

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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

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

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

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

8100 E 22nd St N #700
Wichita, KS 67278+3188

ATTN: Max Lovely

Frusher 9D #1

9-21S-23W Hodgeman,KS

Start Date: 2019.01.08 @ 19:56:00

End Date: 2019.01.09 @ 02:54:02

Job Ticket #: 65079 DST #: 1

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

Printed: 2019.01.14 @ 15:44:44



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65079

DST#: 1

Test Start: 2019.01.08 @ 19:56:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:06:47

Time Test Ended: 02:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4370.00 ft (KB) To 4406.00 ft (KB) (TVD)

Reference Elevations: 2313.00 ft (KB)

Total Depth: 4406.00 ft (KB) (TVD)

2302.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 60.65 psig @ 4371.00 ft (KB)

Capacity: psig

Start Date: 2019.01.08

End Date: 2019.01.09

Last Calib.: 2019.01.09

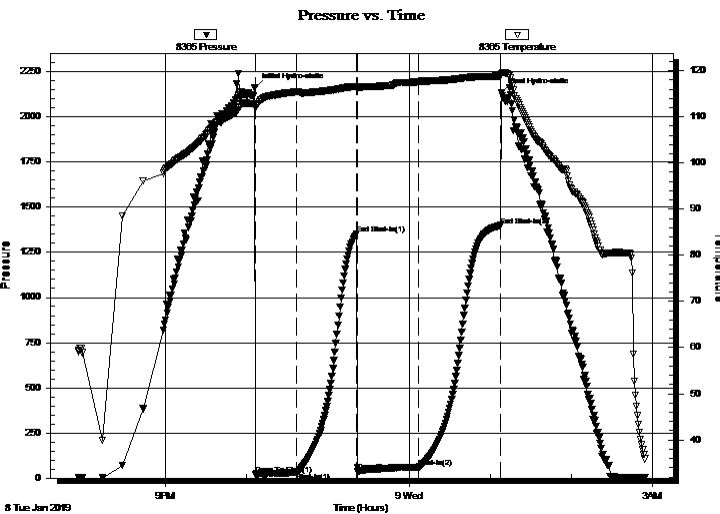
Start Time: 19:56:01

End Time: 02:54:02

Time On Btm: 2019.01.08 @ 22:06:17

Time Off Btm: 2019.01.09 @ 01:08:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 24 minutes Total build 16"
ISI 45 Minutes No blow back
FFP 45 Minutes Blow built to BOB in 30 seconds Total build 38"
FSI 60 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2160.45	112.75	Initial Hydro-static
1	22.23	111.96	Open To Flow (1)
31	31.39	115.45	Shut-In(1)
75	1353.66	116.57	End Shut-In(1)
76	35.69	116.42	Open To Flow (2)
121	60.65	117.61	Shut-In(2)
182	1399.01	118.87	End Shut-In(2)
182	2132.12	119.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	GSOCM O 5% G 10% M 85%	0.46
0.00	472' GIP	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65079

DST#: 1

Test Start: 2019.01.08 @ 19:56:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:06:47

Time Test Ended: 02:54:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4370.00 ft (KB) To 4406.00 ft (KB) (TVD)

Reference Elevations: 2313.00 ft (KB)

Total Depth: 4406.00 ft (KB) (TVD)

2302.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 6752 Outside

Press@RunDepth: 1400.12 psig @ 4372.00 ft (KB)

Capacity: psig

Start Date: 2019.01.08

End Date: 2019.01.09

Last Calib.: 2019.01.09

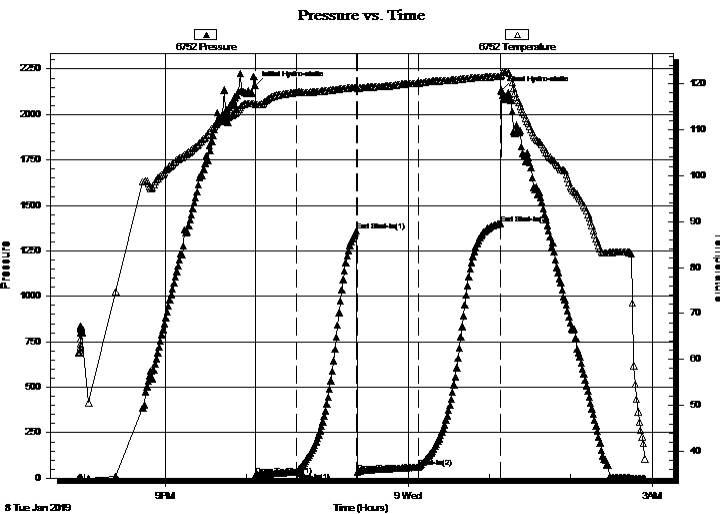
Start Time: 19:56:01

End Time: 02:55:02

Time On Btm: 2019.01.08 @ 22:06:32

Time Off Btm: 2019.01.09 @ 01:08:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 24 minutes Total build 16"
 ISI 45 Minutes No blow back
 FFP 45 Minutes Blow built to BOB in 30 seconds Total build 38"
 FSI 60 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.05	115.68	Initial Hydro-static
1	17.71	115.45	Open To Flow (1)
31	33.55	118.08	Shut-In(1)
75	1358.25	119.12	End Shut-In(1)
76	31.33	118.92	Open To Flow (2)
121	60.02	120.13	Shut-In(2)
181	1400.12	121.57	End Shut-In(2)
182	2133.25	121.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	GSOCM O 5% G 10% M 85%	0.46
0.00	472' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65079 **DST#: 1**
Test Start: 2019.01.08 @ 19:56:00

Tool Information

Drill Pipe:	Length: 4141.00 ft	Diameter: 3.80 inches	Volume: 58.09 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 211.46 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 59.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.46 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4370.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			4348.00	
Hydraulic tool	5.00			4353.00	
Jars	5.00			4358.00	
Safety Joint	2.00			4360.00	
Top Packer	5.00			4365.00	
Packer	5.00			4370.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	4371.00	
Recorder	1.00	6752	Outside	4372.00	
Anchor	31.00			4403.00	
Bullnose	3.00			4406.00	36.00 Anchor Tool
Total Tool Length:	63.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65079 **DST#: 1**
Test Start: 2019.01.08 @ 19:56:00

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: 68.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.77 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 7400.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

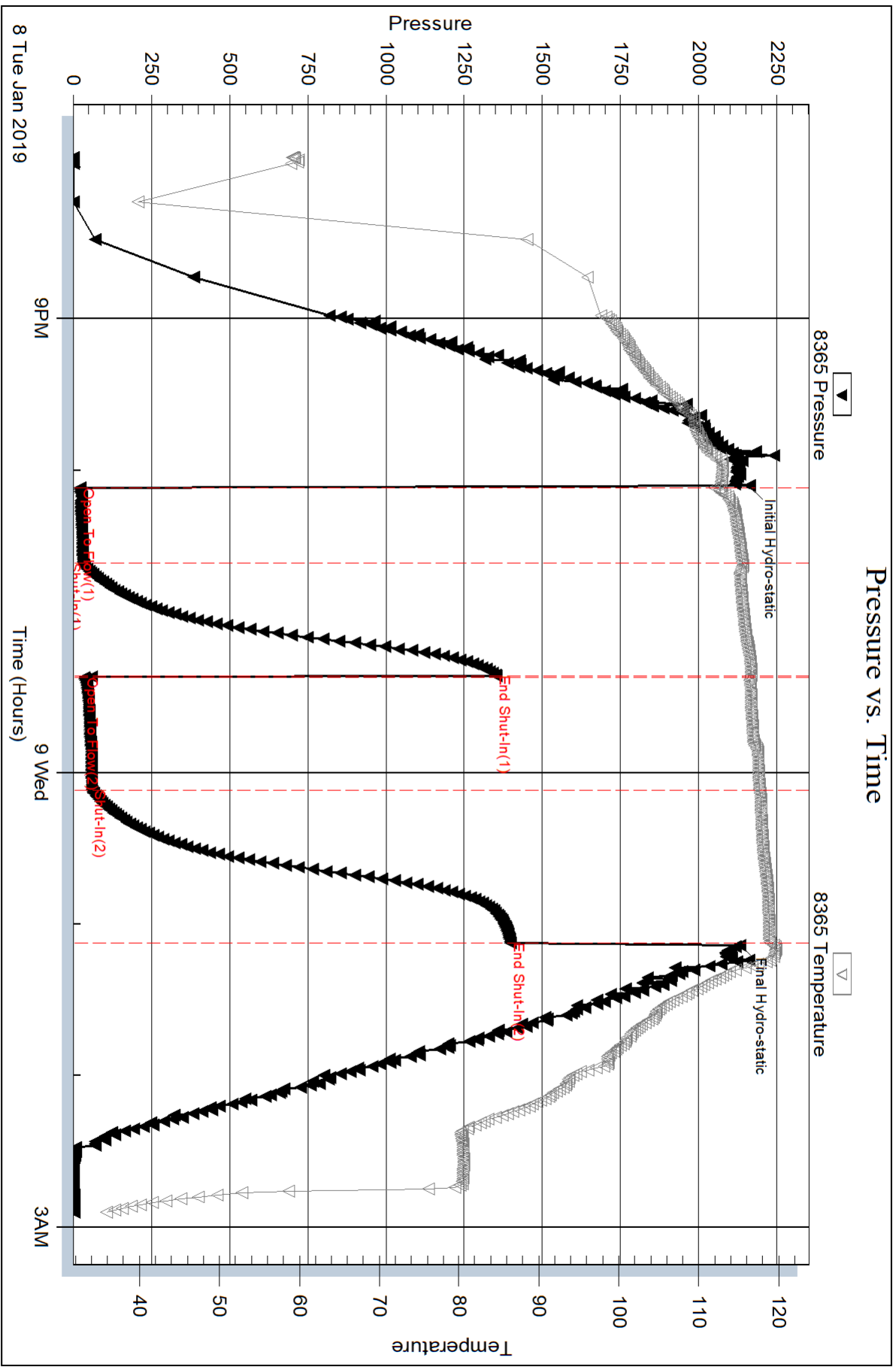
Length ft	Description	Volume bbl
94.00	GSOCM O 5% G 10% M 85%	0.462
0.00	472' GIP	0.000

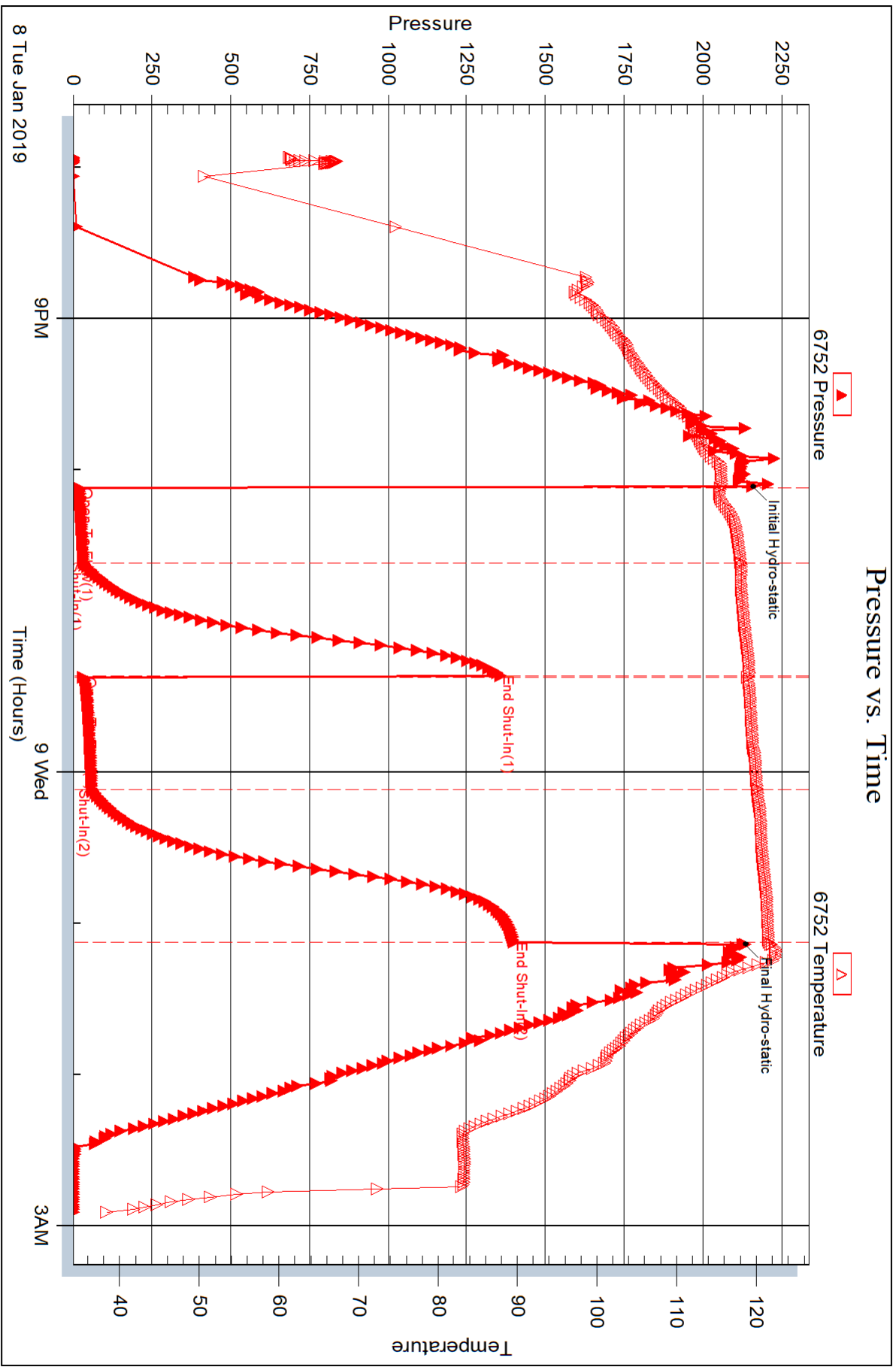
Total Length: 94.00 ft Total Volume: 0.462 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N #700
Wichita, KS 67278+3188

