



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.20 @ 07:15:00

End Date: 2017.01.20 @ 09:01:00

Job Ticket #: 64661 DST #: 1

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

Printed: 2017.01.26 @ 10:54:16

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 1 Oread 2017.01.20



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64661 **DST#: 1**
Test Start: 2017.01.20 @ 07:15:00

Tool Information

Drill Pipe:	Length: 3169.00 ft	Diameter: 3.80 inches	Volume: 44.45 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	lb
		Total Volume: - bbl		Tool Chased	ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial	lb
Depth to Top Packer:	3286.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	64.00 ft				
Number of Packers:	1	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			3267.00	
Shut In Tool	5.00			3272.00	
Hydraulic tool	5.00			3277.00	
Packer	5.00			3282.00	20.00 Bottom Of Top Packer
Packer	4.00			3286.00	
Stubb	1.00			3287.00	
Perforations	5.00			3292.00	
Recorder	0.00	8368	Inside	3292.00	
Recorder	0.00	9120	Outside	3292.00	
Change Over Sub	1.00			3293.00	
Drill Pipe	32.00			3325.00	
Change Over Sub	1.00			3326.00	
Bullnose	4.00			3330.00	44.00 Bottom Packers & Anchor

Total Tool Length: 64.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64661 **DST#: 1**
Test Start: 2017.01.20 @ 07:15:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 77.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
440.00	Mud 100% M	5.079

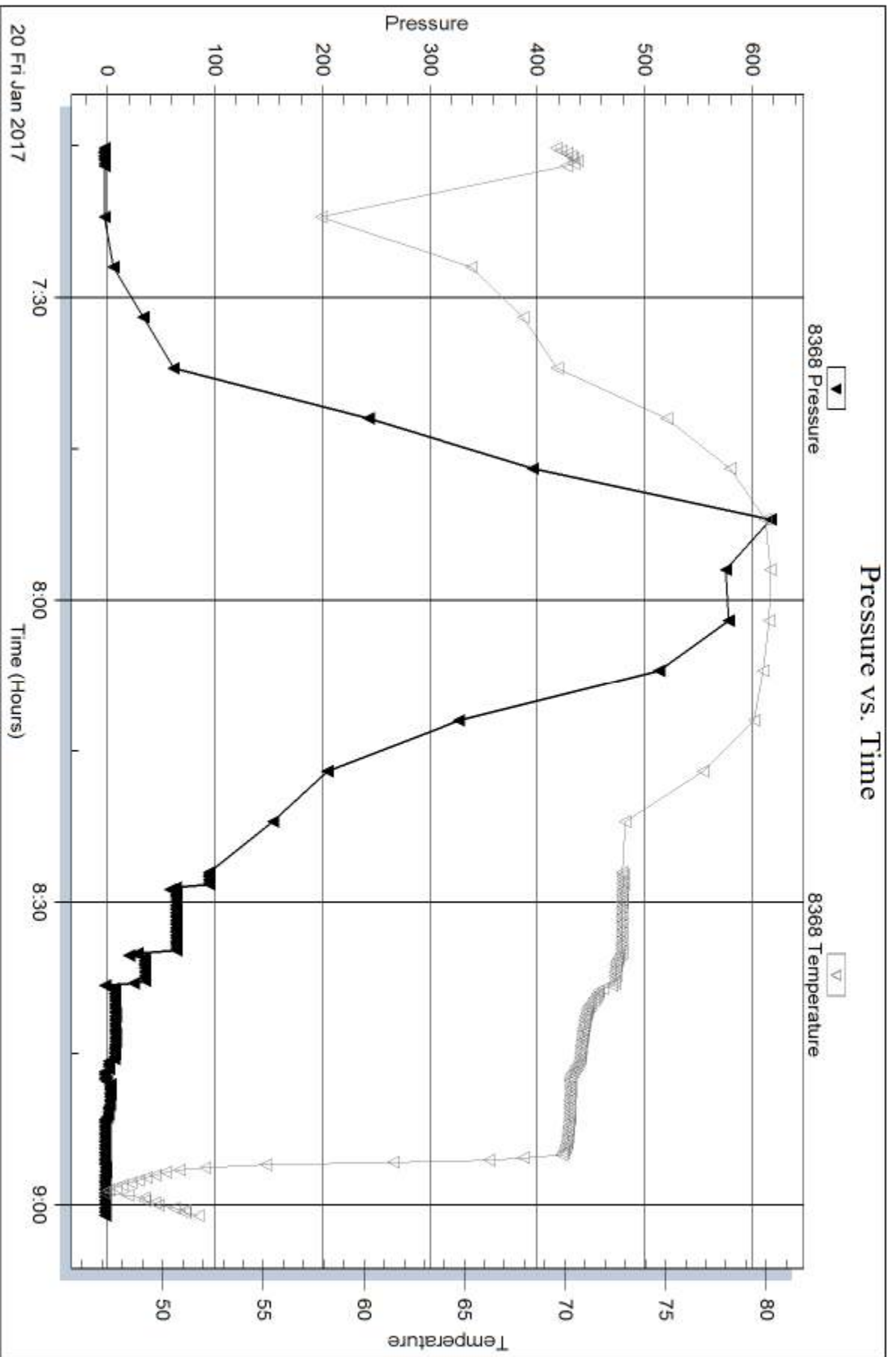
Total Length: 440.00 ft Total Volume: 5.079 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 8368

Inside Jasper Co.

