

Confidentiality Requested:

Yes  No

**KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

**Form must be Typed**

**Form must be Signed**

**All blanks must be Filled**

**WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

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

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

Deepening  Re-perf.  Conv. to EOR  Conv. to SWD  
 Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

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

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**AFFIDAVIT**

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

Submitted Electronically

**KCC Office Use ONLY**

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

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

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

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

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.02 @ 06:15:00

End Date: 2022.09.02 @ 13:39:30

Job Ticket #: 69771                      DST #: 1

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

Printed: 2022.09.09 @ 10:11:20

Ritchie Exploration  
15-19-31w Scott,KS  
Harkness 15D #1  
DST # 1  
LKC K  
2022.09.02



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

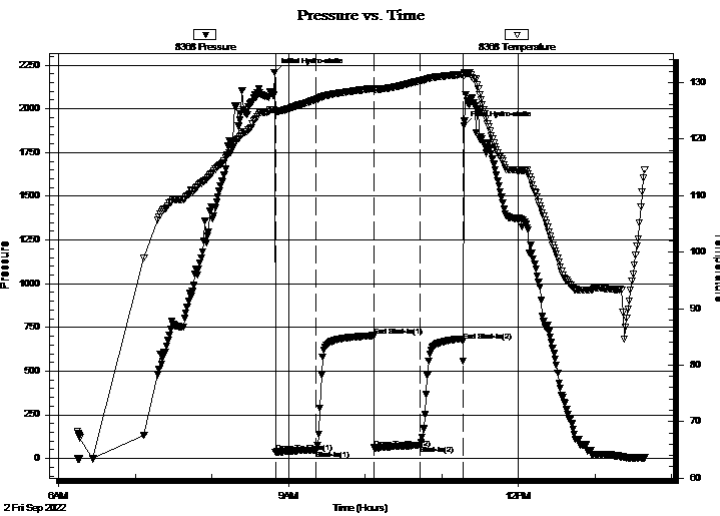
**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69771 **DST#: 1**  
Test Start: 2022.09.02 @ 06:15:00

## GENERAL INFORMATION:

Formation: **LKC K**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 08:49:45  
Time Test Ended: 13:39:30  
Interval: **4269.00 ft (KB) To 4310.00 ft (KB) (TVD)**  
Total Depth: 4310.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Terrance  
Unit No: 75  
Reference Elevations: 2953.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8368** **Inside**  
Press@RunDepth: 74.67 psig @ 4270.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2022.09.02 End Date: 2022.09.02 Last Calib.: 2022.09.02  
Start Time: 06:15:05 End Time: 13:39:29 Time On Btm: 2022.09.02 @ 08:49:00  
Time Off Btm: 2022.09.02 @ 11:17:15

TEST COMMENT: IF-30- 1" blow  
IS-45- No return  
FF-30-1 1/2" Blow  
FS-30-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2208.09	125.24	Initial Hydro-static
1	34.87	124.79	Open To Flow (1)
33	46.83	126.94	Shut-In(1)
78	702.42	128.93	End Shut-In(1)
79	60.86	128.74	Open To Flow (2)
114	74.67	130.23	Shut-In(2)
148	671.22	131.41	End Shut-In(2)
149	1903.35	131.77	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	20%oil 80%mud	0.30
60.00	50%oil 50%mud	0.31
5.00	100%oil	0.07

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 PO Box 783188  
 Wichita, KS 67278-3188  
 ATTN: Max Lovely

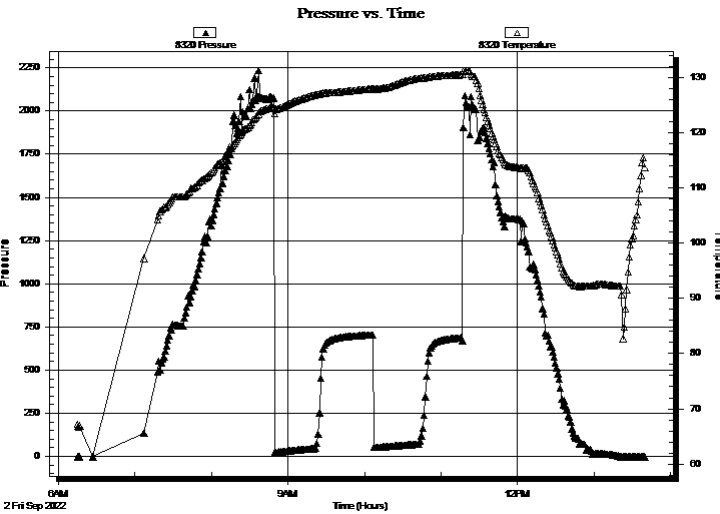
**15-19-31w Scott, KS**  
**Harkness 15D #1**  
 Job Ticket: 69771 **DST#: 1**  
 Test Start: 2022.09.02 @ 06:15:00

### GENERAL INFORMATION:

Formation: **LKC K**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 08:49:45 Tester: Terrance  
 Time Test Ended: 13:39:30 Unit No: 75  
 Interval: **4269.00 ft (KB) To 4310.00 ft (KB) (TVD)** Reference Elevations: 2953.00 ft (KB)  
 Total Depth: 4310.00 ft (KB) (TVD) 2946.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

**Serial #: 8320 Outside**  
 Press@RunDepth: psig @ 4270.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2022.09.02 End Date: 2022.09.02 Last Calib.: 1899.12.30  
 Start Time: 06:15:05 End Time: 13:39:44 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF-30- 1" blow  
 IS-45- No return  
 FF-30-1 1/2" Blow  
 FS-30-No return



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	20%oil 80%mud	0.30
60.00	50%oil 50%mud	0.31
5.00	100%oil	0.07

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69771      **DST#: 1**  
Test Start: 2022.09.02 @ 06:15:00

**Tool Information**

Drill Pipe:	Length: 4131.00 ft	Diameter: 3.79 inches	Volume: 57.64 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4269.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	72.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

**Tool Description**

**Length (ft)    Serial No.    Position    Depth (ft)    Accum. Lengths**

Change Over Sub	1.00			4239.00	
Shut In Tool	5.00			4244.00	
Hydraulic tool	5.00			4249.00	
Jars	5.00			4254.00	
EM Tool	3.00			4257.00	
Safety Joint	3.00			4260.00	
Packer	5.00			4265.00	31.00      Bottom Of Top Packer
Packer	4.00			4269.00	
Stubb	1.00			4270.00	
Recorder	0.00	8368	Inside	4270.00	
Recorder	0.00	8320	Outside	4270.00	
Perforations	3.00			4273.00	
Change Over Sub	1.00			4274.00	
Drill Pipe	32.00			4306.00	
Change Over Sub	1.00			4307.00	
Bullnose	3.00			4310.00	41.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>72.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69771      **DST#: 1**  
Test Start: 2022.09.02 @ 06:15:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 1.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	20%oil 80%mud	0.295
60.00	50%oil 50%mud	0.313
5.00	100%oil	0.070

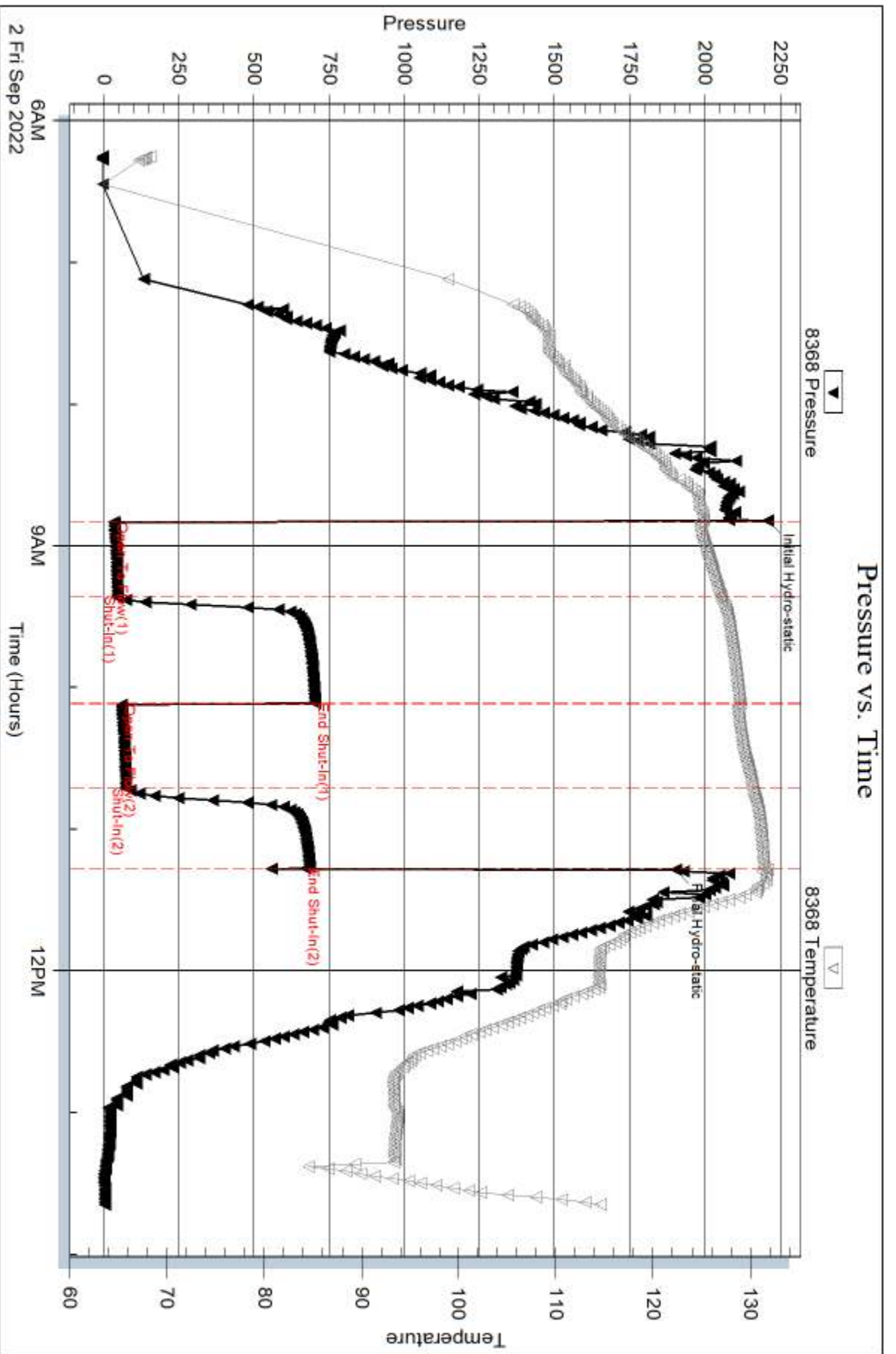
Total Length: 125.00 ft      Total Volume: 0.678 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:



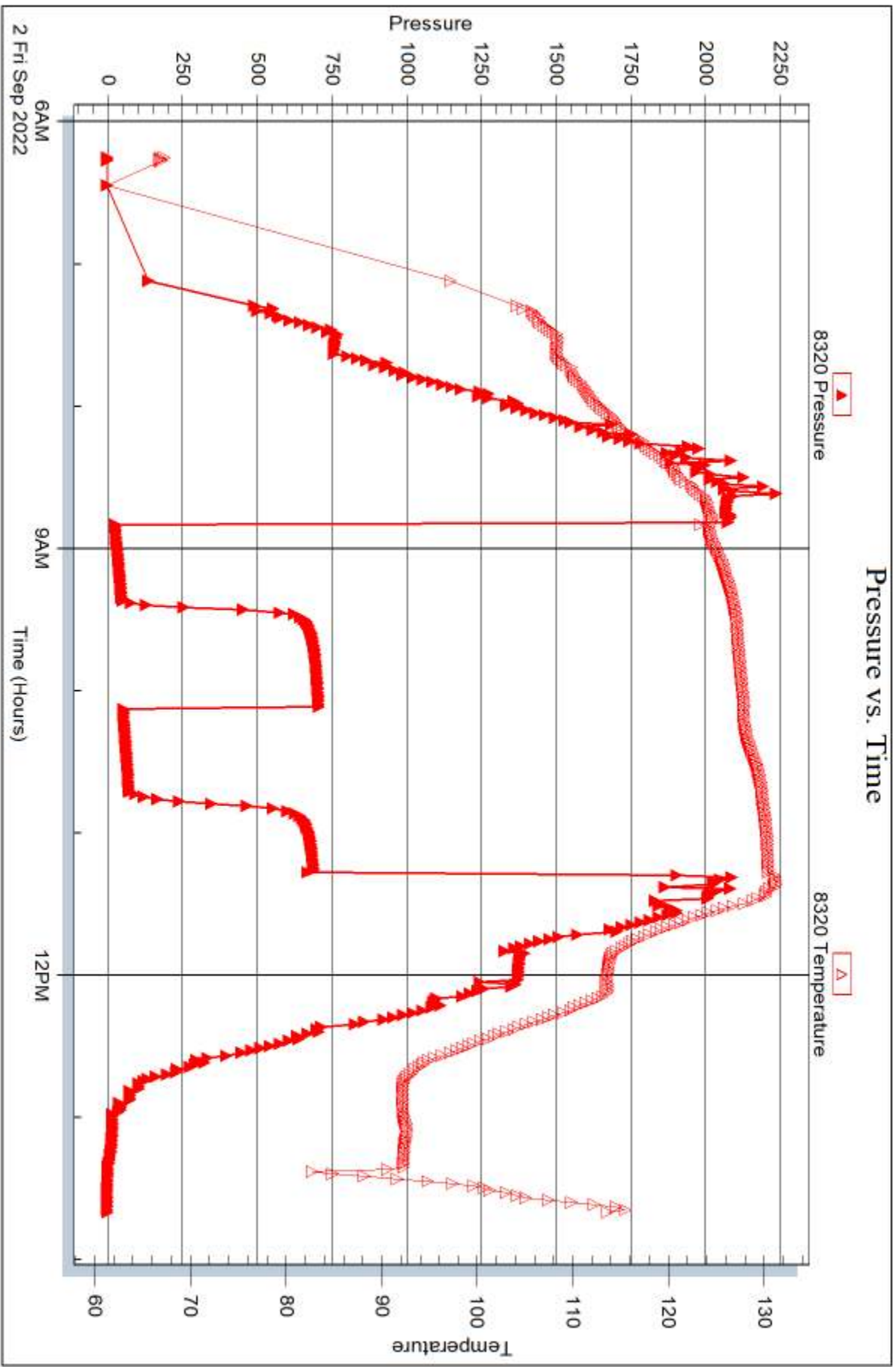


Serial #: 8320

Outside Ritchie Exploration

Harkness 15D #1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.03 @ 08:10:00