ATTN: Max Lovely

Frusher 9D #1

9-21S-23W Hodgeman,KS

Start Date: 2019.01.09 @ 12:29:00

End Date: 2019.01.09 @ 17:55:02

Job Ticket #: 65080 DST #: 2

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

Printed: 2019.01.14 @ 10:14:16

Ritchie Exploration Inc
9-21S-23W Hodgeman,KS
Frusher 9D #1
DST # 2
Cherokee
2019.01.09



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65080 **DST#: 2**
 Test Start: 2019.01.09 @ 12:29:00

GENERAL INFORMATION:

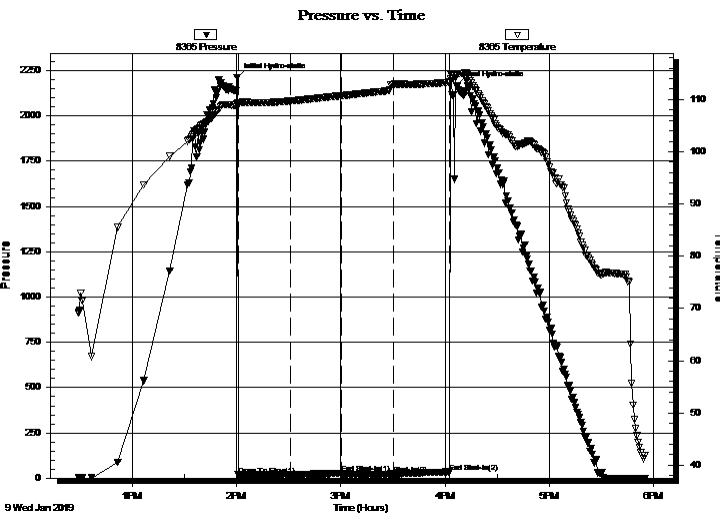
Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:00:47
 Time Test Ended: 17:55:02
 Interval: **4404.00 ft (KB) To 4446.00 ft (KB) (TVD)**
 Total Depth: 4446.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 2313.00 ft (KB)
 2302.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 23.04 psig @ 4405.00 ft (KB) Capacity: psig
 Start Date: 2019.01.09 End Date: 2019.01.09 Last Calib.: 2019.01.09
 Start Time: 12:29:01 End Time: 17:55:02 Time On Btm: 2019.01.09 @ 14:00:32
 Time Off Btm: 2019.01.09 @ 16:06:47

TEST COMMENT: IFP 30 Minutes Blow built to 1"
 ISI 30 Minutes No blow back
 FFP 30 Minutes Dead no blow Flush light surge then dead
 FSI 30 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2211.74	109.31	Initial Hydro-static
1	17.79	108.88	Open To Flow (1)
31	19.02	109.70	Shut-In(1)
60	26.13	110.72	End Shut-In(1)
60	18.02	110.73	Open To Flow (2)
90	23.04	112.90	Shut-In(2)
123	34.82	113.32	End Shut-In(2)
127	2167.72	114.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w / oil spots Mud 100	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

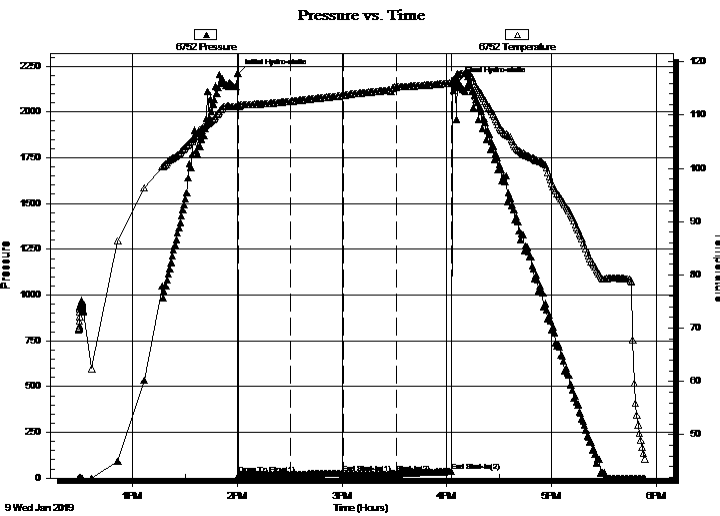
9-21S-23W Hodgeman,KS
Frusher 9D #1
 Job Ticket: 65080 **DST#: 2**
 Test Start: 2019.01.09 @ 12:29:00

GENERAL INFORMATION:

Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:00:47
 Time Test Ended: 17:55:02
 Interval: **4404.00 ft (KB) To 4446.00 ft (KB) (TVD)**
 Total Depth: 4446.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 2313.00 ft (KB)
 2302.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 36.58 psig @ 4406.00 ft (KB) Capacity: psig
 Start Date: 2019.01.09 End Date: 2019.01.09 Last Calib.: 2019.01.09
 Start Time: 12:29:01 End Time: 17:54:02 Time On Btm: 2019.01.09 @ 14:00:32
 Time Off Btm: 2019.01.09 @ 16:06:47

TEST COMMENT: IFP 30 Minutes Blow built to 1"
 ISI 30 Minutes No blow back
 FFP 30 Minutes Dead no blow Flush light surge then dead
 FSI 30 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2210.27	111.78	Initial Hydro-static
1	18.61	111.57	Open To Flow (1)
30	20.03	112.59	Shut-In(1)
60	27.34	113.67	End Shut-In(1)
60	19.39	113.68	Open To Flow (2)
91	24.10	115.27	Shut-In(2)
123	36.58	116.03	End Shut-In(2)
127	2167.16	117.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w / oil spots Mud 100	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65080 **DST#: 2**
Test Start: 2019.01.09 @ 12:29:00

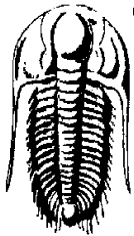
Tool Information

Drill Pipe:	Length: 4174.00 ft	Diameter: 3.80 inches	Volume: 58.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 211.46 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 59.59 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.46 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4404.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Ruined Packer

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			4382.00	
Hydraulic tool	5.00			4387.00	
Jars	5.00			4392.00	
Safety Joint	2.00			4394.00	
Top Packer	5.00			4399.00	
Packer	5.00			4404.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	4405.00	
Recorder	1.00	6752	Outside	4406.00	
Anchor	37.00			4443.00	
Bullnose	3.00			4446.00	42.00 Anchor Tool
Total Tool Length:	69.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65080 **DST#: 2**
Test Start: 2019.01.09 @ 12:29:00

Mud and Cushion Information

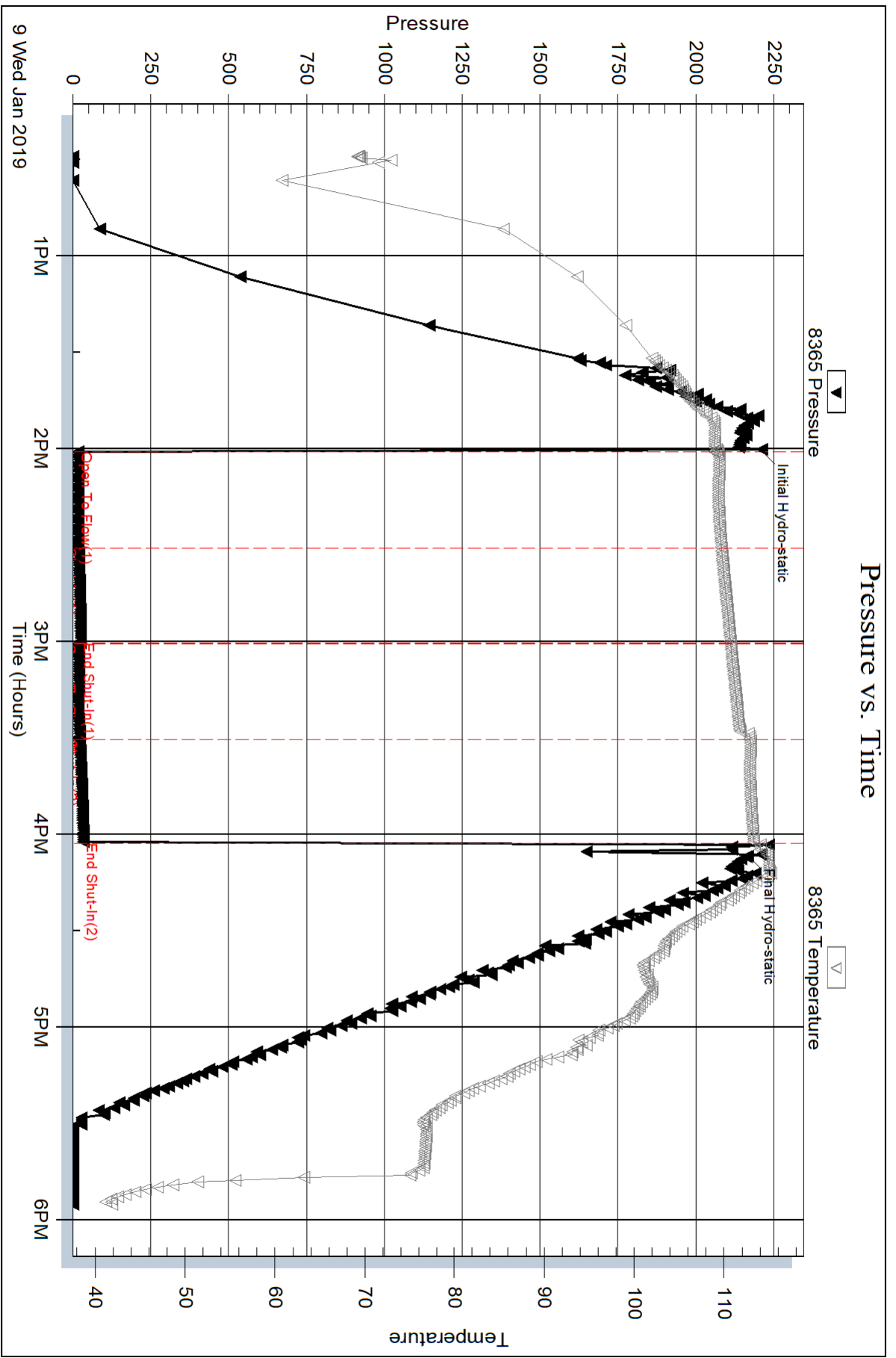
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.98 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6200.00 ppm			
Filter Cake: 1.00 inches			

