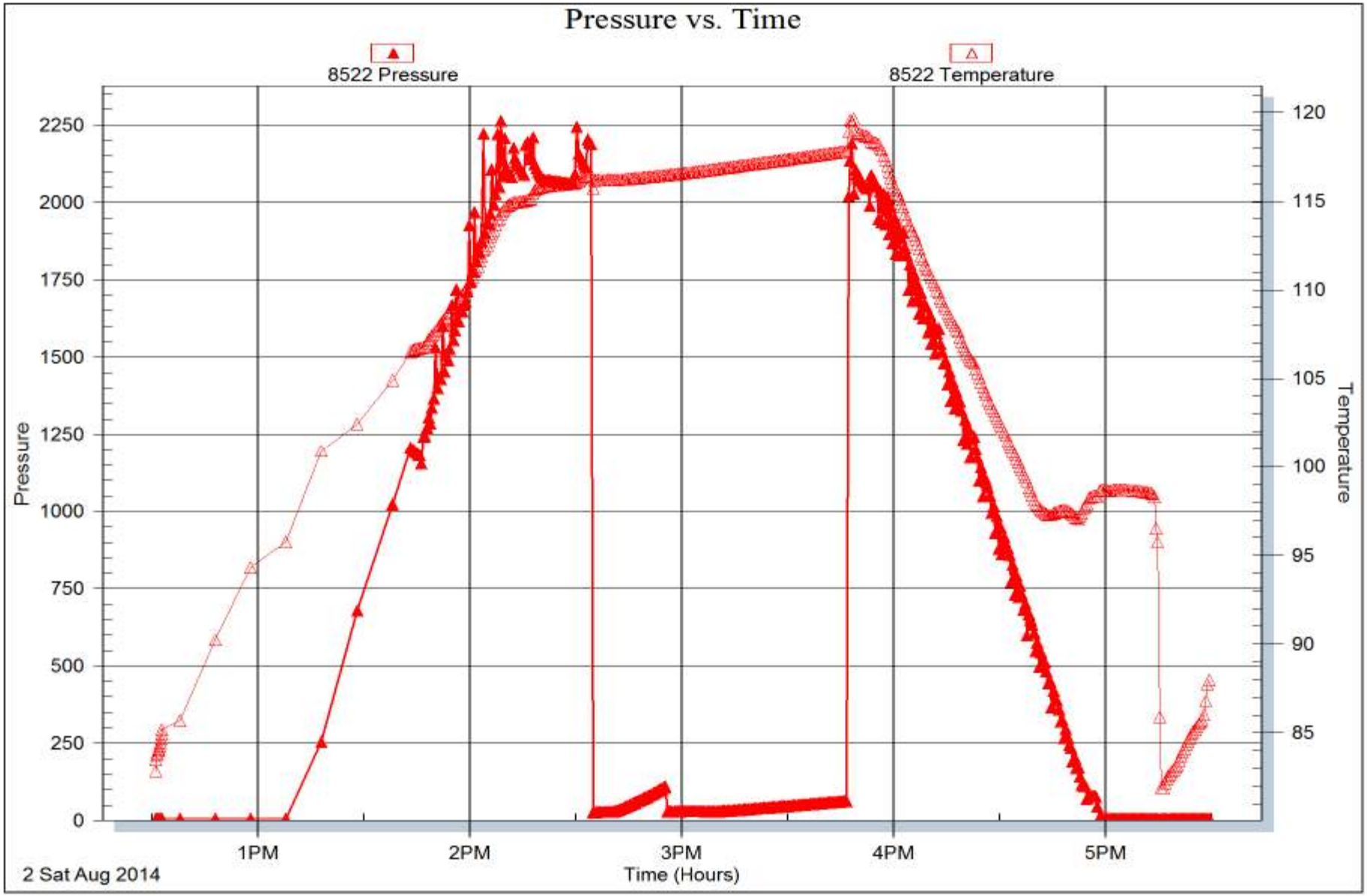
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8365 **Inside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 59139 Printed: 2014.08.06 @ 11:46:16

Serial #: 8522 **Outside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 59139 Printed: 2014.08.06 @ 11:46:17

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.03 @ 11:38:00
End Date: 2014.08.03 @ 16:20:53
Job Ticket #: 59140 DST #: 4

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

Printed: 2014.08.06 @ 11:45:53

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59140 **DST#: 4**

Test Start: 2014.08.03 @ 11:38:00

GENERAL INFORMATION:

Formation: **Cherokee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:16:45
Time Test Ended: 16:20:53

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4432.00 ft (KB) To 4575.00 ft (KB) (TVD)
Total Depth: 4575.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

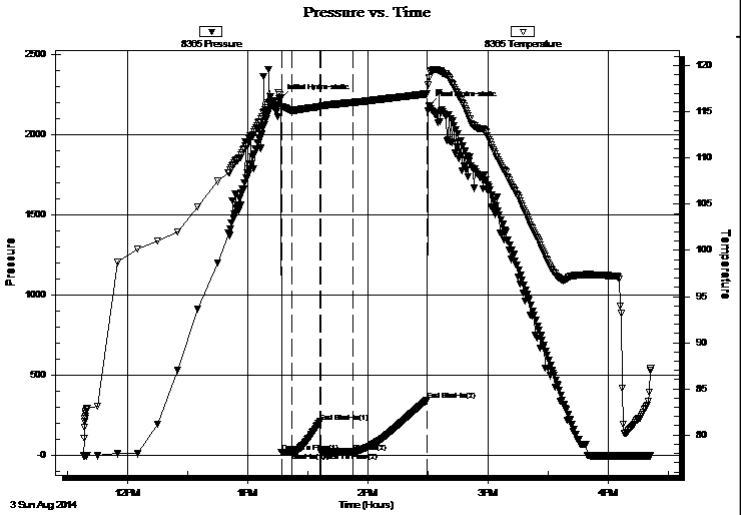
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 21.95 psig @ 4433.00 ft (KB)
Start Date: 2014.08.03 End Date: 2014.08.03
Start Time: 11:38:05 End Time: 16:20:52

Capacity: 8000.00 psig
Last Calib.: 2014.08.03
Time On Btm: 2014.08.03 @ 13:16:15
Time Off Btm: 2014.08.03 @ 14:30:15

TEST COMMENT: IF: Surface blow ,
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2223.80	116.55	Initial Hydro-static
1	18.97	115.57	Open To Flow (1)
6	20.40	115.14	Shut-In(1)
20	210.02	115.58	End Shut-In(1)
20	20.61	115.54	Open To Flow (2)
36	21.95	116.00	Shut-In(2)
73	345.46	116.95	End Shut-In(2)
74	2179.74	118.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100m (oil specs)	0.07

