



DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.16 @ 15:40:00

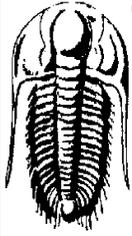
End Date: 2019.09.16 @ 21:59:50

Job Ticket #: 65818 DST #: 1

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

Printed: 2019.09.25 @ 12:11:18

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 1
LKC A-D
2019.09.16



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

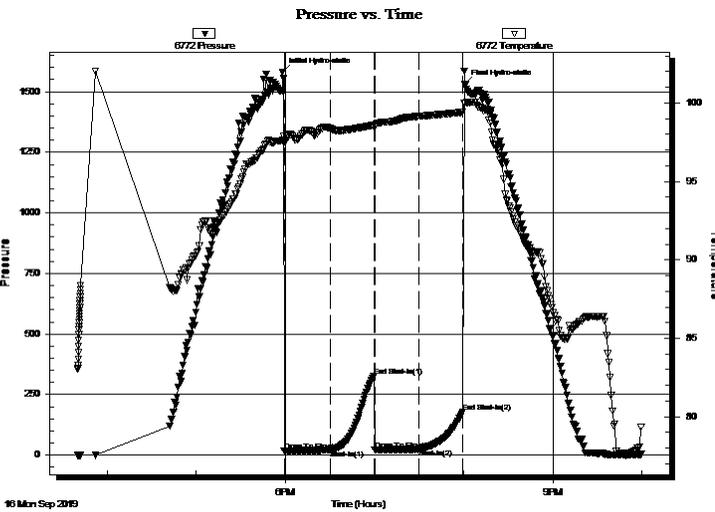
13-16s-14w Barton, KS
Reif #1
Job Ticket: 65818 **DST#: 1**
Test Start: 2019.09.16 @ 15:40:00

GENERAL INFORMATION:

Formation: **LKC A-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:59:10
Time Test Ended: 21:59:50
Interval: **3138.00 ft (KB) To 3196.00 ft (KB) (TVD)**
Total Depth: 3196.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
Press@RunDepth: 24.72 psig @ 3139.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.16 End Date: 2019.09.16 Last Calib.: 2019.09.16
Start Time: 15:40:01 End Time: 21:59:50 Time On Btm: 2019.09.16 @ 17:58:00
Time Off Btm: 2019.09.16 @ 20:01:00

TEST COMMENT: IF-30- Built to 3/4"
ISI-30- No blow back
FF-30- No Blow
FSI-30- No blow back



PRESSURE SUMMARY

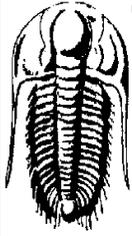
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1580.46	97.64	Initial Hydro-static
2	16.54	97.50	Open To Flow (1)
33	20.72	98.37	Shut-In(1)
62	326.25	98.58	End Shut-In(1)
63	21.49	98.51	Open To Flow (2)
92	24.72	99.15	Shut-In(2)
122	178.74	99.42	End Shut-In(2)
123	1529.76	99.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100%M	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65818 **DST#: 1**
Test Start: 2019.09.16 @ 15:40:00

Tool Information

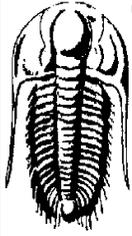
Drill Pipe:	Length: 2880.00 ft	Diameter: 3.80 inches	Volume: 40.40 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 42.33 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3138.00 ft			Final	53000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	78.00 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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Change Over Sub	1.00			3119.00	
Shut In Tool	5.00			3124.00	
Hydraulic tool	5.00			3129.00	
Packer	5.00			3134.00	20.00 Bottom Of Top Packer
Packer	4.00			3138.00	
Stubb	1.00			3139.00	
Recorder	0.00	6772	Inside	3139.00	
Recorder	0.00	6769	Outside	3139.00	
Perforations	20.00			3159.00	
Change Over Sub	1.00			3160.00	
Drill Pipe	32.00			3192.00	
Change Over Sub	1.00			3193.00	
Bullnose	3.00			3196.00	58.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65818 **DST#: 1**
Test Start: 2019.09.16 @ 15:40:00

Mud and Cushion Information

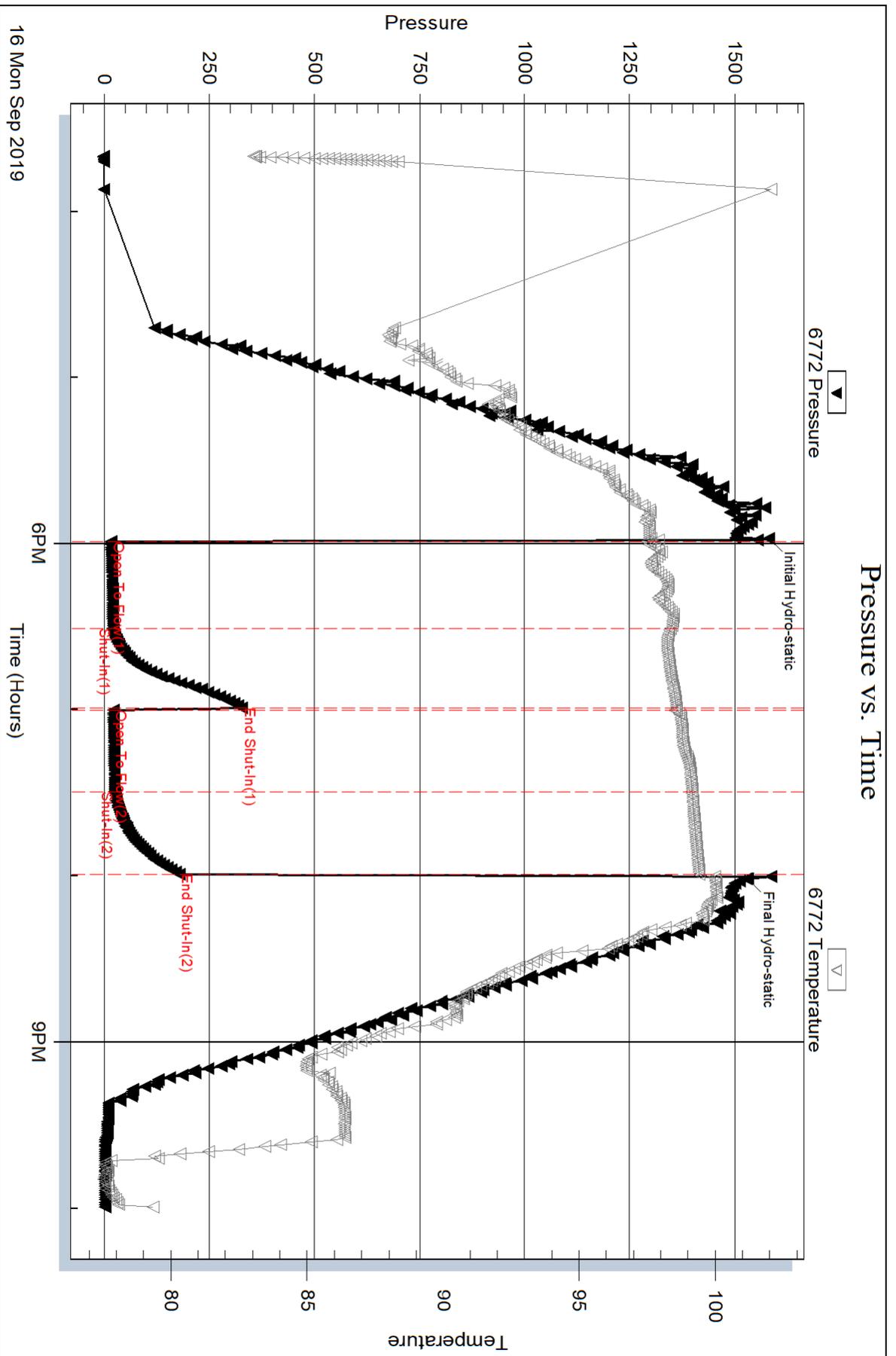
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.38 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6000.00 ppm			
Filter Cake: 1.00 inches			