End Date: 2022.09.03 @ 14:44:45

Job Ticket #: 69772                      DST #: 2

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

Printed: 2022.09.09 @ 10:10:41



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 PO Box 783188  
 Wichita, KS 67278-3188  
 ATTN: Max Lovely

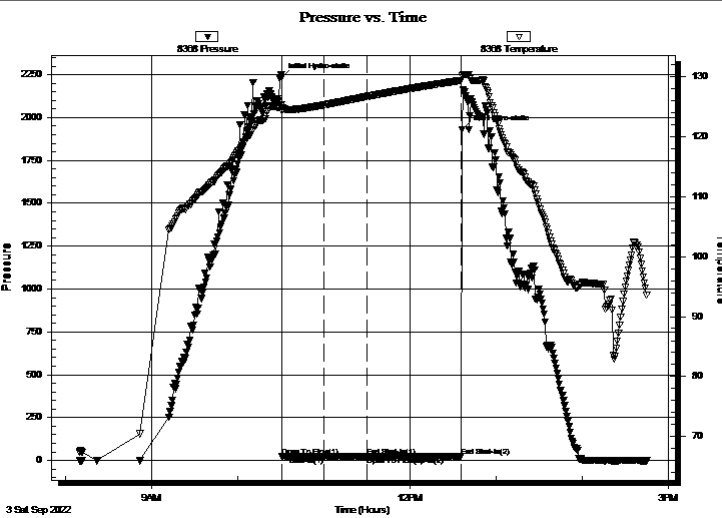
**15-19-31w Scott, KS**  
**Harkness 15D #1**  
 Job Ticket: 69772 **DST#: 2**  
 Test Start: 2022.09.03 @ 08:10:00

## GENERAL INFORMATION:

Formation: **Altamont**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:30:45  
 Time Test Ended: 14:44:45  
 Interval: **4390.00 ft (KB) To 4422.00 ft (KB) (TVD)**  
 Total Depth: 4422.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Terrance  
 Unit No: 75  
 Reference Elevations: 2953.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8368** **Inside**  
 Press@RunDepth: 22.45 psig @ 4391.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2022.09.03 End Date: 2022.09.03 Last Calib.: 2022.09.03  
 Start Time: 08:10:05 End Time: 14:44:44 Time On Btm: 2022.09.03 @ 10:30:30  
 Time Off Btm: 2022.09.03 @ 12:36:15

TEST COMMENT: IF-30-Surface blow  
 IS-30-No return  
 FF-30-Surface blow  
 FS-30-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.19	125.32	Initial Hydro-static
1	23.82	124.23	Open To Flow (1)
30	22.96	125.25	Shut-In(1)
60	23.80	126.65	End Shut-In(1)
60	23.81	126.67	Open To Flow (2)
90	22.45	127.97	Shut-In(2)
125	23.89	129.33	End Shut-In(2)
126	1929.18	130.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 PO Box 783188  
 Wichita, KS 67278-3188  
 ATTN: Max Lovely

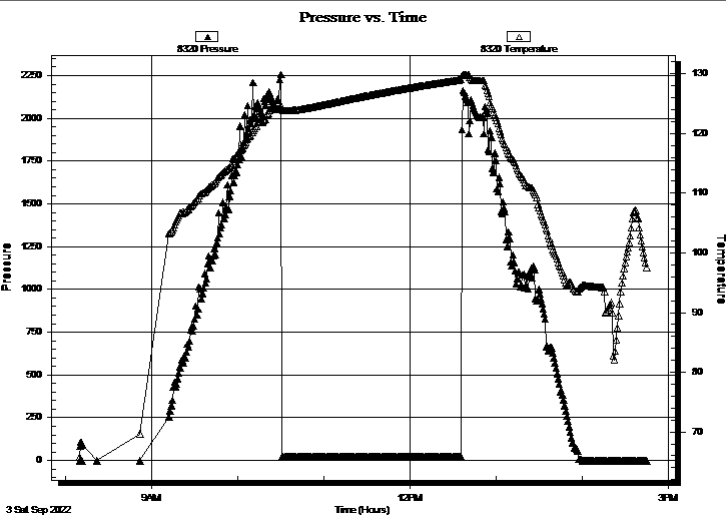
**15-19-31w Scott, KS**  
**Harkness 15D #1**  
 Job Ticket: 69772 **DST#: 2**  
 Test Start: 2022.09.03 @ 08:10:00

## GENERAL INFORMATION:

Formation: **Altamont**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:30:45  
 Time Test Ended: 14:44:45  
**Interval: 4390.00 ft (KB) To 4422.00 ft (KB) (TVD)**  
 Total Depth: 4422.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Terrance  
 Unit No: 75  
 Reference Elevations: 2953.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8320 Outside**  
 Press@RunDepth: psig @ 4391.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2022.09.03 End Date: 2022.09.03 Last Calib.: 1899.12.30  
 Start Time: 08:10:05 End Time: 14:44:44 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF-30-Surface blow  
 IS-30-No return  
 FF-30-Surface blow  
 FS-30-No return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69772      **DST#: 2**  
Test Start: 2022.09.03 @ 08:10:00

**Tool Information**

Drill Pipe:	Length: 4257.00 ft	Diameter: 3.79 inches	Volume: 59.40 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4390.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4360.00	
Shut In Tool	5.00			4365.00	
Hydraulic tool	5.00			4370.00	
Jars	5.00			4375.00	
EM Tool	3.00			4378.00	
Safety Joint	3.00			4381.00	
Packer	5.00			4386.00	31.00 Bottom Of Top Packer
Packer	4.00			4390.00	
Stubb	1.00			4391.00	
Recorder	0.00	8368	Inside	4391.00	
Recorder	0.00	8320	Outside	4391.00	
Perforations	28.00			4419.00	
Perforations	3.00			4422.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69772      **DST#: 2**  
Test Start: 2022.09.03 @ 08:10:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4500.00 ppm			
Filter Cake: 1.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

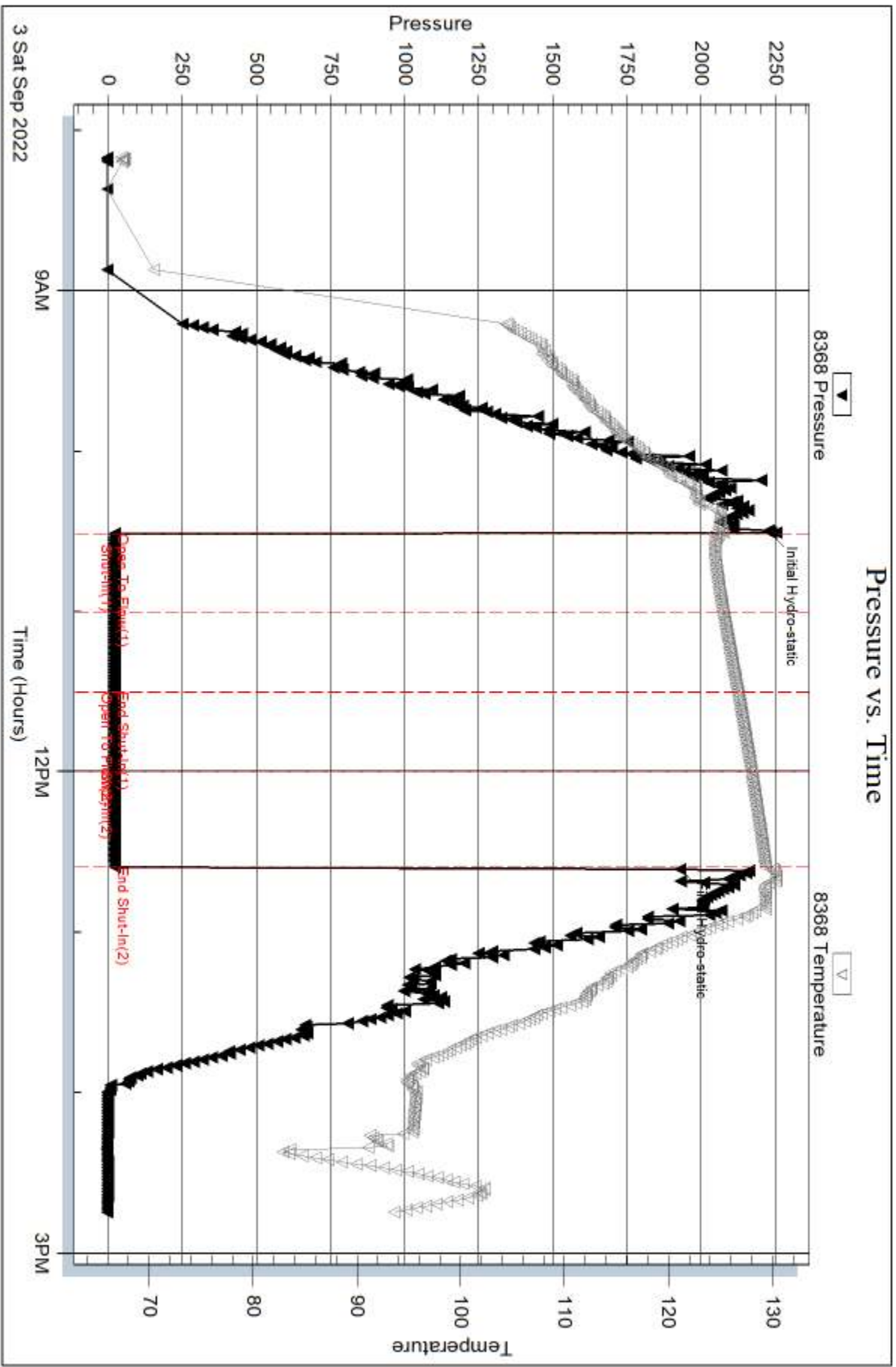
Serial #: 8368

Inside

Richie Exploration

Harkness 15D #1

DST Test Number: 2



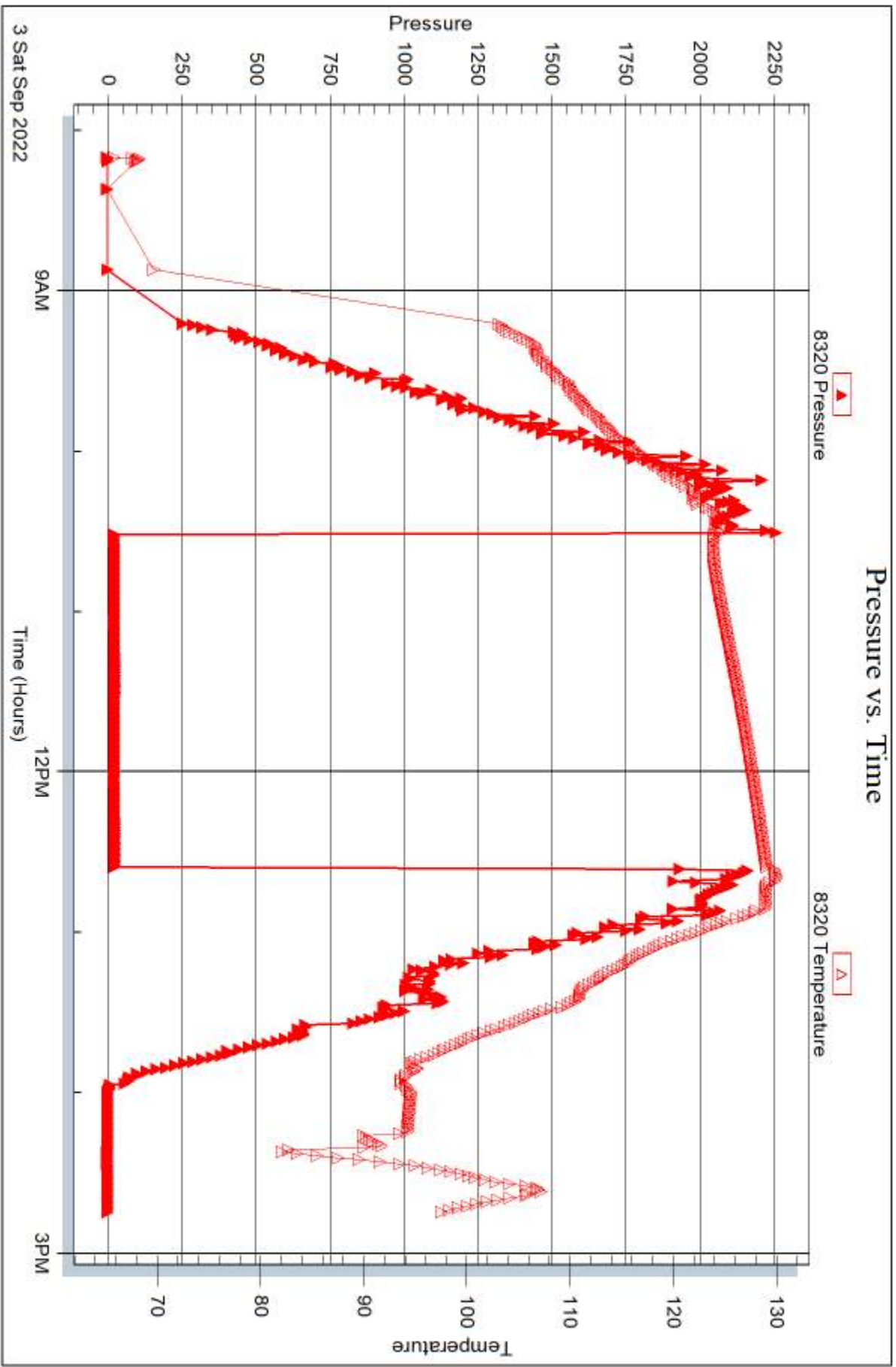


Serial #: 8320

Outside Ritchie Exploration

Harkness 15D #1

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.03 @ 21:45:00

End Date: 2022.09.04 @ 06:28:45

Job Ticket #: 69773                      DST #: 3

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

Printed: 2022.09.09 @ 10:08:41

Ritchie Exploration  
15-19-31w Scott,KS  
Harkness 15D #1  
DST # 3  
Altamont B  
2022.09.03