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59140 **DST#: 4**

Test Start: 2014.08.03 @ 11:38:00

GENERAL INFORMATION:

Formation: **Cherokee**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:16:45
Time Test Ended: 16:20:53

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4432.00 ft (KB) To 4575.00 ft (KB) (TVD)
Total Depth: 4575.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

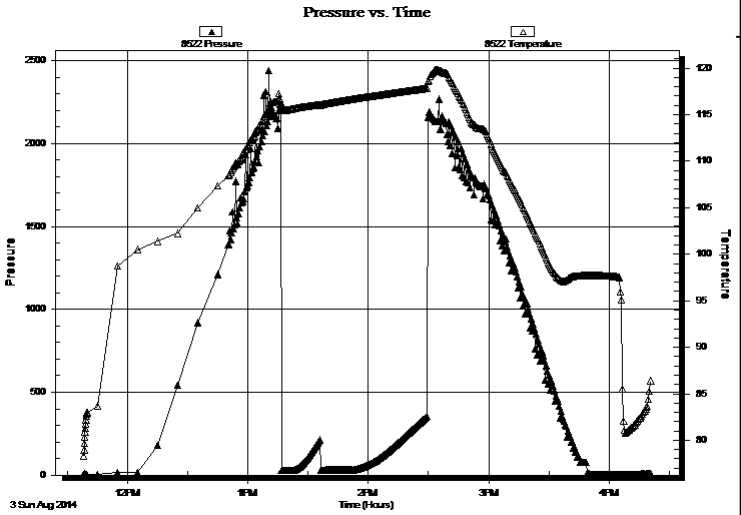
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8522 **Outside**

Press@RunDepth: psig @ 4433.00 ft (KB)
Start Date: 2014.08.03 End Date: 2014.08.03
Start Time: 11:38:05 End Time: 16:20:59

Capacity: 8000.00 psig
Last Calib.: 2014.08.03
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Surface blow ,
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100m (oil specs)	0.07

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59140 **DST#: 4**

Test Start: 2014.08.03 @ 11:38:00

Tool Information

Drill Pipe:	Length:	4300.00 ft	Diameter:	3.80 inches	Volume:	60.32 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	124.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	
					Total Volume:	60.93 bbl	

Drill Pipe Above KB:	19.00 ft
Depth to Top Packer:	4432.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	143.00 ft
Tool Length:	170.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		74000.00 lb
Tool Chased		0.00 ft
String Weight:	Initial	60000.00 lb
	Final	60000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4406.00		
Shut In Tool	5.00			4411.00		
Hydraulic tool	5.00			4416.00		
Jars	5.00			4421.00		
Safety Joint	2.00			4423.00		
Packer	5.00			4428.00	27.00	Bottom Of Top Packer
Packer	4.00			4432.00		
Stubb	1.00			4433.00		
Recorder	0.00	8365	Inside	4433.00		
Recorder	0.00	8522	Outside	4433.00		
Perforations	12.00			4445.00		
Change Over Sub	1.00			4446.00		
Drill Pipe	125.00			4571.00		
Change Over Sub	1.00			4572.00		
Bullnose	3.00			4575.00	143.00	Bottom Packers & Anchor
Total Tool Length:	**170.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59140 **DST#: 4**

Test Start: 2014.08.03 @ 11:38:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	55.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.39 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2900.00 ppm				
Filter Cake:	2.00 inches				