Boss #1

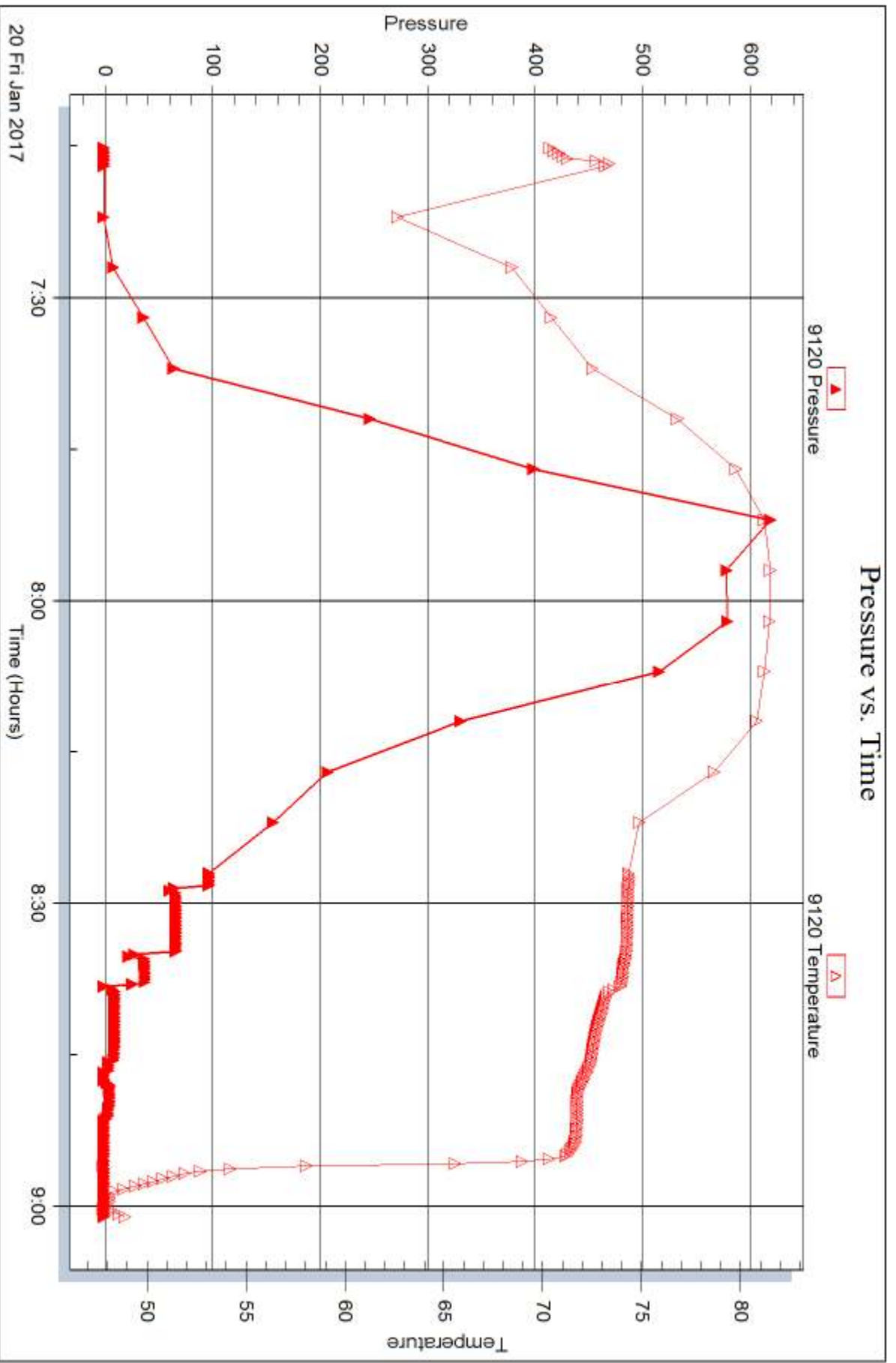
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64661

Printed: 2017.01.26 @ 10:54:17





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.20 @ 12:58:00

End Date: 2017.01.20 @ 19:26:45

Job Ticket #: 64662 DST #: 2

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

Printed: 2017.01.26 @ 10:53:44

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 2 Oread 2017.01.20



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Jaspar Co.
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler / Shane

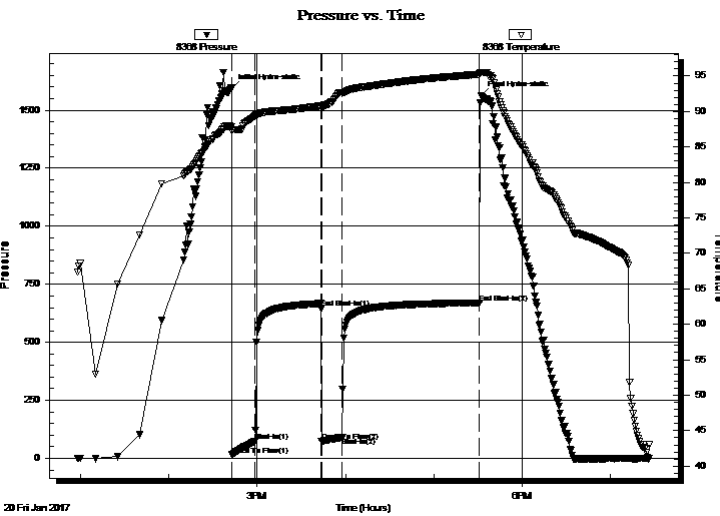
S11-7S-20W Rooks, KS
Boss #1
 Job Ticket: 64662 **DST#: 2**
 Test Start: 2017.01.20 @ 12:58:00

GENERAL INFORMATION:

Formation: **Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:43:00
 Time Test Ended: 19:26:45
 Interval: **3286.00 ft (KB) To 3330.00 ft (KB) (TVD)**
 Total Depth: 3330.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition:
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2172.00 ft (KB)
 2164.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8368 Inside
 Press@RunDepth: 90.12 psig @ 3292.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.01.20 End Date: 2017.01.20 Last Calib.: 2017.01.20
 Start Time: 12:58:15 End Time: 19:26:45 Time On Btm: 2017.01.20 @ 14:42:45
 Time Off Btm: 2017.01.20 @ 17:32:15

TEST COMMENT: 15-IF-Strong Blow ; Built to 8"
 45-ISI-Very Weak Surface Blow after 37 minutes; Built to 1/8"
 15-FF-Fair Blow ; Built to 5 1/4"
 90-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1594.52	87.82	Initial Hydro-static
1	14.69	87.31	Open To Flow (1)
16	71.64	89.31	Shut-In(1)
61	645.80	90.79	End Shut-In(1)
61	73.73	90.65	Open To Flow (2)
75	90.12	92.59	Shut-In(2)
169	669.84	95.25	End Shut-In(2)
170	1562.56	95.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	WGCM 5% W 15% G 80% M	0.22
62.00	WCM 20% W 80% M	0.30
63.00	WCM 40% W 60% M	0.76

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64662 **DST#: 2**
Test Start: 2017.01.20 @ 12:58:00

Tool Information

Drill Pipe:	Length: 3168.00 ft	Diameter: 3.80 inches	Volume: 44.44 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	55000.00 lb
		Total Volume: - bbl		Tool Chased	ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial	49000.00 lb
Depth to Top Packer:	3286.00 ft			Final	53000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	44.00 ft				
Tool Length:	64.00 ft				
Number of Packers:	1	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			3267.00	
Shut In Tool	5.00			3272.00	
Hydraulic tool	5.00			3277.00	
Packer	5.00			3282.00	20.00 Bottom Of Top Packer
Packer	4.00			3286.00	
Stubb	1.00			3287.00	
Perforations	5.00			3292.00	
Recorder	0.00	8368	Inside	3292.00	
Recorder	0.00	9120	Inside	3292.00	
Change Over Sub	1.00			3293.00	
Drill Pipe	32.00			3325.00	
Change Over Sub	1.00			3326.00	
Bullnose	4.00			3330.00	44.00 Bottom Packers & Anchor

Total Tool Length: 64.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64662 **DST#: 2**
Test Start: 2017.01.20 @ 12:58:00