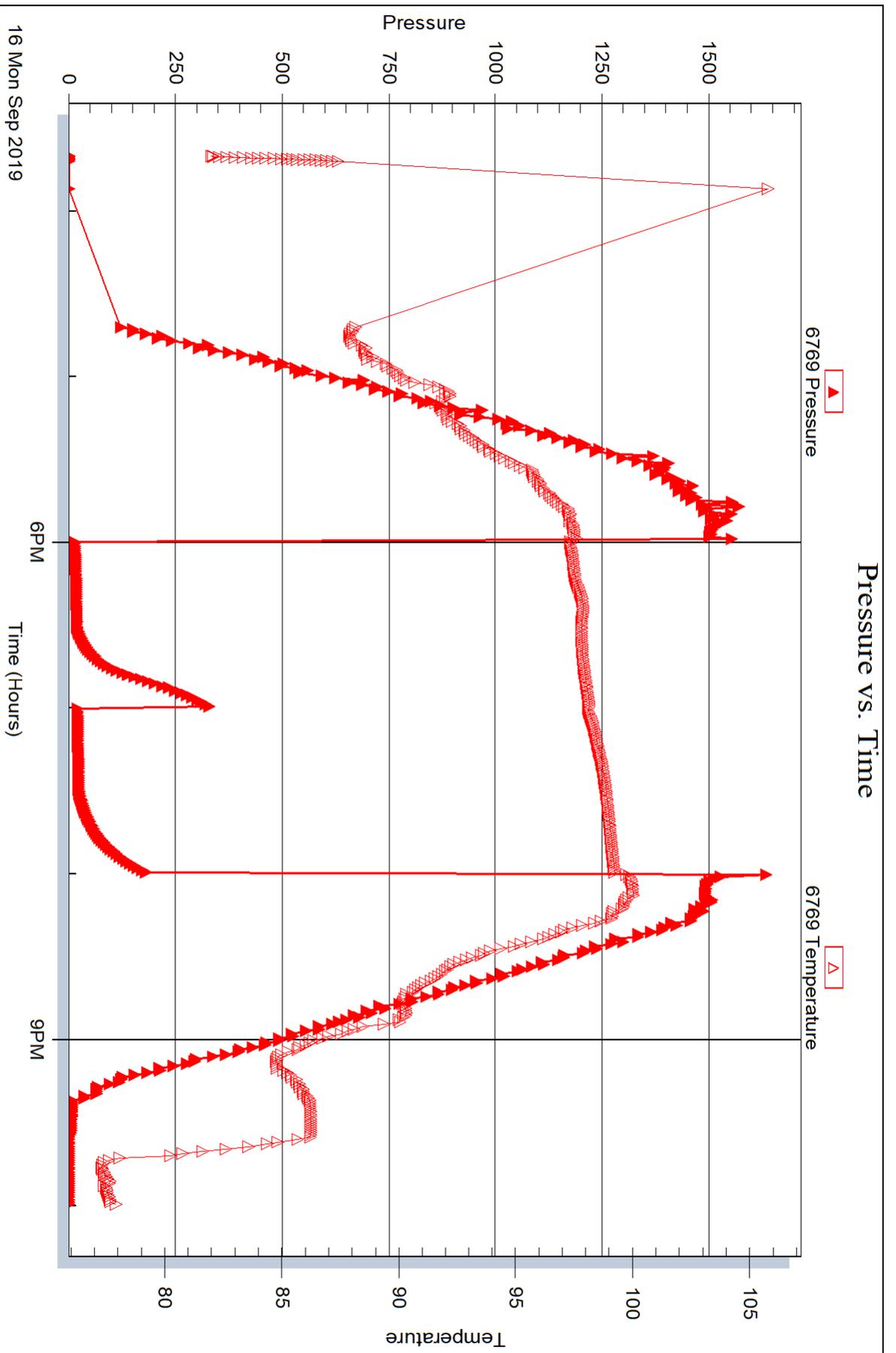
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100%M	0.071

Total Length: 10.00 ft Total Volume: 0.071 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.17 @ 12:13:00

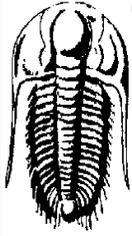
End Date: 2019.09.17 @ 18:04:39

Job Ticket #: 65819 DST #: 2

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

Printed: 2019.09.25 @ 12:10:53

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 2
LKC E-G
2019.09.17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

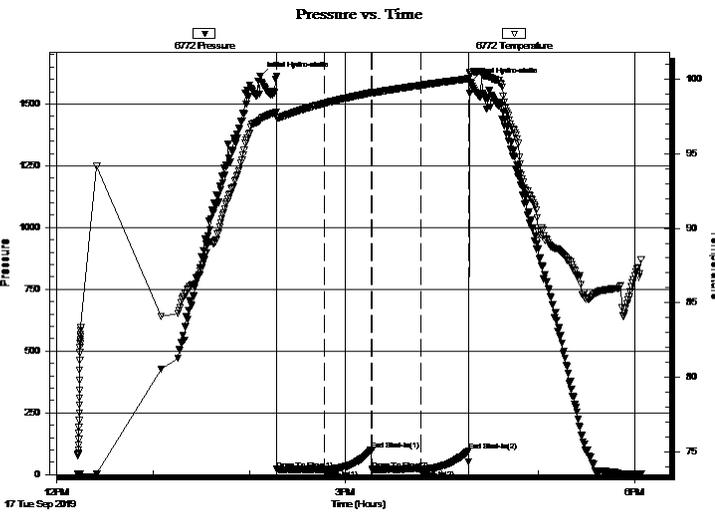
13-16s-14w Barton,KS
Reif #1
Job Ticket: 65819 **DST#: 2**
Test Start: 2019.09.17 @ 12:13:00

GENERAL INFORMATION:

Formation: **LKC E-G**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:17:10
Time Test Ended: 18:04:39
Interval: **3198.00 ft (KB) To 3244.00 ft (KB) (TVD)**
Total Depth: 3244.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
Press@RunDepth: 21.15 psig @ 3199.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.17 End Date: 2019.09.17 Last Calib.: 2019.09.17
Start Time: 12:13:01 End Time: 18:04:40 Time On Btm: 2019.09.17 @ 14:06:50
Time Off Btm: 2019.09.17 @ 16:17:40

TEST COMMENT: IF-30- Weak surface blow
ISI-30- No blow back
FF-30- No blow
FSI-30- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1612.45	97.28	Initial Hydro-static
11	21.01	97.47	Open To Flow (1)
41	20.17	98.39	Shut-In(1)
69	100.32	99.09	End Shut-In(1)
70	20.24	99.08	Open To Flow (2)
101	21.15	99.59	Shut-In(2)
130	95.18	100.04	End Shut-In(2)
131	1588.27	100.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	MUD 100%M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65819 **DST#: 2**
Test Start: 2019.09.17 @ 12:13:00

Tool Information

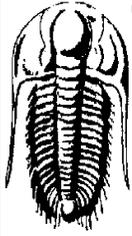
Drill Pipe:	Length: 2939.00 ft	Diameter: 3.80 inches	Volume: 41.23 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	56000.00 lb
			<u>Total Volume: 43.16 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	3198.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	46.00 ft				
Tool Length:	66.00 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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Change Over Sub	1.00			3179.00	
Shut In Tool	5.00			3184.00	
Hydraulic tool	5.00			3189.00	
Packer	5.00			3194.00	20.00 Bottom Of Top Packer
Packer	4.00			3198.00	
Stubb	1.00			3199.00	
Recorder	0.00	6772	Inside	3199.00	
Recorder	0.00	6769	Outside	3199.00	
Perforations	8.00			3207.00	
Change Over Sub	1.00			3208.00	
Drill Pipe	32.00			3240.00	
Change Over Sub	1.00			3241.00	
Bullnose	3.00			3244.00	46.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer

13-16s-14w Barton,KS

370 W. Wichita Ave
Russell KS 67665+0352

Reif #1

Job Ticket: 65819

DST#: 2

ATTN: Austin Klaus

Test Start: 2019.09.17 @ 12:13:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	MUD 100%M	0.014