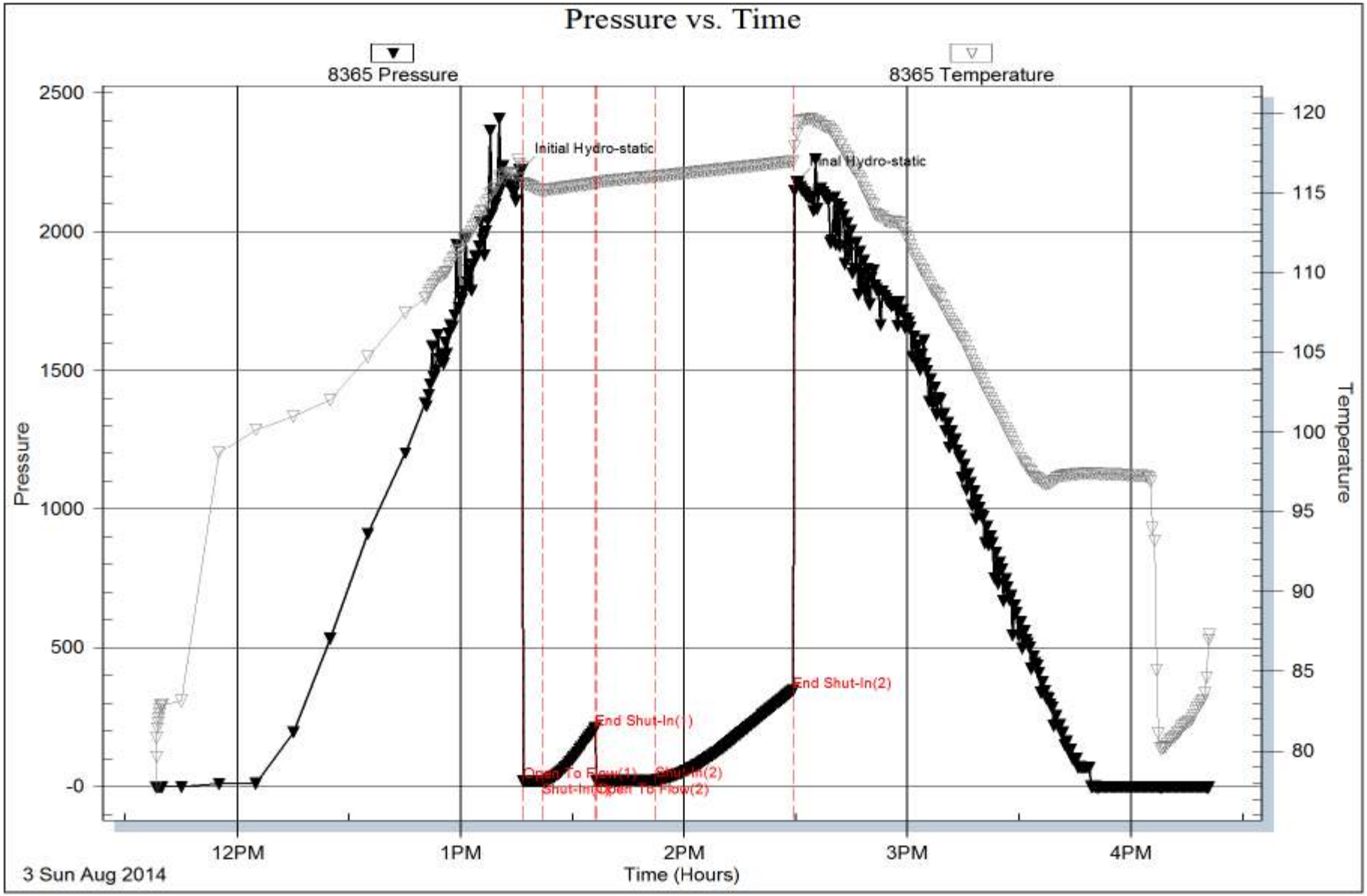
Recovery Information

Recovery Table

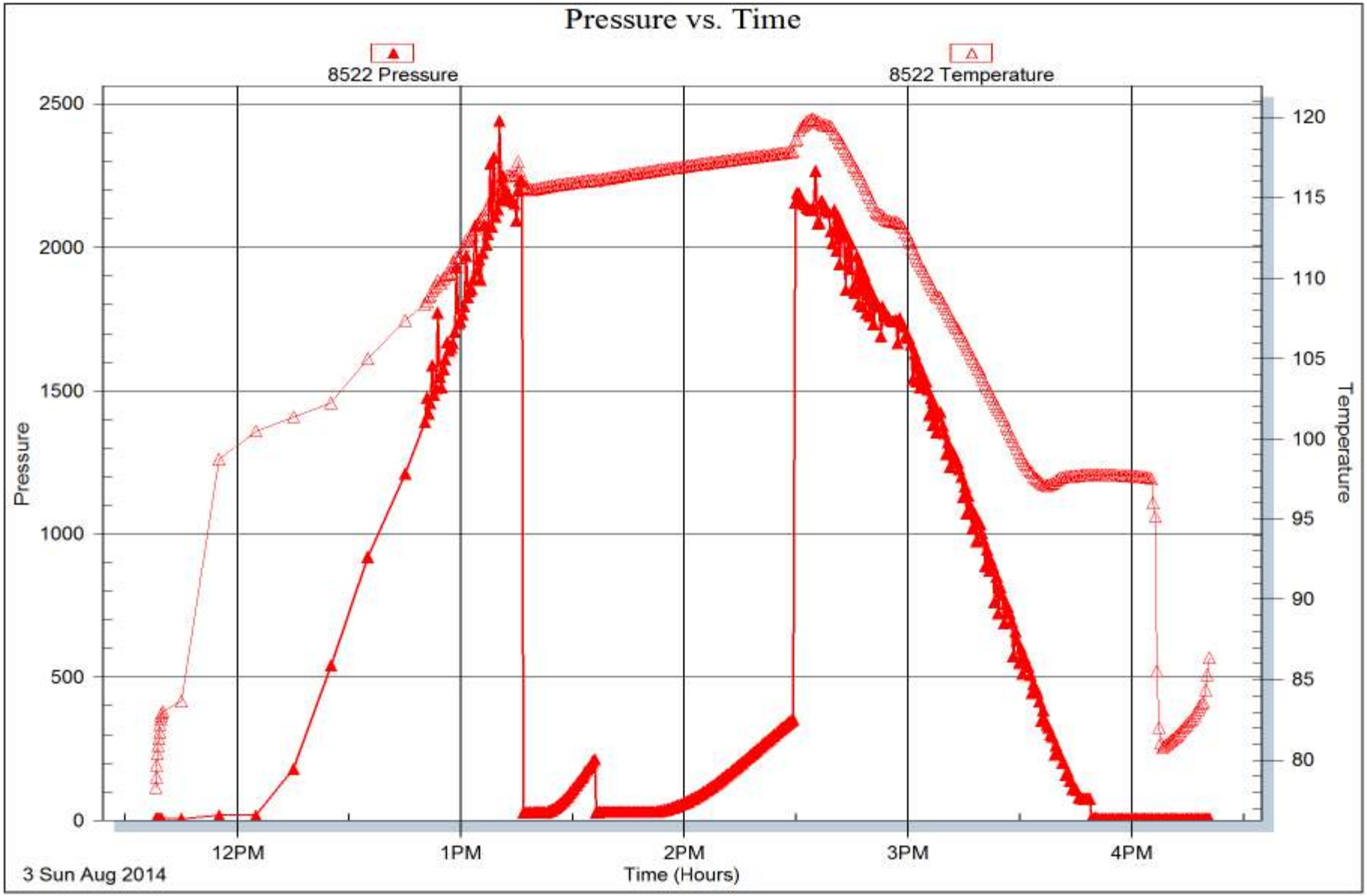
Length ft	Description	Volume bbl
15.00	Mud 100m (oil specs)	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

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


Pressure vs. Time
8365 Pressure
8365 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(2)
End Shut-In(1)
Pressure
Temperature
2500
2000
1500
1000
500
-0
120
115
110
105
100
95
90
85
80
12PM
1PM
2PM
3PM
4PM
Time (Hours)
3 Sun Aug 2014

Serial #: 8522 **Outside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 4



Trilobite Testing, Inc Ref. No: 59140 Printed: 2014.08.06 @ 11:45:54

DRILL STEM TEST REPORT

Prepared For: **Larson Engineering, Inc**

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

EM Stanley Unit 1-20

20 18s 27w Lane,KS

Start Date: 2014.08.04 @ 00:20:00
End Date: 2014.08.04 @ 05:22:45
Job Ticket #: 59141 DST #: 5

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

Printed: 2014.08.06 @ 11:45:25

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59141 **DST#: 5**

Test Start: 2014.08.04 @ 00:20:00

GENERAL INFORMATION:

Formation: **4590**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:29:15
Time Test Ended: 05:22:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4565.00 ft (KB) To 4590.00 ft (KB) (TVD)
Total Depth: 4590.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