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

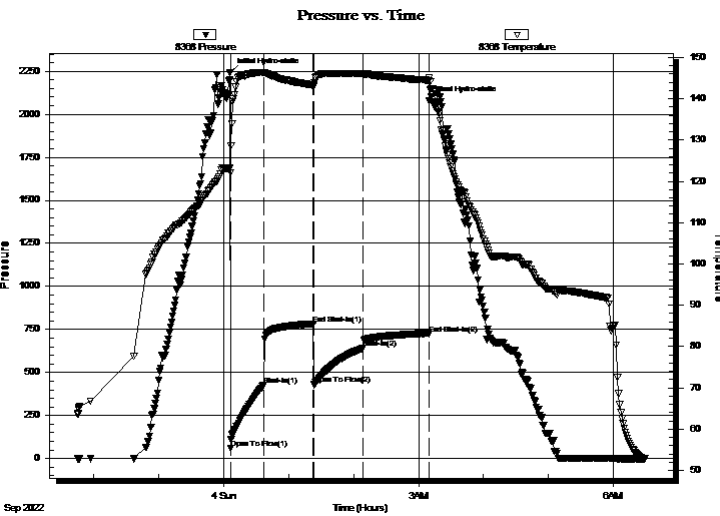
**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69773 **DST#: 3**  
Test Start: 2022.09.03 @ 21:45:00

## GENERAL INFORMATION:

Formation: **Altamont B**  
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 00:06:15 Tester: Terrance  
Time Test Ended: 06:28:45 Unit No: 75  
**Interval: 4419.00 ft (KB) To 4440.00 ft (KB) (TVD)** Reference Elevations: 2953.00 ft (KB)  
Total Depth: 4440.00 ft (KB) (TVD) 2946.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

**Serial #: 8368 Inside**  
Press@RunDepth: 640.95 psig @ 4420.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2022.09.03 End Date: 2022.09.04 Last Calib.: 2022.09.04  
Start Time: 21:45:05 End Time: 06:28:45 Time On Btm: 2022.09.04 @ 00:06:00  
Time Off Btm: 2022.09.04 @ 03:09:45

TEST COMMENT: IF-30-BOB 54"  
IS-45-No return  
FF-45-BOB 25"  
FS-60-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2243.49	123.22	Initial Hydro-static
1	58.88	122.14	Open To Flow (1)
32	427.53	146.30	Shut-In(1)
77	782.91	143.30	End Shut-In(1)
77	429.36	143.10	Open To Flow (2)
123	640.95	146.00	Shut-In(2)
184	721.45	144.38	End Shut-In(2)
184	2076.78	144.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1140.00	100% Water	14.84
120.00	80%Water 20%Mud	1.67
240.00	40%Water 60%Mud	3.35
1.00	oil	0.01

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

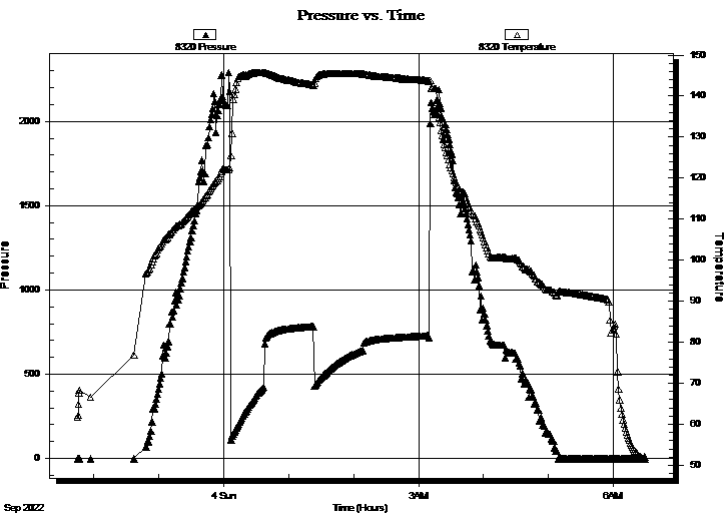
**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69773      **DST#: 3**  
Test Start: 2022.09.03 @ 21:45:00

## GENERAL INFORMATION:

Formation: **Altamont B**  
Deviated: No Whipstock:      ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 00:06:15      Tester: Terrance  
Time Test Ended: 06:28:45      Unit No: 75  
**Interval: 4419.00 ft (KB) To 4440.00 ft (KB) (TVD)**      Reference Elevations: 2953.00 ft (KB)  
Total Depth: 4440.00 ft (KB) (TVD)      2946.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 7.00 ft

**Serial #: 8320      Outside**  
Press@RunDepth:      psig @ 4420.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2022.09.03      End Date: 2022.09.04      Last Calib.: 1899.12.30  
Start Time: 21:45:05      End Time: 06:29:15      Time On Btm:  
Time Off Btm:

TEST COMMENT: IF-30-BOB 54"  
IS-45-No return  
FF-45-BOB 25"  
FS-60-No return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
1140.00	100% Water	14.84
120.00	80%Water 20%Mud	1.67
240.00	40%Water 60%Mud	3.35
1.00	oil	0.01

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69773      **DST#: 3**  
Test Start: 2022.09.03 @ 21:45:00

**Tool Information**

Drill Pipe:	Length: 4289.00 ft	Diameter: 3.79 inches	Volume: 59.85 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	4419.00 ft			Final	72000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	52.00 ft				
Number of Packers:	2	Diameter: 6.88 inches			

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4389.00	
Shut In Tool	5.00			4394.00	
Hydraulic tool	5.00			4399.00	
Jars	5.00			4404.00	
EM Tool	3.00			4407.00	
Safety Joint	3.00			4410.00	
Packer	5.00			4415.00	31.00      Bottom Of Top Packer
Packer	4.00			4419.00	
Stubb	1.00			4420.00	
Recorder	0.00	8368	Inside	4420.00	
Recorder	0.00	8320	Outside	4420.00	
Perforations	17.00			4437.00	
Bullnose	3.00			4440.00	21.00      Bottom Packers & Anchor

**Total Tool Length: 52.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69773      **DST#: 3**  
Test Start: 2022.09.03 @ 21:45:00

### Mud and Cushion Information

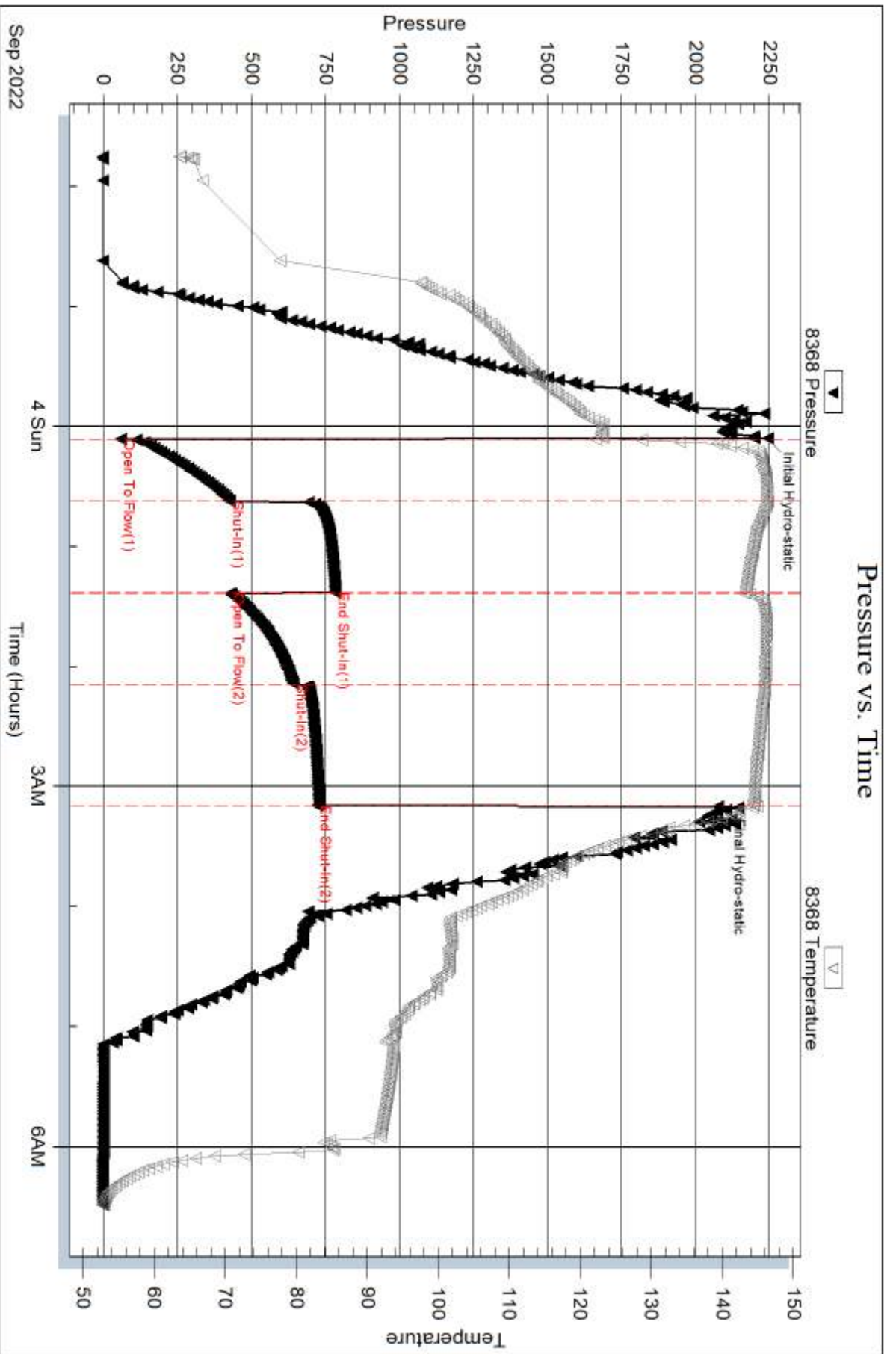
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 1.00 inches			

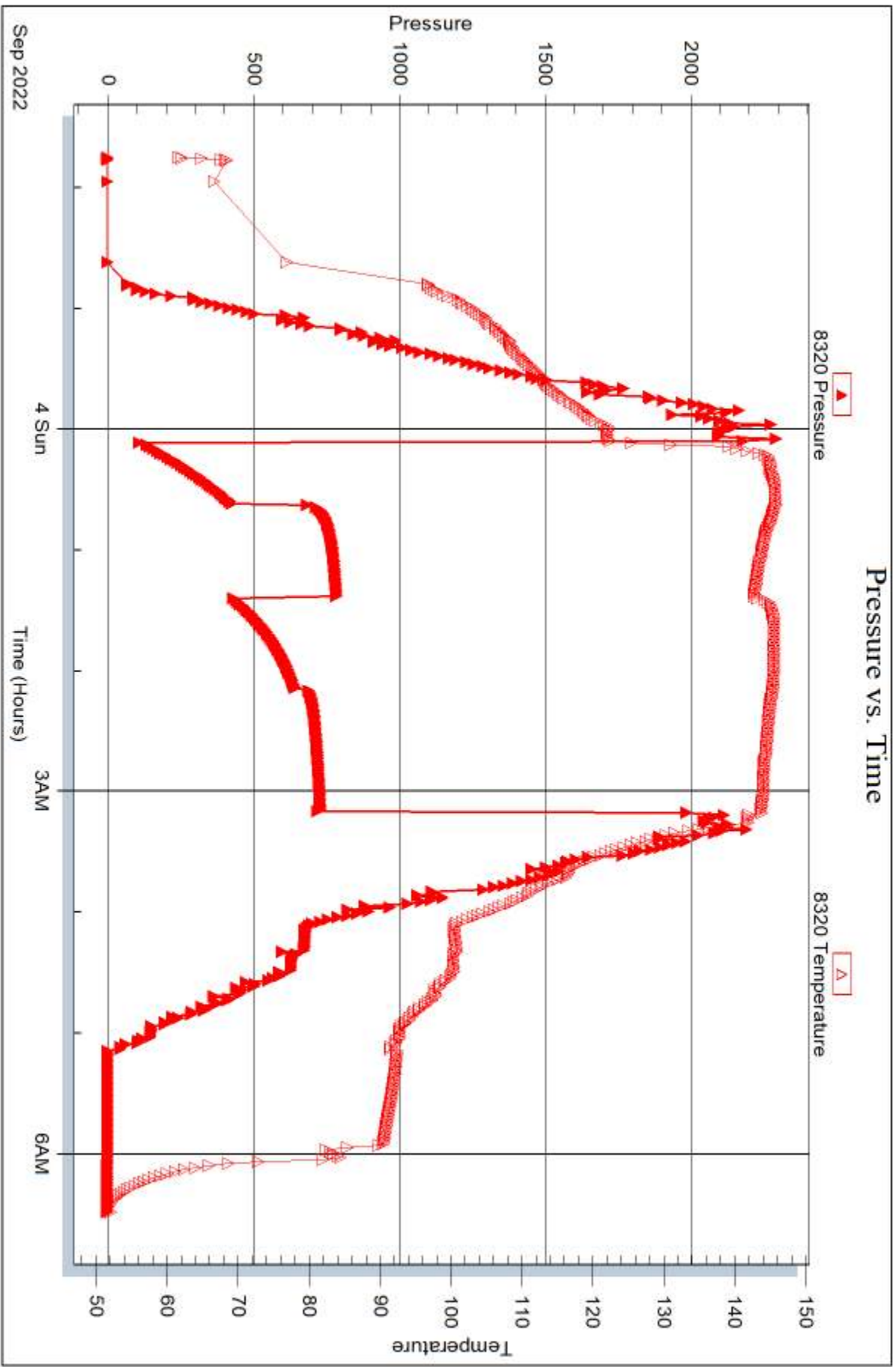
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1140.00	100% Water	14.841
120.00	80%Water 20%Mud	1.674
240.00	40%Water 60%Mud	3.349
1.00	oil	0.014

Total Length: 1501.00 ft      Total Volume: 19.878 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.04 @ 14:30:00

