

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1359715
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: _____

1359715

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> _____
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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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Geological Report

Knopp #7

2283' FNL & 1650' FEL

Sec. 13 T14s R32w

Logan County, Kansas



Pioneer Resources, Inc.

General Data

Well Data: Pioneer Resources, Inc.
Knopp #7
2283' FNL & 1650' FEL
Sec. 13 T14s R32w
Logan County, Kansas
API # 15-109-21496-0000

Drilling Contractor: Discovery Drilling Co. Inc. Rig #2

Geologist: Jason T Alm

Spud Date: April 17, 2017

Completion Date: April 26, 2017

Elevation: 2837' Ground Level
2845' Kelly Bushing

Directions: Oakley KS, South on Hwy 83 21 mi to Jayhawk Rd.
East 2 mi to county line, North 1 mi, West into
location by tank batteries.

Casing: 220' 8 5/8" surface casing
4553' 5 1/2" production casing

Samples: 10' wet and dry, 3700' to RTD

Drilling Time: 3600' to RTD

Electric Logs: ELI "Gus Pfannenstiel"
CNL/CDL, DIL, MEL

Drillstem Tests: Five, Trilobite Testing, Inc. "Bradley Walters"

Problems: Deviation surveys were dropped several times. The
last survey was 4 1/4 degrees off.

Remarks: None

Formation Tops

Formation	Pioneer Resources, Inc. Knopp #7 Sec. 13 T14s R32w 2283' FNL & 1650' FEL
Anhydrite	2316' +533
Base	2338' +507
Heebner	3839' -994
Toronto	3858' -1013
Lansing	3877' -1032
BKC	4191' -1346
Marmaton	4253' -1408
Pawnee	4327' -1482
Myrick	4358' -1513
Fort Scott	4382' -1537
Cherokee	4409' -1564
Johnson	4451' -1606
Morrow	4479' -1634
Mississippian	4502' -1657
RTD	4550' -1705
LTD	4554' -1709

Sample Zone Descriptions

- LKC “A” zone (3877’ -994): Covered in DST #1**
 Ls – Fine to sub-crystalline, oolitic with scattered poor oomoldic porosity, few rocks with dark tarry oil stain, no show of free oil, no odor, mostly barren, very dull scattered yellow fluorescents, 3 units hotwire.
- LKC “C” zone (3910’ -1065): Covered in DST #1**
 Ls – Fine to sub-crystalline, oolitic with poor to fair scattered oolitic porosity, light to fair oil stain with light scattered saturation, slight show of free oil when broken, light yellow fluorescents, fair to good cut, 10 units hotwire.
- LKC “H” zone (4052’ -1207): Covered in DST #2**
 Ls – Fine to sub-crystalline, oolitic with poor oomoldic and pinpoint oomoldic porosity, light oil stain in porosity, very slight show of free oil when broken, very light odor, fair yellow fluorescents, 20 units hotwire.

LKC “I” zone (4082’ -1237): Covered in DST #3
 Ls – Fine crystalline with scattered poor to fair pinpoint vuggy and inter-crystalline porosity, light to fair oil stain with light scattered saturation, slight show of free oil when broken, few gas bubbles, light to fair yellow fluorescents, 117 units hotwire.

LKC “J” zone (4106’ -1261): Covered in DST #4
 Ls – Fine to sub-crystalline, oolitic with scattered poor oomoldic and oolitic porosity, few rocks with light to fair oil stain, no show of free oil, scattered yellow fluorescents, very chalky, 22 units hotwire.

LKC “K” zone (4128’ -1283): Covered in DST #4
 Ls – Fine crystalline, slightly oolitic with poor vuggy and scattered inter-crystalline porosity, light to fair oil stain with very light spotted saturation, slight show of free oil on cup, good odor, fair yellow fluorescents, 67 units hotwire.

Cherokee Lime (4412’ -1567): Covered in DST #5
 Ls – Fine to sub-crystalline in part with fair vuggy and poor to fair inter-fossil porosity, light to fair oil stain with light scattered saturation, fair show of free oil, very light odor, light spotted yellow fluorescents, good streaming cut, few visible gas bubbles, 50-78 units hotwire.

Johnson (4451’ -1606): Covered in DST #5
 Ls – Fine to sub-crystalline in part with poor to fair vuggy and scattered inter-crystalline porosity, light to heavy oil stain and saturation, good show of free oil, good odor, light to fair spotted yellow fluorescents, good cut, 145-74 units hotwire.

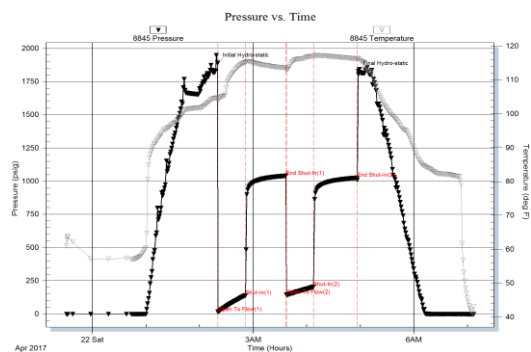
Drill Stem Tests
 Trilobite Testing, Inc.
 “Bradley Walter”

DST #1 LKC A – C zones

Interval (3861’ – 3920’) Anchor Length 59’

IHP	– 1888 #	
IFP	– 30” – B.O.B. 15 min.	13-138 #
ISI	– 45” – Dead	1040 #
FFP	– 30” – B.O.B. 20 min.	143-202 #
FSI	– 45” – Dead	1025 #
FHP	– 1827 #	
BHT	– 116°F	

Recovery: 430’ MCW w/ oil puddle on top

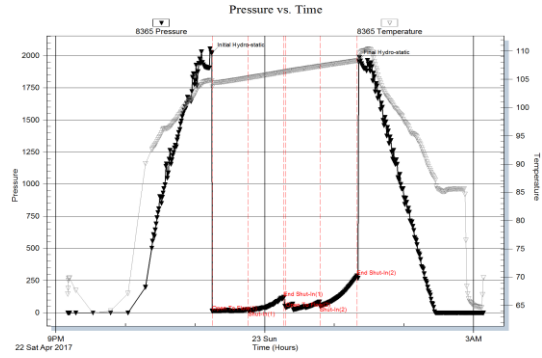


DST #2 LKC H zone

Interval (4028' – 4070') Anchor Length 42'

IHP	- 2019 #	
IFP	- 30" – Built to 1/2 in.	11-15 #
ISI	- 30" – Dead	119 #
FFP	- 30" – W.S.B.	38-51 #
FSI	- 30" – Dead	285 #
FHP	- 1960 #	
BHT	- 108°F	

Recovery: 10' Mud w/ oil spots

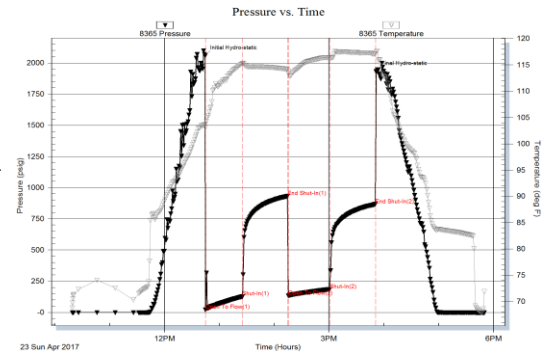


DST #3 LKC I zone

Interval (4062' – 4095') Anchor Length 33'

IHP	- 2057 #	
IFP	- 45" – B.O.B. 21 min.	20-127 #
ISI	- 45" – W.S.B.	930 #
FFP	- 45" – B.O.B. 37 min.	132-185 #
FSI	- 45" – W.S.B.	866 #
FHP	- 1934 #	
BHT	- 117°F	