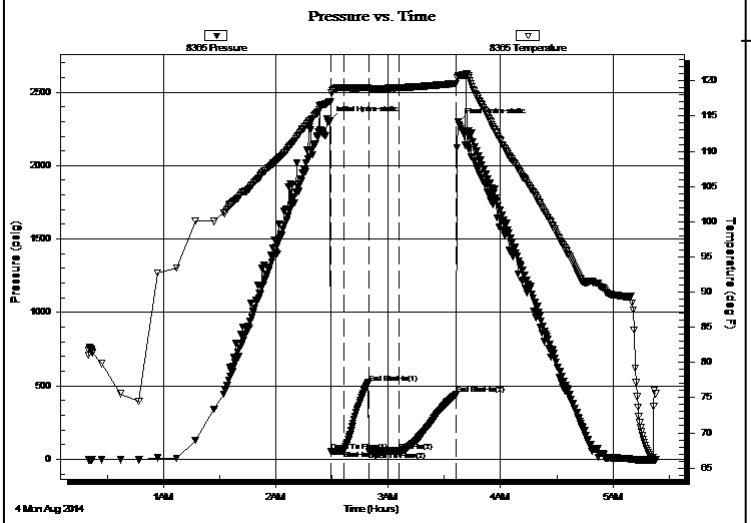
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 57.87 psig @ 4566.00 ft (KB)
Start Date: 2014.08.04 End Date: 2014.08.04
Start Time: 00:20:05 End Time: 05:22:44

Capacity: 8000.00 psig
Last Calib.: 2014.08.04
Time On Btm: 2014.08.04 @ 02:28:45
Time Off Btm: 2014.08.04 @ 03:37:15

TEST COMMENT: IF: 3" blow receded to a 2" blow . tool slid 2' took on some mud.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2303.15	117.06	Initial Hydro-static
1	55.43	117.06	Open To Flow (1)
8	60.77	119.04	Shut-In(1)
21	521.19	119.04	End Shut-In(1)
21	56.65	118.91	Open To Flow (2)
37	57.87	119.03	Shut-In(2)
68	441.20	119.63	End Shut-In(2)
69	2294.42	120.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud 100m	0.34

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59141 **DST#: 5**

Test Start: 2014.08.04 @ 00:20:00

GENERAL INFORMATION:

Formation: **4590**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:29:15
Time Test Ended: 05:22:45

Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 69

Interval: 4565.00 ft (KB) To 4590.00 ft (KB) (TVD)
Total Depth: 4590.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

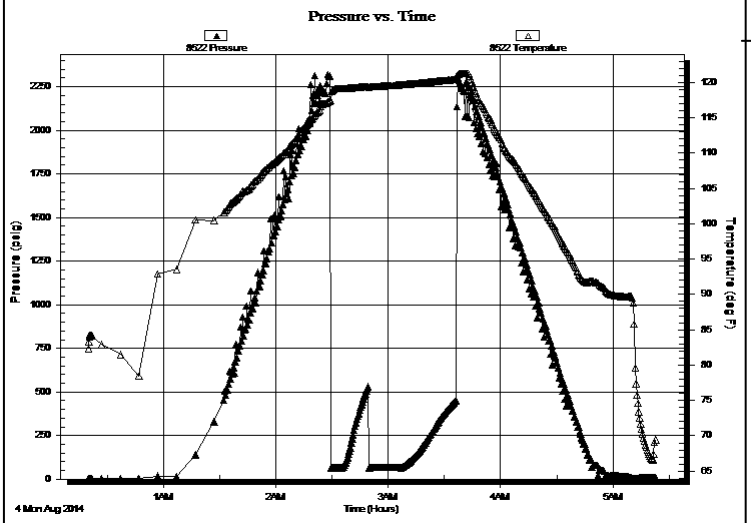
Reference Elevations: 2694.00 ft (KB)
2688.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8522 **Outside**

Press@RunDepth: psig @ 4566.00 ft (KB)
Start Date: 2014.08.04 End Date: 2014.08.04
Start Time: 00:20:05 End Time: 05:22:44

Capacity: 8000.00 psig
Last Calib.: 2014.08.04
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 3" blow receded to a 2" blow . tool slid 2' took on some mud.
ISI: No return.
FF: No blow .
FSI: No return.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Mud 100m	0.34

* Recovery from multiple tests

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59141 **DST#: 5**

Test Start: 2014.08.04 @ 00:20:00

Tool Information

Drill Pipe:	Length:	4425.00 ft	Diameter:	3.80 inches	Volume:	62.07 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	124.00 ft	Diameter:	2.25 inches	Volume:	0.61 bbl	
					Total Volume:	62.68 bbl	

Drill Pipe Above KB:	11.00 ft
Depth to Top Packer:	4565.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	25.00 ft
Tool Length:	52.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		30000.00 lb
Weight to Pull Loose:		75000.00 lb
Tool Chased		2.00 ft
String Weight:	Initial	60000.00 lb
	Final	60000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			4539.00		
Shut In Tool	5.00			4544.00		
Hydraulic tool	5.00			4549.00		
Jars	5.00			4554.00		
Safety Joint	2.00			4556.00		
Packer	5.00			4561.00	27.00	Bottom Of Top Packer
Packer	4.00			4565.00		
Stubb	1.00			4566.00		
Recorder	0.00	8365	Inside	4566.00		
Recorder	0.00	8522	Outside	4566.00		
Perforations	21.00			4587.00		
Bullnose	3.00			4590.00	25.00	Bottom Packers & Anchor
Total Tool Length:	**52.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Larson Engineering, Inc

562 W St Rd 4
Olmitz, KS 67564

ATTN: Vern Schrag

20 18s 27w Lane,KS

EM Stanley Unit 1-20

Job Ticket: 59141 **DST#: 5**

Test Start: 2014.08.04 @ 00:20:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	0 ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.59 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2800.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