End Date: 2022.09.04 @ 23:15:00

Job Ticket #: 69774                      DST #: 4

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

Printed: 2022.09.09 @ 10:08:15



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69774      **DST#: 4**  
Test Start: 2022.09.04 @ 14:30:00

## GENERAL INFORMATION:

Formation: **Altamont C**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 17:23:45  
Time Test Ended: 23:15:00  
Interval: **4438.00 ft (KB) To 4464.00 ft (KB) (TVD)**  
Total Depth: 4464.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2953.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 7.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Terrance  
Unit No: 75

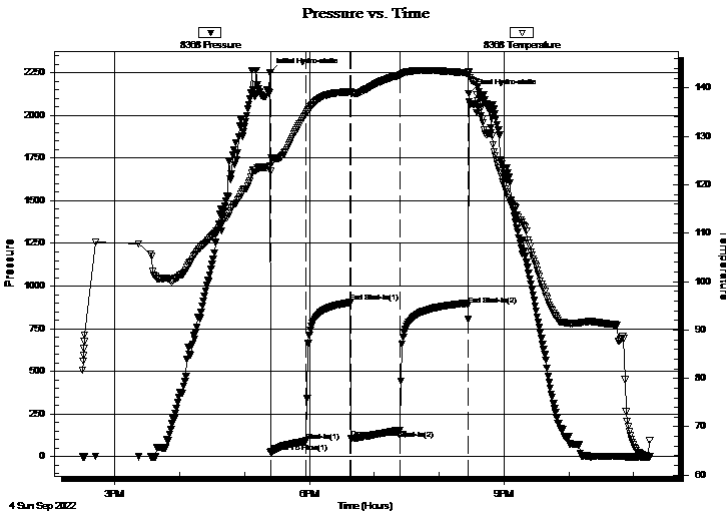
## Serial #: 8368

Inside

Press@RunDepth: 155.79 psig @ 4439.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2022.09.04      End Date: 2022.09.04      Last Calib.: 2022.09.04  
Start Time: 14:30:05      End Time: 23:15:00      Time On Btm: 2022.09.04 @ 17:23:30  
Time Off Btm: 2022.09.04 @ 20:27:15

TEST COMMENT: IF-30-6" blow  
IS-45-No return  
FF-45-No blow  
FS-60-No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2251.36	123.87	Initial Hydro-static
1	24.32	122.83	Open To Flow (1)
34	92.44	134.61	Shut-In(1)
75	903.62	139.19	End Shut-In(1)
75	108.67	138.93	Open To Flow (2)
121	155.79	142.67	Shut-In(2)
183	890.23	143.09	End Shut-In(2)
184	2128.04	143.44	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	100% w ater	1.45
60.00	80%w ater 20%mud	0.84
60.00	20%w ater 20%oil 60%mud	0.84
10.00	100%oil	0.14

\* Recovery from multiple tests

## Gas Rates

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



TRILOBITE  
TESTING, INC.

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69774 **DST#: 4**  
Test Start: 2022.09.04 @ 14:30:00

## GENERAL INFORMATION:

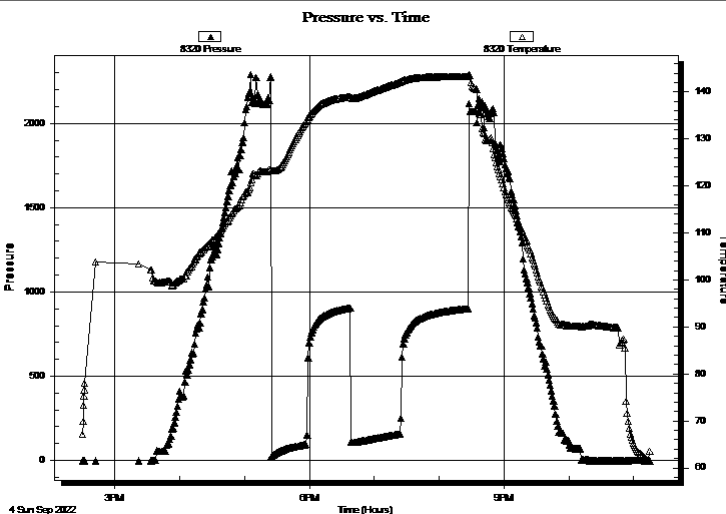
Formation: **Altamont C**  
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 17:23:45 Tester: Terrance  
Time Test Ended: 23:15:00 Unit No: 75  
  
Interval: **4438.00 ft (KB) To 4464.00 ft (KB) (TVD)** Reference Elevations: 2953.00 ft (KB)  
Total Depth: 4464.00 ft (KB) (TVD) 2946.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

**Serial #: 8320** **Outside**

Press@RunDepth: psig @ 4439.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2022.09.04 End Date: 2022.09.04 Last Calib.: 1899.12.30  
Start Time: 14:30:05 End Time: 23:15:15 Time On Btm:  
Time Off Btm:

TEST COMMENT: IF-30-6" blow  
IS-45-No return  
FF-45-No blow  
FS-60-No return

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	100% w ater	1.45
60.00	80%w ater 20%mud	0.84
60.00	20%w ater 20%oil 60%mud	0.84
10.00	100%oil	0.14

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69774      **DST#: 4**  
Test Start: 2022.09.04 @ 14:30:00

**Tool Information**

Drill Pipe:	Length: 4320.00 ft	Diameter: 3.79 inches	Volume: 60.28 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: - bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	lb
Depth to Top Packer:	4438.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	57.00 ft				
Number of Packers:	2	Diameter: 6.88 inches			

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			4408.00	
Shut In Tool	5.00			4413.00	
Hydraulic tool	5.00			4418.00	
Jars	5.00			4423.00	
EM Tool	3.00			4426.00	
Safety Joint	3.00			4429.00	
Packer	5.00			4434.00	31.00      Bottom Of Top Packer
Packer	4.00			4438.00	
Stubb	1.00			4439.00	
Recorder	0.00	8368	Inside	4439.00	
Recorder	0.00	8320	Outside	4439.00	
Perforations	22.00			4461.00	
Bullnose	3.00			4464.00	26.00      Bottom Packers & Anchor

**Total Tool Length: 57.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69774      **DST#: 4**  
Test Start: 2022.09.04 @ 14:30:00

### Mud and Cushion Information

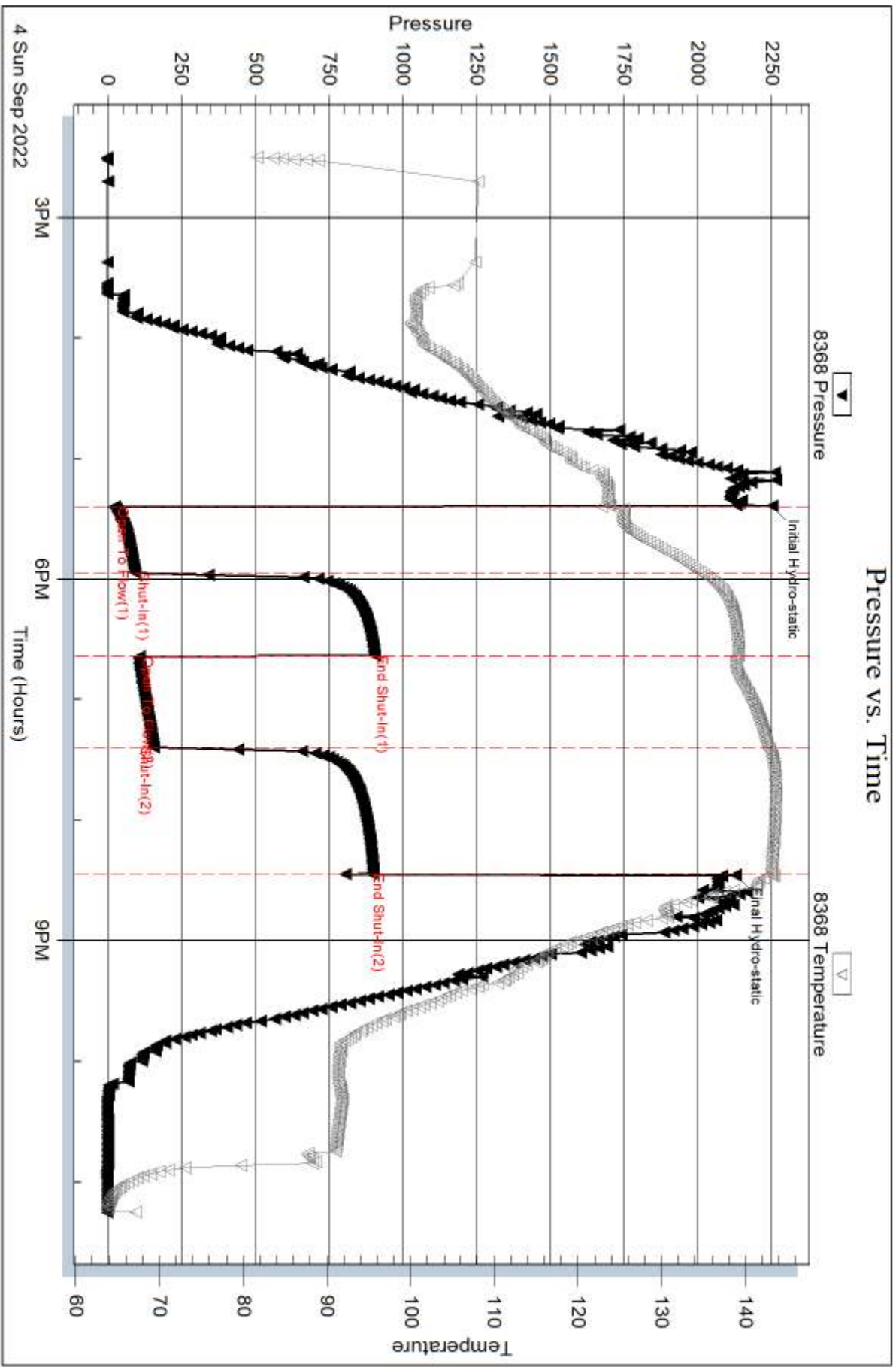
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	32000 ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: 1.00 inches			

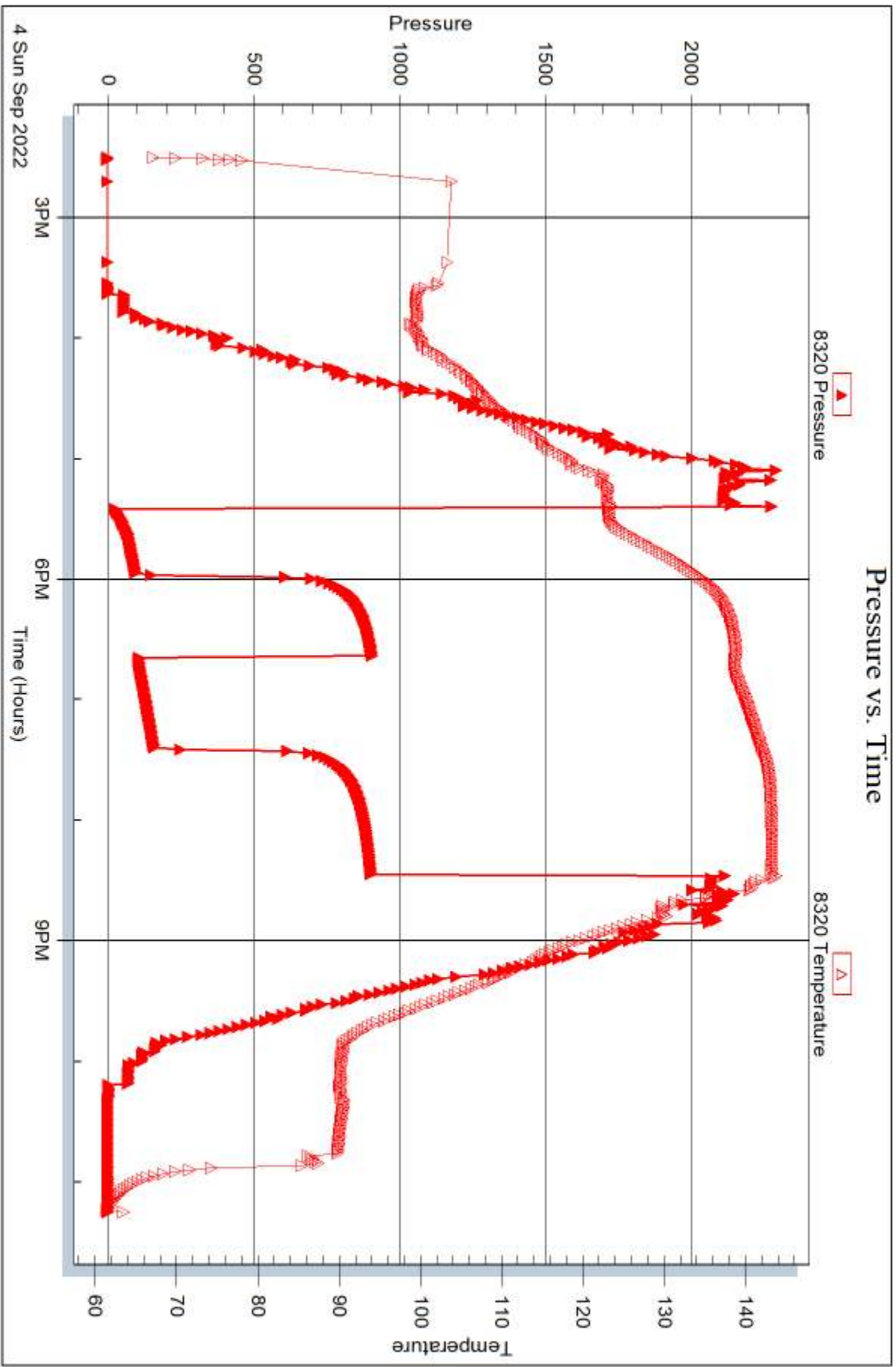
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	100% water	1.445
60.00	80% water 20% mud	0.837
60.00	20% water 20% oil 60% mud	0.837
10.00	100% oil	0.140

Total Length: 310.00 ft      Total Volume: 3.259 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.05 @ 08:50:00

End Date: 2022.09.05 @ 15:32:00

Job Ticket #: 69775                      DST #: 5

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

Printed: 2022.09.09 @ 10:06:44





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TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