Recovery: 450' MCW w/ oil spots

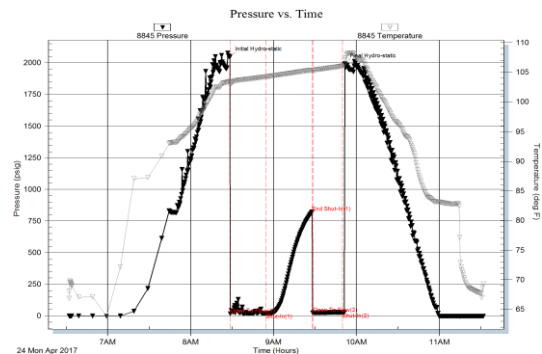


DST #4 LKC J – L zones

Interval (4089' – 4185') Anchor Length 96'

IHP	- 2045 #	
IFP	- 30" – Built to 1 in.	16-21 #
ISI	- 30" – Dead	820 #
FFP	- 20" – W.S.B.	23-26 #
FHP	- 1991 #	
BHT	- 107°F	

Recovery: 20' Mud w/ oil spots

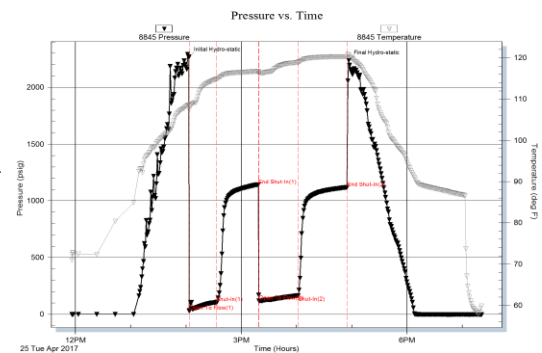


DST #5 Johnson Zone

Interval (4402' – 4472') Anchor Length 70'

IHP	- 2264 #	
IFP	- 30" – B.O.B. 10 min.	30-105 #
ISI	- 45" – Built to 2 1/2 in.	1142 #
FFP	- 45" – B.O.B. 4 min.	118-165 #
FSI	- 45" – Built to 3 in.	1118 #
FHP	- 2236 #	
BHT	- 120°F	

Recovery: 1100' GIP
 230' GMCO 60% Oil
 180' GMCO 35% Oil



Structural Comparison

	Pioneer Resources, Inc. Knopp #7 Sec. 13 T14s R32w 2283' FNL & 1650' FEL	Pioneer Resources, Inc. Knopp #1 Sec. 13 T14s R32w 398' FSL & 1070' FEL		Pioneer Resources, Inc. Knopp #5 Sec. 13 T14s R32w 1645' FNL & 330' FWL	
Formation					
Anhydrite	2316' +533	NA	NA	NA	NA
Base	2338' +507	NA	NA	NA	NA
Heebner	3839' -994	3784' -994	FL	3787' -980	(-14)
Toronto	3858' -1013	3802' -1012	(-1)	3805' -998	(-15)
Lansing	3877' -1032	3818' -1028	(-4)	3822' -1015	(-17)
BKC	4191' -1346	4136' -1346	FL	4141' -1334	(-12)
Marmaton	4253' -1408	4200' -1410	(+2)	4207' -1400	(-8)
Pawnee	4327' -1482	4268' -1478	(-4)	4276' -1469	(-13)
Myrick	4358' -1513	4298' -1508	(-5)	4308' -1502	(-11)
Fort Scott	4382' -1537	4320' -1530	(-7)	4335' -1528	(-9)
Cherokee	4409' -1564	4347' -1557	(-7)	4361' -1554	(-10)
Johnson	4451' -1606	4387' -1597	(-9)	4402' -1595	(-11)
Morrow	4479' -1634	4414' -1624	(-10)	4432' -1625	(-9)
Mississippian	4502' -1657	4422' -1632	(-25)	4463' -1656	(-1)

Summary

The location for the Knopp #7 well was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Five Drill Stem Tests were conducted, one of which recovered commercial amounts of oil from the Johnson Zone. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Knopp #7 well.

Recommended Perforations

Primary:

Johnson Zone

4466' – 4471'

DST #5

4455' – 4459'

4451' – 4453'

Before Abandonment:

Cherokee Lime

4422' – 4429'

DST #5

Respectfully Submitted,

Jason T Alm
Hard Rock Consulting, Inc.

JOB LOG

SWIFT Services, Inc.

DATE 4-26-17 PAGE NO. 1

CUSTOMER Pionces Resources WELL NO. #7 LEASE Knapp JOB TYPE Two-Stage TICKET NO. 30311

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1800							on location 5 1/2" 15.5" 15.5" RTD - 4550' LTD - 4554' TP - 4551' SJ - #2 42.48 D.U. - #53 2327 cent - #3 #5 #7 #9 #11 #13 #15 #18 #21 #52 Basket - #4 #22 #53
4-27-17	0050							Start 5 1/2" 15.5" casing in well Drop Ball Circulate * Reciprocate *
	0230	6 1/2	12				400	Pump 500 gal Mud Flush
		6 1/2	20				300	Pump 20 bbl KCL Flush
	0240	4 1/2	42				200	Mix 175 sks EA-2 @ 15.5 ppg Wash out Pump/Lines - Release Latch Down Plug
	0255	6 1/2	∅				100	Start Displacement
		6 1/2	52				200	Pump Mud
	0310	6 1/2	107.3				1750	Land Latch Down Plug Release Pressure - * Plug Hold *
								Drop Bomb
	0315						1300	Open D.U. Tool - Circulate 3hrs
	0605	6 1/2	12				300	Pump 500 gal Mud Flush Plug RH-MH (30-20)
	0630	6 1/2	166				400	Mix 300 sks SMD @ 11.2 ppg wash out Pump/Lines - Release Top Plug
	0700	6 1/2	∅				300	Start Displacement
		6 1/2	47				500	circulate cement to surface * 15 sks *
	0710	6 1/2	55.3				200	Land top Plug - close D.U. Tool Release Pressure * Hold * wash up trucks
	0745							Job Complete
								Thank You Dave Preston Isaac Kirby

GLOBAL OIL FIELD SERVICES, LLC

2921

REMIT TO 24 S. Lincoln
Russell, KS 67665

SERVICE POINT: Russell, KS

DATE <u>4-17-17</u>	SEC. <u>13</u>	TWP. <u>14</u>	RANGE <u>32 W</u>	CALLED OUT	ON LOCATION	JOB START	JOB FINISH <u>11:45 AM</u>
LEASE <u>Knapp</u>	WELL # <u>7</u>	LOCATION			COUNTY <u>LOGAN</u>	STATE <u>KS</u>	
OLD OR NEW (CIRCLE ONE)							

CONTRACTOR Discovery Drilling Rig #2

TYPE OF JOB SURFACE

HOLE SIZE 12 1/4 T.D. 782'

CASING SIZE 8 5/8 DEPTH 221.19 w/ 65'

TUBING SIZE DEPTH

DRILL PIPE 4 1/2 DEPTH

TOOL DEPTH

PRES. MAX. DEPTH

MEAS. LINE MINIMUM

CEMENT LEFT IN CSG. 20' SHOE JOINT 42.21

PERFS

DISPLACEMENT 12.75 BBL

EQUIPMENT

OWNER

CEMENT AMOUNT ORDERED 150 SK Com
3% CC 2% GEL

COMMON @

POZMIX @

GEL @

CHLORIDE @

ASC @

HANDLING @

MILEAGE @

TOTAL

PUMP TRUCK CEMENTER Brian

417 HELPER JASON

BULK TRUCK

378 DRIVER Kris

BULK TRUCK

DRIVER

REMARKS:
Run in 5 JTS NEW 8 5/8" CASING w/ 10' 2 ANCHORS
JOINT CIRCULATE AND HOPE IN CEMENT, MIX 150 SK,
DISPLACE W/ 12.75 BBL H2O, SHUT IN @ 200 PSI,
CEMENT DD CIRCULATE

CHARGE TO: PIONEER RESOURCES

STREET

CITY STATE ZIP

SERVICE

DEPTH OF JOB

PUMP TRUCK CHARGE

EXTRA FOOTAGE @

MILEAGE @

MANIFOLD @

TOTAL

Global Oil Field 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.