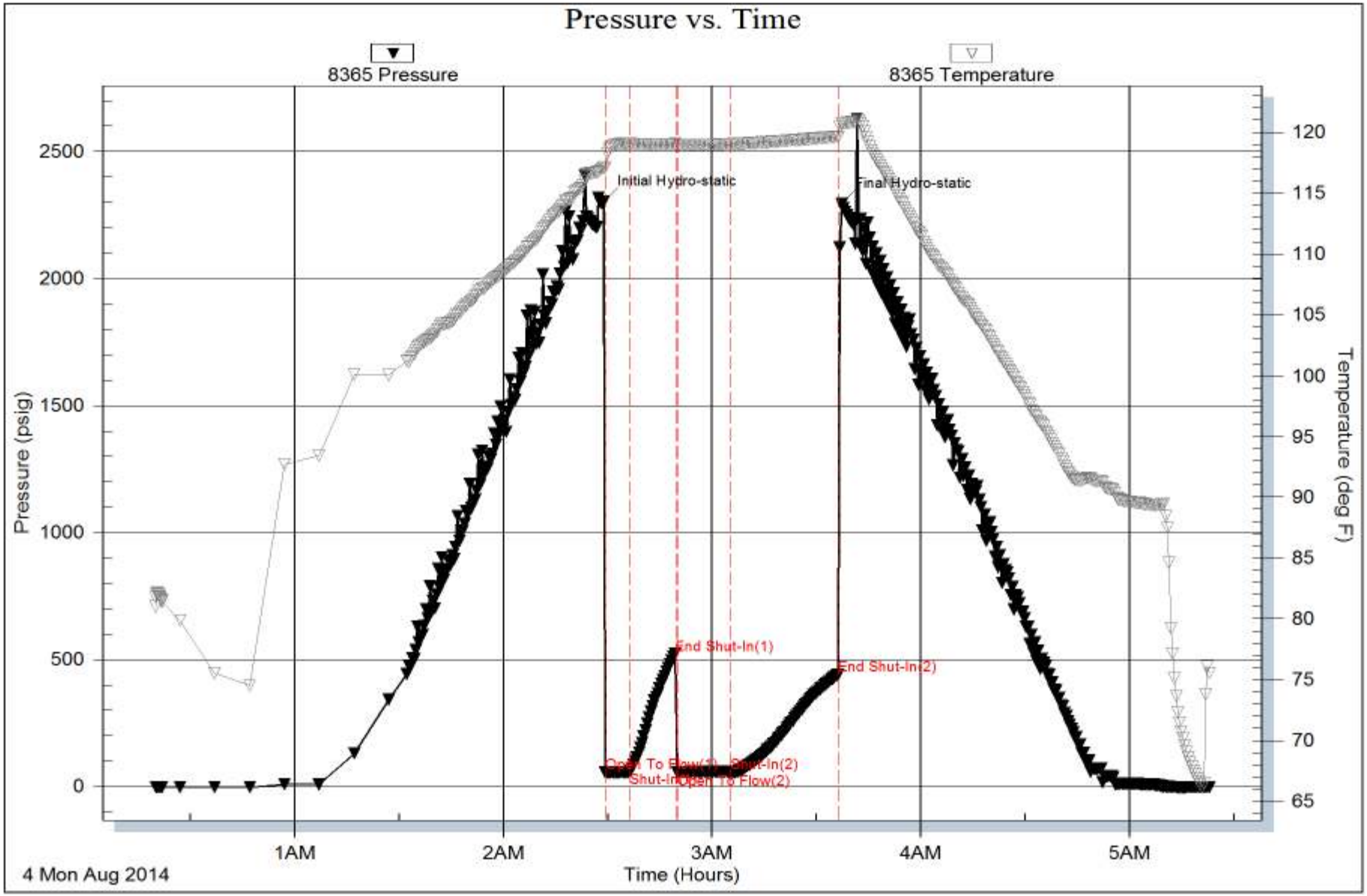
Recovery Table

Length ft	Description	Volume bbl
70.00	Mud 100m	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

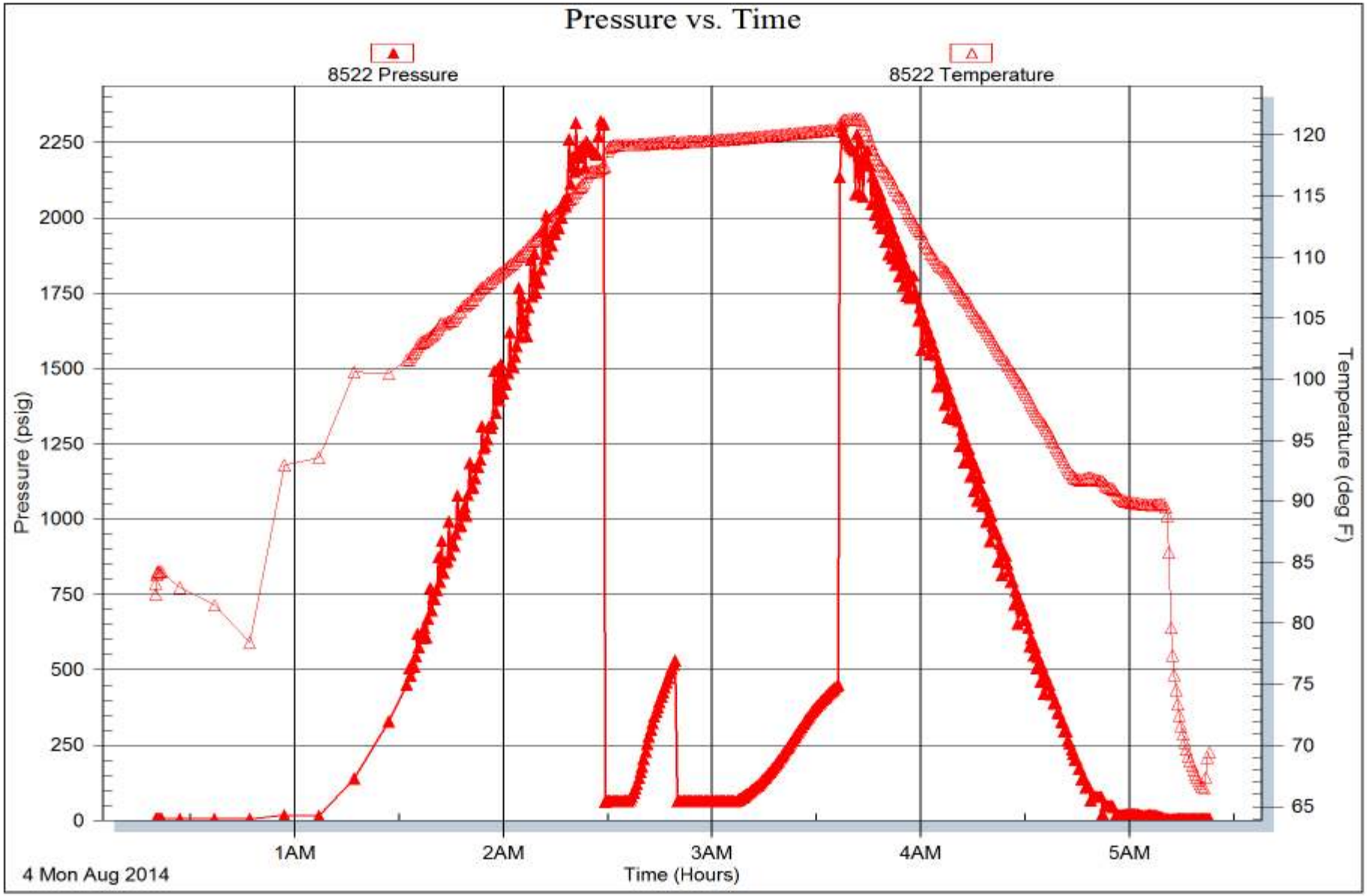
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8365 **Inside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 5



Trilobite Testing, Inc Ref. No: 59141 Printed: 2014.08.06 @ 11:45:26

Serial #: 8522 **Outside** Larson Engineering, Inc EM Stanley Unit 1-20 DST Test Number: 5