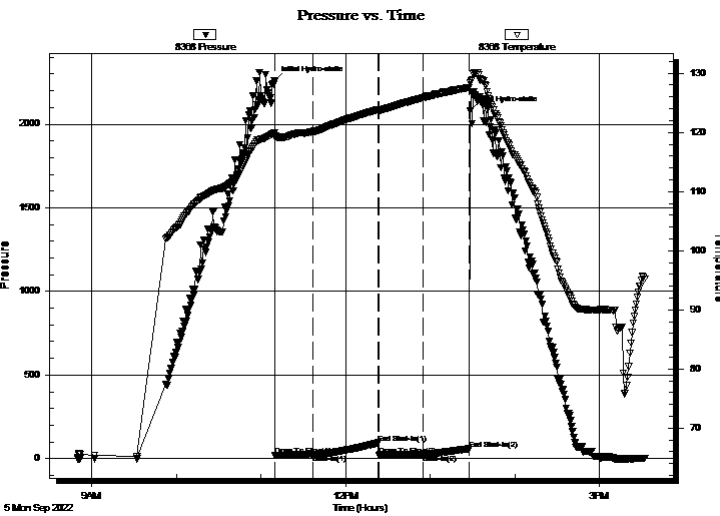
**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69775 **DST#: 5**  
Test Start: 2022.09.05 @ 08:50:00

## GENERAL INFORMATION:

Formation: **Pawnee-Myrick**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 11:09:45  
Time Test Ended: 15:32:00  
Interval: **4466.00 ft (KB) To 4514.00 ft (KB) (TVD)**  
Total Depth: 4514.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Terrance  
Unit No: 75  
Reference Elevations: 2953.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8368** Inside  
Press@RunDepth: 22.50 psig @ 4467.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2022.09.05 End Date: 2022.09.05 Last Calib.: 2022.09.05  
Start Time: 08:50:05 End Time: 15:31:59 Time On Btm: 2022.09.05 @ 11:09:30  
Time Off Btm: 2022.09.05 @ 13:28:15

TEST COMMENT: IF-30-Surface blow  
IS-45-No return  
FF-30-Surface blow died in 5 min  
FS-30-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2258.57	119.96	Initial Hydro-static
1	20.49	119.28	Open To Flow (1)
27	24.39	120.10	Shut-In(1)
74	93.88	123.85	End Shut-In(1)
75	19.18	123.68	Open To Flow (2)
106	22.50	125.85	Shut-In(2)
139	58.06	127.61	End Shut-In(2)
139	2082.25	128.37	Final Hydro-static

## Recovery

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

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69775      **DST#: 5**  
Test Start: 2022.09.05 @ 08:50:00

**Tool Information**

Drill Pipe:	Length: 4322.00 ft	Diameter: 3.79 inches	Volume: 60.31 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4466.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	79.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			4436.00	
Shut In Tool	5.00			4441.00	
Hydraulic tool	5.00			4446.00	
Jars	5.00			4451.00	
EM Tool	3.00			4454.00	
Safety Joint	3.00			4457.00	
Packer	5.00			4462.00	31.00      Bottom Of Top Packer
Packer	4.00			4466.00	
Stubb	1.00			4467.00	
Recorder	0.00	8368	Inside	4467.00	
Recorder	0.00	8320	Outside	4467.00	
Perforations	1.00			4468.00	
Change Over Sub	1.00			4469.00	
Drill Pipe	32.00			4501.00	
Change Over Sub	1.00			4502.00	
Perforations	9.00			4511.00	
Bullnose	3.00			4514.00	48.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>79.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69775      **DST#: 5**  
Test Start: 2022.09.05 @ 08:50:00

### Mud and Cushion Information

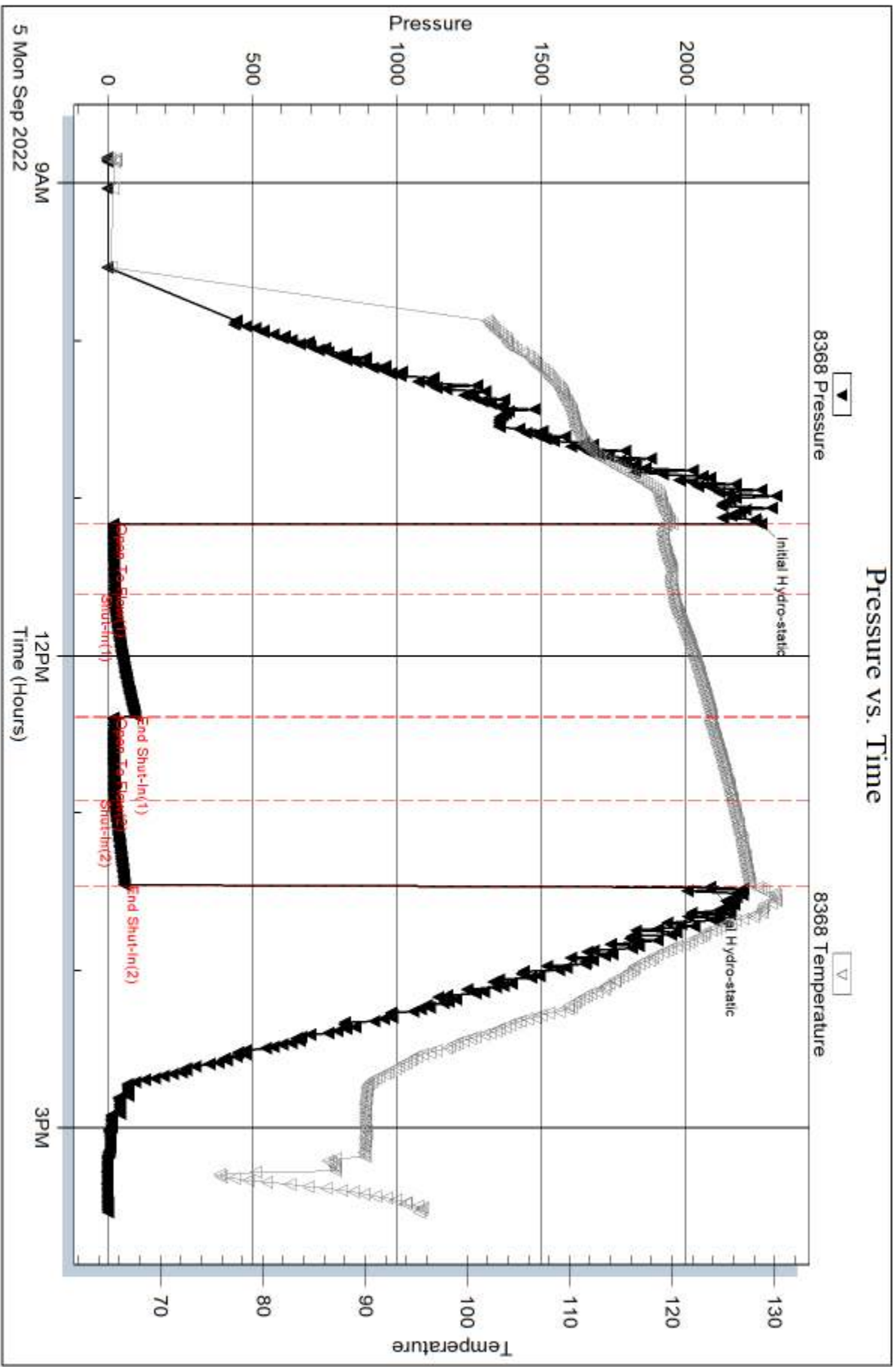
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4500.00 ppm			
Filter Cake: 1.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

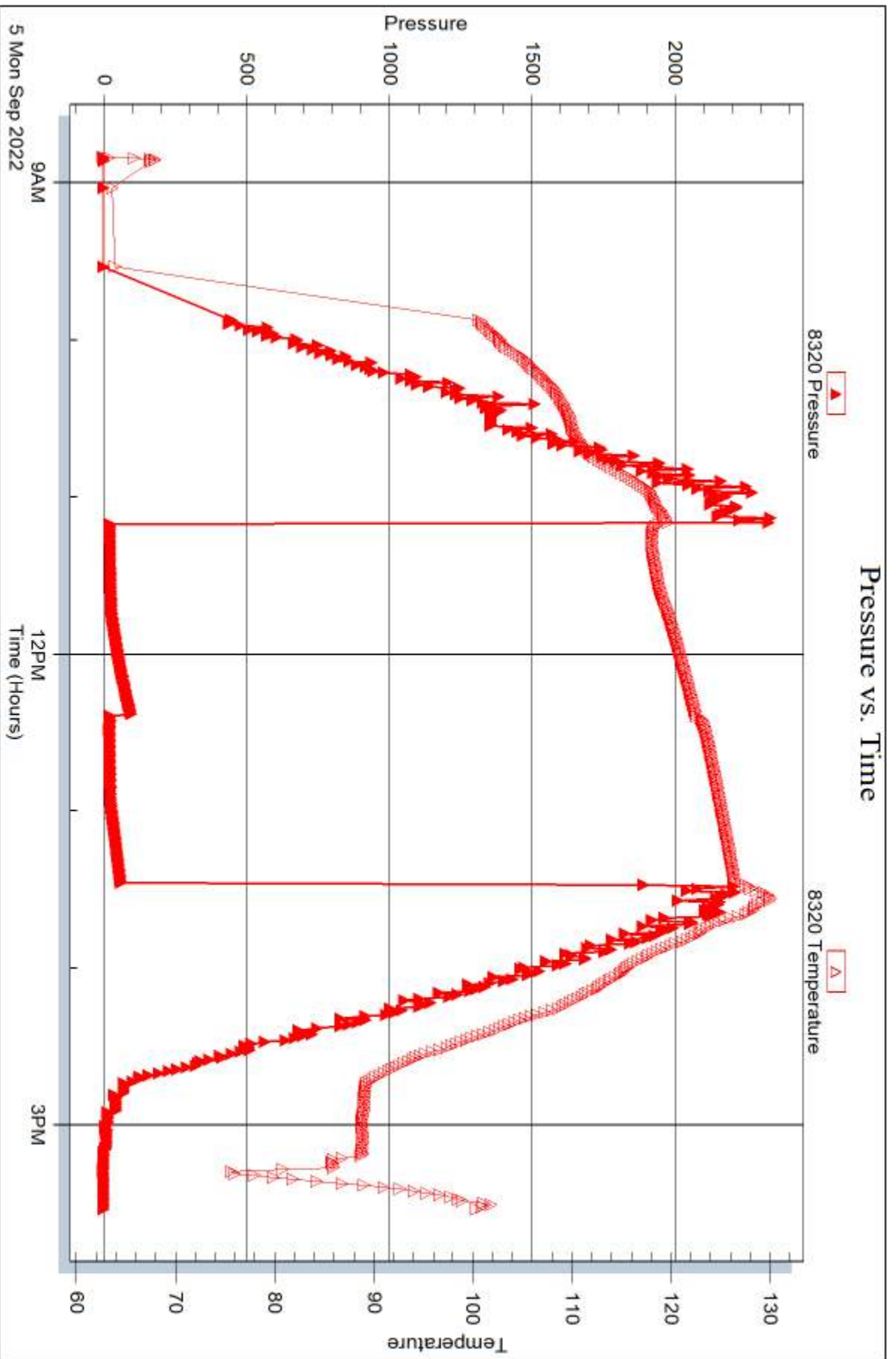


Serial #: 8320

Outside Ritchie Exploration

Harkness 15D #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 69775

Printed: 2022.09.09 @ 10:06:45



## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.06 @ 06:15:00

End Date: 2022.09.06 @ 12:51:45

Job Ticket #: 69851                      DST #: 6

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

Printed: 2022.09.09 @ 10:05:26



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 PO Box 783188  
 Wichita, KS 67278-3188  
 ATTN: Max Lovely

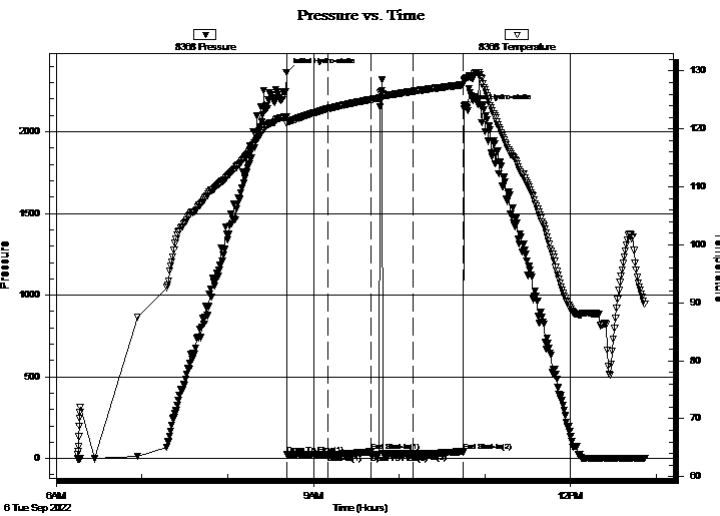
**15-19-31w Scott,KS**  
**Harkness 15D #1**  
 Job Ticket: 69851      **DST#: 6**  
 Test Start: 2022.09.06 @ 06:15:00

## GENERAL INFORMATION:

Formation: **FT Scott - Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:41:30  
 Time Test Ended: 12:51:45  
 Interval: **4508.00 ft (KB) To 4582.00 ft (KB) (TVD)**  
 Total Depth: 4582.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Terrance  
 Unit No: 75  
 Reference Elevations: 2953.00 ft (KB)  
 2946.00 ft (CF)  
 KB to GR/CF: 7.00 ft

**Serial #: 8368**      **Inside**  
 Press@RunDepth: 29.71 psig @ 4514.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2022.09.06      End Date: 2022.09.06      Last Calib.: 2022.09.06  
 Start Time: 06:15:05      End Time: 12:51:44      Time On Btm: 2022.09.06 @ 08:41:15  
 Time Off Btm: 2022.09.06 @ 10:45:30