PLUG & FLOAT EQUIPMENT

@

@

@

@

@

TOTAL

PRINTED NAME

SIGNATURE [Signature]

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT

IF PAID IN 30 DAYS



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources, Inc
 80 Windmill Dr.
 Phillipsburg, Ks 67661
 ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61351

DST#: 1

Test Start: 2017.04.21 @ 23:31:00

GENERAL INFORMATION:

Formation: **LKC A-C**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:20:30
 Time Test Ended: 07:07:30
 Interval: **3861.00 ft (KB) To 3920.00 ft (KB) (TVD)**
 Total Depth: 3920.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Bradley Walter
 Unit No: 78
 Reference Elevations: 2845.00 ft (KB)
 2837.00 ft (CF)
 KB to GR/CF: 8.00 ft

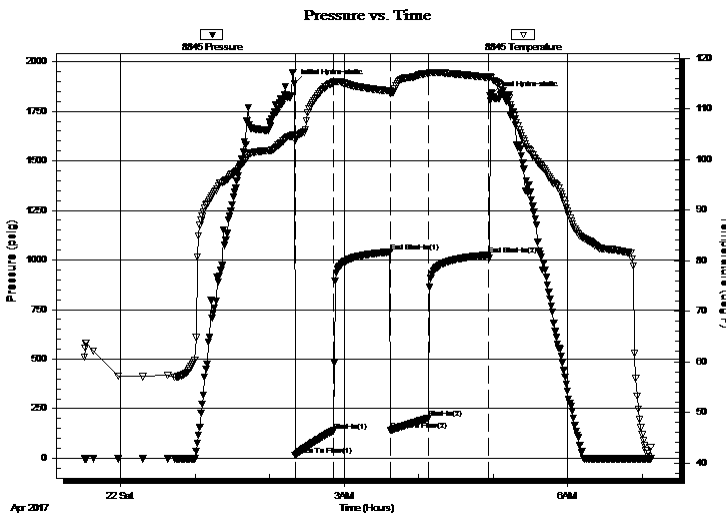
Serial #: 8845

Outside

Press@RunDepth: 202.02 psig @ 3862.00 ft (KB)
 Start Date: 2017.04.21 End Date: 2017.04.22
 Start Time: 23:31:05 End Time: 07:07:29
 Capacity: 8000.00 psig
 Last Calib.: 2017.04.22
 Time On Btm: 2017.04.22 @ 02:20:00
 Time Off Btm: 2017.04.22 @ 04:57:30

TEST COMMENT: IF: BOB @ 15 min.
 IS: No return.
 FF: BOB @ 20 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1888.41	104.83	Initial Hydro-static
1	13.53	103.73	Open To Flow (1)
32	138.45	115.12	Shut-In(1)
77	1040.27	113.52	End Shut-In(1)
78	143.03	112.95	Open To Flow (2)
108	202.02	116.96	Shut-In(2)
157	1025.20	116.18	End Shut-In(2)
158	1827.16	116.34	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
430.00	mcw 15m 85w (oil puddle on top)	4.60

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61351

DST#: 1

Test Start: 2017.04.21 @ 23:31:00

GENERAL INFORMATION:

Formation: **LKC A-C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:20:30

Time Test Ended: 07:07:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 78

Interval: 3861.00 ft (KB) To 3920.00 ft (KB) (TVD)

Reference Elevations: 2845.00 ft (KB)

Total Depth: 3920.00 ft (KB) (TVD)

2837.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8365

Inside

Press@RunDepth: psig @ 3862.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.21

End Date:

2017.04.22

Last Calib.:

2017.04.22

Start Time: 23:31:05

End Time:

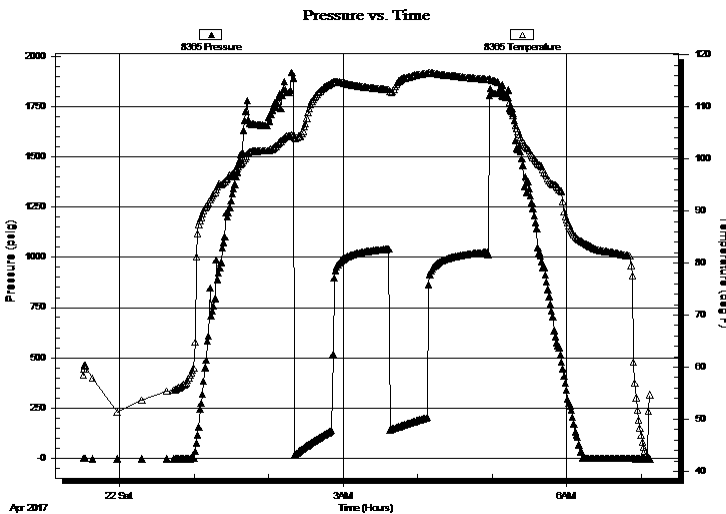
07:07:29

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB @ 15 min.
IS: No return.
FF: BOB @ 20 min.
FS: No return.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
430.00	mcw 15m 85w (oil puddle on top)	4.60

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61351

DST#: 1

Test Start: 2017.04.21 @ 23:31:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 55.00 sec/qt
Water Loss: 8.79 in³
Resistivity: ohm.m
Salinity: 4000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 0 deg API
Water Salinity: 39000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
430.00	mcw 15m 85w (oil puddle on top)	4.602