Mud and Cushion Information

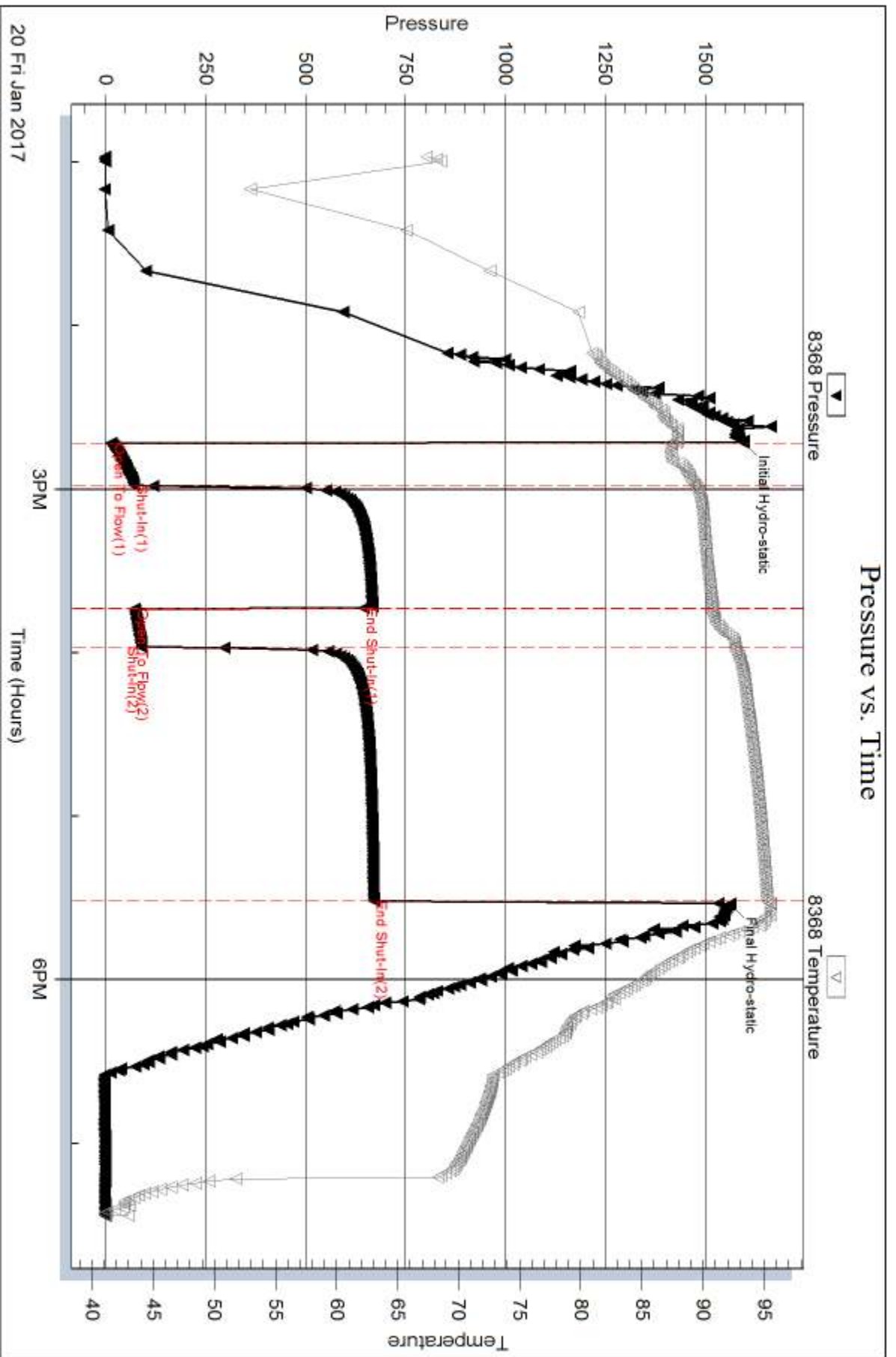
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	23500 ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	WGCM 5% W 15% G 80% M	0.221
62.00	WCM 20% W 80% M	0.305
63.00	WCM 40% W 60% M	0.756

Total Length: 170.00 ft Total Volume: 1.282 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



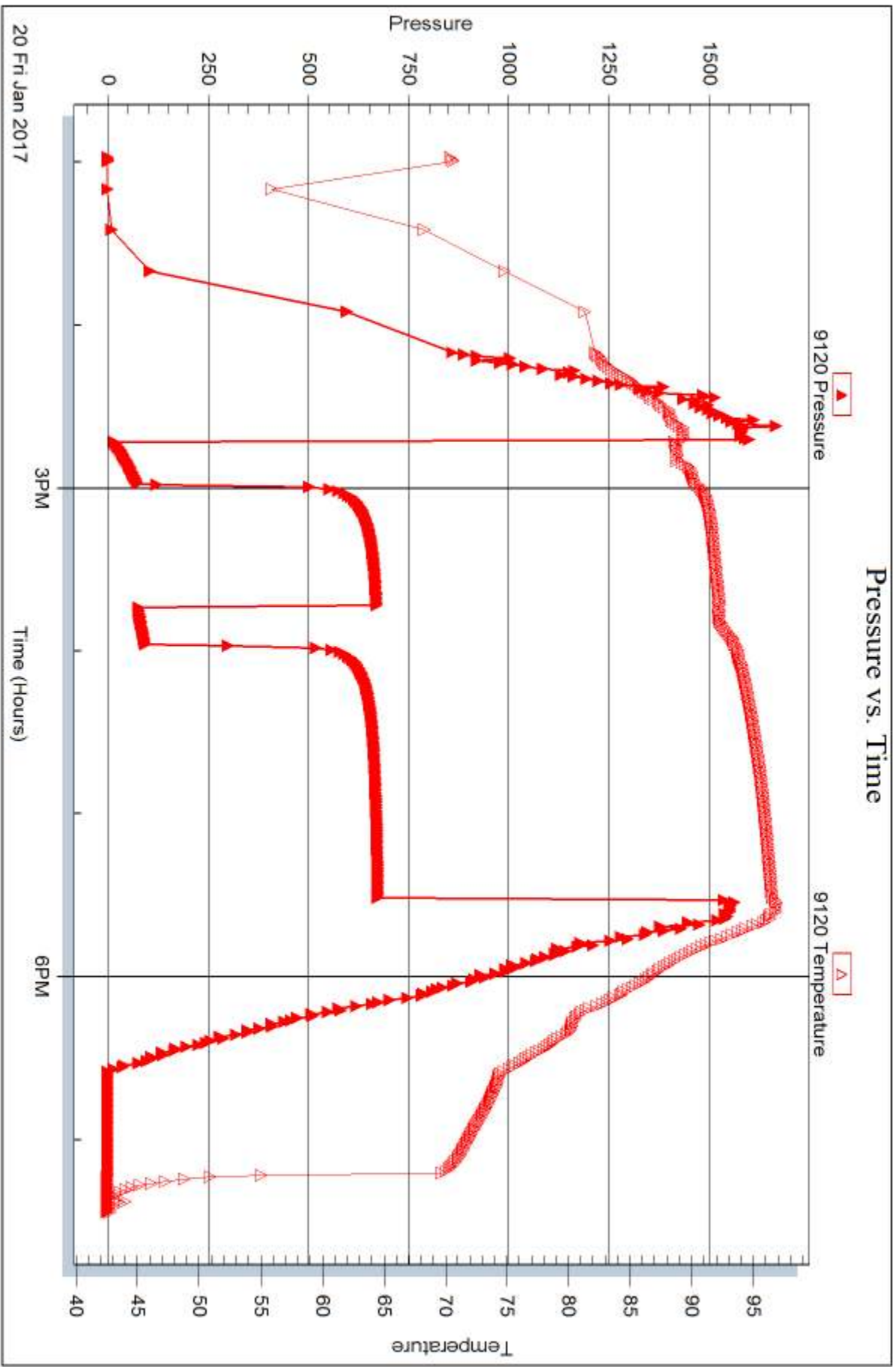
Serial #: 9120

Inside

Jaspar Co.