TEST COMMENT: IF-30-No blow  
 IS-30-No return  
 FF-30-No blow . Flushed tool - surface blow  
 IS-30-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2362.89	122.12	Initial Hydro-static
1	24.23	120.93	Open To Flow (1)
29	25.96	123.49	Shut-In(1)
59	41.13	125.09	End Shut-In(1)
60	25.33	125.09	Open To Flow (2)
89	29.71	126.51	Shut-In(2)
124	43.48	127.63	End Shut-In(2)
125	2141.83	128.38	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69851      **DST#: 6**  
Test Start: 2022.09.06 @ 06:15:00

**Tool Information**

Drill Pipe:	Length: 4385.00 ft	Diameter: 3.79 inches	Volume: 61.19 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 90000.00 lb
		Total Volume: - bbl		Tool Chased ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4508.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	74.00 ft			
Tool Length:	105.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			4478.00	
Shut In Tool	5.00			4483.00	
Hydraulic tool	5.00			4488.00	
Jars	5.00			4493.00	
EM Tool	3.00			4496.00	
Safety Joint	3.00			4499.00	
Packer	5.00			4504.00	31.00      Bottom Of Top Packer
Packer	4.00			4508.00	
Stubb	1.00			4509.00	
Perforations	5.00			4514.00	
Recorder	0.00	8368	Inside	4514.00	
Recorder	0.00	8320	Outside	4514.00	
Change Over Sub	1.00			4515.00	
Drill Pipe	63.00			4578.00	
Change Over Sub	1.00			4579.00	
Bullnose	3.00			4582.00	74.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>		<b>105.00</b>			



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69851      **DST#: 6**  
Test Start: 2022.09.06 @ 06:15:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4500.00 ppm			
Filter Cake: 2.00 inches			

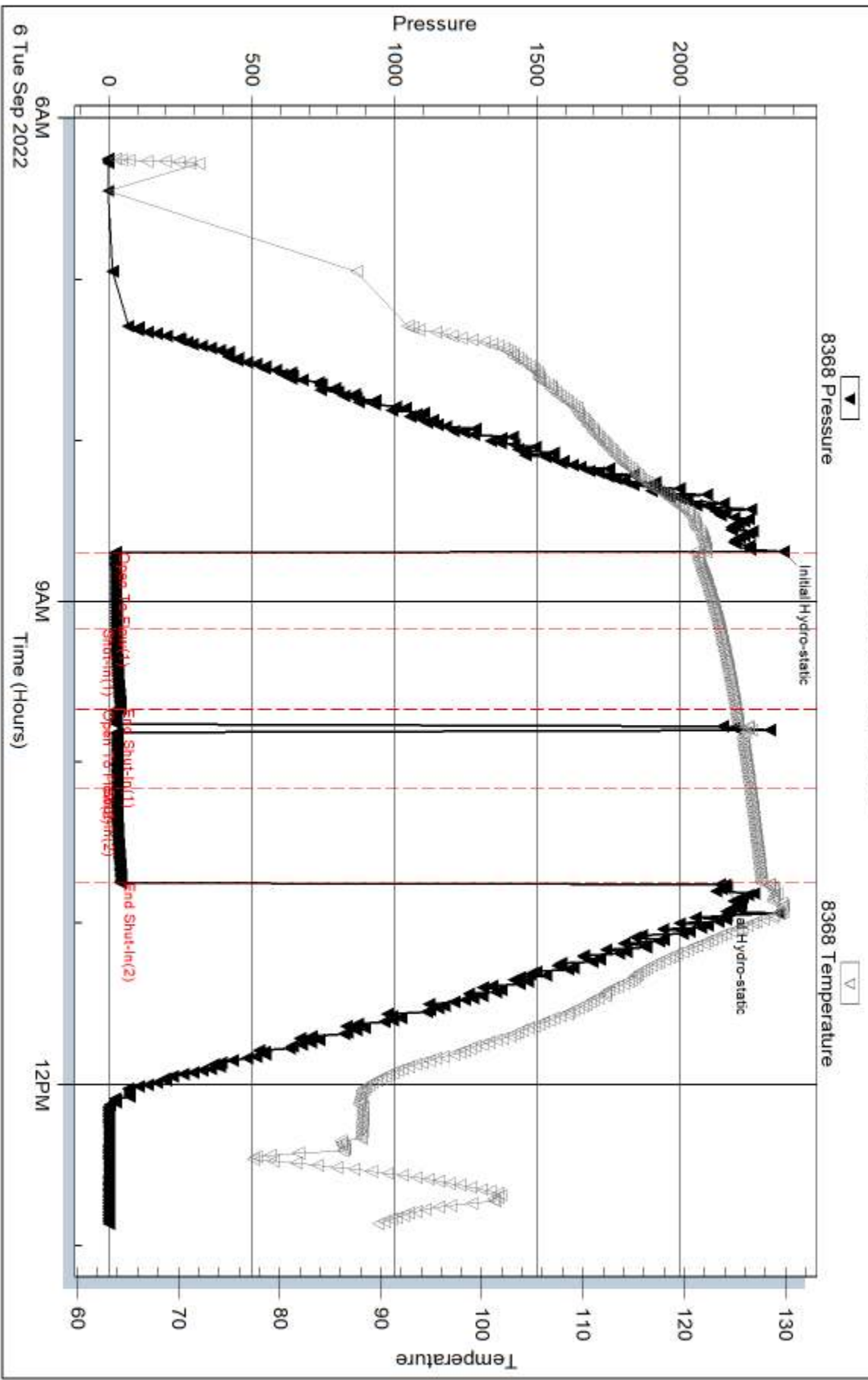
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time

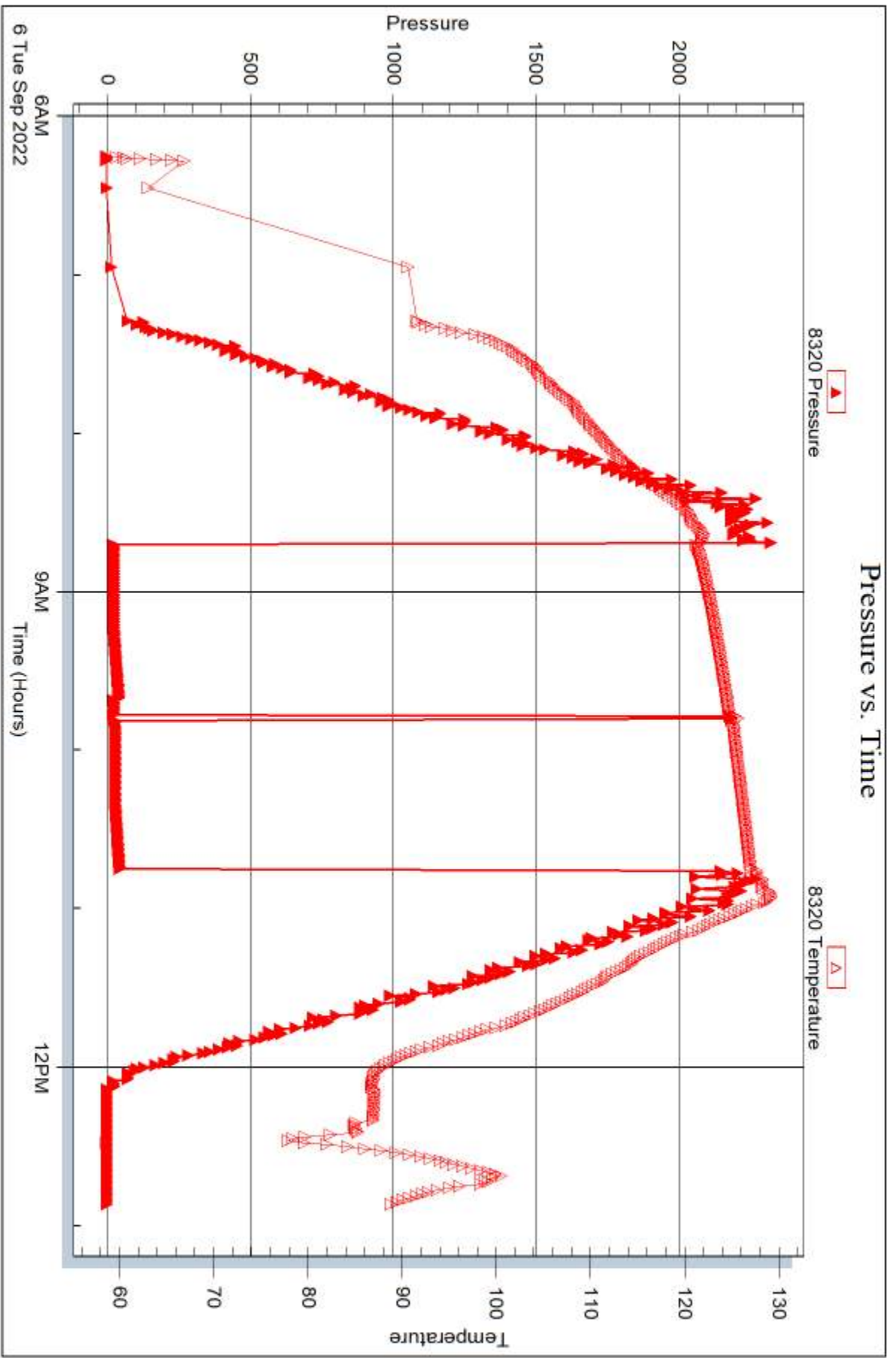


Serial #: 8320

Outside Ritchie Exploration

Harkness 15D #1

DST Test Number: 6





## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

PO Box 783188  
Wichita, KS 67278-3188

ATTN: Max Lovely

### **Harkness 15D #1**

### **15-19-31w Scott,KS**

Start Date: 2022.09.06 @ 21:25:00

End Date: 2022.09.07 @ 04:01:45

Job Ticket #: 69852                      DST #: 7

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

Printed: 2022.09.09 @ 10:04:50



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

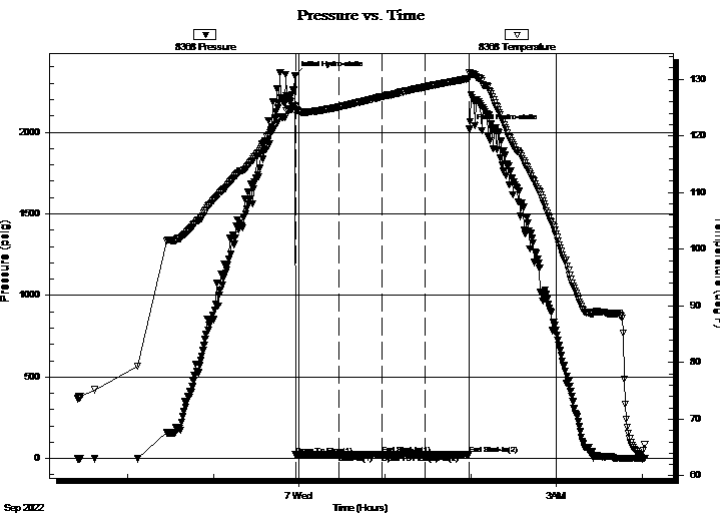
**15-19-31w Scott,KS**  
**Harkness 15D #1**  
Job Ticket: 69852      **DST#: 7**  
Test Start: 2022.09.06 @ 21:25:00

## GENERAL INFORMATION:

Formation: **Morrow**  
Deviated: No Whipstock:                      ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 23:57:30      Tester: Terrance  
Time Test Ended: 04:01:45      Unit No: 75  
**Interval: 4578.00 ft (KB) To 4610.00 ft (KB) (TVD)**      Reference Elevations: 2953.00 ft (KB)  
Total Depth: 4610.00 ft (KB) (TVD)      2946.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 7.00 ft

**Serial #: 8368      Inside**  
Press@RunDepth: 23.67 psig @ 4584.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2022.09.06      End Date: 2022.09.07      Last Calib.: 2022.09.07  
Start Time: 21:25:05      End Time: 04:01:44      Time On Btm: 2022.09.06 @ 23:57:15  
Time Off Btm: 2022.09.07 @ 01:59:15

TEST COMMENT: IF-30- Surface blow died in 20 min  
IS-30-No return  
FF-30-No blow  
FS-30-No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2349.29	125.26	Initial Hydro-static
1	22.19	124.10	Open To Flow (1)
31	23.66	125.12	Shut-In(1)
61	25.64	126.89	End Shut-In(1)
61	23.34	126.90	Open To Flow (2)
91	23.67	128.62	Shut-In(2)
122	25.11	130.13	End Shut-In(2)
122	2019.76	131.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration  
PO Box 783188  
Wichita , KS 67278-3188  
ATTN: Max Lovely

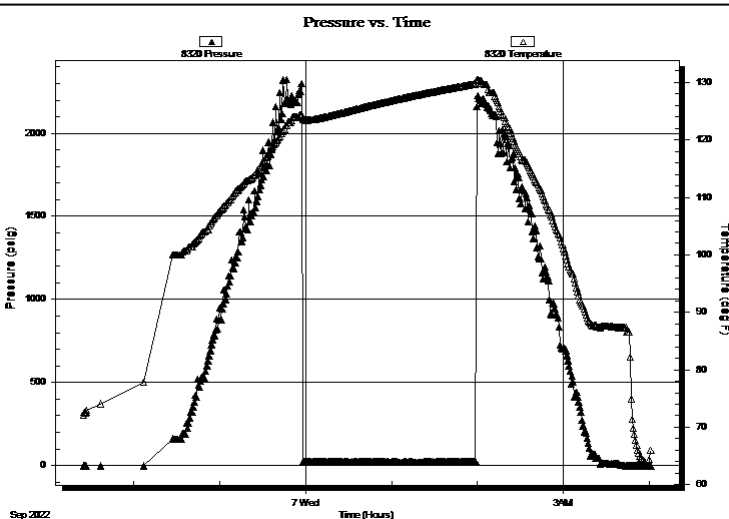
**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69852      **DST#: 7**  
Test Start: 2022.09.06 @ 21:25:00

## GENERAL INFORMATION:

Formation: **Morrow**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 23:57:30  
Time Test Ended: 04:01:45  
Interval: **4578.00 ft (KB) To 4610.00 ft (KB) (TVD)**  
Total Depth: 4610.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2953.00 ft (KB)  
2946.00 ft (CF)  
KB to GR/CF: 7.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Terrance  
Unit No: 75