Total Length: 2.00 ft Total Volume: 0.014 bbl

Num Fluid Samples: 0

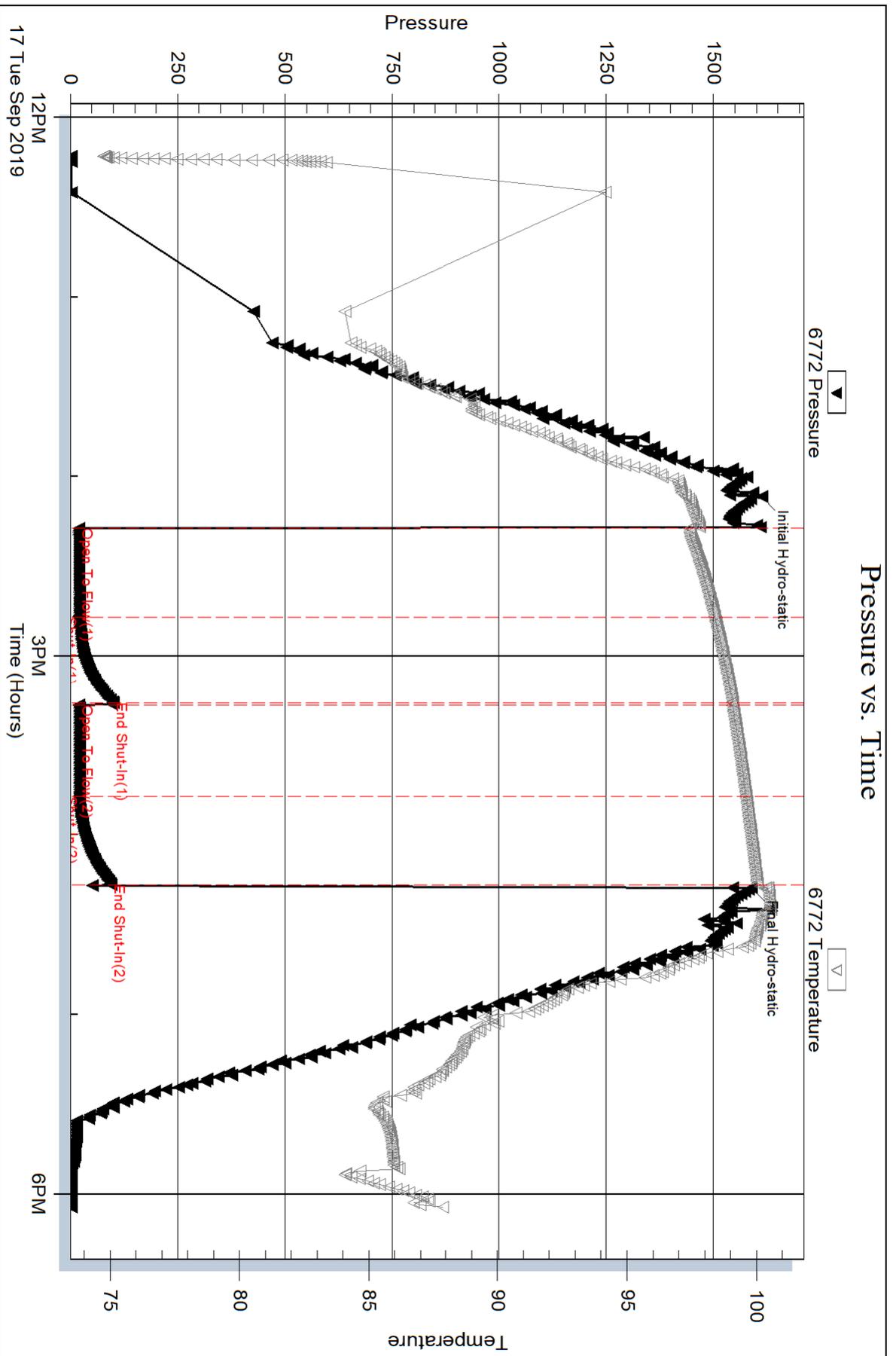
Num Gas Bombs: 0

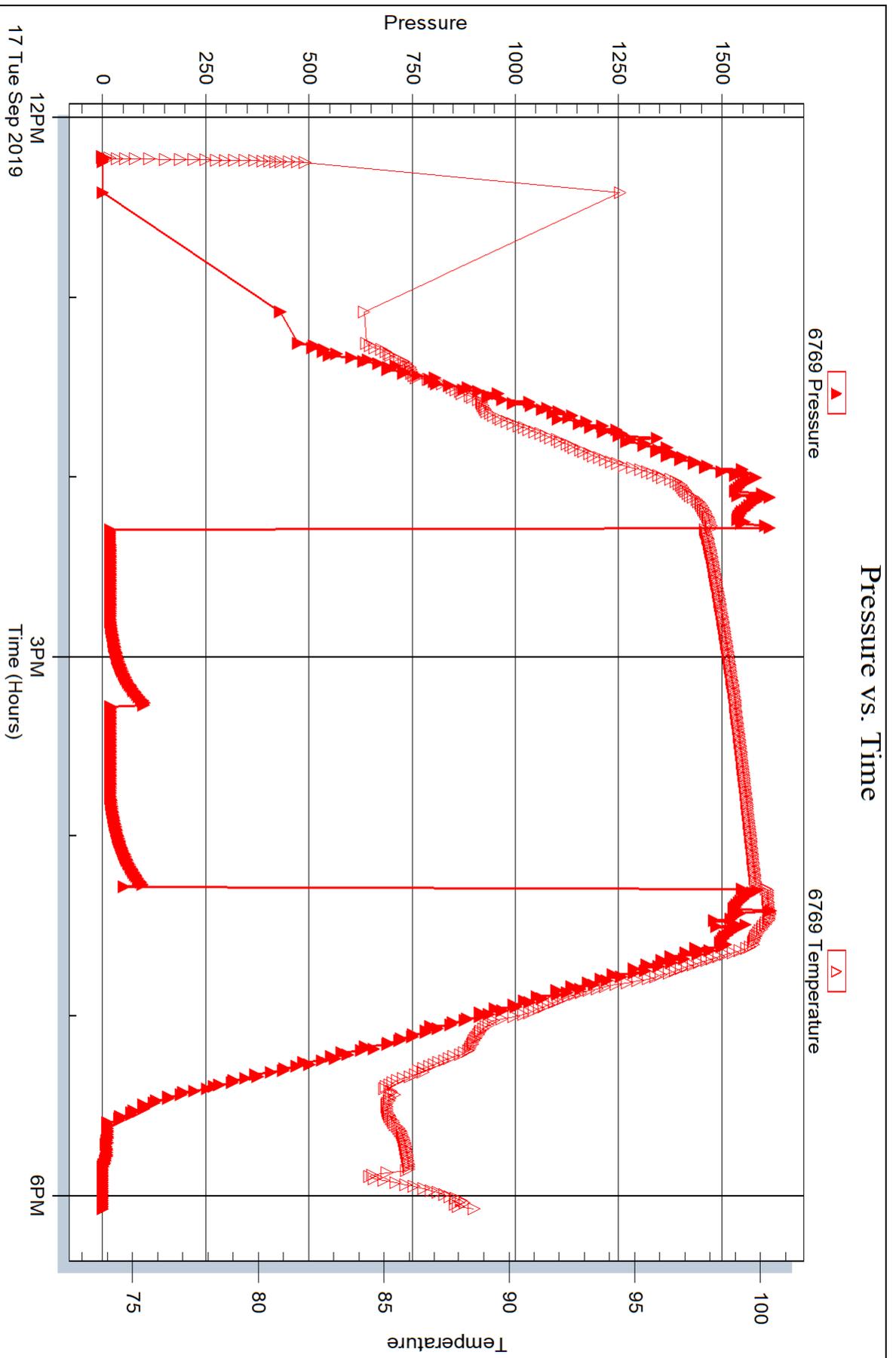
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

Start Date: 2019.09.18 @ 07:03:00

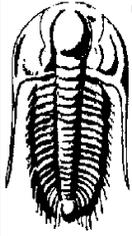
End Date: 2019.09.18 @ 13:04:20

Job Ticket #: 65820 DST #: 3

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

Printed: 2019.09.25 @ 12:10:24

John O Farmer
13-16s-14w Barton,KS
Reif #1
DST # 3
LKC H-J
2019.09.18



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton, KS
Reif #1
Job Ticket: 65820 **DST#: 3**
Test Start: 2019.09.18 @ 07:03:00

GENERAL INFORMATION:

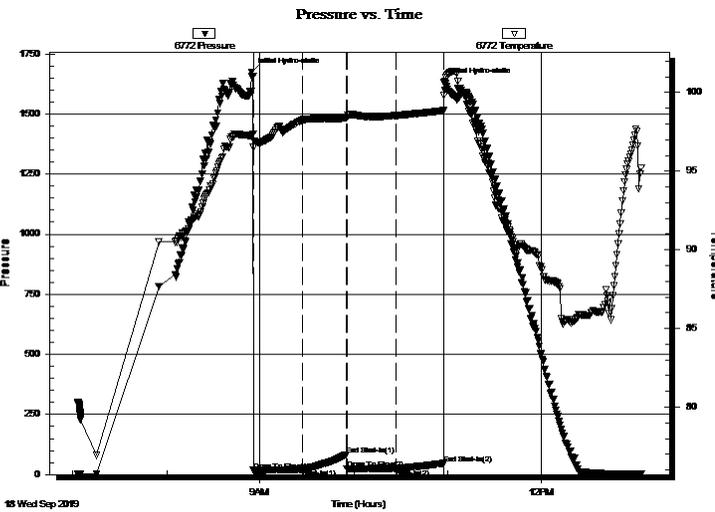
Formation: **LKC H-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:55:40
Time Test Ended: 13:04:20
Interval: **3270.00 ft (KB) To 3328.00 ft (KB) (TVD)**
Total Depth: 3328.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan
Unit No: 66
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6772

Inside

Press@RunDepth: 24.67 psig @ 3271.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.18 End Date: 2019.09.18 Last Calib.: 2019.09.18
Start Time: 07:03:01 End Time: 13:04:20 Time On Btm: 2019.09.18 @ 08:54:40
Time Off Btm: 2019.09.18 @ 10:57:50

TEST COMMENT: IF-30- Built to 1/2"
ISI-30- No blow back
FF-30- Very weak surface blow that died 9 mins into the flow
FSI-30- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1674.63	97.29	Initial Hydro-static
1	17.11	96.50	Open To Flow (1)
33	22.19	98.24	Shut-In(1)
61	82.34	98.37	End Shut-In(1)
61	23.59	98.46	Open To Flow (2)
93	24.67	98.53	Shut-In(2)
123	46.79	98.85	End Shut-In(2)
124	1633.34	99.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	O.S.M. 2%O 98%M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS

Reif #1

Job Ticket: 65820

DST#: 3

Test Start: 2019.09.18 @ 07:03:00

Tool Information

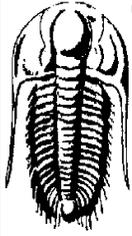
Drill Pipe:	Length: 3007.00 ft	Diameter: 3.80 inches	Volume: 42.18 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 44.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	57000.00 lb
Depth to Top Packer:	3270.00 ft			Final	57000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	78.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3251.00	
Shut In Tool	5.00			3256.00	
Hydraulic tool	5.00			3261.00	
Packer	5.00			3266.00	20.00 Bottom Of Top Packer
Packer	4.00			3270.00	
Stubb	1.00			3271.00	
Recorder	0.00	6772	Inside	3271.00	
Recorder	0.00	6769	Outside	3271.00	
Perforations	20.00			3291.00	
Change Over Sub	1.00			3292.00	
Drill Pipe	32.00			3324.00	
Change Over Sub	1.00			3325.00	
Bullnose	3.00			3328.00	58.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65820 **DST#: 3**
Test Start: 2019.09.18 @ 07:03:00