Trilobite Testing, Inc Ref. No: 59141 Printed: 2014.08.06 @ 11:45:26

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 59137

7-31-14

Well Name & No. EM Stanley Unit #1-20 Test No. 1 Date 8/01/14

Company Larson Engineering, Inc Elevation ~~4242~~ 2694 KB 2688 GL

Address 562 W St Rd #4 Olmitz, KS 67564

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

Location: Sec. 20 Twp. 18 S Rge. 27w Co. Lane State KS

Interval Tested 4242 4256 Zone Tested LKC - K

Anchor Length 14 Drill Pipe Run 4113 Mud Wt. 9.0

Top Packer Depth 4237 Drill Collars Run 124 Vis 57

Bottom Packer Depth 4242 Wt. Pipe Run 0 WL 6.8

Total Depth 4256 Chlorides 3,000 ppm System LCM 2#

Blow Description IF: Surface blow died @ 5 min.

ISI: No return.

FF: No blow

FSI: No return.

Rec 3	Feet of MUD	%gas	%oil	%water	100	%mud
Rec	Feet of	%gas	%oil	%water		%mud
Rec	Feet of	%gas	%oil	%water		%mud
Rec	Feet of	%gas	%oil	%water		%mud
Rec	Feet of	%gas	%oil	%water		%mud

Rec Total 3 BHT 123 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	2114	☒ Test 1250	T-On Location 2030
(B) First Initial Flow	22	☒ Jars 250	T-Started 2230
(C) First Final Flow	24	☒ Safety Joint 75	T-Open 0026
(D) Initial Shut-In	866	☒ Circ Sub N/C	T-Pulled 0131
(E) Second Initial Flow	23	☐ Hourly Standby	T-Out 0313
(F) Second Final Flow	23	☒ Mileage 66 mi 102.30	Comments
(G) Final Shut-In	870	☐ Sampler	
(H) Final Hydrostatic	2102	☐ 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	15	☐ Day Standby	Total 1677.30
Final Shut-In	30	☐ Accessibility	MP/DST Disc't
		Sub Total 1677.30	

Approved By _____ Our Representative _____

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 59138

Well Name & No. EM Stanley Unit #1-20 Test No. 2 Date 8/01/14

Company Larson Engineering, Inc. Elevation 2694 KB 2688 GL

Address 562 W st Rd 4 Olmitz, KS 67564

Co. Rep / Geo. Vern Schrag Rig TD 3

Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4278-4298 Zone Tested LKC L

Anchor Length 20 Drill Pipe Run 4145 Mud Wt. 9.1

Top Packer Depth 4273 Drill Collars Run 124 Vis 53

Bottom Packer Depth 4278 Wt. Pipe Run @ WL 8.4

Total Depth 4298 Chlorides 3300 ppm System LCM 1#

Blow Description IF: Surface blow, died @ 4 min.

ISI: No return

FF: No blow

FSI: No return

Rec 2	Feet of MUD	%gas	%oil	%water 100	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 2 BHT 117 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	2142	☒ Test	1250	T-On Location	1630
(B) First Initial Flow	15	☒ Jars	250	T-Started	1657
(C) First Final Flow	16	☒ Safety Joint	75	T-Open	1849
(D) Initial Shut-In	24	☒ Circ Sub	NC	T-Pulled	1954
(E) Second Initial Flow	14	☐ Hourly Standby		T-Out	2137
(F) Second Final Flow	17	☒ Mileage	66mi 102.30	Comments	
(G) Final Shut-In	24	☐ Sampler			
(H) Final Hydrostatic	2072	☐ 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	15	☐ Day Standby		Total	1677.30
Final Shut-In	30	☐ Accessibility		MP/DST Disc't	
		Sub Total	1677.30		

Approved By _____ Our Representative _____

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 59139

Well Name & No. EM Stanley Unit #1-20 Test No. 3 Date 8/02/04

Company Larson Engineering, Inc Elevation 2694 KB 2688 GL

Address 562 W St. Rd. 4 Olmitz, KS 67564

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

Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4328 4420 Zone Tested Marmaton

Anchor Length 96 Drill Pipe Run 4205 Mud Wt. 9.1

Top Packer Depth 4319 Drill Collars Run 124 Vis 63

Bottom Packer Depth 4324 Wt. Pipe Run 0 WL 8.8

Total Depth 4420 Chlorides 2400 ppm System LCM 2#

Blow Description IF: Surface blow.

ISI: No return

FF: No blow

FSI: No return

Rec 10	Feet of MUD (OIL SPOTS)	%gas	%oil	%water 100	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 10 BHT 117 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2185	☒ Test 1250	T-On Location 1200
(B) First Initial Flow 17	☒ Jars 250	T-Started 1231
(C) First Final Flow 19	☒ Safety Joint 75	T-Open 1436
(D) Initial Shut-In 101	☒ Circ Sub N/C	T-Pulled 1541
(E) Second Initial Flow 20	☐ Hourly Standby	T-Out 1729
(F) Second Final Flow 21	☒ Mileage 66mi 102.30	Comments
(G) Final Shut-In 56	☐ Sampler	
(H) Final Hydrostatic 2109	☐ 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 15	☐ Day Standby	Total 1677.30
Final Shut-In 30	☐ Accessibility	MP/DST Disc't
	Sub Total 1677.30	

Approved By Our Representative

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 59140

Well Name & No. EM Stanley Unit # 1-20 Test No. 4 Date 8/03/14

Company Larson Engineering Elevation 2694 KB 2702 GL

Address 562 W St. Rd 4 Olmitz, KS 67564

Co. Rep / Geo. Vennekray Rig HD #3

Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State KS

Interval Tested 4432 - 4575 Zone Tested Cherokee

Anchor Length 143 Drill Pipe Run 4300 Mud Wt. 9.1

Top Packer Depth 4427 Drill Collars Run 124 Vis 54

Bottom Packer Depth 4432 Wt. Pipe Run 0 WL 8.4

Total Depth 4575 Chlorides 2900 ppm System LCM 1 #

Blow Description IF: Surface blow

ISI: No return

FF: No blow

FSI: No return

Rec 15	Feet of MUD (OIL SPECS)	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 117 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	2224	☒ Test	1250	T-On Location	1100
(B) First Initial Flow	19	☒ Jars	250	T-Started	1058
(C) First Final Flow	20	☒ Safety Joint	75	T-Open	1316
(D) Initial Shut-In	210	☒ Circ Sub	NC	T-Pulled	1421
(E) Second Initial Flow	21	☐ Hourly Standby		T-Out	1621
(F) Second Final Flow	22	☒ Mileage	66 102.30	Comments	
(G) Final Shut-In	345	☐ Sampler			
(H) Final Hydrostatic	2190	☐ Straddle			
		☒ Shale Packer	250	☐ Ruined Shale Packer	
Initial Open	5	☐ Extra Packer		☐ Ruined Packer	
Initial Shut-In	15	☐ Extra Recorder		☐ Extra Copies	
Final Flow	15	☐ Day Standby		Sub Total	0
Final Shut-In	30	☐ Accessibility		Total	1927.30
		Sub Total	1927.30	MP/DST Disc't	