**Serial #: 8320**      **Outside**  
Press@RunDepth: psig @ 4584.00 ft (KB)  
Start Date: 2022.09.06      End Date: 2022.09.07  
Start Time: 21:25:05      End Time: 04:01:29  
Capacity: 8000.00 psig  
Last Calib.: 1899.12.30  
Time On Btm:  
Time Off Btm:

TEST COMMENT: IF-30- Surface blow died in 20 min  
IS-30-No return  
FF-30-No blow  
FS-30-No return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud	0.00

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69852      **DST#: 7**  
Test Start: 2022.09.06 @ 21:25:00

## Tool Information

Drill Pipe:	Length: 4443.00 ft	Diameter: 3.79 inches	Volume: 62.00 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4578.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.88 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4548.00	
Shut In Tool	5.00			4553.00	
Hydraulic tool	5.00			4558.00	
Jars	5.00			4563.00	
EM Tool	3.00			4566.00	
Safety Joint	3.00			4569.00	
Packer	5.00			4574.00	31.00 Bottom Of Top Packer
Packer	4.00			4578.00	
Stubb	1.00			4579.00	
Perforations	5.00			4584.00	
Recorder	0.00	8368	Inside	4584.00	
Recorder	0.00	8320	Outside	4584.00	
Perforations	23.00			4607.00	
Bullnose	3.00			4610.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
PO Box 783188  
Wichita, KS 67278-3188  
ATTN: Max Lovely

**15-19-31w Scott, KS**  
**Harkness 15D #1**  
Job Ticket: 69852      **DST#: 7**  
Test Start: 2022.09.06 @ 21:25:00

## Mud and Cushion Information

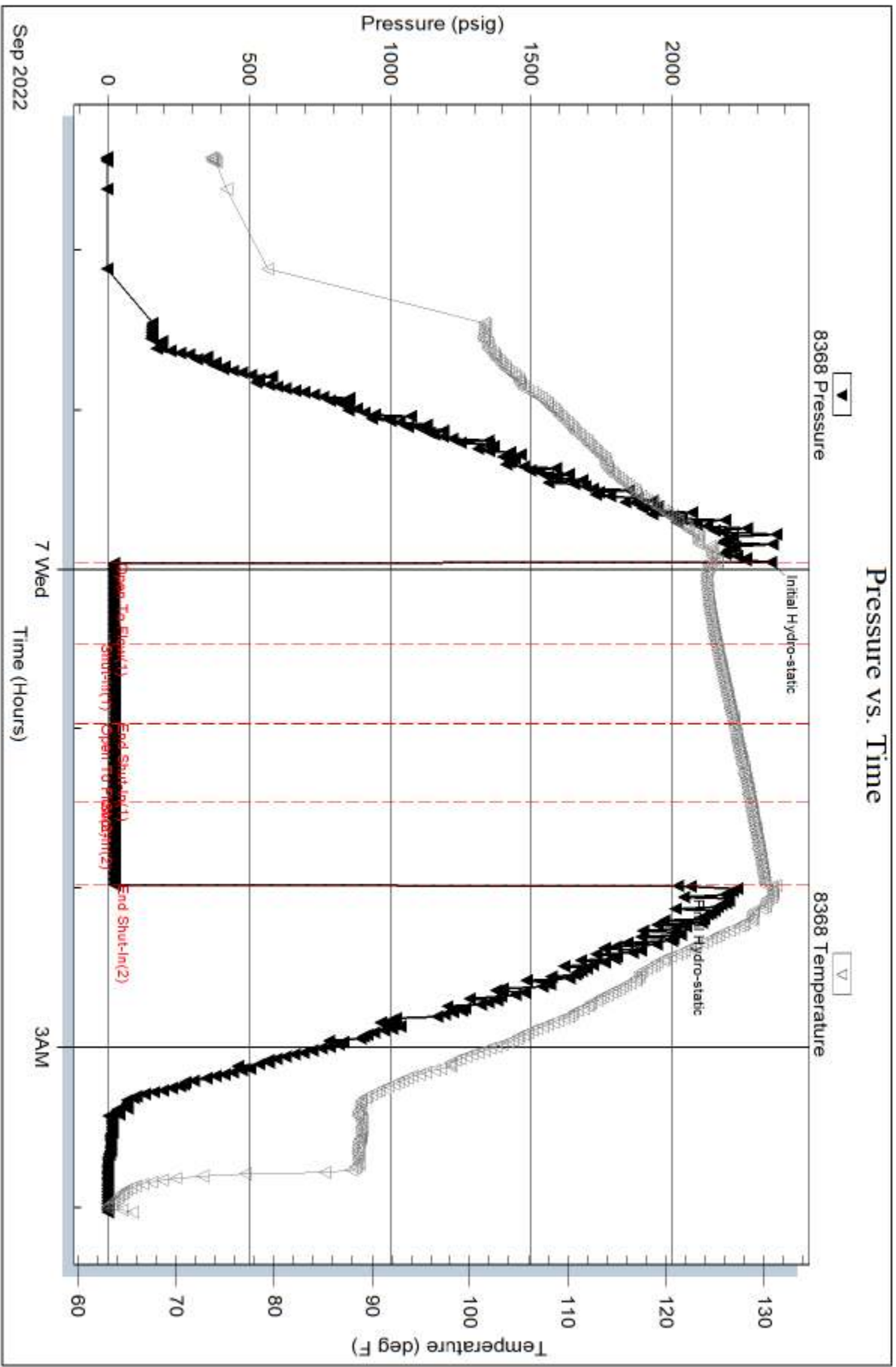
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	mud	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

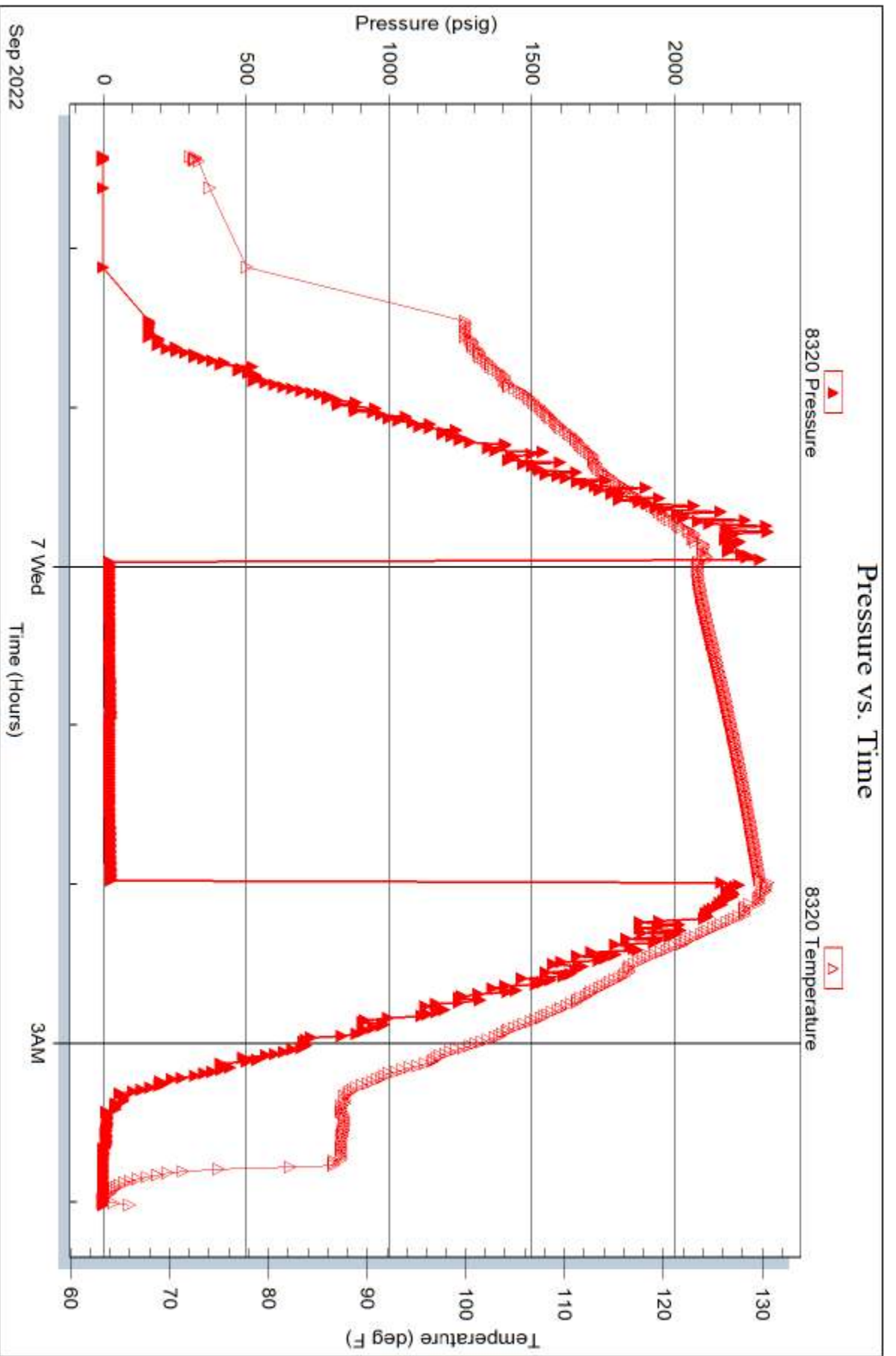


Serial #: 8320

Outside Ritchie Exploration

Harkness 15D #1

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 69852

Printed: 2022.09.09 @ 10:04:51



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69771

Well Name & No. Huckness 15D #1 Test No. 1 Date 9-2-22  
 Company Ritchie Exploration Elevation 2953 KB 2946 GL  
 Address P.O. Box 83188 Wichita, KS 67278 + 3188  
 Co. Rep / Geo. Max Lovely Rig STP #1  
 Location: Sec. 15 Twp 19 Rge. 31w Co. Scott State KS

Interval Tested 4269 - 4310 Zone Tested ~~4210~~ Lansing "K"  
 Anchor Length 41 Drill Pipe Run 4131 Mud Wt. 9.2  
 Top Packer Depth 4264 Drill Collars Run 118 Vis 56  
 Bottom Packer Depth 4269 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4310 Chlorides 2500 ppm System LCM 1#

Blow Description IF = 30 - 1" Blow  
ISI = 45 - No Return  
FF = 30 = 1 1/2 Blow  
FSI = 30 - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>			<u>20%</u>	<u>80%</u>	
<u>60</u>			<u>50%</u>	<u>50%</u>	
<u>5</u>			<u>100%</u>		

Rec Total 125 BHT 130 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2208  Test 1950 T-On Location 4:30  
 (B) First Initial Flow 35  Jars 300 T-Started 6:15  
 (C) First Final Flow ~~72~~ 44  Safety Joint \_\_\_\_\_ T-Open 8:50  
 (D) Initial Shut-In ~~72~~ 702  Circ Sub \_\_\_\_\_ T-Pulled 11:05  
 (E) Second Initial Flow ~~61~~ 61  Hourly Standby \_\_\_\_\_ T-Out 13:41  
 (F) Second Final Flow ~~75~~ 75  Mileage 16X2 48 Comments Full Perdiem  
 (G) Final Shut-In 671  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1903  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Sub Total 0  
 Sub Total 2298  Accessibility \_\_\_\_\_ Total 2298  
 MP/DST Disc't \_\_\_\_\_

Approved By Max Lovely Our Representative Terrance Wickham

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



# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **69772**

Well Name & No. Harkness 15 D Test No. 2 Date 9-3-22  
 Company Ritchie Exploration Elevation 2953 KB 2944 GL  
 Address P.O. Box 783188 Wichita, KS, 67278 + 3188  
 Co. Rep / Geo. Max Lovely Rig STP 2  
 Location: Sec. 15 Twp 19 Rge. 31W Co. Scott State KS

Interval Tested 4390-4420 Zone Tested Altamont  
 Anchor Length 32 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.4  
 Top Packer Depth 4385 Drill Collars Run 118 Vis 76  
 Bottom Packer Depth 4390 Wt. Pipe Run \_\_\_\_\_ WL 8.0  
 Total Depth 4420 Chlorides 4600 ppm System LCM 1  
 Blow Description IF-30 - Surface Blow  
ISI-30 - No Return  
FS-30 - Surface Blow  
FST-30 - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>				<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1 BHT 129 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2234  Test 1950 T-On Location 7:00  
 (B) First Initial Flow 24  Jars 300 T-Started 8:10  
 (C) First Final Flow 23  Safety Joint \_\_\_\_\_ T-Open 10:30  
 (D) Initial Shut-In 24  Circ Sub \_\_\_\_\_ T-Pulled 12:30  
 (E) Second Initial Flow 24  Hourly Standby \_\_\_\_\_ T-Out 14:45  
 (F) Second Final Flow 22  Mileage 16x2 48 Comments Full Perdiem  
 (G) Final Shut-In 24  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1929  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 2298  
 Sub Total 2298 MP/DST Disc't \_\_\_\_\_

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **69773**

Well Name & No. Harkness 15D #1 Test No. 1 Date 9-3-22  
 Company Ritchie Exploration Elevation 2953 KB 2946 GL  
 Address P.O. Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig STP 1  
 Location: Sec. 15 Twp 19 Rge. 31w Co. Scott State KS

Interval Tested 4419 - 4440 Zone Tested Altamont "B"  
 Anchor Length ~~4413~~ 21 Drill Pipe Run 4289 Mud Wt. 9.6  
 Top Packer Depth ~~4419~~ 4415 Drill Collars Run 1/8 Vis 76  
 Bottom Packer Depth ~~2~~ 4419 Wt. Pipe Run ~~4289~~ WL 8.8  
 Total Depth 4440 Chlorides 4600 ppm System LCM 1#  
 Blow Description FF-30-BOB 54 inches  
RSI-45- No Return  
FF-45-BOB 25 inches  
RSI-60- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>240</u>			<u>40</u>	<u>60</u>	
<u>120</u>			<u>80</u>	<u>20</u>	
<u>1140</u>			<u>100</u>		
<u>1</u>		<u>100</u>			