Mud and Cushion Information

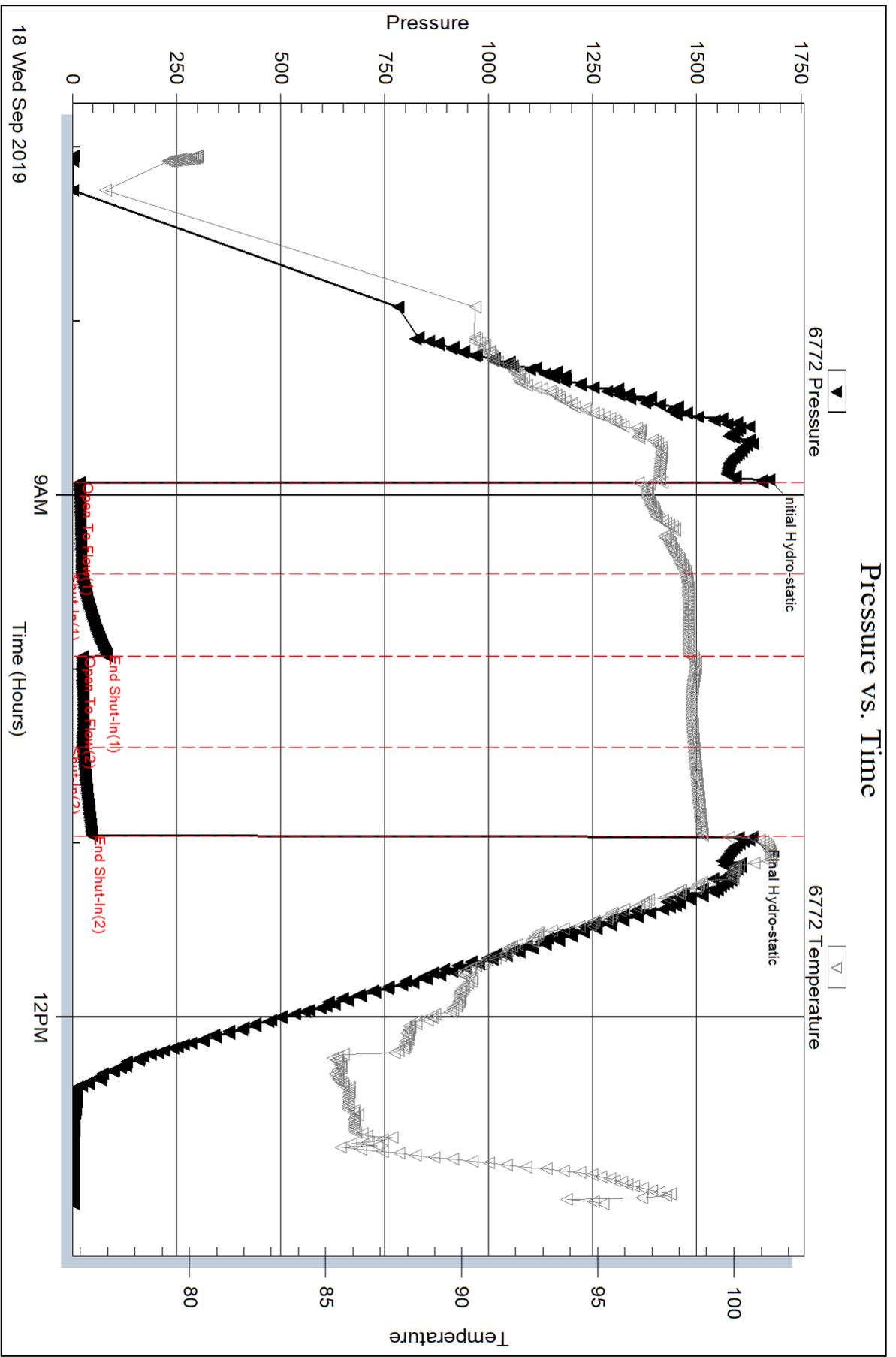
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.69 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: inches			

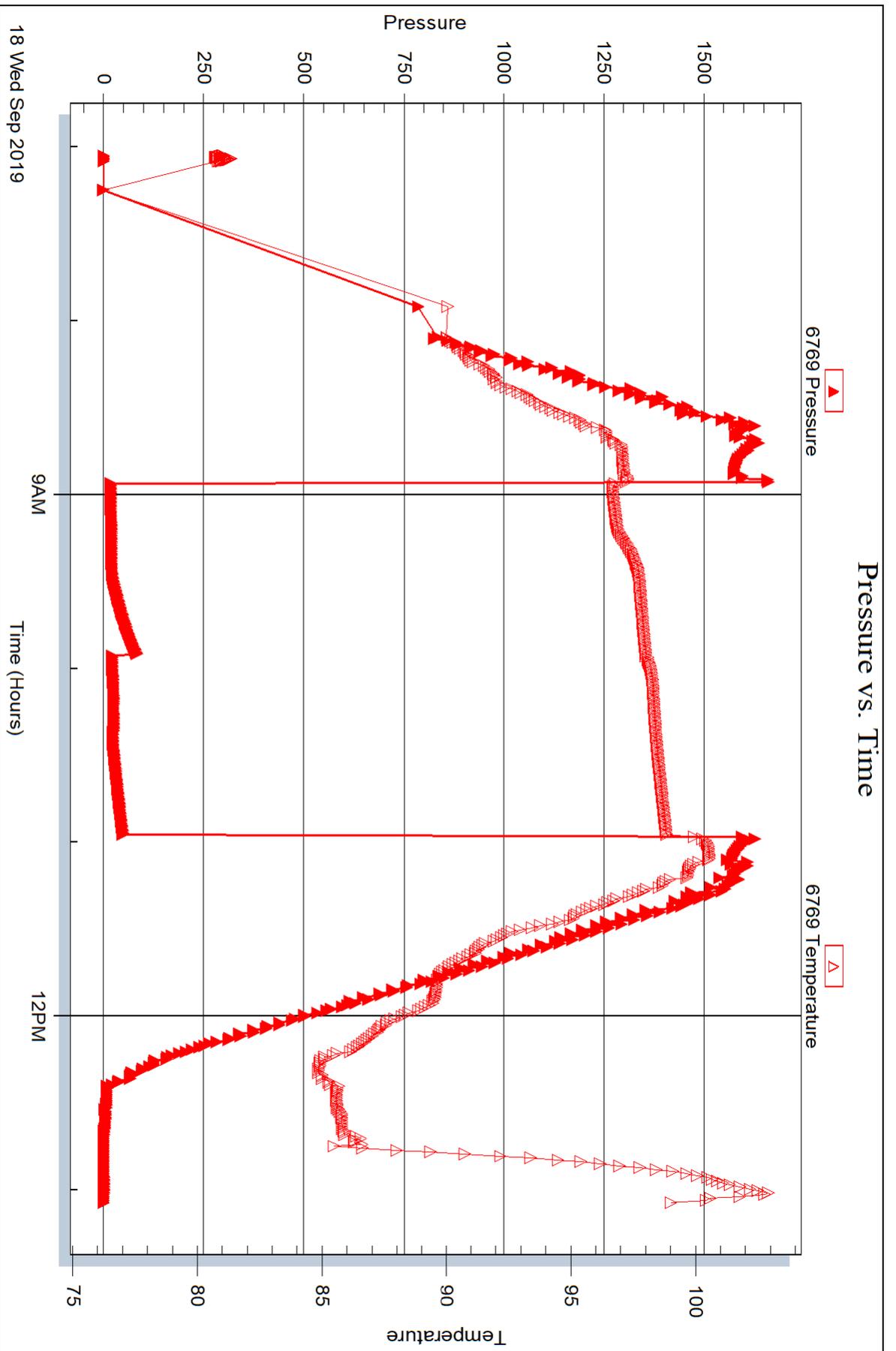
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	O.S.M. 2%O 98%M	0.212

Total Length: 30.00 ft Total Volume: 0.212 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

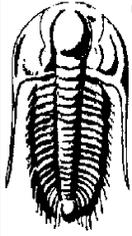
Start Date: 2019.09.19 @ 09:18:00

End Date: 2019.09.19 @ 15:54:30

Job Ticket #: 65821 DST #: 4

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

Printed: 2019.09.25 @ 12:09:59



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65821 **DST#: 4**
Test Start: 2019.09.19 @ 09:18:00

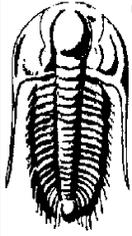
Tool Information

Drill Pipe:	Length: 3069.00 ft	Diameter: 3.80 inches	Volume: 43.05 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 44.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3347.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	3384.00 ft			
Interval between Packers:	37.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3328.00	
Shut In Tool	5.00			3333.00	
Hydraulic tool	5.00			3338.00	
Packer	5.00			3343.00	20.00 Bottom Of Top Packer
Packer	4.00			3347.00	
Stubb	1.00			3348.00	
Change Over Sub	1.00			3349.00	
Recorder	0.00	6772	Inside	3349.00	
Recorder	0.00	6769	Inside	3349.00	
Drill Pipe	32.00			3381.00	
Perforations	2.00			3383.00	
Blank Spacing	1.00			3384.00	37.00 Tool Interval
Packer	3.00			3387.00	
Stubb	2.00			3389.00	
Recorder	0.00	9058	Below	3389.00	
Perforations	11.00			3400.00	
Change Over Sub	1.00			3401.00	
Drill Pipe	32.00			3433.00	
Change Over Sub	1.00			3434.00	
Bullnose	3.00			3437.00	53.00 Bottom Packers & Anchor