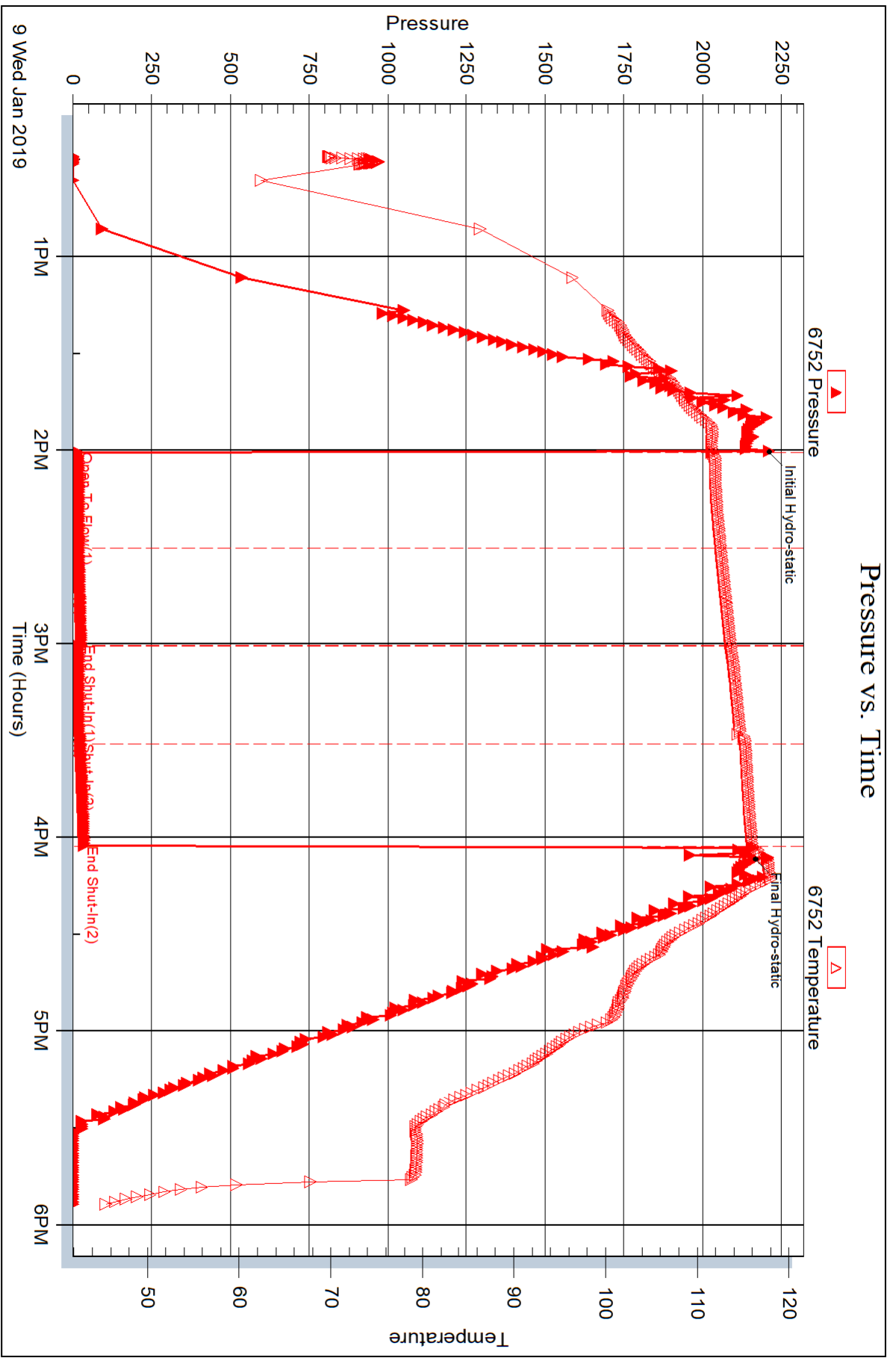
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud w / oil spots Mud 100	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:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N #700
Wichita, KS 67278+3188

ATTN: Max Lovely

Frusher 9D #1

9-21S-23W Hodgeman,KS

Start Date: 2019.01.10 @ 04:25:00

End Date: 2019.01.10 @ 13:23:02

Job Ticket #: 65081 DST #: 3

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

Printed: 2019.01.14 @ 09:39:57



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65081

DST#: 3

Test Start: 2019.01.10 @ 04:25:00

GENERAL INFORMATION:

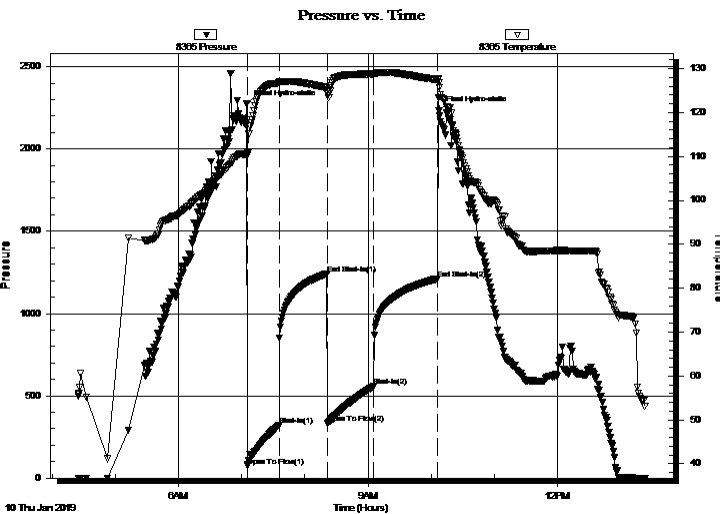
Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:05:32
 Tester: Ken Swinney
 Time Test Ended: 13:23:02
 Unit No: 72
 Interval: **4444.00 ft (KB) To 4475.00 ft (KB) (TVD)**
 Reference Elevations: 2313.00 ft (KB)
 Total Depth: 4475.00 ft (KB) (TVD)
 2302.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 557.18 psig @ 4445.00 ft (KB) Capacity: psig
 Start Date: 2019.01.10 End Date: 2019.01.10 Last Calib.: 2019.01.10
 Start Time: 04:25:01 End Time: 13:23:02 Time On Btm: 2019.01.10 @ 07:05:02
 Time Off Btm: 2019.01.10 @ 10:07:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 3 1/2 minutes Total build 94"
 ISI 45 Minutes Blow back built to 8 1/2"
 FFP 45 Minutes Blow built to BOB in 4 1/2 minutes Total build 83"
 FSI 60 Minutes Light surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2272.04	110.49	Initial Hydro-static
1	73.90	110.22	Open To Flow (1)
31	322.76	126.83	Shut-In(1)
76	1241.21	125.62	End Shut-In(1)
77	331.60	124.75	Open To Flow (2)
120	557.18	128.77	Shut-In(2)
181	1211.84	127.39	End Shut-In(2)
183	2232.92	126.77	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	GSOCM O 5 G 15 M 80	0.31
1417.00	GO G 20 O 80	18.52
0.00	34' GIP	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman, KS

Frusher 9D #1

Job Ticket: 65081

DST#: 3

Test Start: 2019.01.10 @ 04:25:00

GENERAL INFORMATION:

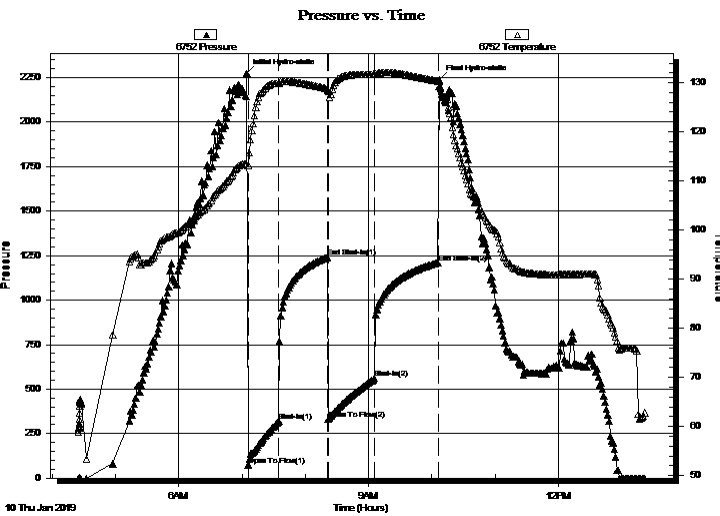
Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 07:05:32
 Tester: Ken Swinney
 Time Test Ended: 13:23:02
 Unit No: 72
 Interval: **4444.00 ft (KB) To 4475.00 ft (KB) (TVD)**
 Reference Elevations: 2313.00 ft (KB)
 Total Depth: 4475.00 ft (KB) (TVD)
 2302.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 11.00 ft

Serial #: 6752

Outside

Press@RunDepth: 1211.18 psig @ 4446.00 ft (KB) Capacity: psig
 Start Date: 2019.01.10 End Date: 2019.01.10 Last Calib.: 2019.01.10
 Start Time: 04:25:01 End Time: 13:21:47 Time On Btm: 2019.01.10 @ 07:04:32
 Time Off Btm: 2019.01.10 @ 10:07:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 3 1/2 minutes Total build 94"
 ISI 45 Minutes Blow back built to 8 1/2"
 FFP 45 Minutes Blow built to BOB in 4 1/2 minutes Total build 83"
 FSI 60 Minutes Light surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2274.43	113.48	Initial Hydro-static
1	74.32	113.19	Open To Flow (1)
31	319.14	129.87	Shut-In(1)
77	1240.85	128.71	End Shut-In(1)
77	331.25	128.42	Open To Flow (2)
121	560.14	131.75	Shut-In(2)
182	1211.18	130.34	End Shut-In(2)
183	2239.05	130.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	GSOCM O 5 G 15 M 80	0.31
1417.00	GO G 20 O 80	18.52
0.00	34' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65081 **DST#: 3**
Test Start: 2019.01.10 @ 04:25:00

Tool Information

Drill Pipe:	Length: 4237.00 ft	Diameter: 3.80 inches	Volume: 59.43 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 211.46 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.47 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.46 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4444.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Circulating Sub

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			4422.00	
Hydraulic tool	5.00			4427.00	
Jars	5.00			4432.00	
Safety Joint	2.00			4434.00	
Top Packer	5.00			4439.00	
Packer	5.00			4444.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	4445.00	
Recorder	1.00	6752	Outside	4446.00	
Anchor	26.00			4472.00	
Bullnose	3.00			4475.00	31.00 Anchor Tool
Total Tool Length:	58.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65081 **DST#: 3**
Test Start: 2019.01.10 @ 04:25:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.98 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 6200.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

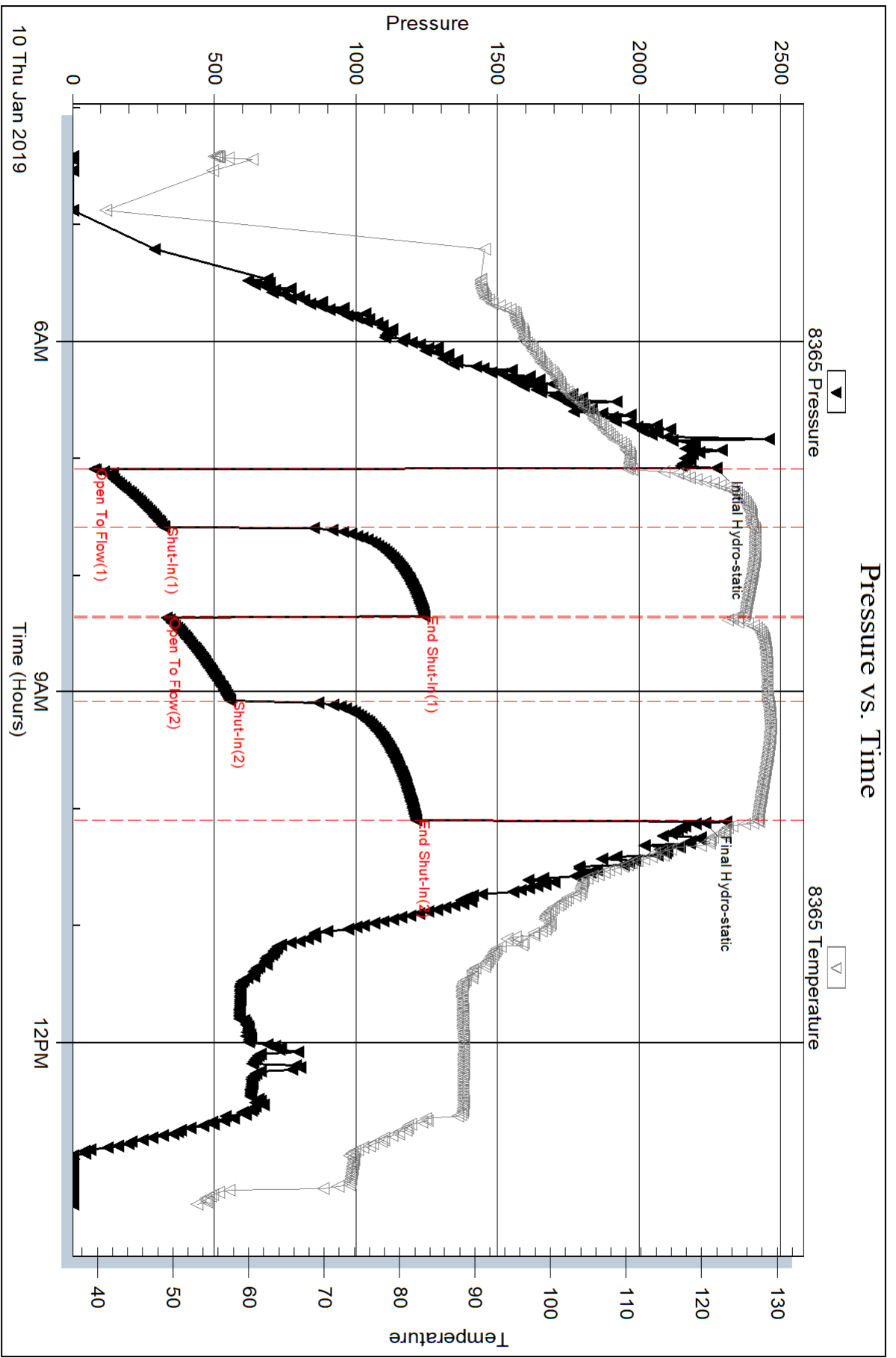
Length ft	Description	Volume bbl
63.00	GSOCM O 5 G 15 M 80	0.310
1417.00	GO G 20 O 80	18.524
0.00	34' GIP	0.000