Rec Total 1500 BHT 145 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2243  Test 1950 T-On Location 9:00 21:00  
 (B) First Initial Flow 59  Jars 300 T-Started 21:45  
 (C) First Final Flow 428  Safety Joint T-Open 12:07  
 (D) Initial Shut-In 783  Circ Sub T-Pulled 3:07  
 (E) Second Initial Flow 429  Hourly Standby T-Out 6:30  
 (F) Second Final Flow 641  Mileage 16x2 48 Comments Full Perdiem  
 (G) Final Shut-In 721  Sampler  EM Tool  
 (H) Final Hydrostatic 2077  Straddle  Ruined Shale Packer  
 Shale Packer  Extra Packer  Ruined Packer  
 Extra Recorder  Extra Copies  
 Day Standby Sub Total 0  
 Accessibility Total 2298  
 Sub Total 2298 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Terrance Wickham

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **69774**

Well Name & No. Harkness 15 D #1 Test No. 4 Date 9-4-2022  
 Company Ritchie Exploration Elevation 2953 KB 2946 GL  
 Address P.O. Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig STP 1  
 Location: Sec. 15 Twp 19 Rge. 31w Co. Scott State KS

Interval Tested 4438-4464 Zone Tested Altamont "C"  
 Anchor Length 26' Drill Pipe Run 4320 Mud Wt. 9.4  
 Top Packer Depth 4433 Drill Collars Run 118 Vis 56  
 Bottom Packer Depth 4438 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4464 Chlorides 4600 ppm System LCM 1  
 Blow Description IF-30-6 inches  
TSI-45- No Return  
FF-45- No Blow  
FST-60- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>180</u>				<u>100%</u>	
<u>60</u>			<u>80</u>	<u>20</u>	
<u>100</u>		<u>20</u>	<u>20</u>	<u>60</u>	
<u>10</u>		<u>100</u>			

Rec Total 310 BHT 143 Gravity \_\_\_\_\_ API RW .15@ 100°F Chlorides 32,000 ppm

(A) Initial Hydrostatic 2251  Test 1950 T-On Location 14:00  
 (B) First Initial Flow 24  Jars 300 T-Started 14:30  
 (C) First Final Flow 92  Safety Joint T-Open 17:25  
 (D) Initial Shut-In 904  Circ Sub T-Pulled 20:25  
 (E) Second Initial Flow 109  Hourly Standby T-Out 23:15  
 (F) Second Final Flow 156  Mileage 16x2 48 Comments Full Perdiem  
 (G) Final Shut-In 890  Sampler  EM Tool  
 (H) Final Hydrostatic 2128  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder  Day Standby Sub Total 0  
 Accessibility Total 2298  
 Sub Total 2298 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Terrance Wickham

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





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **69775**

Well Name & No. Harkness 150 #1 Test No. 5 Date 9-5-22  
 Company Ritchie Exploration Elevation 2953 KB 2944 GL  
 Address P.O. Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig STP #1  
 Location: Sec. 15 Twp 19 Rge. 31w Co. Scott State KS

Interval Tested 4466 - 4514 Zone Tested Pawnee  
 Anchor Length 48 Drill Pipe Run 4322 Mud Wt. 9.3  
 Top Packer Depth 4461 Drill Collars Run 118 Vis 59  
 Bottom Packer Depth 4466 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4514 Chlorides 4500 ppm System LCM 1#

Blow Description IF-30 - Surface Blow  
ISI-45 - No Return  
FF-30 - Surface Blow Died in 5 min  
FSI-30 - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>				<u>100</u>	

Rec Total 5 BHT 128 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2259  Test 1950 T-On Location 8:00  
 (B) First Initial Flow 20  Jars 300 T-Started 8:50  
 (C) First Final Flow 24  Safety Joint \_\_\_\_\_ T-Open 11:05  
 (D) Initial Shut-In 94  Circ Sub \_\_\_\_\_ T-Pulled 13:20  
 (E) Second Initial Flow 19  Hourly Standby \_\_\_\_\_ T-Out \_\_\_\_\_  
 (F) Second Final Flow 23  Mileage 10x2 48 Comments Full Perdiem  
 (G) Final Shut-In 58  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2082  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 45  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 2298  
 Sub Total 2298 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Terrance Wickham

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69851

Well Name & No. Harkness 15D #1 Test No. 6 Date 9-6-22  
 Company Ritchie Exploration Elevation 2953 KB 2944 GL  
 Address P.O. Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig STP 1  
 Location: Sec. 15 Twp 19 Rge. 31W Co. Scott State KS

Interval Tested 4508-4582 Zone Tested Fa. Scott, Cherokee, Johnson  
 Anchor Length 74' Drill Pipe Run 4385 Mud Wt. 9.3  
 Top Packer Depth 4503 Drill Collars Run 118 Vis 59  
 Bottom Packer Depth 4508 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4582 Chlorides 4500 ppm System LCM 1#

Blow Description IF-30- No blow  
ISI-30- No Return  
FF-30- No blow - Flushed tool after 5 min - Surface blow  
FSI-30- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>				<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1 BHT 127 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2343  Test 1950 T-On Location 5:00  
 (B) First Initial Flow 24  Jars 300 T-Started 6:15  
 (C) First Final Flow 24  Safety Joint T-Open 8:40  
 (D) Initial Shut-In 41  Circ Sub T-Pulled 10:40  
 (E) Second Initial Flow 25  Hourly Standby T-Out 12:50  
 (F) Second Final Flow 30  Mileage 16x2 48 Comments Full Perdiem  
 (G) Final Shut-In 43  Sampler  
 (H) Final Hydrostatic 2142  Straddle  EM Tool

Initial Open 30  Shale Packer  Ruined Shale Packer  
 Initial Shut-In 30  Extra Packer  Ruined Packer  
 Final Flow 30  Extra Recorder  Extra Copies  
 Final Shut-In 30  Day Standby Sub Total 0  
 Sub Total 2298 Total 2298 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Terrance Wickham

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **69852**

Well Name & No. Hackness 150 #1 Test No. 7 Date 9-6-22  
 Company Ritchie Exploration Elevation 2953 KB 2946 GL  
 Address P.O. Box 783188 Wichita, KS 67278  
 Co. Rep / Geo. Max Lovely Rig STP 1  
 Location: Sec. 15 Twp 19 Rge. 31w Co. Scott State Ks

Interval Tested 4578 - 4610 Zone Tested Morrow  
 Anchor Length 32' Drill Pipe Run 4443 Mud Wt. 9.3  
 Top Packer Depth 4573 Drill Collars Run 118 Vis 59  
 Bottom Packer Depth 4578 Wt. Pipe Run \_\_\_\_\_ WL 8.8  
 Total Depth 4610 Chlorides 4600 ppm System LCM H  
 Blow Description IF - 30 - Surface Blow Died in 30 min  
ISI - 30 - No Return  
FS - 30 - No blow  
FSE - 30 - No Return

Rec	Feet of	%gas	%oil	%water	%mud
1				100	

Rec Total 1 BHT 130 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2349</u>	<input checked="" type="checkbox"/> Test 1950	T-On Location <u>20:00</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars 300	T-Started <u>21:25</u>
(C) First Final Flow <u>24</u>	<input checked="" type="checkbox"/> Safety Joint	T-Open <u>23:58</u>
(D) Initial Shut-In <u>26</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1:58</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>4:00</u>
(F) Second Final Flow <u>24</u>	<input type="checkbox"/> Mileage <u>16 x 2</u> 96	Comments <u>Tools Released 8:00 AM</u>
(G) Final Shut-In <u>25</u>	<input type="checkbox"/> Sampler	<u>Full Perdiem</u>
(H) Final Hydrostatic <u>2020</u>	<input type="checkbox"/> Straddle	<u>Loaded Tools 9-8-22</u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input checked="" type="checkbox"/> EM Tool
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby 1d 4h	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>800</u>
	Sub Total <u>2346</u>	Total <u>3146</u>

Approved By \_\_\_\_\_ Our Representative Terrance Wickham

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**#1 Harkness 15D**

1,052' FSL & 446' FEL

78' N & 116' W of NE SE SE Section 15-19S-31W

Scott County, Kansas

API# 15-171-21295-0000

Elevation: GL: 2,946', KB: 2,953'

Sample Tops

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Anhydrite	2290	+663
B/Anhydrite	2304	+649
Stotler	3558	-605
Heebner	3945	-992
Toronto	3960	-1007
Lansing	3988	-1035
Muncie	4172	-1219
Stark	4272	-1319
Hushpuckney	4311	-1358
BKC	4356	-1403
Marmaton	4392	-1439
Altamont	4406	-1453
Pawnee	4476	-1523
Myrick	4502	-1549
Ft Scott	4516	-1563
Cherokee	4540	-1587
Johnson	4574	-1621
Mississippian	4617	-1664
Spergen	4639	-1686
RTD	4710	-1757

# FRANKS Oilfield Service

◆ 815 Main Street Victoria, KS 67671 ◆ 24 Hour Phone (785) 639-7269  
 ◆ Office Phone (785) 639-3949 ◆ Email: franksoilfield@yahoo.com

TICKET NUMBER 0696  
 LOCATION Haxie  
 FOREMAN Tom Williams

## FIELD TICKET & TREATMENT REPORT CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
5-26-22	4767	Harkness 15D #1	15	19	31W	SCOTT

CUSTOMER <u>Ritchie Exploration Inc.</u>		
MAILING ADDRESS <u>PO Box 763168</u> <u>8100 E 2nd St. N #700</u>		
CITY <u>Wichita</u>	STATE <u>KS</u>	ZIP CODE <u>67278</u>

TRUCK #	DRIVER	TRUCK #	DRIVER
<u>102</u>	<u>Tom W</u>		
<u>201</u>	<u>Jack T</u>		

JOB TYPE <u>Surface</u>	HOLE SIZE <u>12 1/4"</u>	HOLE DEPTH <u>223'</u>	CASING SIZE & WEIGHT <u>5 7/8" 23#</u>
CASING DEPTH <u>222'</u>	DRILL PIPE _____	TUBING _____	OTHER _____
SLURRY WEIGHT <u>14.5</u>	SLURRY VOL <u>1.4</u>	WATER gal/sk _____	CEMENT LEFT in CASING _____
DISPLACEMENT <u>12.158</u>	DISPLACEMENT PSI _____	MIX PSI _____	RATE _____

REMARKS: Safety meeting & set up on STPH. Circulate mud.  
Mix 17.5% surface blend & displace with 12.5 Bbl shot in 11:45 pm  
CEMENT did circulate

*Thanks Tom & Jack*

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
<del>MA02</del>	<u>1</u>	PUMP CHARGE <u>Surface</u>	<u>\$1150.00</u>	<u>\$1150.00</u>
<u>MA01</u>	<u>82</u>	MILEAGE	<u>\$6.50</u>	<u>\$533.00</u>
<u>MA02</u>	<u>8.59405</u>	<u>Tan Mileage Delivery</u>	<u>\$1054.11</u>	<u>\$1054.11</u>
<u>CB004</u>	<u>17.55x</u>	<u>Class A 390cc 290gal</u>	<u>\$24.50</u>	<u>\$4287.50</u>
			sub total	<u>\$7021.61</u>
			less 10% disc.	<u>\$702.16</u>
			sub total	<u>\$6319.45</u>
			SALES TAX	<u>327.99</u>
			ESTIMATED TOTAL	<u>6650.14</u>

AUTHORIZATION Todd E. Mudd TITLE \_\_\_\_\_ DATE \_\_\_\_\_

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

# FRANKS Oilfield Service

◆ 815 Main Street Victoria, KS 67671 ◆ 24 Hour Phone (785) 639-7269  
 ◆ Office Phone (785) 639-3949 ◆ Email: franksoilfield@yahoo.com

TICKET NUMBER 0711  
 LOCATION Hoxie  
 FOREMAN Tam Williams

## FIELD TICKET & TREATMENT REPORT

# Harkness 15D CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
<u>4-9-22</u>	<u>4767</u>	<del>Schwartz-Hugeman #1</del>	<u>29</u>	<u>19</u>	<u>30 W</u>	<u>Lape</u>
CUSTOMER <u>Ritchie Exploration Inc</u>			TRUCK #			
MAILING ADDRESS <u>PO Box</u>			DRIVER			
<u>5100 E 22nd St. N # 700</u>			<u>102</u>			
CITY			TRUCK #			
STATE			DRIVER			
ZIP CODE			<u>201</u>			
			<u>Payton D</u>			
			<u>Payton E</u>			

JOB TYPE PTA HOLE SIZE \_\_\_\_\_ HOLE DEPTH \_\_\_\_\_ CASING SIZE & WEIGHT \_\_\_\_\_  
 CASING DEPTH \_\_\_\_\_ DRILL PIPE 4 1/2" TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT \_\_\_\_\_ SLURRY VOL \_\_\_\_\_ WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING \_\_\_\_\_  
 DISPLACEMENT \_\_\_\_\_ DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: 50 site morning & set up on site #1 Plug as ordered

<u>1</u>	<u>2310'</u>	<u>50sf</u>
<u>2</u>	<u>1910'</u>	<u>50sf</u>
<u>3</u>	<u>730'</u>	<u>50sf</u>
<u>4</u>	<u>250'</u>	<u>40sf</u>
<u>5</u>	<u>60'</u>	<u>20sf</u>
	<u>RH</u>	<u>30</u>

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
<u>PL005</u>	<u>1</u>	<u>PUMP CHARGE PTA</u>	<u>\$1500<sup>00</sup></u>	<u>\$1500<sup>00</sup></u>
<u>M001</u>	<u>82</u>	<u>MILEAGE</u>	<u>\$6<sup>50</sup></u>	<u>\$533<sup>00</sup></u>
<u>M002</u>	<u>12.02 tanks</u>	<u>Two Mileage Deliveries</u>	<u>\$1178<sup>46</sup></u>	<u>\$1478<sup>46</sup></u>
<u>LB010</u>	<u>270 sxc</u>	<u>60/40 4 1/2 gel x 4 1/2 #1000</u>	<u>\$16<sup>75</sup></u>	<u>\$4522<sup>50</sup></u>
			<u>sub total</u>	<u>\$8,033<sup>96</sup></u>
			<u>less 10% disc.</u>	<u>\$803<sup>39</sup></u>
			<u>sub total</u>	<u>\$7,230<sup>57</sup></u>
			<u>SALES TAX</u>	<u>305.27</u>
			<u>ESTIMATED TOTAL</u>	<u>7535.84</u>

AUTHORIZATION [Signature] TITLE \_\_\_\_\_ DATE \_\_\_\_\_

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