Total Tool Length: 110.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer

13-16s-14w Barton,KS

370 W. Wichita Ave
Russell KS 67665+0352

Reif #1

Job Ticket: 65821

DST#: 4

ATTN: Austin Klaus

Test Start: 2019.09.19 @ 09:18:00

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: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
30.00	Mud 100%M	0.212

Total Length: 30.00 ft Total Volume: 0.212 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

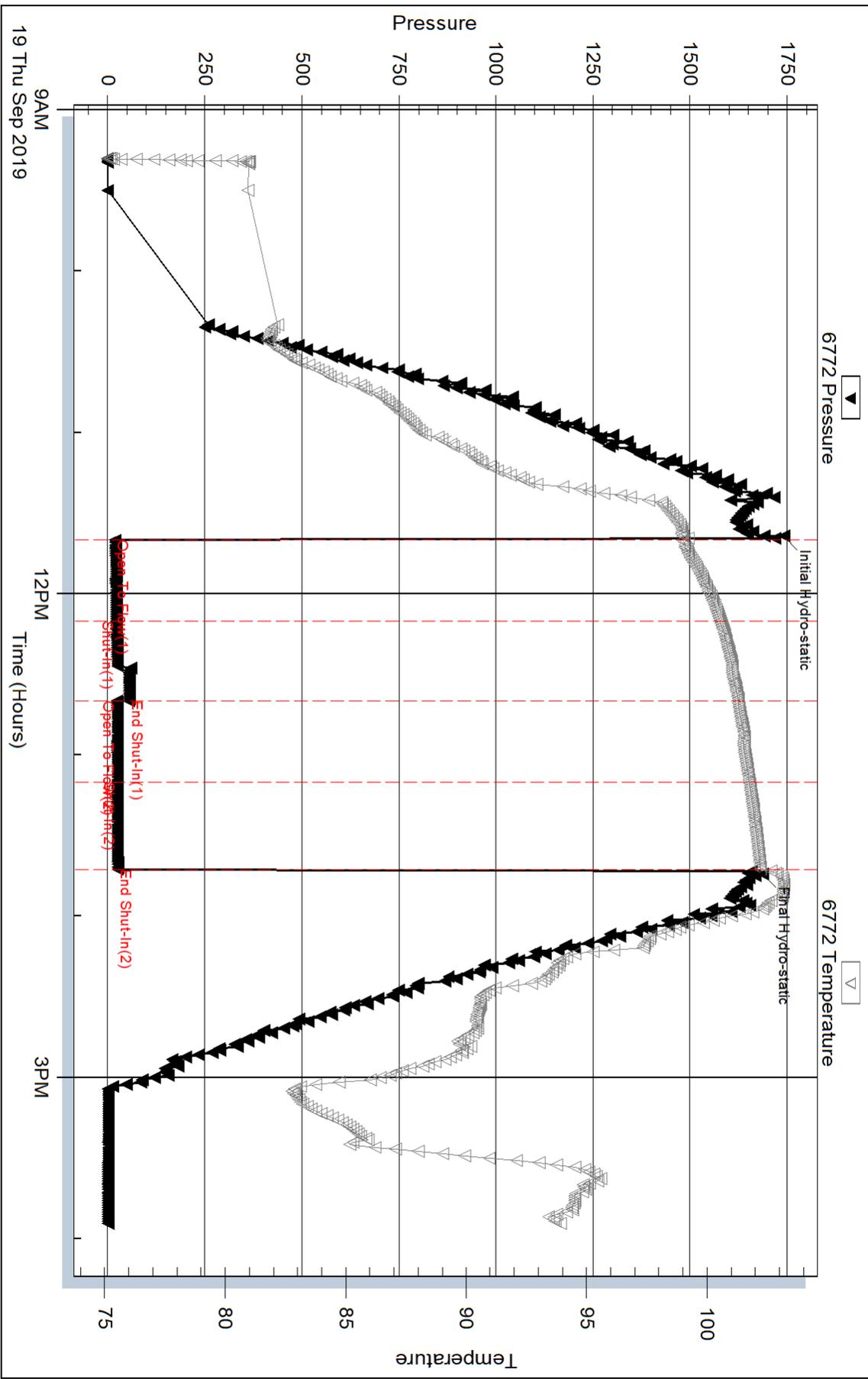
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