Boss #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 64662

Printed: 2017.01.26 @ 10:53:45



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.21 @ 05:02:00

End Date: 2017.01.21 @ 07:36:30

Job Ticket #: 64663 DST #: 3

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

Printed: 2017.01.26 @ 10:53:23



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64663 **DST#: 3**
Test Start: 2017.01.21 @ 05:02:00

Tool Information

Drill Pipe:	Length: 3237.00 ft	Diameter: 3.80 inches	Volume: 45.41 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: - bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	37.00 ft			String Weight: Initial	lb
Depth to Top Packer:	3346.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	54.00 ft				
Tool Length:	79.00 ft				
Number of Packers:	1	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			3322.00	
Shut In Tool	5.00			3327.00	
Hydraulic tool	5.00			3332.00	
Jars	5.00			3337.00	
Packer	5.00			3342.00	25.00 Bottom Of Top Packer
Packer	4.00			3346.00	
Stubb	1.00			3347.00	
Recorder	0.00	8368	Inside	3347.00	
Recorder	0.00	9120	Outside	3347.00	
Perforations	15.00			3362.00	
Change Over Sub	1.00			3363.00	
Drill Pipe	32.00			3395.00	
Change Over Sub	1.00			3396.00	
Bullnose	4.00			3400.00	54.00 Bottom Packers & Anchor

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64663 **DST#: 3**
Test Start: 2017.01.21 @ 05:02:00

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
400.00	Mud 100% M	4.509

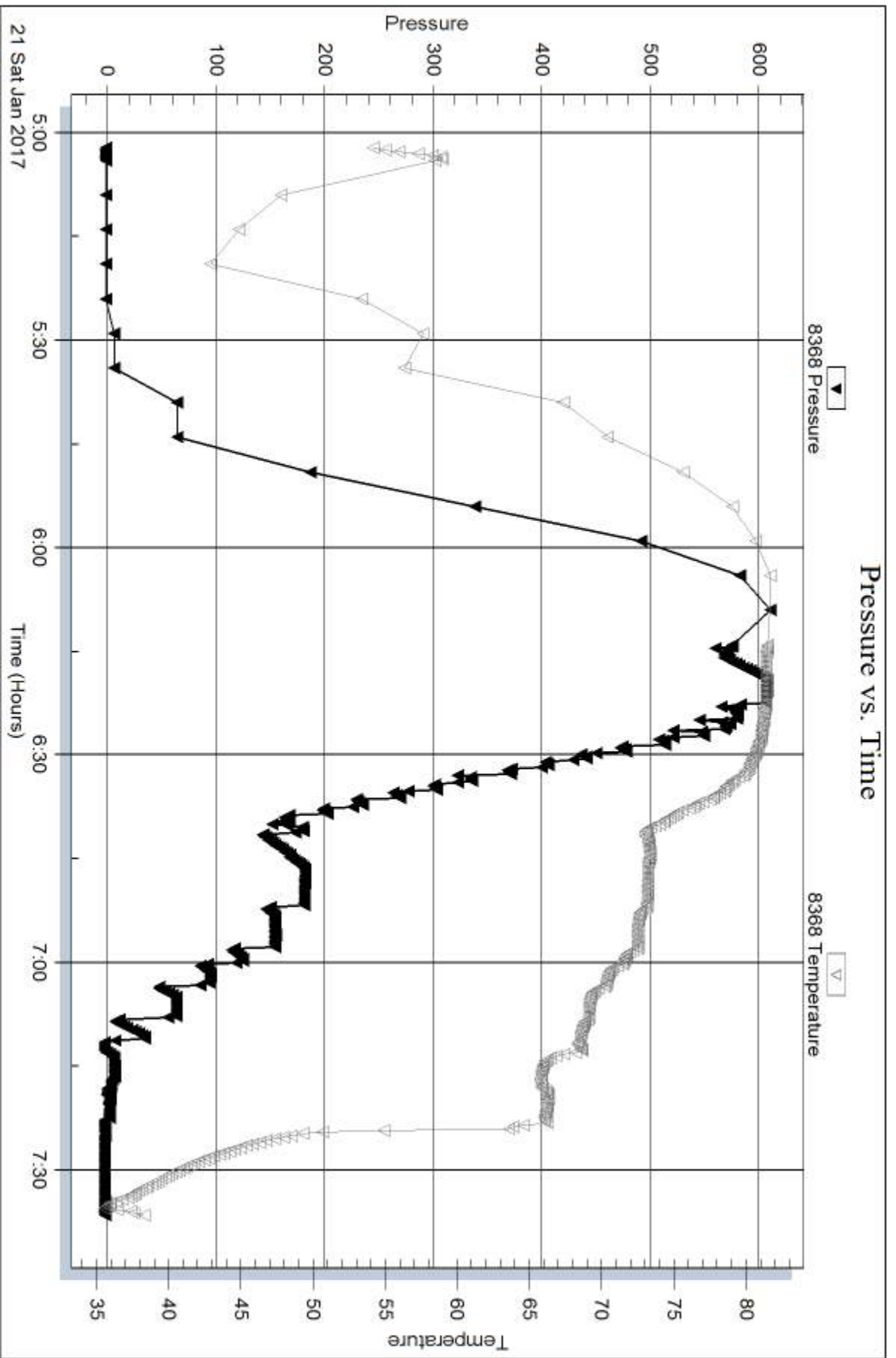
Total Length: 400.00 ft Total Volume: 4.509 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 8368

Inside Jasper Co.