Total Length: 1480.00 ft Total Volume: 18.834 bbl

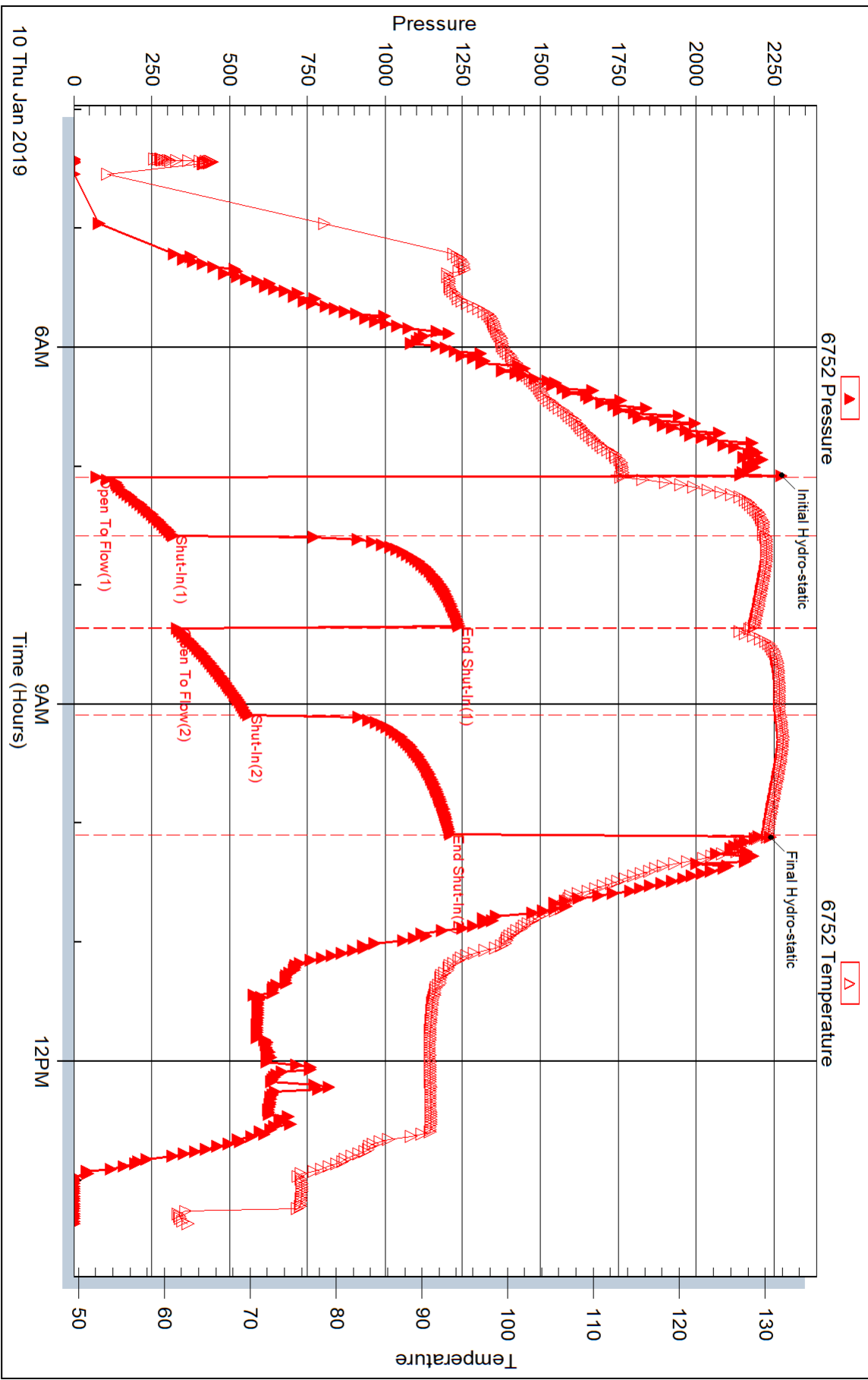
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N #700
Wichita, KS 67278+3188

ATTN: Max Lovely

Frusher 9D #1

9-21S-23W Hodgeman,KS

Start Date: 2019.01.10 @ 21:35:00

End Date: 2019.01.11 @ 05:43:02

Job Ticket #: 65082 DST #: 4

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

Printed: 2019.01.14 @ 09:38:23

Ritchie Exploration Inc
9-21S-23W Hodgeman,KS
Frusher 9D #1
DST # 4
Cherokee
2019.01.10



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman, KS

Frusher 9D #1

Job Ticket: 65082

DST#: 4

Test Start: 2019.01.10 @ 21:35:00

GENERAL INFORMATION:

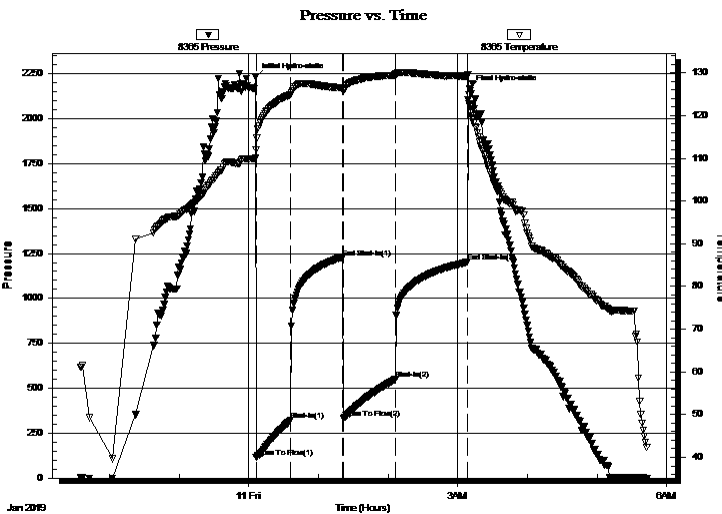
Formation: **Cherokee**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 00:06:17
 Tester: Ken Swinney
 Time Test Ended: 05:43:02
 Unit No: 72
 Interval: **4473.00 ft (KB) To 4490.00 ft (KB) (TVD)**
 Reference Elevations: 2313.00 ft (KB)
 Total Depth: 4490.00 ft (KB) (TVD)
 2302.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 548.85 psig @ 4474.00 ft (KB) Capacity: psig
 Start Date: 2019.01.10 End Date: 2019.01.11 Last Calib.: 2019.01.11
 Start Time: 21:35:01 End Time: 05:43:02 Time On Btm: 2019.01.11 @ 00:05:47
 Time Off Btm: 2019.01.11 @ 03:10:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 3 minutes Total build 96"
 ISI 45 Minutes 6 3/4" blow back
 FFP 45 Minutes Blow built to BOB in 4 1/2 minutes Total build 78"
 FSI 60 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2230.68	109.98	Initial Hydro-static
1	114.69	111.99	Open To Flow (1)
31	321.62	124.94	Shut-In(1)
75	1226.70	126.36	End Shut-In(1)
76	331.77	126.05	Open To Flow (2)
121	548.85	129.47	Shut-In(2)
183	1202.13	129.22	End Shut-In(2)
185	2164.13	122.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
252.00	GMCO M 20 G 20 O 60	1.61
1197.00	GO Gas 20 Oil 80	16.79
0.00	63' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65082

DST#: 4

Test Start: 2019.01.10 @ 21:35:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:06:17

Time Test Ended: 05:43:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4473.00 ft (KB) To 4490.00 ft (KB) (TVD)

Reference Elevations: 2313.00 ft (KB)

Total Depth: 4490.00 ft (KB) (TVD)

2302.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 6752 Outside

Press@RunDepth: 1201.48 psig @ 4475.00 ft (KB)

Capacity: psig

Start Date: 2019.01.10

End Date: 2019.01.11

Last Calib.: 2019.01.11

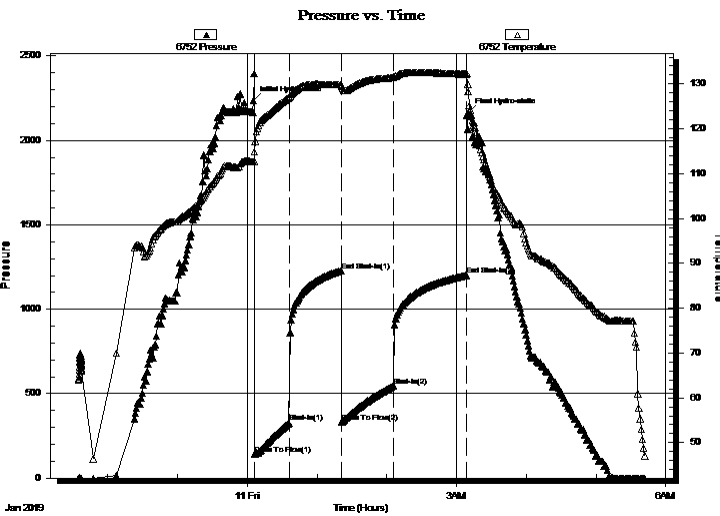
Start Time: 21:35:01

End Time: 05:42:02

Time On Btm: 2019.01.11 @ 00:05:17

Time Off Btm: 2019.01.11 @ 03:10:02

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 3 minutes Total build 96"
ISI 45 Minutes 6 3/4" blow back
FFP 45 Minutes Blow built to BOB in 4 1/2 minutes Total build 78"
FSI 60 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.93	112.70	Initial Hydro-static
1	143.54	114.92	Open To Flow (1)
31	328.20	126.98	Shut-In(1)
76	1228.76	129.76	End Shut-In(1)
76	331.24	129.49	Open To Flow (2)
121	547.25	131.53	Shut-In(2)
183	1201.48	132.16	End Shut-In(2)
185	2165.84	128.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
252.00	GMCO M 20 G 20 O 60	1.61
1197.00	GO Gas 20 Oil 80	16.79
0.00	63' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65082 **DST#: 4**
Test Start: 2019.01.10 @ 21:35:00

Tool Information

Drill Pipe:	Length: 4239.00 ft	Diameter: 3.80 inches	Volume: 59.46 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 211.46 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 100000.0 lb
		Total Volume: 60.50 bbl		Tool Chased 6.00 ft
Drill Pipe Above KB:	4.46 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4473.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	17.00 ft			
Tool Length:	44.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			4451.00	
Hydraulic tool	5.00			4456.00	
Jars	5.00			4461.00	
Safety Joint	2.00			4463.00	
Packer - Shale	5.00			4468.00	
Packer	5.00			4473.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	4474.00	
Recorder	1.00	6752	Outside	4475.00	
Anchor	12.00			4487.00	
Bullnose	3.00			4490.00	17.00 Anchor Tool
Total Tool Length:	44.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65082 **DST#: 4**
Test Start: 2019.01.10 @ 21:35:00

Mud and Cushion Information

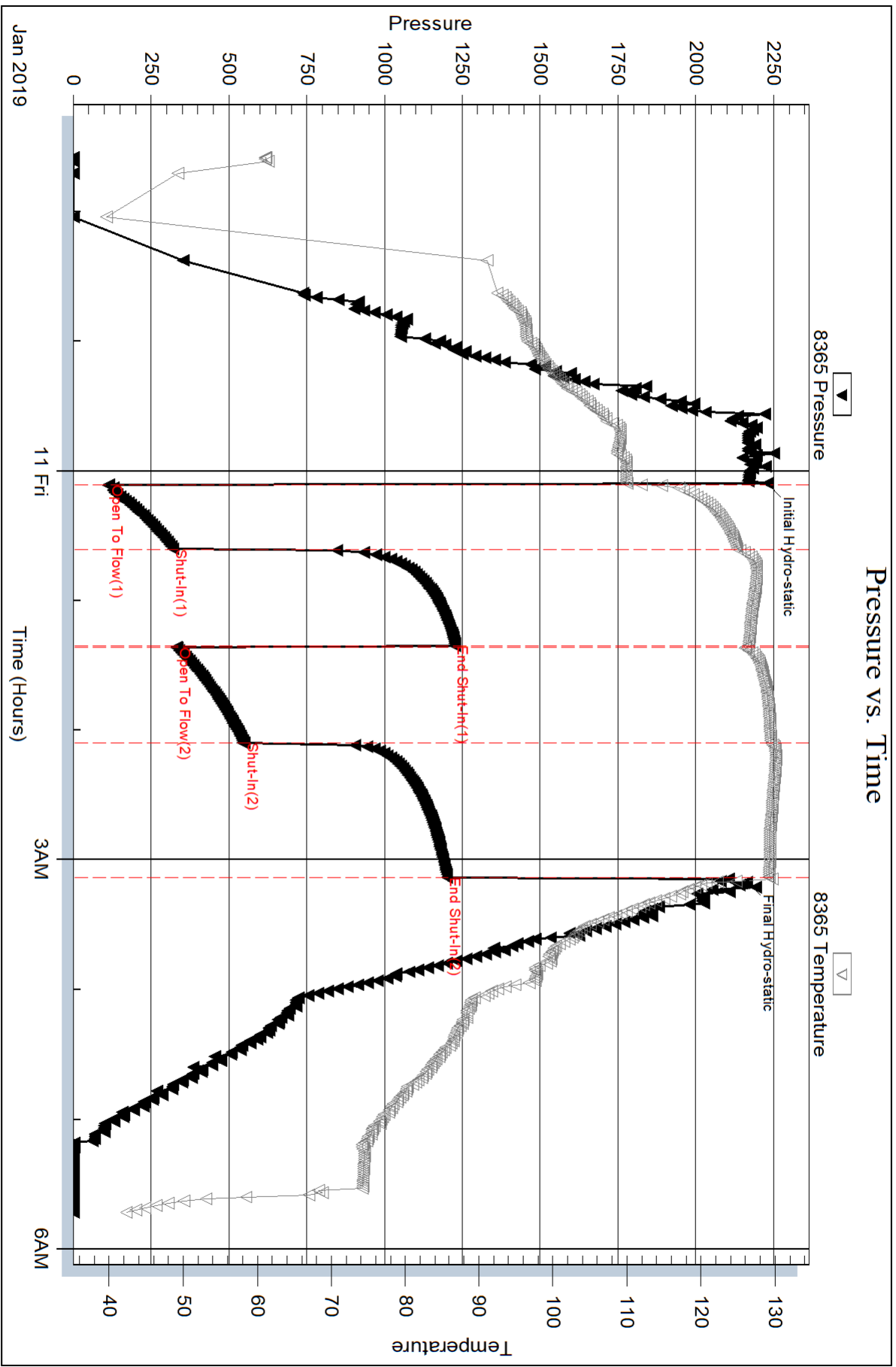
Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl	
Water Loss: 11.18 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 7700.00 ppm		
Filter Cake: 1.00 inches		