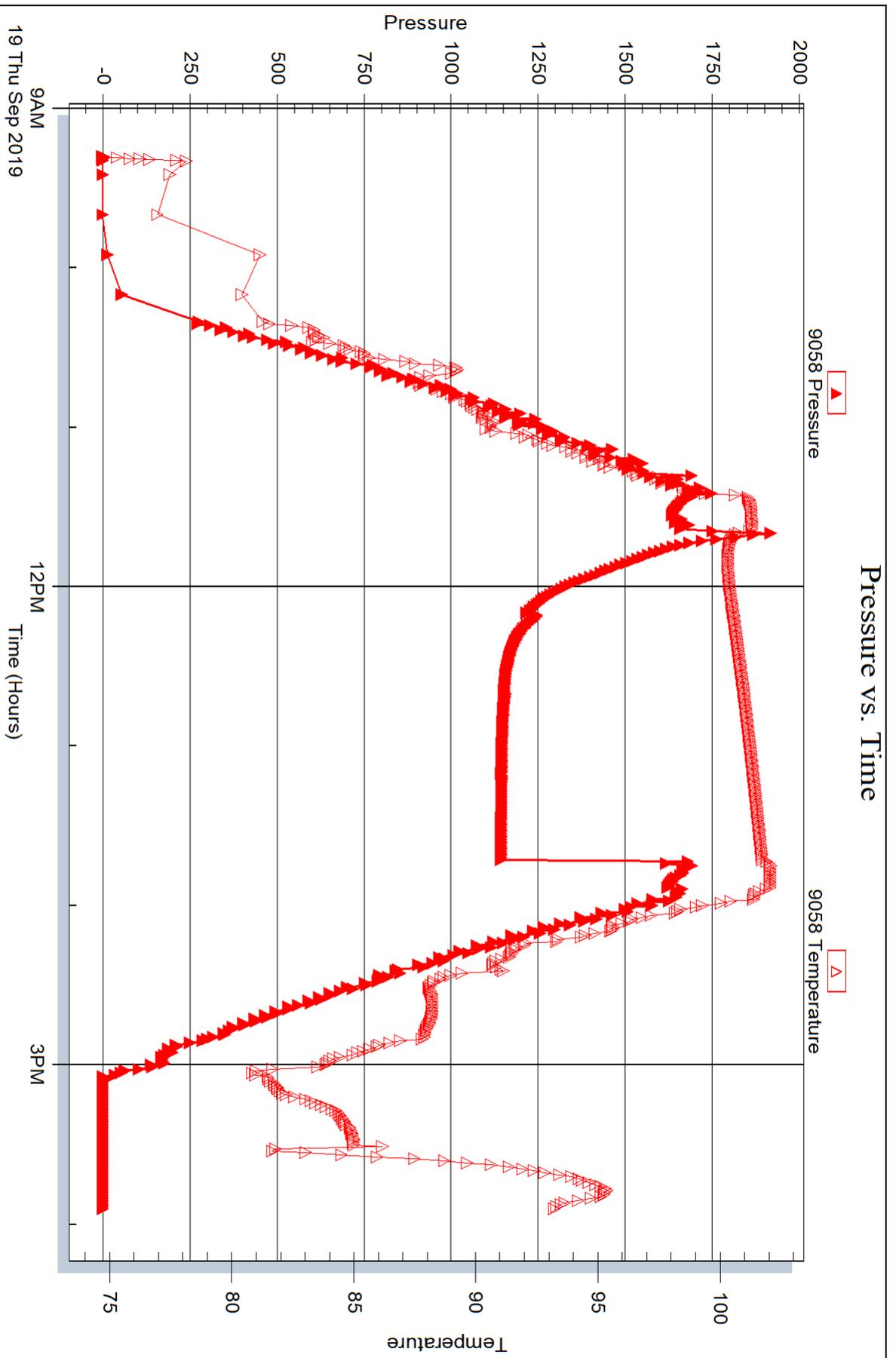


Serial #: 9058

Below (Straddled) Farmer

Ref #1

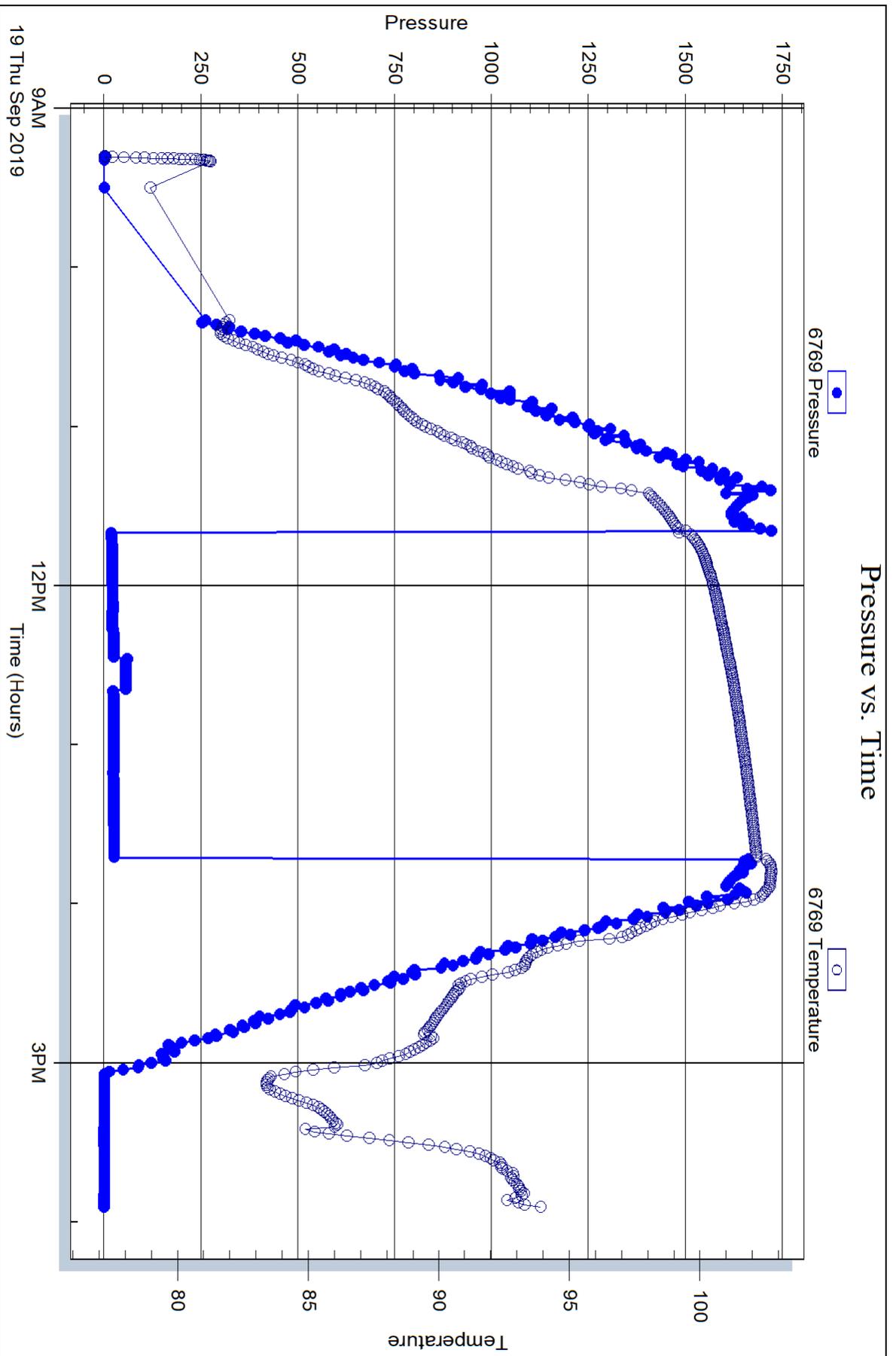
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 65821

Printed: 2019.09.25 @ 12:10:00





DRILL STEM TEST REPORT

Prepared For: **John O Farmer**

370 W. Wichita Ave
Russell KS 67665+0352

ATTN: Austin Klaus

Reif #1

13-16s-14w Barton,KS

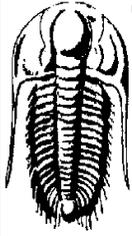
Start Date: 2019.09.19 @ 16:19:00

End Date: 2019.09.19 @ 23:07:09

Job Ticket #: 65822 DST #: 5

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

Printed: 2019.09.25 @ 12:07:19



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

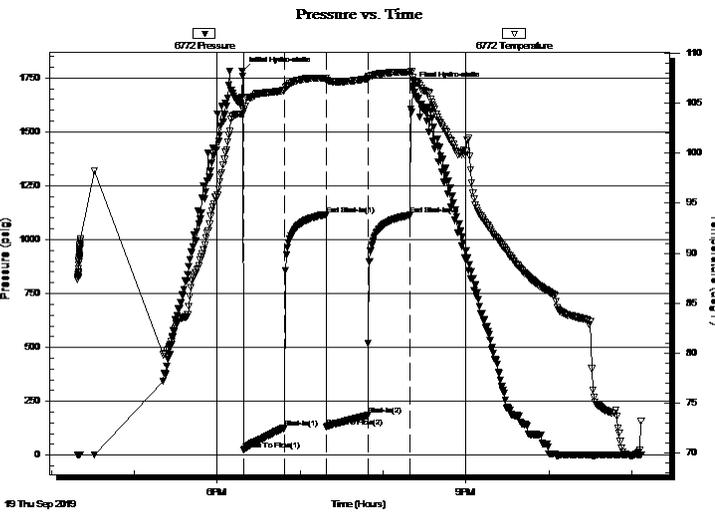
13-16s-14w Barton, KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:19:20
Time Test Ended: 23:07:09
Interval: **3387.00 ft (KB) To 3407.00 ft (KB) (TVD)**
Total Depth: 3438.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 1938.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Straddle (Initial)
Tester: Benny Mulligan
Unit No: 66

Serial #: 6772 Inside
Press@RunDepth: 184.98 psig @ 3388.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.09.19 End Date: 2019.09.19 Last Calib.: 2019.09.19
Start Time: 16:19:01 End Time: 23:07:10 Time On Btm: 2019.09.19 @ 18:18:10
Time Off Btm: 2019.09.19 @ 20:21:30

TEST COMMENT: IF-30- BOB 18 mins 20 secs Built to 17 1/2 "
ISI-30- No blow back
FF-30- BOB 23 mins Built to 15 1/2"
FSI-30- Weak surface blow back



PRESSURE SUMMARY

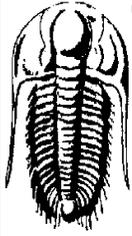
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1781.81	103.93	Initial Hydro-static
2	24.42	104.20	Open To Flow (1)
31	126.45	106.29	Shut-In(1)
61	1116.97	107.52	End Shut-In(1)
62	131.80	107.28	Open To Flow (2)
91	184.98	107.45	Shut-In(2)
122	1113.23	108.11	End Shut-In(2)
124	1713.05	107.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MW 20%M 80%W	0.85
240.00	MW 40%M 60%W	2.30
10.00	CO 100%O	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

Tool Information

Drill Pipe:	Length: 3100.00 ft	Diameter: 3.80 inches	Volume: 43.48 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.70 inches	Volume: 1.93 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 45.41 bbl</u>	Tool Chased	2.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3387.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	3407.00 ft				
Interval between Packers:	20.00 ft				
Tool Length:	73.00 ft				
Number of Packers:	3	Diameter:	6.75 inches		

Tool Comments:

Tool Description

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

Change Over Sub	1.00			3368.00		
Shut In Tool	5.00			3373.00		
Hydraulic tool	5.00			3378.00		
Packer	5.00			3383.00	20.00	Bottom Of Top Packer
Packer	4.00			3387.00		
Stubb	1.00			3388.00		
Recorder	0.00	6772	Inside	3388.00		
Recorder	0.00	6769	Outside	3388.00		
Perforations	15.00			3403.00		
Blank Off Sub	1.00			3404.00		
Stubb	3.00			3407.00	20.00	Tool Interval
Packer	1.00			3408.00		
Stubb	2.00			3410.00		
Perforations	27.00			3437.00		
Recorder	0.00	9058	Below	3437.00		
Bullnose	3.00			3440.00	33.00	Bottom Packers & Anchor
Total Tool Length:	73.00					



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

John O Farmer
370 W. Wichita Ave
Russell KS 67665+0352
ATTN: Austin Klaus

13-16s-14w Barton,KS
Reif #1
Job Ticket: 65822 **DST#: 5**
Test Start: 2019.09.19 @ 16:19:00