Boss #1

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 64663

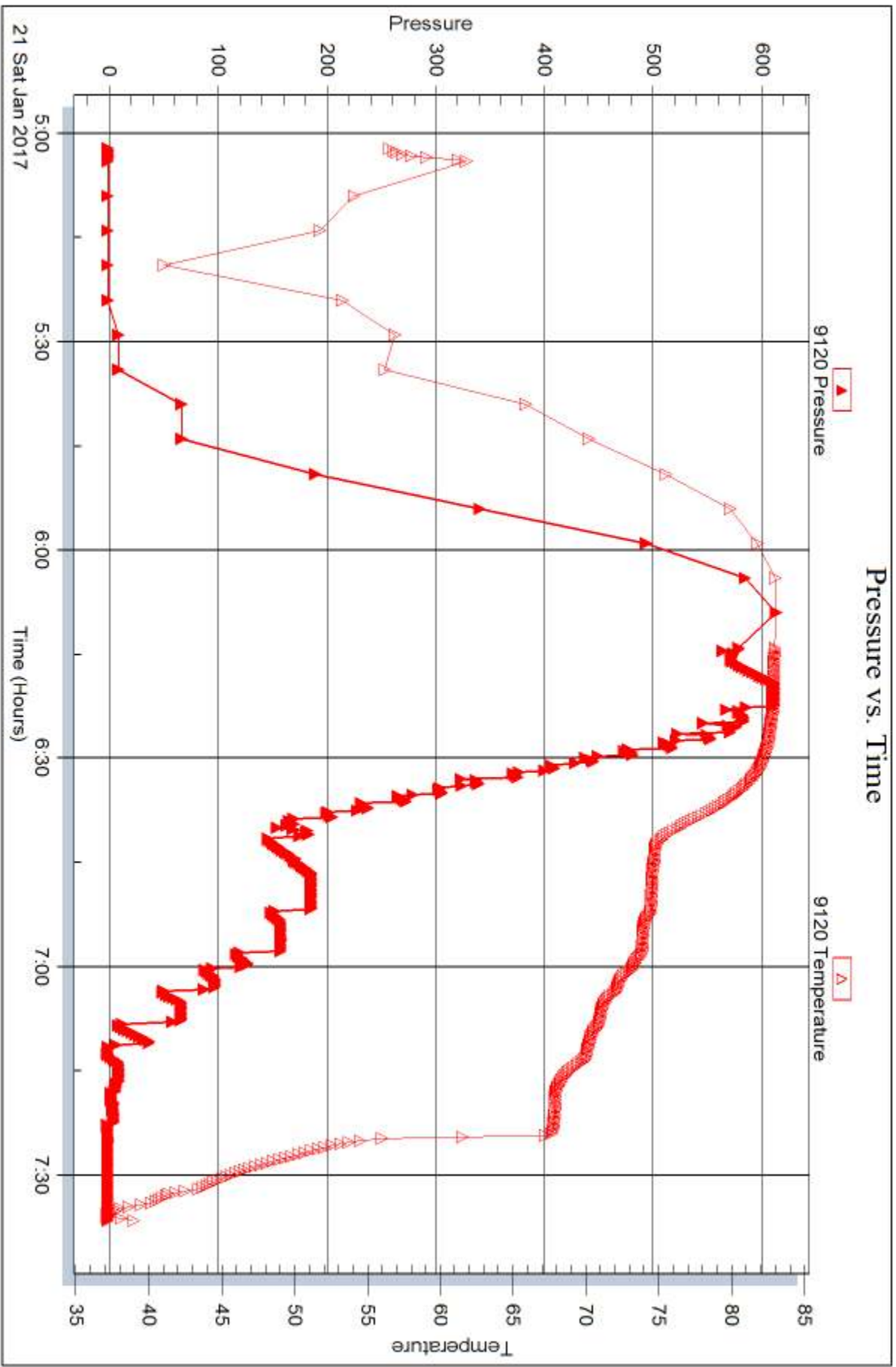
Printed: 2017.01.26 @ 10:53:23

Serial #: 9120

Outside Jasper Co.

Boss #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64663

Printed: 2017.01.26 @ 10:53:24



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.21 @ 10:14:00

End Date: 2017.01.21 @ 16:17:30

Job Ticket #: 64664 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.01.26 @ 10:52:45



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

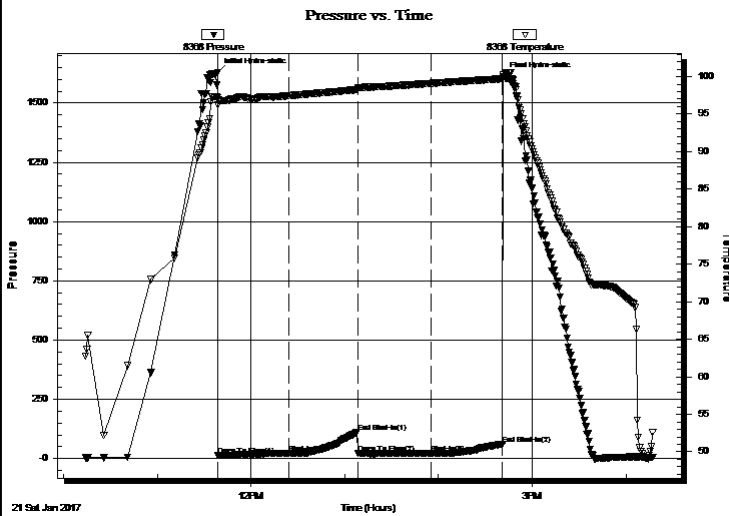
S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64664 **DST#: 4**
Test Start: 2017.01.21 @ 10:14:00

GENERAL INFORMATION:

Formation: **Toronto - LKC 'A'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:39:00
Time Test Ended: 16:17:30
Interval: **3346.00 ft (KB) To 3400.00 ft (KB) (TVD)**
Total Depth: 3330.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8368 Inside
Press@RunDepth: 22.25 psig @ 3347.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.21 End Date: 2017.01.21 Last Calib.: 2017.01.21
Start Time: 10:14:15 End Time: 16:17:30 Time On Btm: 2017.01.21 @ 11:38:45
Time Off Btm: 2017.01.21 @ 14:41:30

TEST COMMENT: 45-IF-Very Weak Blow ; Built to 1"
45-ISI-No Blow Back
45-FF-Very Weak Surface Blow ; few bubbles
45-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1629.27	97.24	Initial Hydro-static
1	12.32	96.30	Open To Flow (1)
46	22.28	97.46	Shut-In(1)
90	109.02	98.27	End Shut-In(1)
90	22.64	98.32	Open To Flow (2)
137	22.25	99.09	Shut-In(2)
183	60.87	99.71	End Shut-In(2)
183	1613.20	100.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 25% O 75% M	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64664 **DST#: 4**
Test Start: 2017.01.21 @ 10:14:00

Tool Information

Drill Pipe:	Length: 3229.00 ft	Diameter: 3.80 inches	Volume: 45.29 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	53000.00 lb
			<u>Total Volume:</u>	Tool Chased	2.00 ft
				String Weight: Initial	52000.00 lb
Drill Pipe Above KB:	32.00 ft			Final	52000.00 lb
Depth to Top Packer:	3346.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	54.00 ft				
Tool Length:	82.00 ft				
Number of Packers:	1	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			3319.00	
Shut In Tool	5.00			3324.00	
Hydraulic tool	5.00			3329.00	
Jars	5.00			3334.00	
Safety Joint	3.00			3337.00	
Packer	5.00			3342.00	28.00 Bottom Of Top Packer
Packer	4.00			3346.00	
Stubb	1.00			3347.00	
Recorder	0.00	8368	Inside	3347.00	
Recorder	0.00	9120	Outside	3347.00	
Perforations	15.00			3362.00	
Change Over Sub	1.00			3363.00	
Drill Pipe	32.00			3395.00	
Change Over Sub	1.00			3396.00	
Bullnose	4.00			3400.00	54.00 Bottom Packers & Anchor