Approved By Our Representative

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 59141

Well Name & No. EM Stanley Unit # 1-20 Test No. 5 Date 8/04/14

Company Larson Engineering, Inc Elevation 2644 KB 2688 GL

Address 562 W St Rd 4 Olmitz, Ks 67564

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

Location: Sec. 20 Twp. 18S Rge. 27W Co. Lane State Ks

Interval Tested 4565 4590 Zone Tested Cherokee sand

Anchor Length 25 Drill Pipe Run 4425 Mud Wt. 9.0

Top Packer Depth 4560 Drill Collars Run 124 Vis 57

Bottom Packer Depth 4565 Wt. Pipe Run 0 WL 9.6

Total Depth 4590 Chlorides 2600 ppm System LCM 1#

Blow Description IF: 3" recvd to 2 inches - tool slid 2' took on some mud.

ISI: No return

FF: No blow

FSI No return.

Rec 70	Feet of MCW	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 70 BHT 119 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic	2303	☒ Test	1250	T-On Location	2345 8/03
(B) First Initial Flow	55	☒ Jars	250	T-Started	0020
(C) First Final Flow	61	☒ Safety Joint	75	T-Open	0228
(D) Initial Shut-In	521	☒ Circ Sub	NC	T-Pulled	0333
(E) Second Initial Flow	57	☐ Hourly Standby		T-Out	0523
(F) Second Final Flow	58	☒ Mileage	66 102.30	Comments	
(G) Final Shut-In	441	☐ Sampler			
(H) Final Hydrostatic	2294	☐ Straddle			
		☒ Shale Packer	250	☐ Ruined Shale Packer	
Initial Open	5	☐ Extra Packer		☐ Ruined Packer	
Initial Shut-In	15	☐ Extra Recorder		☐ Extra Copies	
Final Flow	15	☐ Day Standby		Sub Total	0
Final Shut-In	30	☐ Accessibility		Total	1927.30
		Sub Total	1927.30	MP/DST Disc't	

Approved By _____ Our Representative _____

WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG
CONSULTANT GEOLOGIST

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

Well Name:	E.M. STANLEY UNIT #1-20		
Location:	SW SE SE SE OF SEC. 20-18S-27W		
Licence Number:	API: 15-101-22531	Region:	Lane Co., KS
Spud Date:	July 26, 2014	Drilling Completed:	August 4, 2014
Surface Coordinates:	134' FSL & 347' FEL		
Bottom Hole Coordinates:			
Ground Elevation (ft):	2687'	K.B. Elevation (ft):	2694'
Logged Interval (ft):	3800' To: RTD	Total Depth (ft):	4644'
Formation:	D&A, Mississippi		
Type of Drilling Fluid:	Chemical Premix (Displaced)		

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

Company: Larson Engineering Inc.
Address: 562 West State Road 4
Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

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

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 556', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA23, 7-7/8", standard jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).

CASING:

Set 8-5/8" casing at 262'

CIRCULATION SYSTEM:

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

OPEN HOLE LOGS:

DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to suface casing; LogTech-Pioneer Wireline, Hays, KS, Jerrod Long, Log total depth (4640') was four feet short to rotary total depth (4644').

DRILL STEM TEST #1:

LKC (K-zone): Interval: 4242-4256 (14'): Blow: weak surf IFP, no RB, no blow 2nd open; Times: 5-15-15-30; Recovery: 3' mud (100%M); Pressures: HP: 2114-2107, SIP: 866-870, FP: 22-24, 23-23; BHT: 123 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.

DRILL STEM TEST #2:

LKC (L-zone): Interval: 4278-4298 (20'): Blow: weak surf died 4 min IFP; Times: 5-15-15-30; Recovery: 2' mud (100%M); Pressures: HP: 2147-2072; SIP: 24-24; FP: 15-16, 14-17; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.

DRILL STEM TEST #3:

Pleas., Marmaton: Interval: 4324-4420 (96'): Blow: weak surf IFP, no RB, no Blow FFP; Times: 5-15-15-30; Recovery: 10' mud w/oil spots (100%M); Pressures: HP: 2185-2109, SIP: 101-56, FP: 17-19, 20-21; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.

DRILL STEM TEST #4:

Pawnee thru Cherokee: Interval: 4432-4575 (143'): Blow: weak surf IFP, no RB, no blow FFP; Times: 5-15-15-30; Recovery: 15' mud w/oil spots (100%M); Pressures: HP: 2224-2180, SIP: 210-345, FP: 19-20, 21-22; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.

DRILL STEM TEST #5

Cherokee Sand: Interval: 4565-4590 (25'): Tool slid about 2' at open; lost some mud; Blow 3" decr 2" IFP, no blow 2nd open; Times: 5-15-15-30; Recovery: 70' mud (probably due to leak past packer); Pressures: HP: 2303-2294, SIP: 521-441, FP: 55-61, 57-58; BHT: 119 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.

Geological Descriptions

3850 LS: lt grayish brown; mic-vf xtal; chalky; trc chert; no visible porosity; N.S.

LS: as above;

LS: lt-md grayish brown; mic-vf xtal; chalky to shaley; shells; poor porosity; N.S., 3980.

LS: lt-md grayish brown; mic-vf xtal; dense to chalky; sli fos; no visible porosity; N.S.

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

3900 LS: lt-brown to grayish brown; mic-vf xtal; dense to chalky; rough textured; N.S.

LS: lt-md grayish brown; mic-vf xtal; v-shaley in part; chalky; no visible porosity; N.S.

LS: lt grayish brown; mic-vf xtal; dense to v-chalky; dull mineral fluor; N.S.

HEEBNER 3936 (-1242)
Shale: black; carbonaceous; 3950.
LS: dense; indistinct;

Shale: gray, greenish-gray; calcareous; pyritic; 3960.

3950 LS: white to v-lt brown; mic-vf xtal; dense to chalky; milky to gray, opaq, fos chert; poor porosity; even mineral fluor; N.S., 3970, 3980.