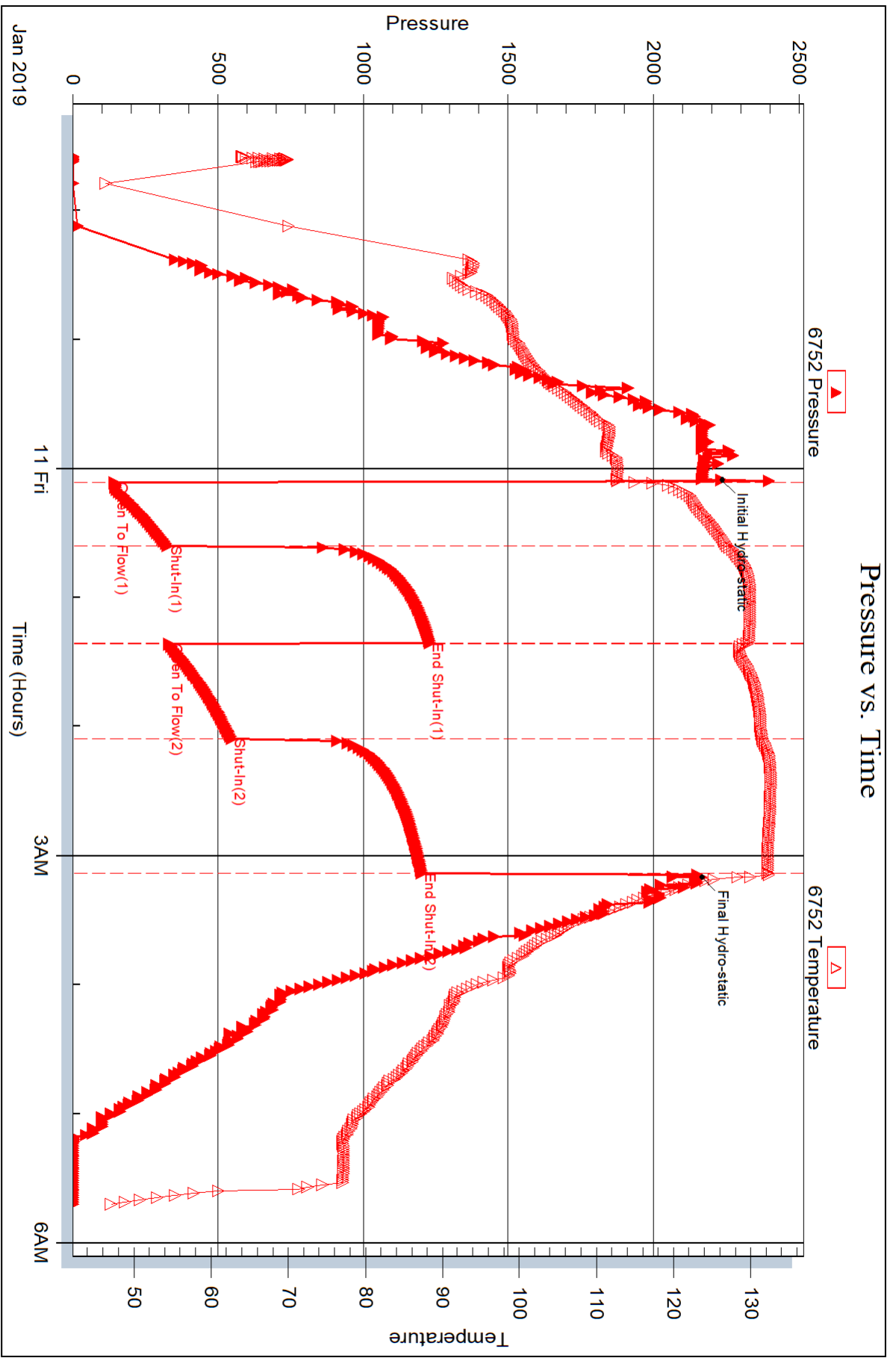
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
252.00	GMCO M 20 G 20 O 60	1.609
1197.00	GO Gas 20 Oil 80	16.791
0.00	63' GIP	0.000

Total Length: 1449.00 ft Total Volume: 18.400 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 E 22nd St N #700
Wichita, KS 67278+3188

ATTN: Max Lovely

Frusher 9D #1

9-21S-23W Hodgeman,KS

Start Date: 2019.01.11 @ 15:46:00

End Date: 2019.01.11 @ 23:28:02

Job Ticket #: 65083 DST #: 5

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

Printed: 2019.01.14 @ 09:38:02



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS

Frusher 9D #1

Job Ticket: 65083

DST#: 5

Test Start: 2019.01.11 @ 15:46:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:44:32

Time Test Ended: 23:28:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 4488.00 ft (KB) To 4531.00 ft (KB) (TVD)

Reference Elevations: 2313.00 ft (KB)

Total Depth: 4531.00 ft (KB) (TVD)

2302.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8365

Inside

Press@RunDepth: 150.18 psig @ 4489.00 ft (KB)

Capacity: psig

Start Date: 2019.01.11

End Date:

2019.01.11

Last Calib.:

2019.01.11

Start Time: 15:46:01

End Time:

23:28:02

Time On Btm:

2019.01.11 @ 17:44:02

Time Off Btm:

2019.01.11 @ 21:18:47

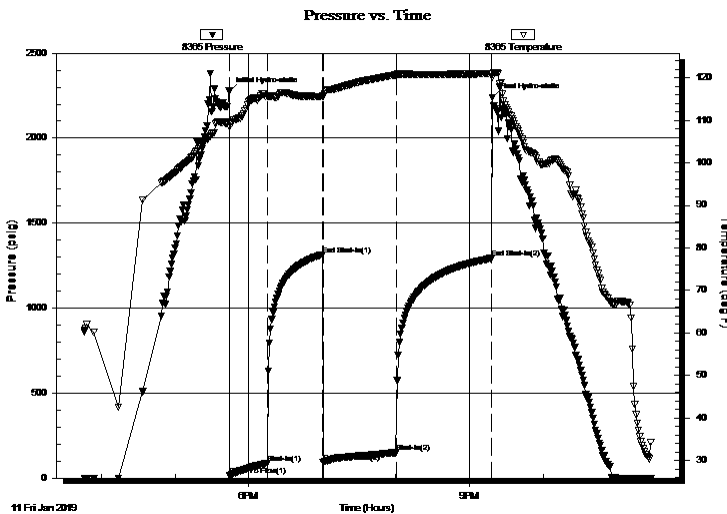
TEST COMMENT: IFP 30 Minutes Blow built to 6 1/4"

ISI 45 Minutes No blow back

FFP 60 Minutes Blow built to 9"

FSI90 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2272.80	109.62	Initial Hydro-static
1	18.05	108.54	Open To Flow (1)
31	88.70	115.55	Shut-In(1)
76	1315.21	115.69	End Shut-In(1)
77	93.60	115.66	Open To Flow (2)
136	150.18	120.68	Shut-In(2)
214	1293.49	120.99	End Shut-In(2)
215	2237.80	120.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
297.00	MW Mud 30% Water 70%	2.24

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc
 8100 E 22nd St N #700
 Wichita, KS 67278+3188
 ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
 Job Ticket: 65083 **DST#: 5**
 Test Start: 2019.01.11 @ 15:46:00

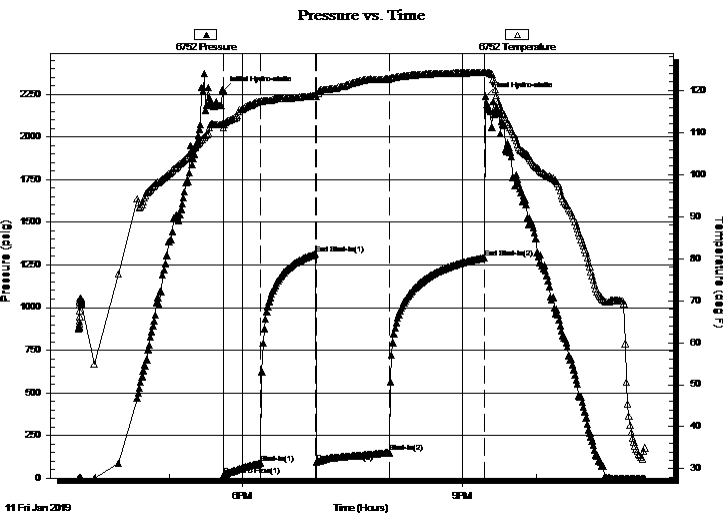
GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:44:32
 Time Test Ended: 23:28:02
Interval: 4488.00 ft (KB) To 4531.00 ft (KB) (TVD)
 Total Depth: 4531.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 2313.00 ft (KB)
 2302.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6752 Outside

Press@RunDepth: 1292.75 psig @ 4490.00 ft (KB) Capacity: psig
 Start Date: 2019.01.11 End Date: 2019.01.11 Last Calib.: 2019.01.11
 Start Time: 15:46:01 End Time: 23:29:02 Time On Btm: 2019.01.11 @ 17:44:02
 Time Off Btm: 2019.01.11 @ 21:18:47

TEST COMMENT: IFP 30 Minutes Blow built to 6 1/4"
 ISI 45 Minutes No blow back
 FFP 60 Minutes Blow built to 9"
 FSI 90 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2271.71	112.18	Initial Hydro-static
1	18.61	111.08	Open To Flow (1)
31	89.01	117.41	Shut-In(1)
76	1313.83	118.70	End Shut-In(1)
77	93.87	118.54	Open To Flow (2)
136	149.72	122.80	Shut-In(2)
214	1292.75	124.30	End Shut-In(2)
215	2238.88	124.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
297.00	MW Mud 30% Water 70%	2.24

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65083 **DST#: 5**
Test Start: 2019.01.11 @ 15:46:00

Tool Information

Drill Pipe:	Length: 4270.00 ft	Diameter: 3.80 inches	Volume: 59.90 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 211.46 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 90000.00 lb
		Total Volume: 60.94 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	20.46 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4488.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	70.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut-In Tool	5.00			4466.00	
Hydraulic tool	5.00			4471.00	
Jars	5.00			4476.00	
Safety Joint	2.00			4478.00	
Packer - Shale	5.00			4483.00	
Packer	5.00			4488.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	4489.00	
Recorder	1.00	6752	Outside	4490.00	
Anchor	38.00			4528.00	
Bullnose	3.00			4531.00	43.00 Anchor Tool
Total Tool Length:	70.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc
8100 E 22nd St N #700
Wichita, KS 67278+3188
ATTN: Max Lovely

9-21S-23W Hodgeman,KS
Frusher 9D #1
Job Ticket: 65083 **DST#: 5**
Test Start: 2019.01.11 @ 15:46:00

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:	23000 ppm
Viscosity: 69.00 sec/qt	Cushion Volume: bbl		
Water Loss: 11.99 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6400.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