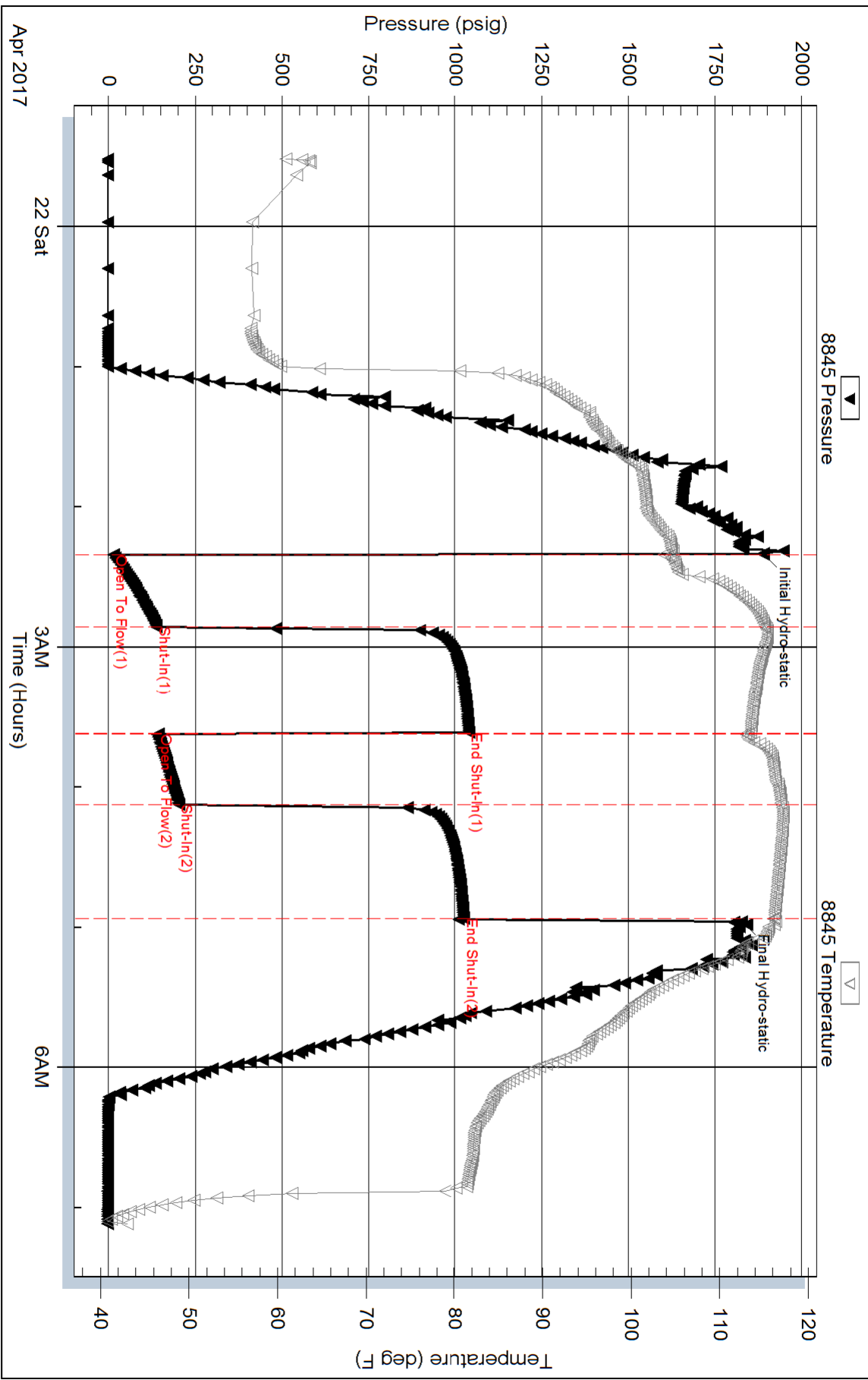
Total Length: 430.00 ft Total Volume: 4.602 bbl

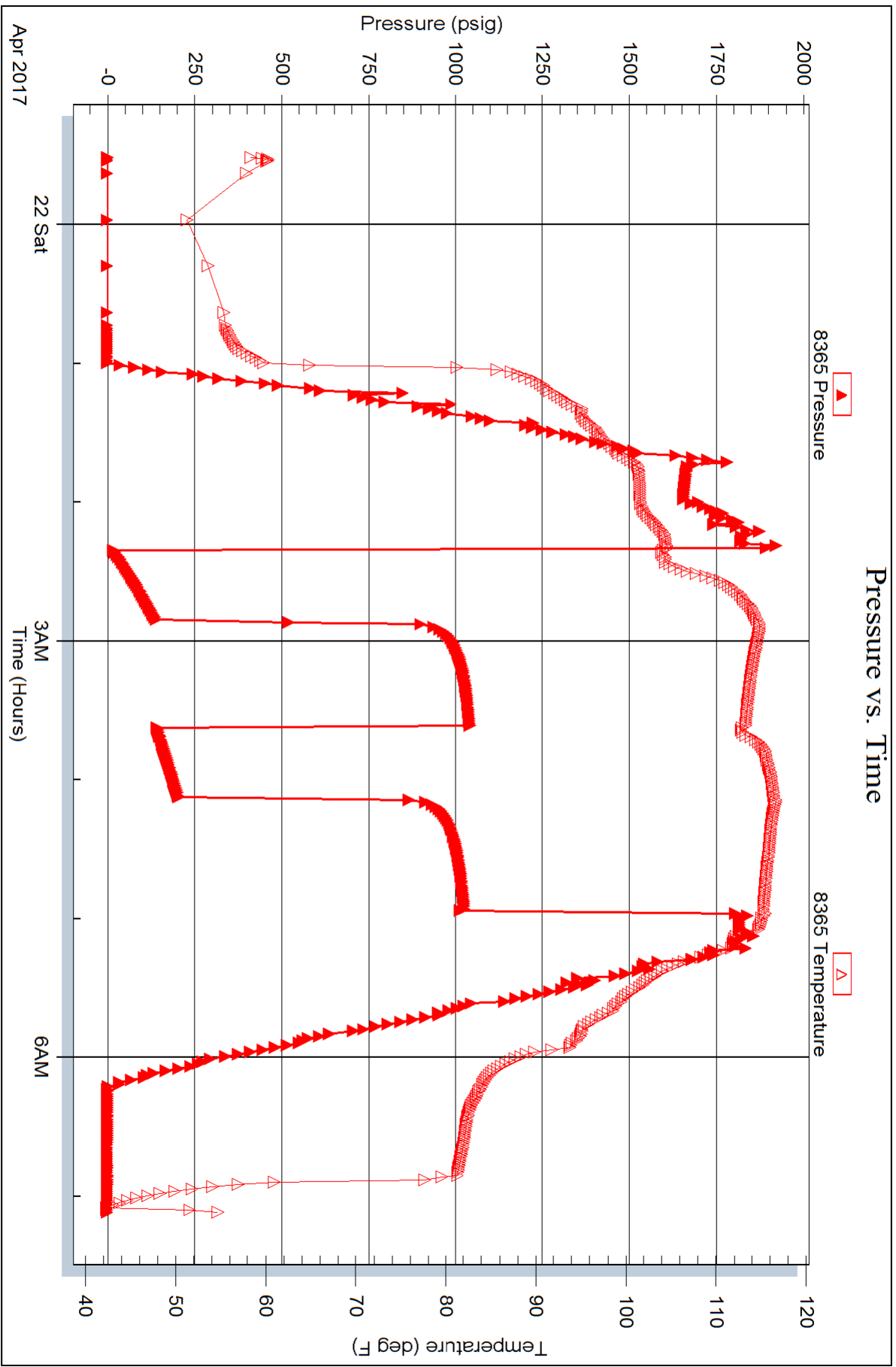
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: rw is .269 @ 48F = 39000ppm

Pressure vs. Time







**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

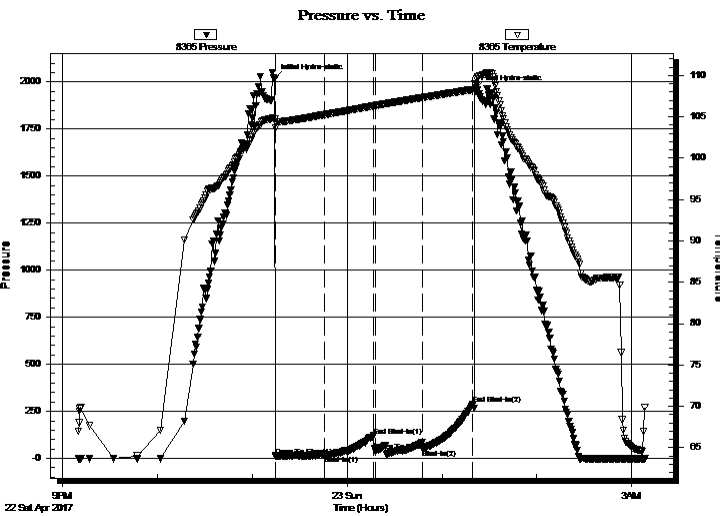
13 14s 32w Logan, Ks
Knopp #7
Job Ticket: 61352 **DST#: 2**
Test Start: 2017.04.22 @ 21:10:00

GENERAL INFORMATION:

Formation: **LKC H**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:14:30
Time Test Ended: 03:08:45
Interval: **4028.00 ft (KB) To 4070.00 ft (KB) (TVD)**
Total Depth: 4070.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 78
Reference Elevations: 2845.00 ft (KB)
2837.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8365 **Inside**
Press@RunDepth: 50.72 psig @ 4026.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.04.22 End Date: 2017.04.23 Last Calib.: 2017.04.23
Start Time: 21:10:05 End Time: 03:08:44 Time On Btm: 2017.04.22 @ 23:14:15
Time Off Btm: 2017.04.23 @ 01:20:45