Total Tool Length: 82.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64664 **DST#: 4**
Test Start: 2017.01.21 @ 10:14:00

Mud and Cushion Information

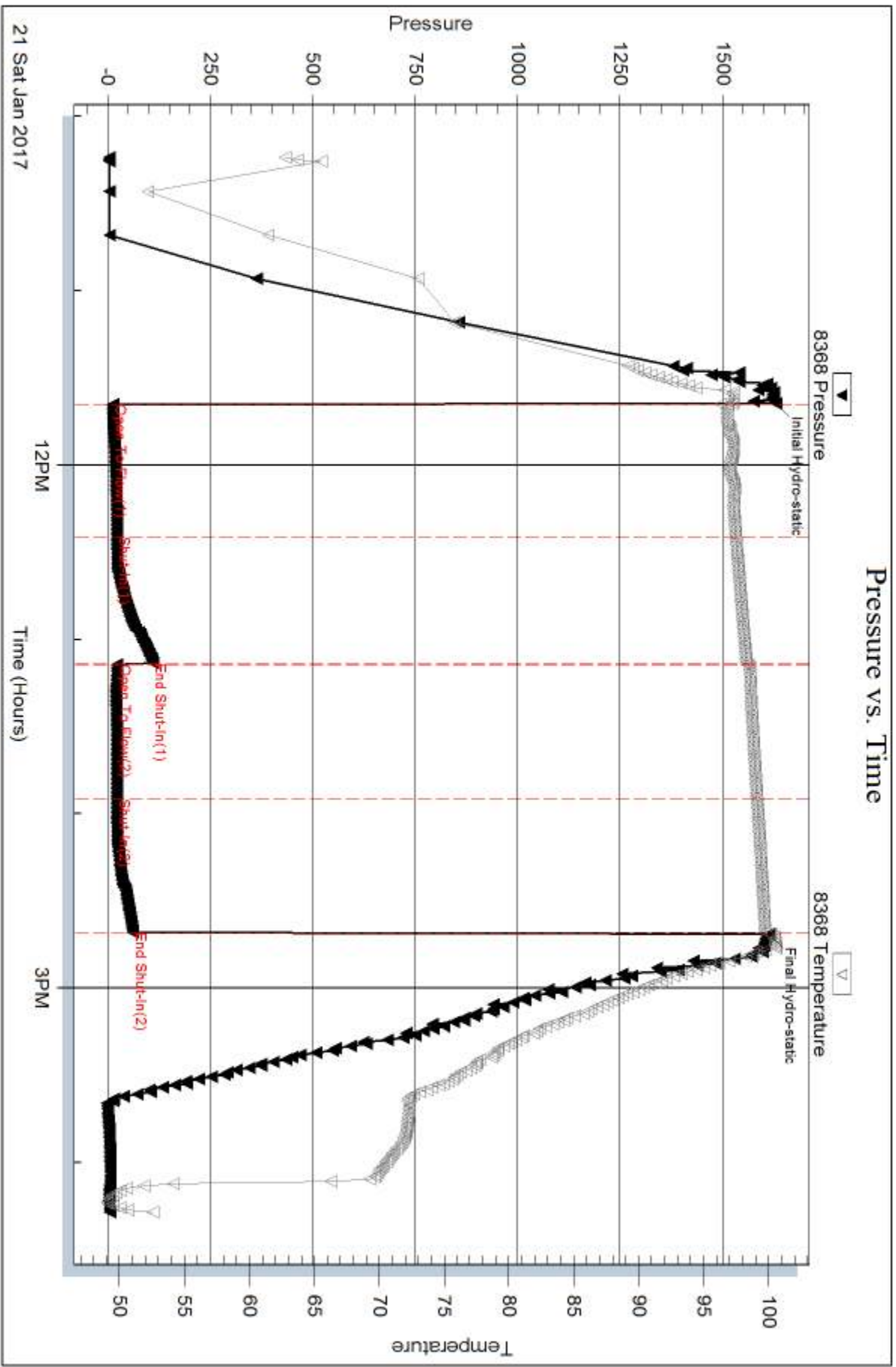
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 750.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OCM 25% O 75% M	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