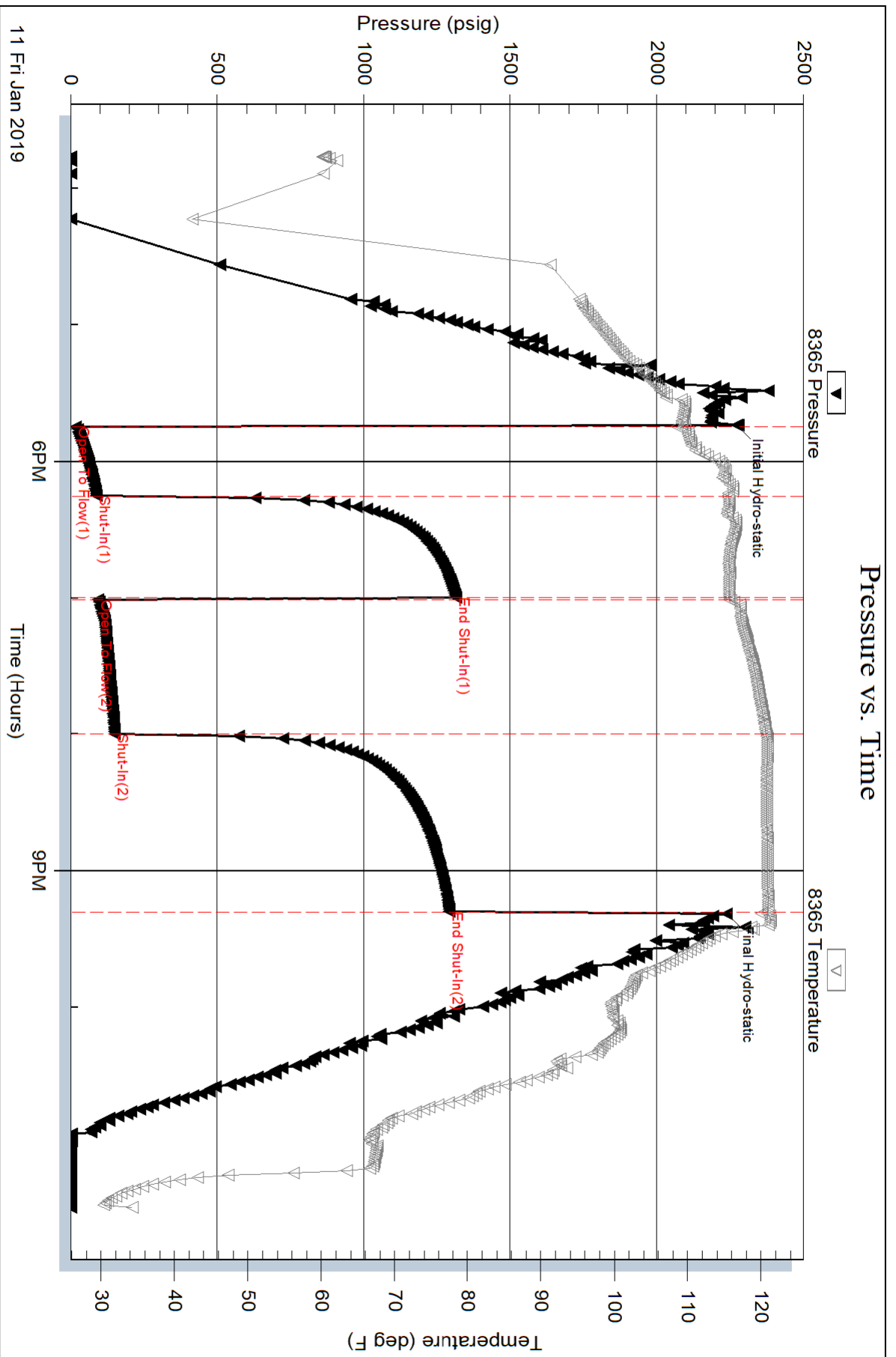
Length ft	Description	Volume bbl
297.00	MW Mud 30% Water 70%	2.240

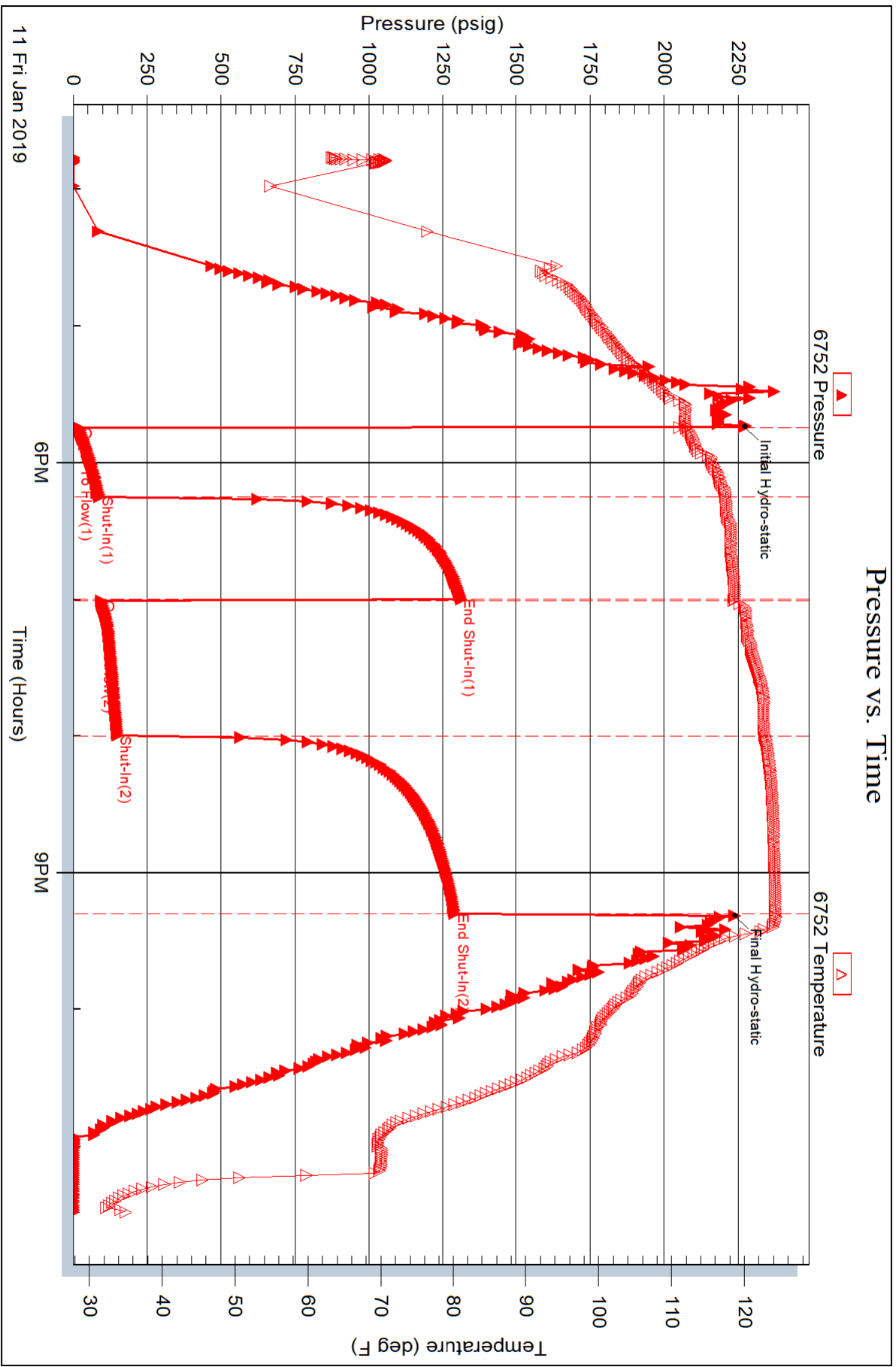
Total Length: 297.00 ft Total Volume: 2.240 bbl

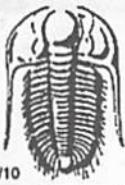
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery resistivity .505 ohms @ 40 deg







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65079

Well Name & No. #1 Frusher 9D Test No. 1 Date 8 JAN 19
 Company Ritchie Exploration Inc. Elevation 2313 KB 2302 GL
 Address 8100 E 22nd St N #700 PO Box 783188 Wichita Kansas 67278-3188
 Co. Rep / Geo. Max Lovely Rig Sterling Rig 4
 Location: Sec. 9 Twp 21S Rge. 23W Co. Hodgeman State KS

Interval Tested 4370-4406 Zone Tested Ft. Scott
 Anchor Length 36 Drill Pipe Run 4141 Mud Wt. 9.2
 Top Packer Depth 4365 Drill Collars Run 211.46 Vls 68
 Bottom Packer Depth 4370 Wt. Pipe Run — WL 8.8
 Total Depth 4406 Chlorides 7400 ppm System LCM 2#

Blow Description I.F. Blow built to BOB in 24 minutes/Total build 16 inches
I.S.I. No blow back
F.F. Blow built to BOB in 30 seconds/Total build 38 inches
F.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>94</u>	<u>Oil cut Gassy Mud</u>	<u>10</u>	<u>5</u>	<u>85</u>	<u>—</u>
<u>472</u>	<u>C.I.P</u>	<u>100</u>	<u>—</u>	<u>—</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 94 BHT 118 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2160</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>3:39 pm</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>7:56 pm</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:06 pm</u>
(D) Initial Shut-In <u>1353</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>1:06 am</u>
(E) Second Initial Flow <u>35</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>2:54 am</u>
(F) Second Final Flow <u>60</u>	<input checked="" type="checkbox"/> Mileage <u>150</u>	Comments <u>—</u>
(G) Final Shut-In <u>1399</u>	<input type="checkbox"/> Sampler <u>—</u>	<input type="checkbox"/> EM Tool <u>—</u>
(H) Final Hydrostatic <u>2132</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
	<input type="checkbox"/> Shale Packer <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
	<input type="checkbox"/> Extra Packer <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
	<input type="checkbox"/> Extra Recorder <u>—</u>	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby <u>—</u>	Total <u>1625</u>
	<input type="checkbox"/> Accessibility <u>—</u>	MP/DST Disc't <u>—</u>
	Sub Total <u>1625</u>	

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65080**

Well Name & No. Frusher 9D #1 Test No. 2 Date 9 JAN 19
 Company Ritchie Exploration Inc. Elevation 2313 KB 2302 GL
 Address 8100 E 22nd St N #700 Box 783188 Wichita Kansas 6727813188
 Co. Rep / Geo. Max Lovely Rig Stirling Rig 4
 Location: Sec. 9 Twp 21S Rge. 23W Co. Hodgeman State KS

Interval Tested 4404 - 4446 Zone Tested Cherokee
 Anchor Length 42 Drill Pipe Run 4174 Mud Wt. 9.2
 Top Packer Depth 4397 Drill Collars Run 211.46 Vls 56
 Bottom Packer Depth 4404 Wt. Pipe Run - WL 10.0
 Total Depth 4446 Chlorides 6200 ppm System LCM 2#

Blow Description I.F. Blow built to 1 inch
I.S.I. No blow back
F.F. Dead / Flush tool light surge then dead
F.S.I. No blow back

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

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

(A) Initial Hydrostatic <u>2211</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>11:24 am</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:29 pm</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2:00 pm</u>
(D) Initial Shut-In <u>26</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>4:00 pm</u>
(E) Second Initial Flow <u>18</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>5:55 pm</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>150</u>	Comments _____
(G) Final Shut-In <u>34</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>2167</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input checked="" type="checkbox"/> Ruined Packer <u>320</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>320</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1945</u>
	Sub Total <u>1625</u>	MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65081

Well Name & No. Frusher 9D #1 Test No. 3 Date 10 Jan 19
 Company Ritchie Exploration Inc Elevation 2313 KB 2302 GL
 Address 8100 E 22nd St N #700 Box 783188 Wichita Kansas 67278+3188
 Co. Rep / Geo. Max Lovely Rig sterling Rig #1
 Location: Sec. 9 Twp 21S Rge. 23W Co. Hodgeman State KS

Interval Tested 4444-4475 Zone Tested Cherokee
 Anchor Length 31 Drill Pipe Run 4237 Mud Wt. 9.2
 Top Packer Depth 4439 Drill Collars Run 211.46 Vis 56
 Bottom Packer Depth 4444 Wt. Pipe Run - WL 10.0
 Total Depth 4475 Chlorides 6200 ppm System LCM 2#

Blow Description I.F. Blow built to BOB 3 1/2 minutes / Total build 94 inches
I.S.I. 8 1/2 inch blow back

F.F. Blow built to BOB in 4 1/2 minutes / Total build 83 inches
F.S.I. Light surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>63</u>	<u>oil cut Gassy mud</u>	<u>15</u>	<u>5</u>	<u>80</u>	<u>0</u>
<u>1417</u>	<u>Gassy O.I</u>	<u>20</u>	<u>80</u>	<u>0</u>	<u>0</u>
<u>346</u>	<u>GIP</u>	<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Rec Total 1480 BHT 129 Gravity 36 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2272</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2:55 am</u>
(B) First Initial Flow <u>73</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>4:25 am</u>
(C) First Final Flow <u>322</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>7:06 am</u>
(D) Initial Shut-In <u>1241</u>	<input checked="" type="checkbox"/> Circ Sub <u>50</u>	T-Pulled <u>10:06 am</u>
(E) Second Initial Flow <u>331</u>	<input type="checkbox"/> Hourly Standby <u> </u>	T-Out <u>1:23 pm</u>
(F) Second Final Flow <u>657</u>	<input checked="" type="checkbox"/> Mileage <u>150</u>	Comments <u> </u>
(G) Final Shut-In <u>1211</u>	<input type="checkbox"/> Sampler <u> </u>	<input type="checkbox"/> EM Tool <u> </u>
(H) Final Hydrostatic <u>2232</u>	<input type="checkbox"/> Straddle <u> </u>	<input type="checkbox"/> Ruined Shale Packer <u> </u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u> </u>	<input type="checkbox"/> Ruined Packer <u> </u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u> </u>	<input type="checkbox"/> Extra Copies <u> </u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder <u> </u>	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u> </u>	Total <u>1675</u>
	<input type="checkbox"/> Accessibility <u> </u>	MP/DST Disc't <u> </u>
	Sub Total <u>1675</u>	