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



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2018.84	104.74	Initial Hydro-static
1	11.94	103.63	Open To Flow (1)
32	15.44	105.24	Shut-In(1)
63	119.31	106.31	End Shut-In(1)
64	38.35	106.36	Open To Flow (2)
94	50.72	107.32	Shut-In(2)
126	285.48	108.29	End Shut-In(2)
127	1959.67	108.95	Final Hydro-static

Recovery

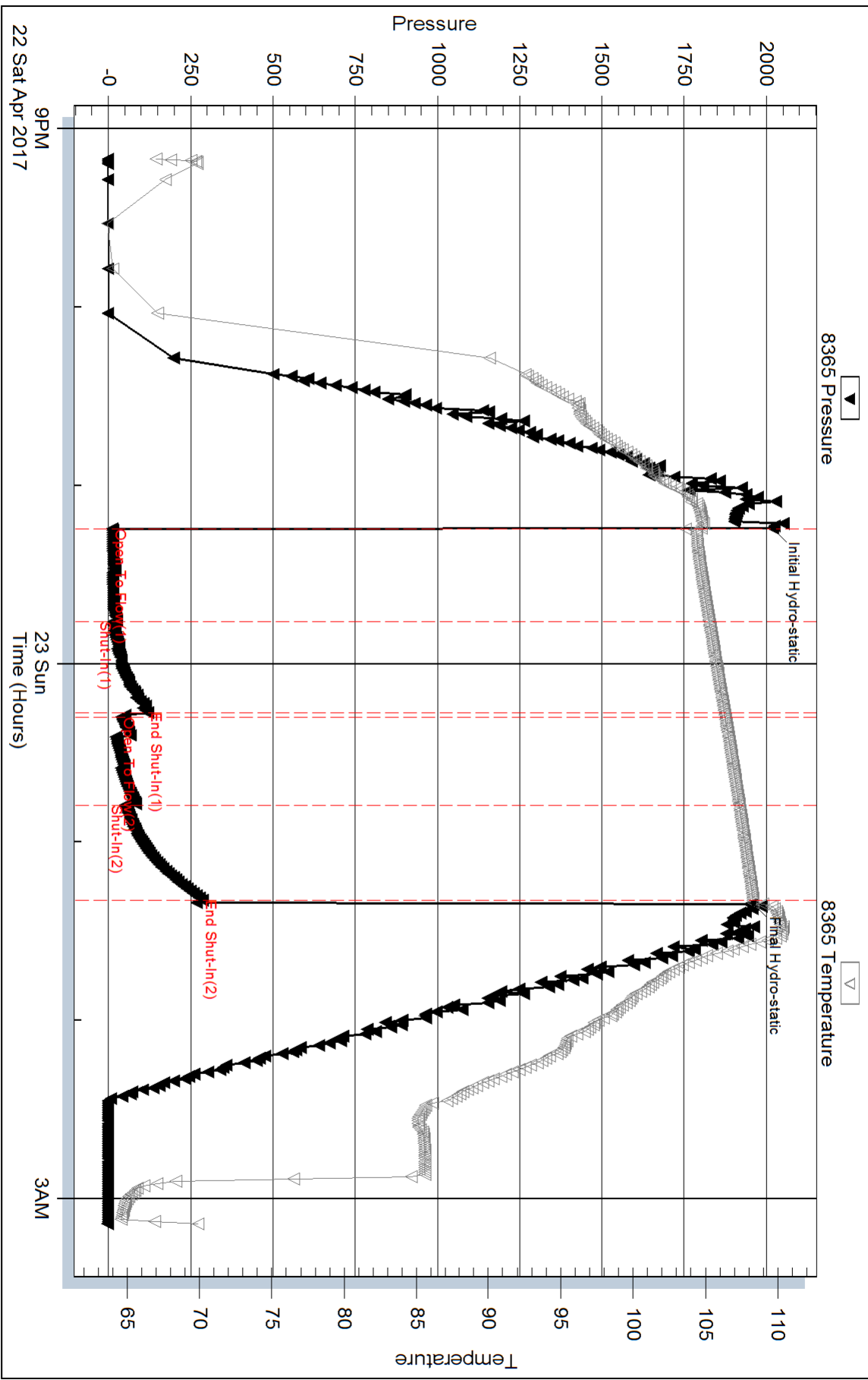
Length (ft)	Description	Volume (bbl)
10.00	Mud 100m (oil speks)	0.07

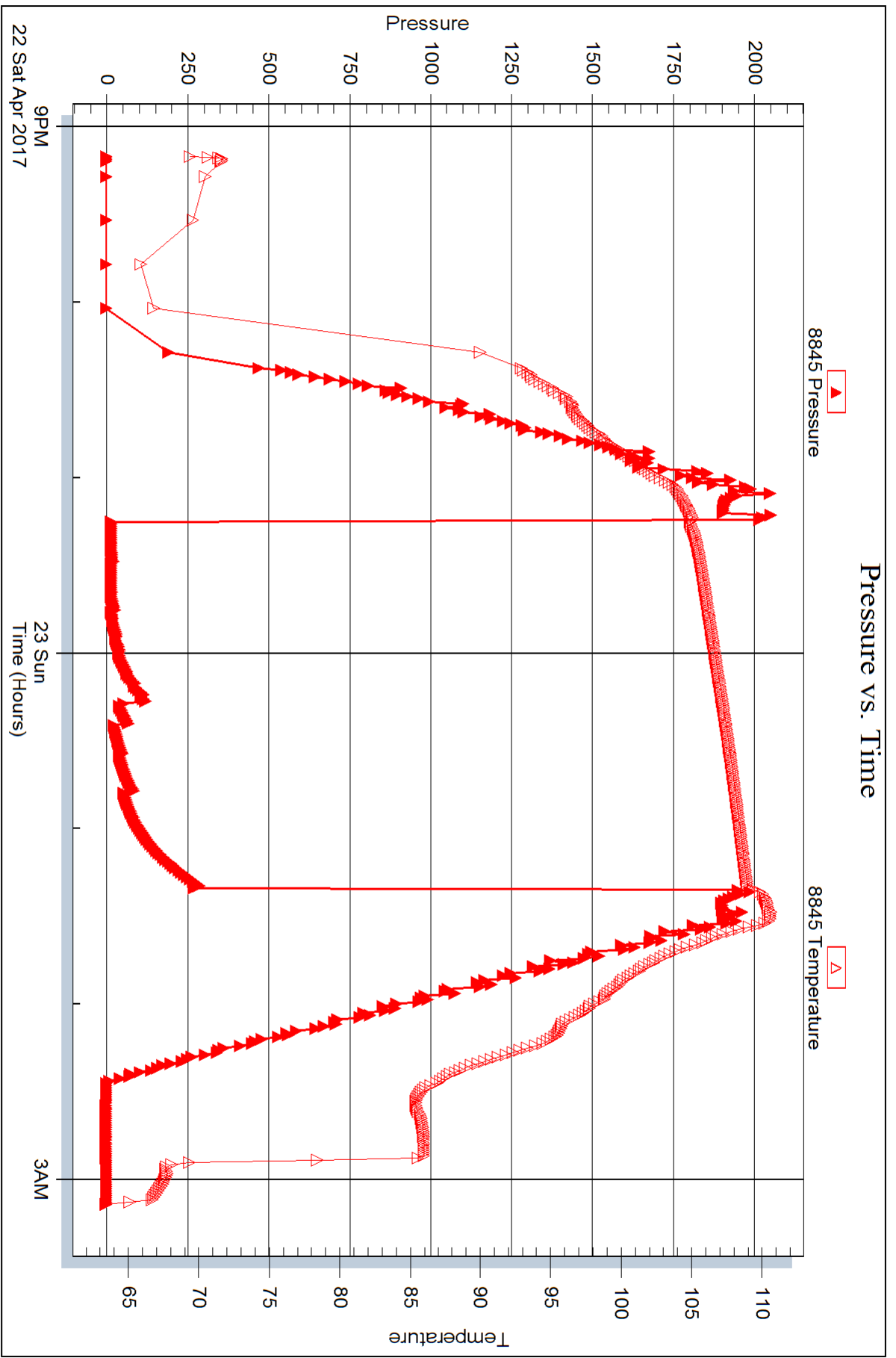
* Recovery from multiple tests

Gas Rates

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

Pressure vs. Time







TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks
Knopp #7
Job Ticket: 61353 **DST#: 3**
Test Start: 2017.04.23 @ 10:19:00