Shale: gray, green

LANSING 3971 (-1276)
LS: lt grayish brown; mic-vf xtal; dense to chalky in part; trc gray, opaq chert; much well defined coarse ool; v-poor int ool porosity; even mineral fluor; N.S., 3990.

LS: as above but less oolitic and more soft chalk; N.S.

4000 Shale: gray, green; calcareous;

Shale: gray, green, trc maroon; dk gray lime;

LS: lt brown; vf-xtal; dense; finely granular; minor opaq chert, trc orange chert; chalky in part; poor porosity; N.S., 4035, 4035-30m.

LS: lt-md grayish brown; vf-xtal; dense; gray opaq chert, trc smokey chert; N.S., 4035-30m.

LS: lt-md brown; vf-xtal; dense to chalky; semi-opaq chert; poor porosity; N.S.

4050 LS: lt brown; mic-vf xtal; dense to chalky; sli oolitic; opaq chert; no visible porosity; N.S.

LS: as above;

LS: lt-md brown; vf-xtal; dense to chalky in part; oolitic; no visible porosity; N.S.

LS: lt brown; vf-xtal; dense to chalky in part; sli granular; poor porosity; N.S.

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

4100 LS: lt brown; mic-vf xtal; dense to chalky in part; minor opaq chert; no visible porosity; N.S.

LS: as above;

LS: lt-md grayish brown; vf-xtal; much opaq chert; no visible porosity; N.S.

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

MUNCIE CREEK 4147 (-1453)
4150 Shale: black; carbonaceous; 4162 stop.
LS: md-dk grayish brown; vf-xtal; dense; fos-frag; cherty; no visible porosity; N.S.

Shale: green, gray;

LS: lt-md brown; vf-xtal; dense w/minor chalk; oolitic in part; no visible porosity; N.S.

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

Shale: dk gray;
LS: dense; N.S.
Shale: green to gray;

LS: off white to lt brown; mic-vf xtal; v-chalky, soft; poor apparent porosity; N.S.

4200 LS: lt brown; vf-xtal; sli oolitic; chalky; poor porosity; N.S.

LS: lt brown to gray; vf-xtal; trace poor oomoldic; minor tight int xtal porosity; N.S.

LS: off white to lt gray; vf-xtal; sli pyritic; cherty; dense; no visible porosity; N.S.

STARK SH 4243 (-1549)
Shale: black; carbon.; trc 4256 stop, incr 30m.
LS: dk grayish brown; vf-xtal; dense; sli pyritic; sli fos-frag; no visible porosity; N.S., 30m.
4250 LS: off white to lt gray; vf-xtal; fine vug por. w/dull fluor; some soft white dull fluor chalk; N.S., 4262-60m.

LS: lt brown to gray; mic-vf xtal; dense to chalky in part; much lt gray, opaq. chert; no visible porosity; N.S.

HUSHPUCKNEY 4280 (-1586)
Shale: black; carbon., 4288-30m.
LS: lt-md grayish brown; vf-xtal; dense; opaq chert; no visible porosity; N.S.
Marl: steel gray; soft, mushy; 4293-30 & 60m.
LS: lt brown to grayish brn; vfx-tal; dense; chalky; sli oolitic; trc granular chert; no visible porosity; N.S.

4300 LS: lt grayish brown; vf-xtal; dense, platey; chalky in part; no visible porosity; N.S.

LS: as above; decr chalk; N.S.

LS: dk brown; vf-xtal; dense; no visible porosity; N.S, 4340.

Shale: green, gray; calcareous.

4350 LS: lt brown; vf-xtal; trc fine vug porosity w/specks dk stain & sli show black oil; specks gillsonitic stain; no fluor; 4360.

Shale: green; silty;

MARMATON 4368 (-1674)
LS: lt grayish brown; vf-xtal; dense; no visible porosity; N.S.

Shale: gray, green; calcareous; 4390.

LS: lt brown to grayish brown; mic-vf xtal; dense to chalky in part; no visible porosity; N.S.

4400 LS: dk brown; vf-xtal; dense; no visible porosity; N.S.

LS: lt brown; vf-xtal; dense to chalky in part; orange chert; poor porosity; N.S., 4420.

LS: lt brown; mic-vf xtal; dense, platey; chalky in part; scattered chalky fluor; no visible porosity; N.S.

Shale: green;

PAW MKR 4433 (-1739)
LS: lt brown; mic-vf xtal; dense to chalky in part; no visible porosity; N.S.

4450 LS: as above;

Shale: dk gray, green;

LS: lt brown; mic-vf xtal; dense to chalky in part; no visible porosity; N.S.

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

LS: grayish brown; w/much shale;

Shale: black; carbonaceous; 4510

FT. SCOTT 4500 (-1806)
4500 LS: grayish brown; vf-xtal; oolitic in part; no visible porosity; N.S.

LS: as above w/trc oolitic chert; N.S.

LS: lt brown to grayish brown; vf-xtal; oolitic; tight int ool porosity w/v sli stain & fluor, no visible oil; 4430.

CHER SH 4524 (-1830)
LS: lt brown to gray; mic-vf xtal; dense to sli chalky; sli oolitic; no visible porosity; N.S.

LS: lt brown to gray; vf-xtal; scattered fluor w/v-lt stain; tight; 4550.

4550 LS: as above; 4560.

LS: lt brown to gray; vf-xtal; fine vug porosity w/ sli stain, fluor & v-sli S.O.,

SiltSt: green; platey; micaceous; trace

SdSt/SiltSt: white; v-fine; blocky, platey, w-cem; trc free quartz; N.S., 4585-30m.

Chert: even white & tan; fresh to tripolitic in part; white chalk; coarse pyrites; N.S., 4590-30 & 60m.

Chert: various; weathered; oxidized; with much gray shale;

MISSISSIPPI 4604 (-1910)
4600 LS: lt brown, cream; mic-vf xtal; oolitic; chalky; poor int ool porosity; N.S., 4620.

DOL: grayish brown; vf-f xtal; tight int xtal & scattered vug porosity; N.S.

LS: grayish brown; vf-xtal; dolomitic; tight int xtal porosity; N.S.

ROTARY TOTAL DEPTH 4644 (-1950)

4650

Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

November 25, 2014

Thomas Larson
Larson Engineering, Inc. dba Larson Operating Company
562 W STATE RD 4
OLMITZ, KS 67564-8561

Re: ACO-1
API 15-101-22531-00-00
EM Stanley Unit 1-20
SE/4 Sec.20-18S-27W
Lane County, Kansas

Dear Thomas Larson:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 7/2/2014 and the ACO-1 was received on November 25, 2014 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department