Mud and Cushion Information

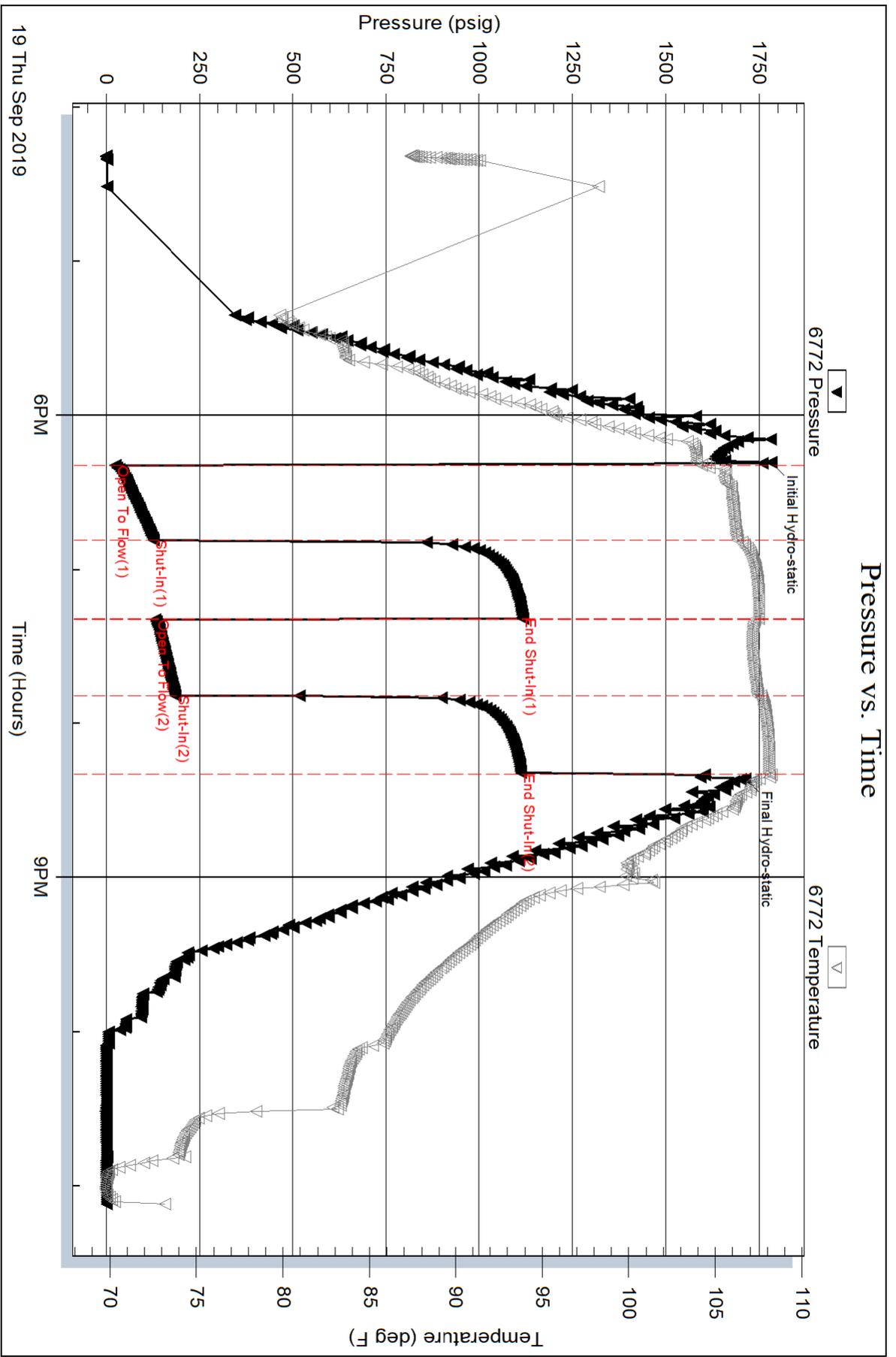
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	27000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9000.00 ppm			
Filter Cake: 1.00 inches			

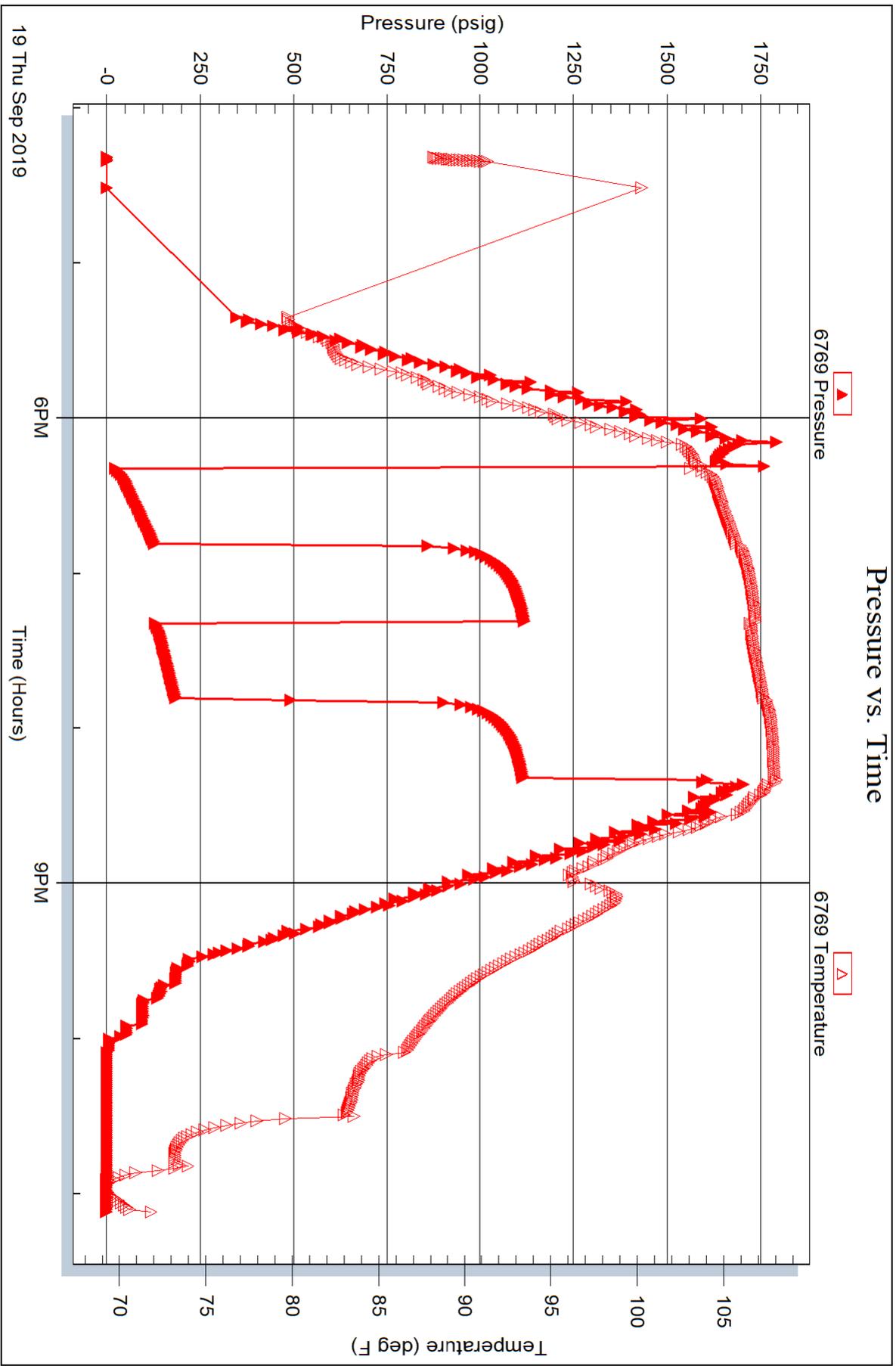
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	MW 20%M 80%W	0.850
240.00	MW 40%M 60%W	2.304
10.00	CO 100%O	0.140

Total Length: 370.00 ft Total Volume: 3.294 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:



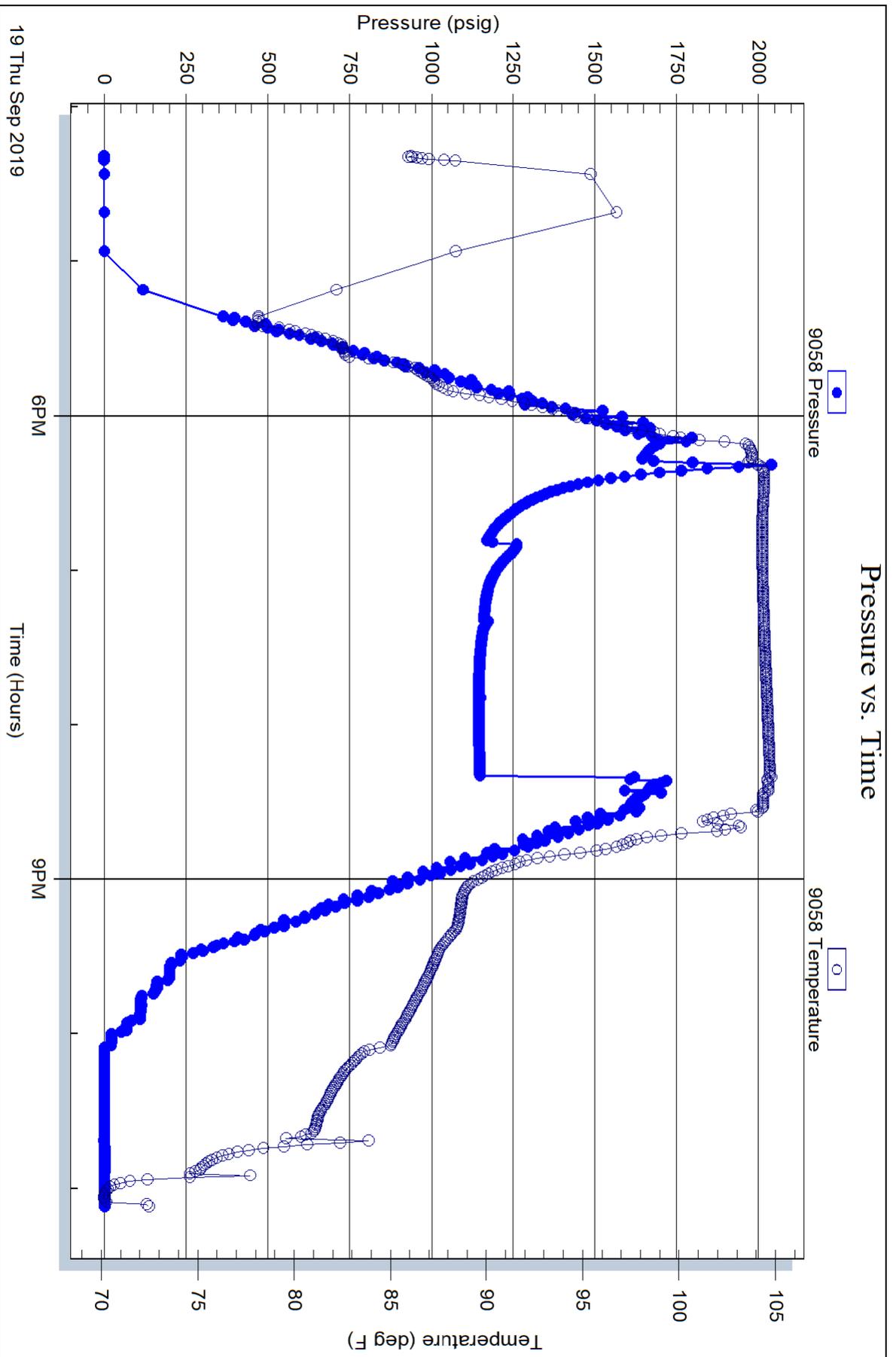


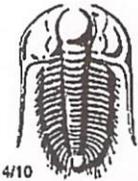
Serial #: 9058

Below (Straddled) Farmer

Ref #1

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65818

NO.