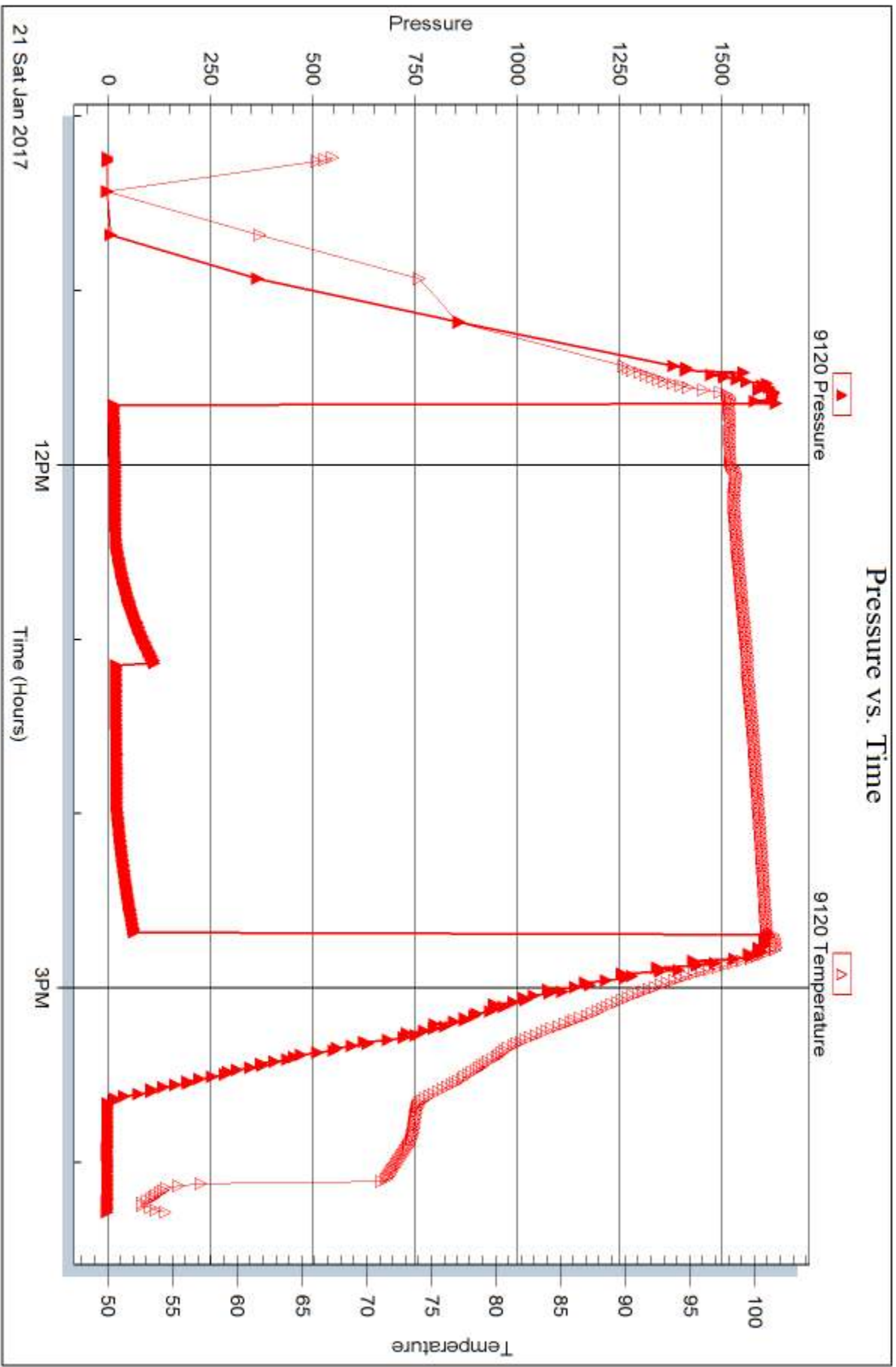


Serial #: 9120

Outside Jasper Co.

Boss #1

DST Test Number: 4



21 Sat Jan 2017

Triobite Testing, Inc

Ref. No: 64664

Printed: 2017.01.26 @ 10:52:46



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.22 @ 05:46:00

End Date: 2017.01.22 @ 10:33:00

Job Ticket #: 64665 DST #: 5

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

Printed: 2017.01.26 @ 10:52:18

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 5 LKC 'E-G' 2017.01.22



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64665 **DST#: 5**
Test Start: 2017.01.22 @ 05:46:00

GENERAL INFORMATION:

Formation: **LKC 'E-G'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:27:00
Time Test Ended: 10:33:00
Interval: **3455.00 ft (KB) To 3494.00 ft (KB) (TVD)**
Total Depth: 3494.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft

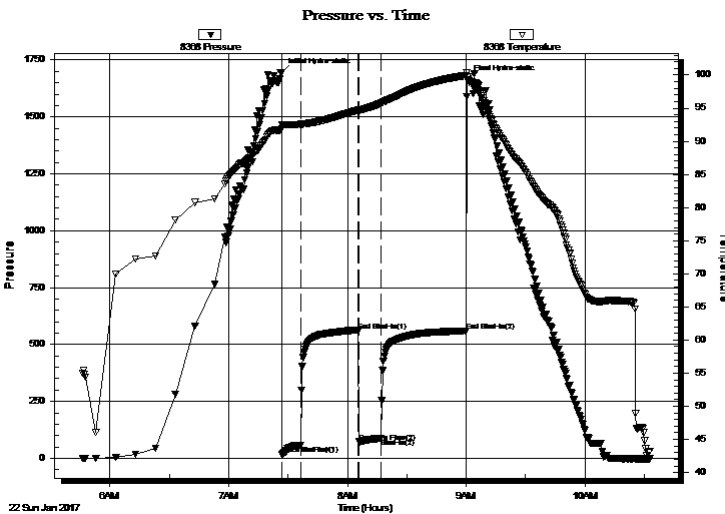
Serial #: 8368

Inside

Press@RunDepth: 89.01 psig @ 3456.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.22 End Date: 2017.01.22 Last Calib.: 2017.01.22
Start Time: 05:46:15 End Time: 10:33:00 Time On Btm: 2017.01.22 @ 07:26:45
Time Off Btm: 2017.01.22 @ 09:00:45

TEST COMMENT: 10-IF-Strong Blow ; Built to 7"
30-ISI-No Blow Back
10-FF-Strong Blow ; Built to 6 1/2"
45-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1695.63	92.46	Initial Hydro-static
1	17.58	91.92	Open To Flow (1)
10	56.36	92.48	Shut-In(1)
39	560.79	94.73	End Shut-In(1)
39	72.53	94.63	Open To Flow (2)
51	89.01	95.73	Shut-In(2)
94	560.02	99.94	End Shut-In(2)
94	1665.12	99.71	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	WCM w /scum oil <1% O 10% W 90%M	0.05
117.00	OGMCW 1% O 5% Gas 44% M 50% W	0.63
63.00	OWCM 5% O 15% W 80% M	0.88

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64665 **DST#: 5**
Test Start: 2017.01.22 @ 05:46:00

Tool Information

Drill Pipe:	Length: 3325.00 ft	Diameter: 3.80 inches	Volume: 46.64 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	58000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	3455.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	59.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3436.00	
Shut In Tool	5.00			3441.00	
Hydraulic tool	5.00			3446.00	
Packer	5.00			3451.00	20.00 Bottom Of Top Packer
Packer	4.00			3455.00	
Stubb	1.00			3456.00	
Recorder	0.00	8368	Inside	3456.00	
Recorder	0.00	9120	Inside	3456.00	
Perforations	1.00			3457.00	
Change Over Sub	1.00			3458.00	
Drill Pipe	31.00			3489.00	
Change Over Sub	1.00			3490.00	
Bullnose	4.00			3494.00	39.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64665 **DST#: 5**
Test Start: 2017.01.22 @ 05:46:00

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:	66000 ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 750.00 ppm			
Filter Cake: inches			