Approved By Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65082

Well Name & No. Frusher 9D#2 Test No. 4 Date 10 JAN 19
 Company R. F. Schie Exploration Inc Elevation 2313 KB 2302 GL
 Address 8100 E 22nd St N #700 Wichita Kansas 67278+3188
 Co. Rep/Geo. Max Lovely Rig Sterling Rig 4
 Location: Sec. 9 Twp 21S Rge. 23W Co. Hodgeman State KS

Interval Tested 4473-4490 Zone Tested Cherokee
 Anchor Length 17 Drill Pipe Run 4239 Mud Wt. 9.4
 Top Packer Depth 4468 Drill Collars Run 211.46 Vis 63
 Bottom Packer Depth 4473 Wt. Pipe Run - WL 11.2
 Total Depth 4490 Chlorides 7700 ppm System LCM 2#

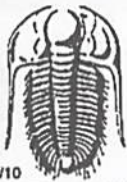
Blow Description F.F. Blow built to BOB 3 minutes/Total build 96 inches
I.S.I. 6 3/4 inch blow back
F.F. Blow built to BOB in 4 1/2 minutes/Total build 78 inches
F.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>252</u>	<u>Muddy Gassy Oil</u>	<u>20%</u>	<u>60%</u>	<u>20%</u>	<u>0%</u>
<u>1197</u>	<u>Gassy Oil</u>	<u>20%</u>	<u>80%</u>	<u>0%</u>	<u>0%</u>
<u>63</u>	<u>GIP</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>100%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1449 BHT 129 Gravity 36 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2230</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>8:05 pm</u>
(B) First Initial Flow <u>114</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>9:35 pm</u>
(C) First Final Flow <u>321</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:05 am</u>
(D) Initial Shut-In <u>1226</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>3:05 am</u>
(E) Second Initial Flow <u>331</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>5:43 am</u>
(F) Second Final Flow <u>548</u>	<input checked="" type="checkbox"/> Mileage <u>150</u>	Comments
(G) Final Shut-In <u>1202</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2164</u>	<input type="checkbox"/> Straddle	
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> EM Tool
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1875</u>
	Sub Total <u>1875</u>	MP/DST Disc't

Approved By _____ Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65083**

Well Name & No. Frusher 9D#1 Test No. 5 Date 11 JAN 19
 Company Ritchie Exploration Inc. Elevation 2313 KB 2302 GL
 Address 8100 E 22nd St N #700 Box 787188 Wich. Mo Kansas 6727813188
 Co. Rep/Geo. Max Lovely Rig Sterling Rig 4
 Location: Sec. 9 Twp 21S Rge. 23W Co. Hobkeman State KS

Interval Tested 4488-4531 Zone Tested Miss. ss. app.
 Anchor Length 43 Drill Pipe Run 4270 Mud Wt. 9.2
 Top Packer Depth 4483 Drill Collars Run 211.46 Vis 69
 Bottom Packer Depth 4488 Wt. Pipe Run — WL 12.0
 Total Depth 4531 Chlorides 6400 ppm System LCM 1#

Blow Description I.F. Blow built to 6 1/4 inch
I.S.I. No blow back
F.F. Blow built to 9 inches
F.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>297</u>	<u>Muddy Water</u>			<u>70</u>	<u>30</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 297 BHT 121 Gravity _____ API RW 1505 @ 40 ° F Chlorides 23,000 ppm

(A) Initial Hydrostatic <u>2272</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2:40 pm</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:46 pm</u>
(C) First Final Flow <u>88</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:45 pm</u>
(D) Initial Shut-In <u>1315</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>9:15 pm</u>
(E) Second Initial Flow <u>93</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>11:30 pm</u>
(F) Second Final Flow <u>150</u>	<input checked="" type="checkbox"/> Mileage <u>150 150</u>	Comments _____
(G) Final Shut-In <u>1293</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>2237</u>	<input type="checkbox"/> Straddle _____	_____

Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> EM Tool _____
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
Final Shut-In <u>75</u>	<input type="checkbox"/> Day Standby _____	<input type="checkbox"/> Extra Copies _____
Sub Total <u>1875</u>	<input type="checkbox"/> Accessibility _____	Sub Total <u>0</u>
		Total <u>1875</u>

Approved By _____ Our Representative [Signature] MP/DST Disc't _____

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

Max R. Lovely

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Ritchie Exploration

LEASE #1 Frusher 9D

FIELD Wildcat

LOCATION SW NE SE

SEC 9 TWP 21 R 23W

COUNTY Hodgeman STATE KS

CONTRACTOR Sterling Rig #4

SPUD 12/14/18 COMP 11/2/19

RID 4606 LTD 4608

MUD UP 3587 TYPE MUD Chem

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	LOG TOP	SUB-SEA DATA	STRUCTURAL POSITION
	TOP	LOG TOP	DATA	A B C
Anhydrite	1549	1519	794	805 793 788
Base Anhydrite	1561	1561	792	876 981 987
Stoller	3815	3816	1503	1510 1513 1519
Heabner	3828	3828	1515	1524 1527 1534
Lansing	3864	3866	1533	1562 1564 1570
Muncie	4207	4032	1719	1737 1732 1731
BKC	4207	4198	1885	1905 1908 1914
Marmaton	4242	4234	1921	1944 1942 1938
Pawnee	4324	4314	2001	2024 2022 2033
FT Scott	4381	4381	2068	2097 2098 2102
Cherokee	4406	4406	2093	2122 2130 2126
Cherokee SD				2216 2190 2212
MISSISSIPPI	4461	4461	2148	2223 2200 2244

REFERENCE WELLS FOR STRUCTURE

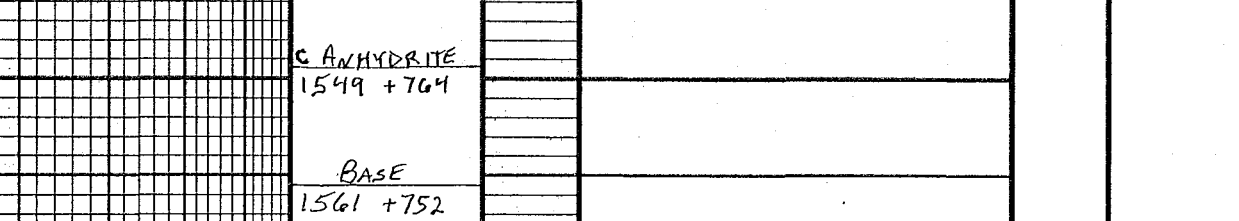
A Norstat #1 - 9 Frusher Farms, 1310 ENL, 420 FEET 9-21-23W

B Raymond Oil #1 - Gibbs, 485 ENL, 841 FEET 15-21-23W

C Norstat #1 - 16 Malcolm, 2510 FSL, 760 FEET 16-21-23W

REMARKS

LEGEND



DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	REMARKS
1500			
1549	ANHYDRITE		
1561	BASE		
3500			7:11M 1-6-19 DRLG @ 3502'
3600			MUD CHECK VIS: 60 WT: 8.8 CHLOR: 5.900 LCM: 1 FLT: 9.6
3700		LS, TAN, BRN, SOFT, SL CHLKY, G INT XTLM, NS	
		SH, BLK, GRAY LS, WHI, XTLM, BRTL, SOFT, VF XTLM, NS	
		LS, GRAY, FOM XTLM, BRTL, SL HRD, FOSS, F FOSS, NS	
		SH, LT-DK GRAY	
		LS, WHI, TAN, VF XTLM, DWS, TITE, NS	
		SH, GRAY	
		LS, TAN, F XTLM, SOFT, ABUN SML FOSS, V FOSS, NS	
		SH, DK GRAY	
		LS, TAN, WHI, FOM XTLM, SOFT, SL - MDRY, F, G, B, NS	
		R.A.	
		SH, GRAY	
		LS, TAN, FOM XTLM, SOFT, G XTLM, NS	
		SH, RED, GRN, GRAY	
		LS, TAN, F XTLM, SOFT, VF SMPKS, F, B, NS	
3800		LS, TAN, EXTLM, CARB, SOFT, BRTL, G XTLM, NS	
3815	HERBNER	SH, BLK SH, GRAY, RED, GRN	
3828	TORONTO	LS, BRN, F XTLM, M HRD, TITE, NS	
3864	LANSING	SH, GRAY LS, BRN, M XTLM, M HRD, SL FOSS, G, B, NS	
		SS, WHI, GRAY, F GRNS + CRSGRNS, SML, FOM, G, B, NS	
		LS, WHI, M-CRS XTLM, SOFT, BRTL, VG, NS	
		LS, TAN, FOM XTLM, BRTL, CRMBLY, VG, NS, SOFT CHLKY	
		LS, CRM, M XTLM, M HRD, F XTLM, NS	
		SH, GRAY	
		LS, WHI, F XTLM, M HRD, VF, NS	
		LS, BRN, M XTLM, HRD, NO VIS, NS	
		LS, CRM, F XTLM, HRD, NO APPD, NS	
		LS, WHI, V SL SOFT FOSS, F XTLM, SL DWS, HRD, P XTLM, NS	
		CHT, WHI, V SL SOFT FOSS, SHARP, NS	
		SH, BLK, DK GRAY LS, BRN, TAN, FOM XTLM, HRD, FOSS, SOFT MED VUG, NS	
		DOLO, BUFF, SUCR, HRD, NO VIS, NS	
		SH, GRAY LS, BRN, TAN, F XTLM, SL FOSS, SOFT BUFF, CHT - SHARP, NS	
		CHT, GRAY, SHARP, NS	
		CHT, APRICOT, WHI, GRAY, OPAQ, SHARP, NS	
		SH, GRAY DOLO, WHI, TAN, BUFF, SUCR, M HRD, SL BRTL, NO VIS, NS	
4000		LS, BUFF, FOM XTLM, M HRD, FOSS, F FOSS, NS	
		LS, TAN, BUFF, F XTLM, W/LG XLS W/N, SL HRD + BRTL, F, NS	
		CHT, WHI, TRIP, F, NS	
		LS, CRM, TAN, F XTLM, HRD, SL FOSS, P, NS	
		SH, GRAY, BURG	
		LS, BRN, VF XTLM, V HRD, TITE, FEW SML FOSS, NS	
		LS, GRAY, VF XTLM, DWS, M HRD, TITE, NS	
		LS, WHI, LT GRAY, VF XTLM, DWS, M HRD, TITE, NS	
		SH, BLK LS, GRAY, BRN, TAN, VF XTLM, HRD, TITE, NS	
		LS, BRN, F XTLM, HRD, FOSS, NO VIS, SOFT BRN FOSS, CHT, NS	
		LS, TAN, F XTLM, HRD, SL BRTL, W CNT'D OOLS, NO F, NS	
4100		LS, BRN, F XTLM, MEB XLS W/N, V HRD, TITE, NS	
		SH, DK GRAY LS, GRAY, WHI, F XTLM, SOFT, V SL CHLKY, NS	
		LS, CRM, F XTLM, BRTL, M HRD, SL CHLKY, NS	
		SH, BLK, V HRD CHALK, SL LMY XLS W/N	
		LS, WHI, TAN, CRM, VF XTLM, DWS, V BRTL, W/D VLS, NS	
		R.A.	
		LS, WHI, M-CRS XTLM, M HRD, XTLM, NS	
		SH, BLK, GRN, HRD LS, CRM, LT TAN, F XTLM, V HRD, TITE, NS	
		R.A.	
		LS, BRN, TAN, F XTLM, HRD, V FEW FOSS, NO VIS, NS	
4200		SH, GRAY LS, BRN, F XTLM, SL DWS, V HRD, TITE, NS	
		LS, CRM, F XTLM, SL DWS, HRD, TITE, NS	
		LS, BRN, VF XTLM, DWS, V HRD, TITE, NS	
		M.A. - UCR BRN + WHI FOSS CHT	
4300		LS, TAN, VF XTLM, HRD, SOFT FOSS, (B) (V) (NS), NO VIS, NS	
		LS, AA	
		LS, GRAY, VF XTLM, DWS, HRD, TITE, NS	
		CHT, TAN, APRICOT, OPAQ, SHARP, F, B, NS	
		LS, CRM, LT TAN, F XTLM, DWS, V HRD, TITE, NS	
		R.A.	
		LS, BRN, VF XTLM, V DWS, V HRD, TITE, NS	
		LS, BRN, GRAY, VF XTLM, DWS, V HRD, TITE, NS	
		LS, GRAY, VF XTLM, DWS, HRD, TITE, NS	
		SH, GRAY, DK GRAY LS, GRAY, F XTLM, HRD, NO VIS, NS	
		SH, GRAY LS, GRAY, F XTLM, HRD, NO VIS, NS	
		SH, GRAY LS, GRAY, F XTLM, V HRD, TITE, NS	
		SH, BLK, CARB, PLS SUDY SH, GRAY, SL CARB LS, BRN, VF XTLM, DWS, M HRD, NO VIS, NS	
		LS, CRM, F XTLM, SOFT, SL CHLKY, SUDY, FOM FLUOR STG, MICRO SPT STG, CARB, V AT OIL	
		LS, CRM, F XTLM, SOFT, SL CHLKY, SUDY, FOM FLUOR STG, MICRO SPT STG, CARB, V AT OIL	
		SH, BLK, CRN - SMELLS W/N	
		LS, WHI, F XTLM, CRN, SL HRD, M HRD, P XTLM, NS	
		LS, BRN, F XTLM, HRD, SOFT FLUOR STG, LT ODR, FOM STG, W/BK, LT BRN OIL, P ENERGY	
		LS, CRM, WHI, F XTLM, SL FLUOR STG, N TRAY, WHI, FOM STG, PLS BK OIL, SL SHO GAS, C'S LFOD	
		LS, WHI, CRM, TAN, VF XTLM, DWS, HRD, NO VIS, NS	
		SH, CRN, GRAY, BURG	
		LS, WHI, F XTLM, HRD, G SPT INT XTLM + SML VUG, F, G ODR, F, G, SO VF BRN FLUOR STG, LT BRN OIL, P ENERGY	
		LS, CRM, M XTLM, SL HRD, V XTLM, F SPT STG, CARB, V AT OIL	
		LS, CRM, M XTLM, SL HRD, V XTLM, F SPT STG, CARB, V AT OIL	
		SH, CRN, MXTLM, SL HRD, V XTLM, F SPT STG, CARB, V AT OIL	
		DOLO, LMY, M XTLM, SL HRD, V XTLM, F SPT STG, CARB, V AT OIL	
		DOLO, LMY, M XTLM, SL HRD, V XTLM, F SPT STG, CARB, V AT OIL	
		DOLO, CRM, FAN, VF XTLM, SUCR HRD, NO VIS, NS	
		CHALK	
		DOLO, TAN, FINE SUCR, M HRD, SPT STG, CARB, V AT OIL	
		DOLO, CRM, F XTLM, HRD, SUCR, NO VIS, P - SET WHI, CHT, NS	
		CHT, WHI, SHARP, PLS TRIP, NS	
		CHT, CHINA WHI, WHI, PLS WHI OPAQ MOSTLY FRESH, PLS TRIP, NS	
		R.A.	
		LS, TAN, BRN, F XTLM, HRD, PLS FRAC, MOSTLY V TITE, NS	
		DOLO, TAN, BRN, F XTLM, V SUCR, HRD, FOM, NS	
		R.A.	
		DOLO, A.A	
		OT: CFS, S, STD, SHORT TRIP, CONT'D HOLE 1 1/2 HRS FOR LOGS	
4600			