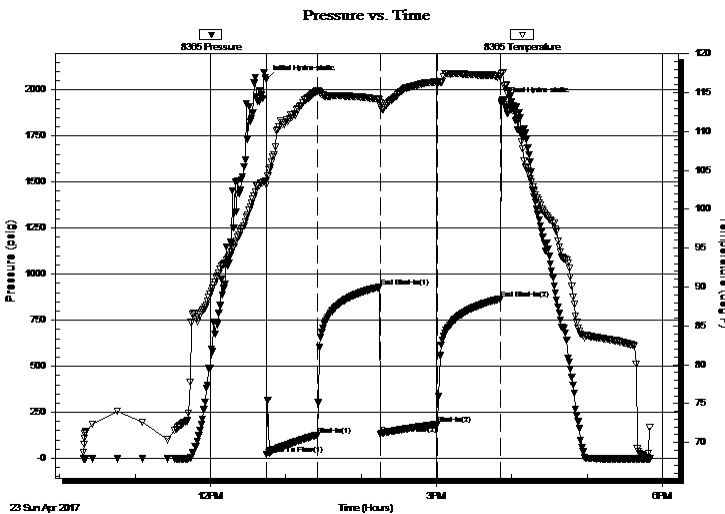
GENERAL INFORMATION:

Formation: **LKC I**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:44:45
Time Test Ended: 17:49:45
Interval: **4062.00 ft (KB) To 4095.00 ft (KB) (TVD)**
Total Depth: 4095.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 2845.00 ft (KB)
2837.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Bradley Walter
Unit No: 78

Serial #: 8365 **Inside**
Press@RunDepth: 184.68 psig @ 4063.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.04.23 End Date: 2017.04.23 Last Calib.: 2017.04.23
Start Time: 10:19:05 End Time: 17:49:44 Time On Btm: 2017.04.23 @ 12:44:15
Time Off Btm: 2017.04.23 @ 15:52:00

TEST COMMENT: IF: BOB @ 21 min.
IS: Surface return.
FF: BOB @ 37 min.
FS: Surface return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2057.15	103.70	Initial Hydro-static
1	20.42	103.11	Open To Flow (1)
41	126.85	115.27	Shut-In(1)
91	929.94	114.15	End Shut-In(1)
92	132.19	113.71	Open To Flow (2)
137	184.68	116.27	Shut-In(2)
187	865.55	117.09	End Shut-In(2)
188	1933.53	117.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
450.00	mcw 20m 80w (oil spots)	4.88

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks
Knopp #7
Job Ticket: 61353 **DST#: 3**
Test Start: 2017.04.23 @ 10:19:00

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: 59000 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.59 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 15000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
450.00	mcw 20m 80w (oil spots)	4.883

Total Length: 450.00 ft Total Volume: 4.883 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: rw is .128 @ 71f = 59000ppm