Well Name & No. Reif #1 Test No. 1 Date 9-16-2019
 Company John O. Farmer Inc Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665-0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16s Rge. 14w Co. Barton State KS

Interval Tested 3138-3196 Zone Tested LKC A-D
 Anchor Length 58' Drill Pipe Run 2880 Mud Wt. 8.7
 Top Packer Depth 3133 Drill Collars Run _____ Vis 52
 Bottom Packer Depth 3138 Wt. Pipe Run 273 WL 10.4
 Total Depth 3196 Chlorides 6000 ppm System LCM 1 1/2#

Blow Description If - built to 3/4"
FSTI - no blow back
FF - was dead on open
FSTI - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>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

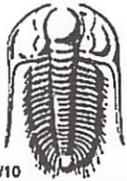
Rec Total 10' BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1580 Test 1200 T-On Location 2:40 P.M.
 (B) First Initial Flow 16 Jars T-Started 3:40
 (C) First Final Flow 20 Safety Joint T-Open 6:00
 (D) Initial Shut-In 326 Circ Sub T-Pulled 8:00
 (E) Second Initial Flow 21 Hourly Standby T-Out 10:00
 (F) Second Final Flow 24 Mileage 50mi RT 50 Comments _____
 (G) Final Shut-In 178 Sampler _____
 (H) Final Hydrostatic 1529 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 30 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 30 Day Standby _____ Sub Total 0
 Sub Total 1250 Accessibility _____ Total 1250
 MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65819

NO.

Well Name & No. Reif #1 Test No. 2 Date 9-17-2019
 Company John O Farmer Inc Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665 + 0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3198-3244 Zone Tested LKC E-G
 Anchor Length ~~3198~~ 46' Drill Pipe Run 2939 Mud Wt. 8.9
 Top Packer Depth ~~3198~~ 3193 Drill Collars Run — Vls 52
 Bottom Packer Depth ~~3198~~ 3198 Wt. Pipe Run 273 WL 10.4
 Total Depth 3244 Chlorides 6,000 ppm System LCM 1 1/2 #

Blow Description IF - weak surface blow
LSI - no blow back
FE - was dead when opened
FST - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>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 Total 2' BHT 100 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1612 1612</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>8:20 AM</u>
(B) First Initial Flow <u>21 21</u>	<input type="checkbox"/> Jars _____	T-Started <u>12:13 P.M.</u>
(C) First Final Flow <u>20 20</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>2:17</u>
(D) Initial Shut-In <u>100 100</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>4:17</u>
(E) Second Initial Flow <u>21 20</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:05</u>
(F) Second Final Flow <u>21 21</u>	<input checked="" type="checkbox"/> Mileage <u>50 mi RT</u> 50	Comments _____
(G) Final Shut-In <u>95</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1588</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 type="checkbox"/> Ruined Packer _____
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>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1250</u>
	Sub Total <u>1250</u>	MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan

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 65820

NO.

Well Name & No. Reif #1 Test No. 3 Date 9-18-2019
 Company John O Farmer Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665+0352
 Co. Rep / Geo. Austin Klaus Rig Disco Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3270 - 3328 Zone Tested LKC H-J
 Anchor Length 58' Drill Pipe Run 3007' Mud Wt. 9.1
 Top Packer Depth 3265 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3270 Wt. Pipe Run 273' WL 9.6
 Total Depth 3328 Chlorides 9000 ppm System LCM 1 1/2 #

Blow Description IF - built to 1/2"
FSI - no blow back
FF - very weak surface blow died 9mins into the flow
FSI - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>0.5m</u>	<u>2</u>		<u>98</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

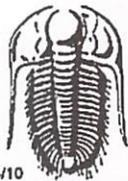
Rec Total 30' BHT 99 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1674 Test 1200 T-On Location 6:40 AM
 (B) First Initial Flow 17 Jars _____ T-Started 7:03
 (C) First Final Flow 22 Safety Joint _____ T-Open 8:56
 (D) Initial Shut-In 82 Circ Sub _____ T-Pulled 10:56
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 1:04 P.M.
 (F) Second Final Flow 24 Mileage 50mi RT 50 Comments _____
 (G) Final Shut-In 46 Sampler _____
 (H) Final Hydrostatic 1633 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 30 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 30 Day Standby _____ Extra Copies _____
 Sub Total 1250 Accessibility _____ Sub Total 0
 Sub Total 1250 MP/DST Disc't _____ Total 1250

Approved By _____ Our Representative Benny Mulligan

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65821

NO.

Well Name & No. Reif #1 Test No. 4 Date 9-19-2019
 Company John O Farmer Elevation 1938 KB 1930 GL
 Address 370 W. Wichita Ave Russell KS 67665+0352
 Co. Rep / Geo. Austin Klaus Rig DISCO Rig 2
 Location: Sec. 13 Twp 16S Rge. 14W Co. Barton State KS

Interval Tested 3347-3388 Zone Tested Arbuckle
 Anchor Length 41' Drill Pipe Run 3069 Mud Wt. 9.1
 Top Packer Depth 3342 Drill Collars Run --- Vis 53
 Bottom Packer Depth 3347 Wt. Pipe Run 273 WL 9.6
 Total Depth 3438 Chlorides 9,000 ppm System LCM 1 1/2 #

Blow Description IF - built to 1/2" then started to weaken
ISI - no blow back
FF - was dead when opened
FST - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>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 301 BHT 102 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1740 Test 1200 T-On Location 8:05
 (B) First Initial Flow 18 Jars _____ T-Started 9:18 AM
 (C) First Final Flow 21 Safety Joint _____ T-Open 11:42
 (D) Initial Shut-In 54 Circ Sub _____ T-Pulled 1:42
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 3:56
 (F) Second Final Flow 25 Mileage 50 mi RT 50 Comments _____
 (G) Final Shut-In 26 Sampler _____
 (H) Final Hydrostatic 1686 Straddle 600 EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1850
 Sub Total 1850 MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65822

NO.

Well Name & No. Reif #1 Test No. 5 Date 9-19-2019
 Company John O Farmer Elevation 1938 KB 1936 GL
 Address 370 W. Wichita Ave Russell KS 67665 +0352
 Co. Rep / Geo. Austin Rig Disc Rig 2
 Location: Sec. 13 Twp 16s Rge. 14w Co. Barton State KS

Interval Tested 3387-3407 Zone Tested Arbuckle
 Anchor Length 20' Drill Pipe Run 3100' Mud Wt. 9.1
 Top Packer Depth 3382 Drill Collars Run Vis 53
 Bottom Packer Depth 3387 Wt. Pipe Run 273' WL 9.6
 Total Depth 3438 Chlorides 9000 ppm System LCM 1 1/2#
 Blow Description IF - BOB 18 mins 20secs total build of
FSI - no blow back
FF - BOB 23 mins total build of 15 1/2"
FSI - weak surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>C.O.</u>	<u>100</u>			
<u>240</u>	<u>M.W.</u>		<u>60</u>	<u>40</u>	
<u>120</u>	<u>M.W.</u>		<u>80</u>	<u>20</u>	

Rec Total 370' BHT 107 Gravity API RW 0.242 @ 75.2 °F Chlorides 27,000 ppm

(A) Initial Hydrostatic <u>1781</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u> </u>
(B) First Initial Flow <u>24</u>	<input type="checkbox"/> Jars <u> </u>	T-Started <u>4:19 P.M.</u>
(C) First Final Flow <u>126</u>	<input type="checkbox"/> Safety Joint <u> </u>	T-Open <u>6:20</u>
(D) Initial Shut-In <u>1116</u>	<input type="checkbox"/> Circ Sub <u> </u>	T-Pulled <u>8:20</u>
(E) Second Initial Flow <u>131</u>	<input type="checkbox"/> Hourly Standby <u> </u>	T-Out <u>11:08</u>
(F) Second Final Flow <u>184</u>	<input checked="" type="checkbox"/> Mileage <u> </u>	Comments <u>Loaded tools</u>
(G) Final Shut-In <u>1113</u>	<input type="checkbox"/> Sampler <u> </u>	<u>after test</u>
(H) Final Hydrostatic <u>1713</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> EM Tool <u> </u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u> </u>	<input type="checkbox"/> Ruined Shale Packer <u> </u>
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer <u> </u>	<input type="checkbox"/> Ruined Packer <u> </u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder <u> </u>	<input type="checkbox"/> Extra Copies <u> </u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby <u> </u>	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility <u> </u>	Total <u>1800</u>
	Sub Total <u>1800</u>	MP/DST Disc't <u> </u>

Approved By Our Representative Benny Mulligan

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