MUD-CD: MICHAEL CARROLL
TRILOBITE TESTING: KEN SWINNEY
ELLI LOGGING: JASON CARPELLUCCI



#1 Frusher 9D

1,544' FSL & 837' FEL

106' S & 153' E of SW NE SE Section 9-21S-23W

Hodgeman County, Kansas

API# 15-083-21967-0000

Elevation: GL: 2,303', KB: 2,314'

Sample Tops			Ref. Well
Anhydrite	1522	+792	-13
B/Anhydrite	1563	+751	-12
Heebner	3815	-1502	+8
Toronto	3828	-1515	+9
Lansing	3864	-1551	+11
Muncie	4038	-1725	+12
Stark	4130	-1817	+14
Hush	4168	-1855	+14
Marmaton	4242	-1929	+15
Altamont	4259	-1946	+13
Pawnee	4324	-2011	+13
Ft. Scott	4381	-2068	+29
Cherokee	4406	-2093	+29
Mississippian	4461	-2147	+76
RTD	4606	-2292	



Services, Inc.

CHARGE TO: Ritchie Exploration

ADDRESS

CITY, STATE, ZIP CODE

TICKET 031934

PAGE 1 OF 1

1. SERVICE LOCATIONS <u>Ness City, KS</u>	WELL/PROJECT NO. <u>90-1</u>	LEASE <u>Fraser</u>	COUNTY/PARISH <u>Wagoner</u>	STATE <u>KS</u>	CITY <u>Ness City</u>	DATE <u>1/17/19</u>	OWNER <u>Ness City, S-17</u>
2. TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>HD</u>	RIG NAME/NO.	SHIPPED VIA <u>CT</u>	DELIVERED TO <u>Location</u>	WELL PERMIT NO.	ORDER NO.	
3. WELL TYPE <u>O1</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>Part Celler</u>	WELL LOCATION <u>Ness City, S-17</u>				
4. REFERRAL LOCATION	INVOICE INSTRUCTIONS <u>E-3-1-N NW int</u>						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC ACCT DF	DESCRIPTION	QTY.		UNIT		UNIT PRICE	AMOUNT
				UM	UM	UM	UM		
576		1	MILEAGE <u>T/B #112</u>			25	mi	5.00	125.00
576D		1	<u>Pump Charge</u>			1	job	1300.00	1300.00
329-8		1	<u>60/40 Pozum 8% gel</u>			180	sts	11.00	1998.00
276		1	<u>Cotton Seed Hulls</u>			3	sts	30.00	90.00
290		1	<u>D-Air</u>			3	gal	42.00	126.00
581		1	<u>Service Charge CRT</u>			300	sts	1.50	525.00
		1	<u>Daycase</u>			330	tm	0.85	280.50

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

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

X [Signature]

DATE SIGNED 1/17/19 TIME SIGNED 11:30

A.M. P.M.

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

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?

WE UNDERSTOOD AND MET YOUR NEEDS?

OUR SERVICE WAS PERFORMED WITHOUT DELAY?

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?

ARE YOU SATISFIED WITH OUR SERVICE?

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 1

TOTAL 4613.89

SWIFT OPERATOR [Signature] APPROVAL [Signature]

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

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 1/17/19 PAGE NO. 1

CUSTOMER Ritchie Explorator WELL NO. 9D-1 LEASE Frusher JOB TYPE Port Collar TICKET NO. 031934

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0830							On Location 2 7/8" 5 1/2" PC = 1482'
	0945				✓		1200	Test BS to 1200 PSI Open P.C.
	0955	2			✓		200	Injection Rate
	1000	4	60		✓		200	Mix 180 sks of 60/40 poz 8 1/2 gel w/ 300# of Hulls in first 100 sks *Circulate to Surface*
	1025	3 1/2	7 1/2		✓		250	Displace CMT
	1030	0	0		✓		1200	Close PC Test *Hold* Run 5 joints
	1045	3 1/2	25		✓		200	Reverse Clean
	1230				✓		500	Wash up Truck Pressure Casing to 500 PSI *Shut in* 180 sks of 60/40 Pozmix 8 1/2 gel + 300# Cotton Seed Hulls used Job Complete Thank You Gideon, Preston, Kirby



Services, Inc.

TICKET 031933

PAGE 1 OF 2

CHARGE TO: Ritchie Exploration
 ADDRESS _____
 CITY, STATE, ZIP CODE _____

1. SERVICE LOCATIONS <u>Ness City, KS</u>	WELL/PROJECT NO. <u>9d-1</u>	LEASE <u>Frisher</u>	COUNTY/PARISH <u>Hodgeman</u>	STATE <u>KS</u>	CITY <u>Jetmore</u>	DATE <u>1/13/19</u>	OWNER <u>Ness City, 16-S</u>
2. TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <u>Sterling</u>	RIG NAME/NO. <u>4</u>	SHIPPED VIA <u>CT</u>	DELIVERED TO <u>Location</u>	WELL PERMIT NO.	ORDER NO.	
3. WELL TYPE <u>Oil</u>	WELL CATEGORY <u>Development</u>	JOB PURPOSE <u>Long String</u>	WELL LOCATION <u>Ness City, 16-S</u>		WELL INSTRUCTIONS <u>3-E, 1-N, NW-1/4</u>		

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC ACCT DF	DESCRIPTION	QTY.		UNIT		AMOUNT
				UM	UM	UM	UM	
576		1	MILEAGE Trk #112			26	mi	5.00
578		1	Pump Charge - Longstring			1	job	1300.00
403		1	Cement Baskets	5	1/2 in	3	ea	275.00
404		1	Port Collar	5	1/2 in	1	ea	2500.00
406		1	Latch down Plug + Bell	5	1/2 in	1	ea	250.00
407		1	Inset Fleet shoe w/ Arb fill	5	1/2 in	1	ea	325.00
409		1	Centralizers - Turbs	6	1/2 in	8	ea	85.00

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

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.
 X [Signature]
 DATE SIGNED 1/13/19 TIME SIGNED 9:45 A.M. P.M.

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

SURVEY	AGREE	UNDECIDED	DISAGREE	PAGE TOTAL	TOTAL
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				1	6005.00
WE UNDERSTOOD AND MET YOUR NEEDS?				2	6615.23
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					12000.00
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					12000.00
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO			11358.66
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					12000.00
TOTAL					12000.00

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



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

TICKET CONTINUATION

TICKET No. 03A33

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL			DATE	UNIT PRICE	AMOUNT	PAGE OF
		LOC	ACCT	DF			QTY	U/M	QTY				

CUSTOMER Ritchie Exploration

Ernsler 94-1

1/13/19

2 OF 2

325						Standard Cement						13	00	2925	00
279						Bentonite Gel						4	00	120	00
283						Salt						1200	00	240	00
292						Held - 322						100	00	800	00
277						Coal Seal (Gilsonte)						1125	00	956	00
221						Liquid KCL						2	00	50	00
281						Mud Flux						500	00	750	00
290						D-Air						3	00	126	00

SERVICE CHARGE		CUBIC FEET		TON MILES		MILEAGE CHARGE		TOTAL WEIGHT		LOADED MILES	
581		225		299.69		00		25		25	
583						00		25		25	

CONTINUATION TOTAL 6615 73

JOB LOG

SWIFT Services, Inc.

DATE 1/13/19 PAGE NO. 1

CUSTOMER Ritchie Exploration WELL NO. 9d-1 LEASE Frusher JOB TYPE Long String TICKET NO. 031933

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2300							On Location 5 1/2" 15.5# pipe TD: 4606' TP: 4602' SJ: 21' PC: 1483' #75
								Turbo: 1, 2, 3, 6, 20, 23, 74, 76 Baskets: 12, 75, 97
	0310							Start 5 1/2" Casing in well
	0700							Drop ball - Circulate
	0825	4 1/2	12		✓	100		Pump 500 gal Mud flush
		4 1/2	20		✓	100		Pump 20 bbl KCL flush
	0835		7.5					Plug RH MH [30, 20]
	0840	4 1/2	56		✓	100		Mix 225 sks of Standard CMT
	0855							Wash out Pump & Lines Release latch down Plug
	0905	6 1/2	0		✓	100		Start Displacement
		6 1/2	80		✓	300		lift Pressure
		6 1/2	108		✓	800		Max lift Pressure
	0925	6 1/2	109		✓	1800		Land Latch down Plug
								Release Pressure *Plug Hold*
	0930							Wash-up Truck
	0945							Job Complete
								Thank you.
								Gudeon, Preston, Kirby



BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

Tmt 32

FIELD SERVICE TICKET

1718 17652 A

DATE _____ TICKET NO. _____

DATE OF JOB 12-15-16 DISTRICT Pratt Kansas		NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/> CUSTOMER ORDER NO.:							
CUSTOMER R. Richie Exploration Co		LEASE Franklin		WELL NO. 1181					
ADDRESS		COUNTY Holdrege		STATE Kansas					
CITY STATE		SERVICE CREW Fernis, Mike, Wood							
AUTHORIZED BY		JOB TYPE: 8.675' 30' face casing 242							
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM/PM	TIME
86779	.5						12-14-16		2:20
19918	.5					ARRIVED AT JOB	12-15-16		0230
						START OPERATION			0445
						FINISH OPERATION			0515
						RELEASED			0600
						MILES FROM STATION TO WELL			100

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: *Alan Poff*
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT	
CP1000	Common Cement	BB	165		2646 00	
CC109	Calcium chloride	lb	312		327 60	
CC102	CelloFlake	lb	42		155 40	
E100	Pickup Mileage	M	100		450 00	
E101	Heavy Equipment Mileage	M	200		1600 00	
E113	Bulk delivery charge Per ton mile	TN/M	780		19500 00	
CB200	Depth charge 0-500'	4hr	1		1000 00	
CB240	Blending & Mixing Service charge	SK	165		231 00	
SC003	Service supervisor F. 157 & 158 on location	SA	1		175 00	
					SUB TOTAL	8429 00

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$	
MATERIALS	%TAX ON \$	
TOTAL (JLW)		5225 98

SERVICE REPRESENTATIVE <i>Fernis</i>	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: <i>Alan Poff</i>
--------------------------------------	--

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.