Serial #: 8365

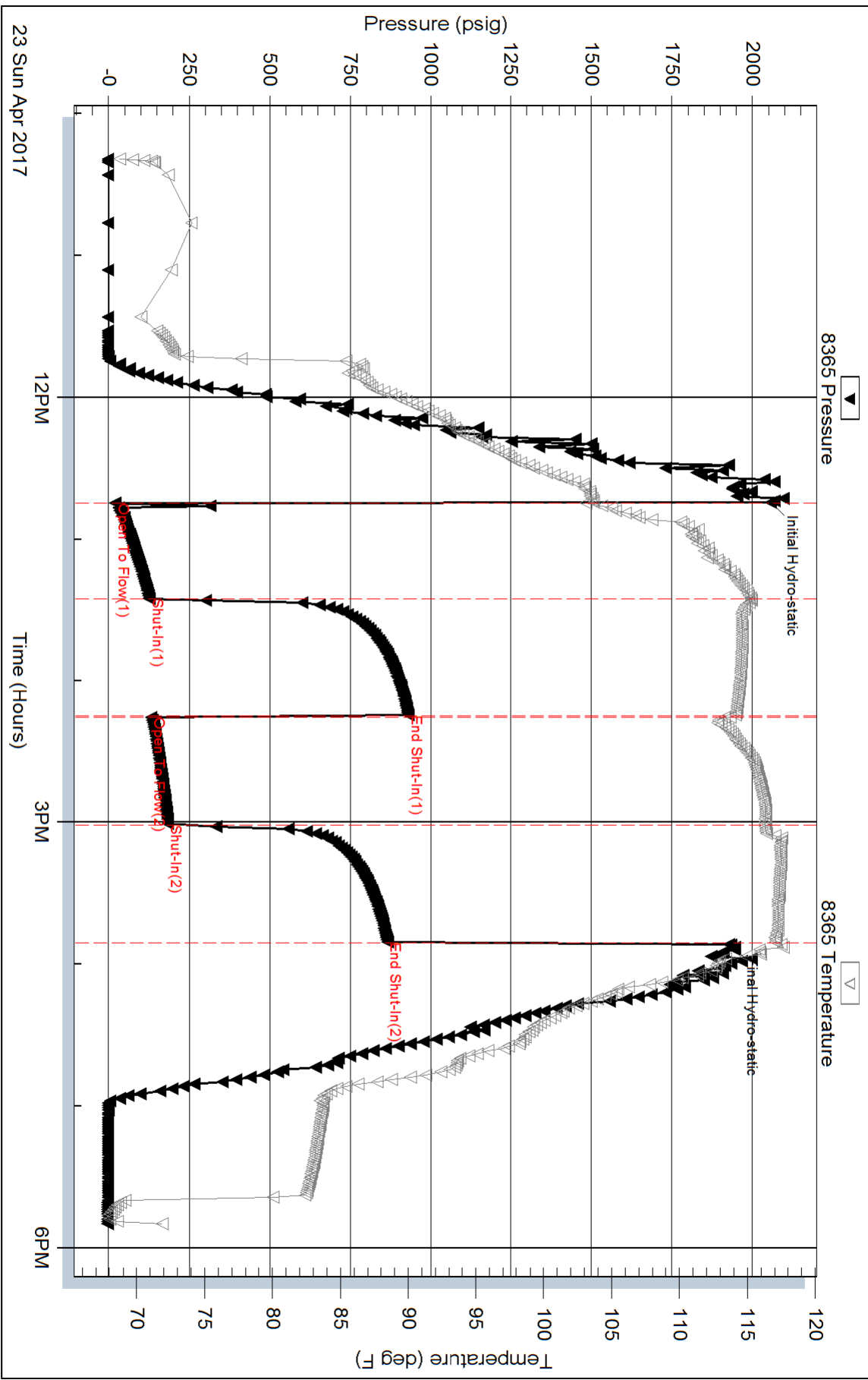
Inside

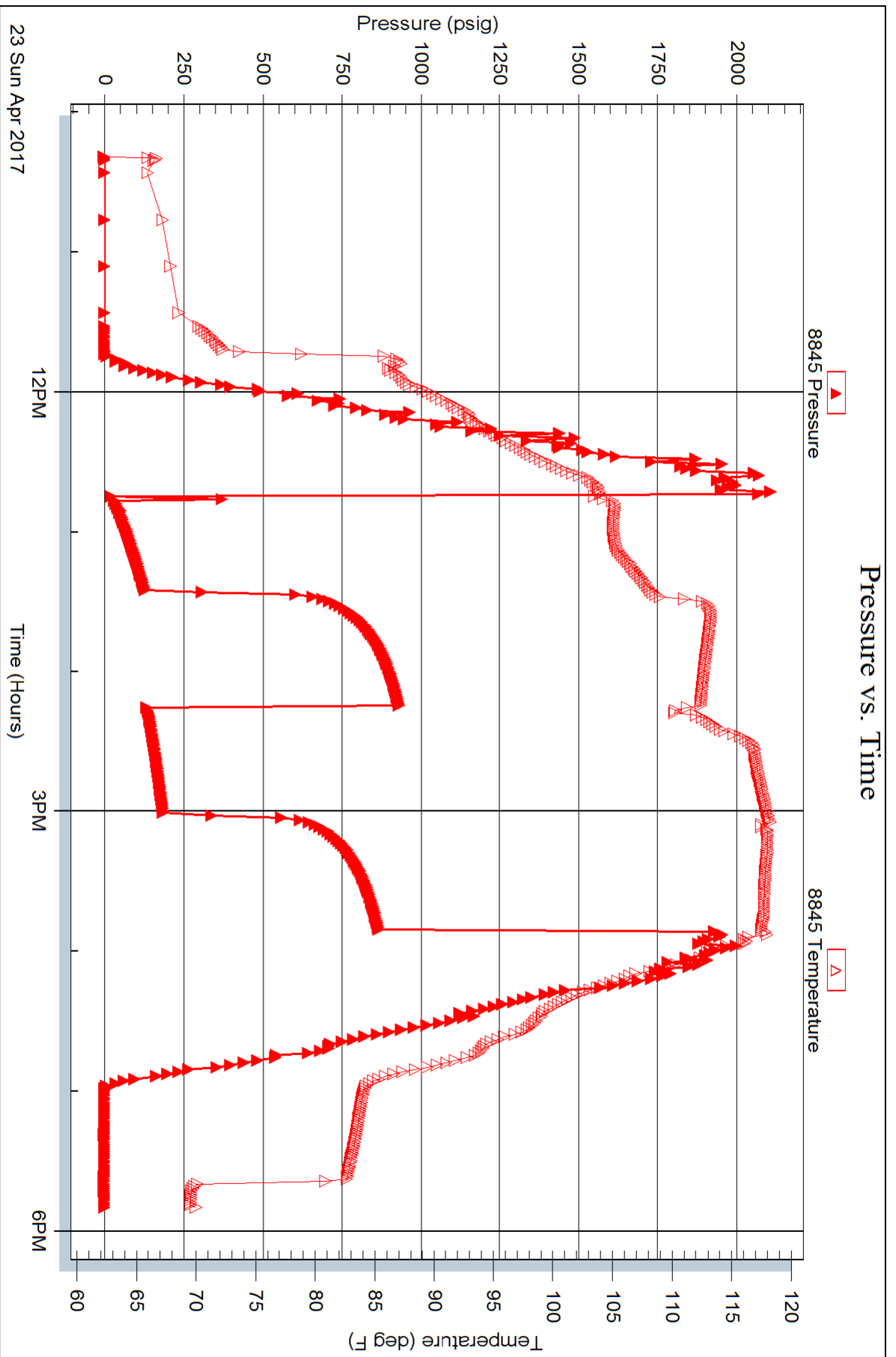
Pioneer Resources, Inc

Knopp #7

DST Test Number: 3

Pressure vs. Time







**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources, Inc

13 14s 32w Logan, Ks

80 Windmill Dr.
Phillipsburg, Ks 67661

Knopp #7

Job Ticket: 61354

DST#: 4

ATTN: Jason Alm

Test Start: 2017.04.24 @ 06:32:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	mud 100m (oil spots)	0.147

Total Length: 20.00 ft Total Volume: 0.147 bbl

Num Fluid Samples: 0

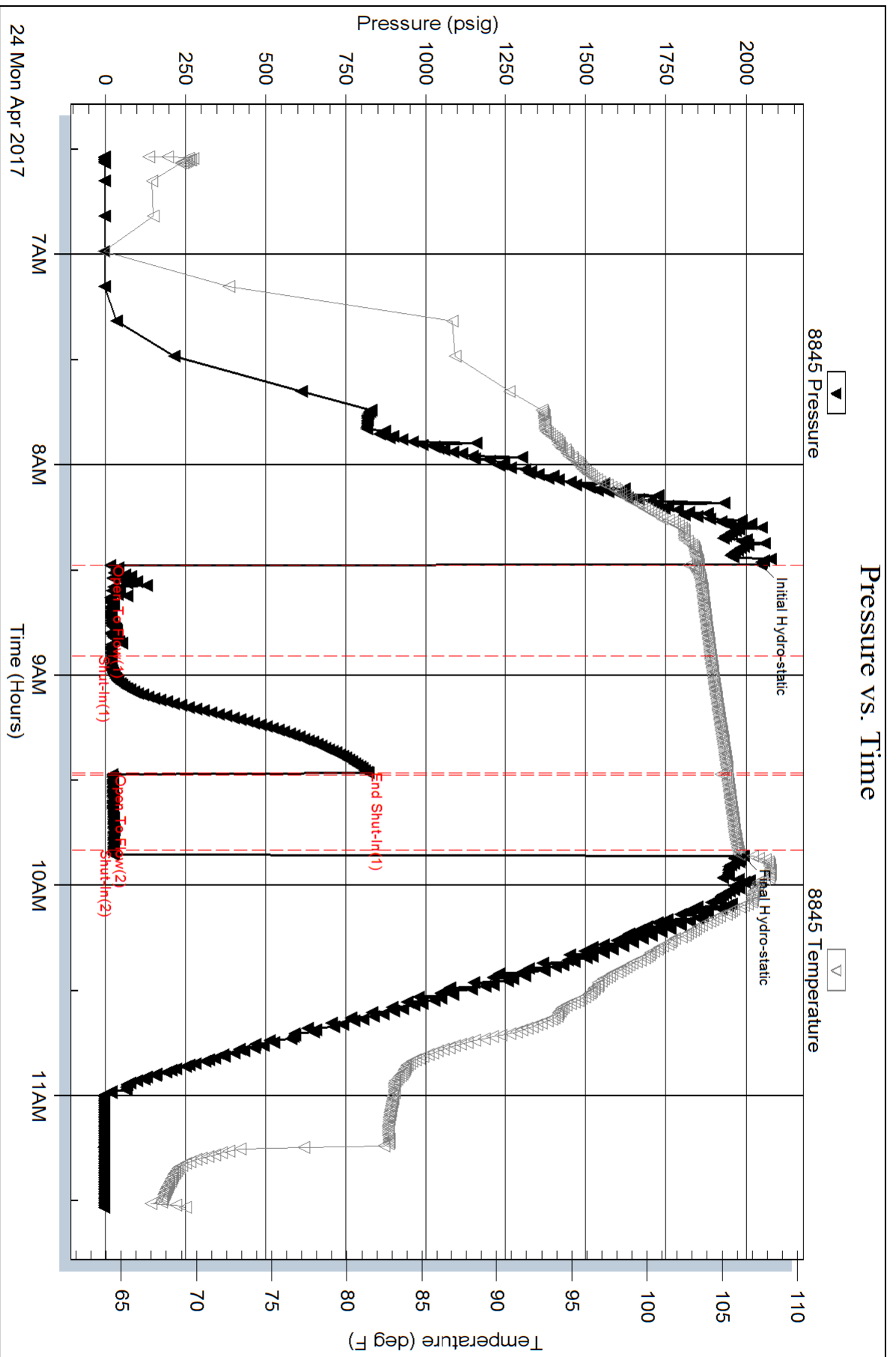
Num Gas Bombs: 0

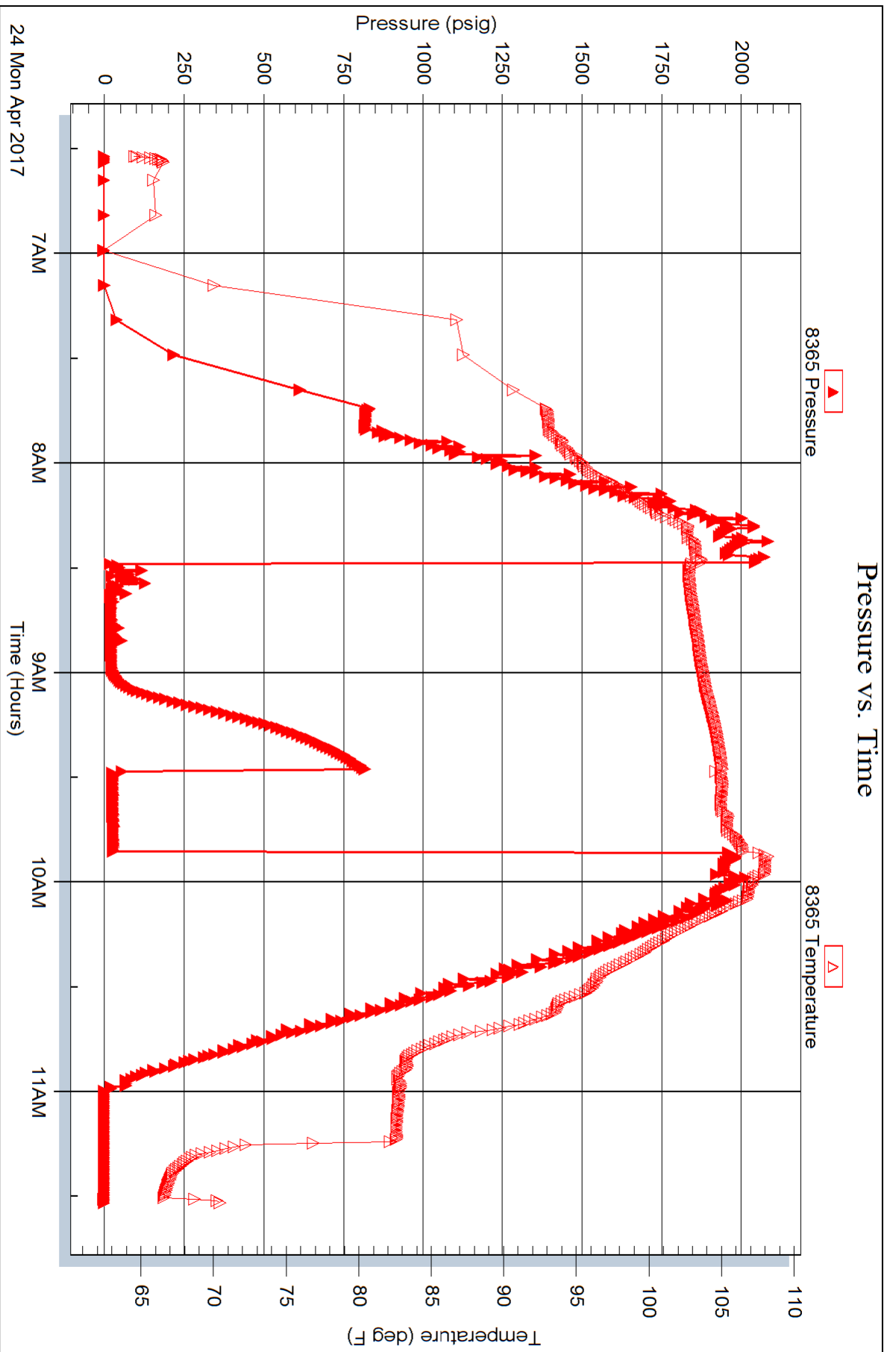
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61355

DST#: 5

Test Start: 2017.04.25 @ 11:56:00

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:03:15
 Time Test Ended: 19:20:45
 Interval: **4402.00 ft (KB) To 4472.00 ft (KB) (TVD)**
 Total Depth: 4472.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Bradley Walter
 Unit No: 78
 Reference Elevations: 2845.00 ft (KB)
 2837.00 ft (CF)
 KB to GR/CF: 8.00 ft

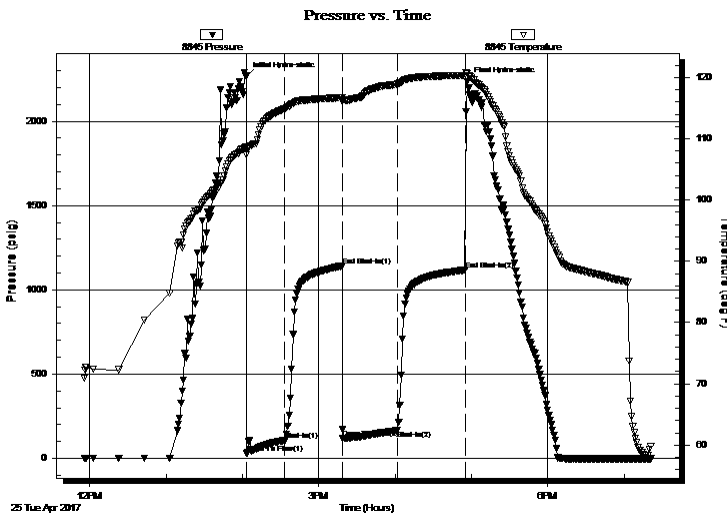
Serial #: 8845

Outside

Press@RunDepth: 164.89 psig @ 4403.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.04.25 End Date: 2017.04.25 Last Calib.: 2017.04.25
 Start Time: 11:56:05 End Time: 19:20:44 Time On Btm: 2017.04.25 @ 14:03:00
 Time Off Btm: 2017.04.25 @ 16:56:45

TEST COMMENT: IF: BOB @ 10 min.
 IS: 2 1/2" return, receded to 2".
 FF: BOB @ 4 min.
 FS: 3" return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2263.95	108.63	Initial Hydro-static
1	30.38	107.40	Open To Flow (1)
30	104.89	114.80	Shut-In(1)
76	1141.80	116.70	End Shut-In(1)
76	118.20	116.40	Open To Flow (2)
119	164.89	118.92	Shut-In(2)
172	1118.52	120.27	End Shut-In(2)
174	2235.86	120.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	gmco 35g 30m 35o	1.32
230.00	gmco 25g 15m 60o	3.00
0.00	1100' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pioneer Resources, Inc
80 Windmill Dr.
Phillipsburg, Ks 67661
ATTN: Jason Alm

13 14s 32w Logan, Ks

Knopp #7

Job Ticket: 61355

DST#: 5

Test Start: 2017.04.25 @ 11:56:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 52.00 sec/qt
Water Loss: 9.59 in³
Resistivity: ohm.m
Salinity: 10000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 30 deg API
Water Salinity: 0 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	gmco 35g 30m 35o	1.322
230.00	gmco 25g 15m 60o	2.999
0.00	1100' GIP	0.000

Total Length: 410.00 ft Total Volume: 4.321 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