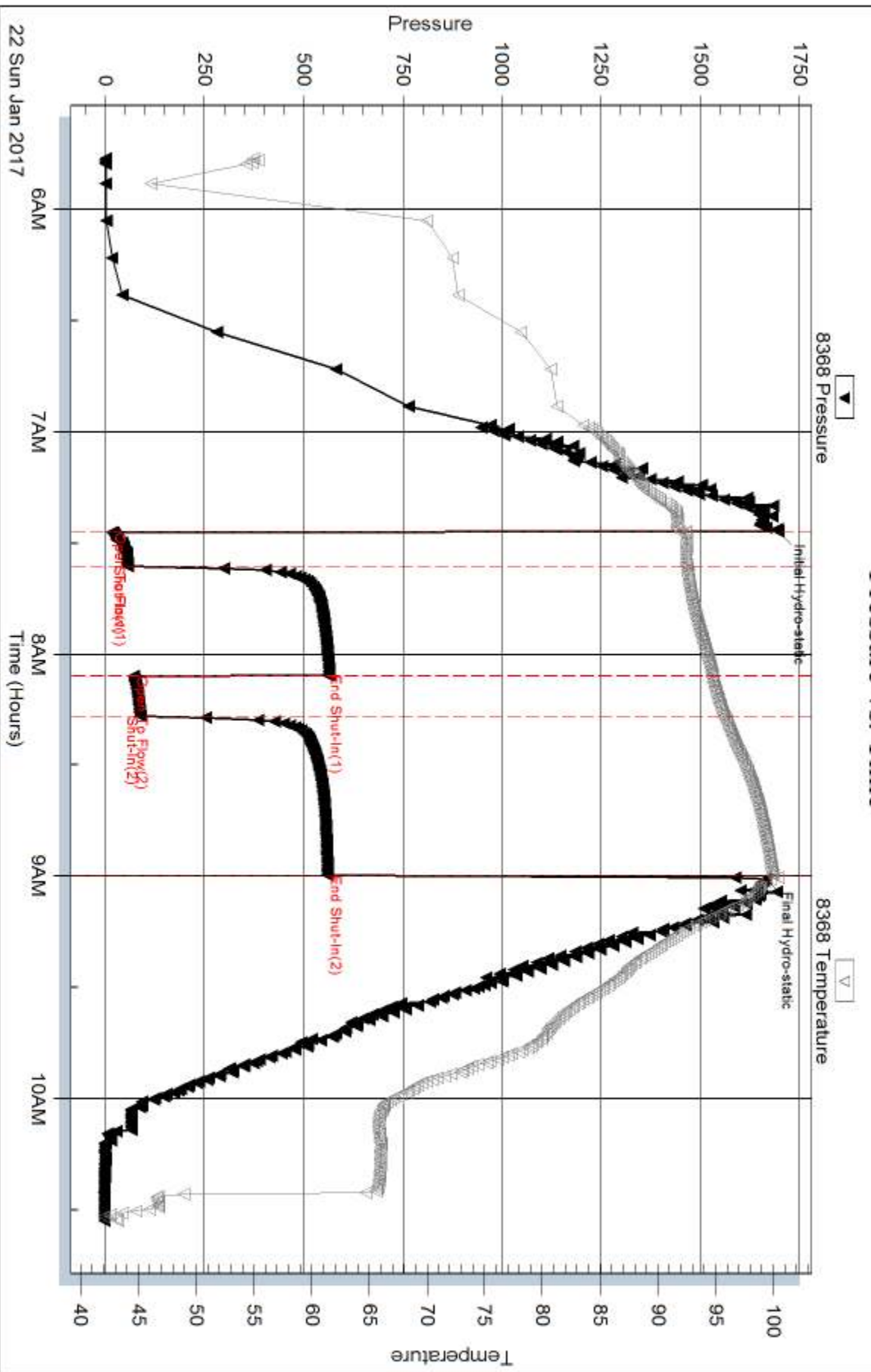
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	WCM w/scum oil <1% O 10% W 90%M	0.049
117.00	OGMCW 1% O 5% Gas 44% M 50% W	0.630
63.00	OWCM 5% O 15% W 80% M	0.884

Total Length: 190.00 ft Total Volume: 1.563 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Pressure vs. Time



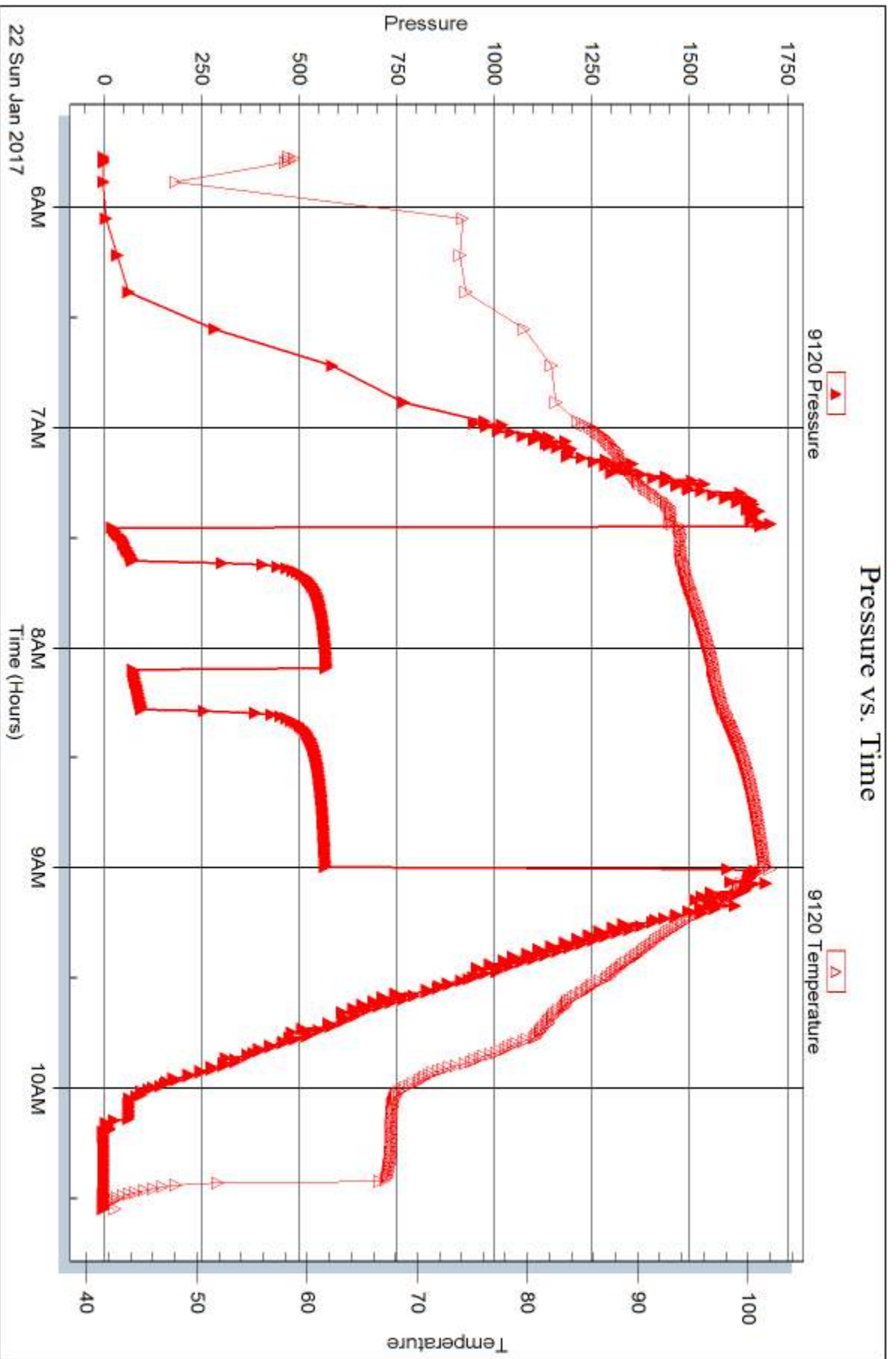
Serial #: 9120

Inside

Jaspar Co.

Boss #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 64665

Printed: 2017.01.26 @ 10:52:19



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.22 @ 23:39:00

End Date: 2017.01.23 @ 03:16:15

Job Ticket #: 64666 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.01.26 @ 10:51:46

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 6 LKC '1-' 2017.01.22



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64666 **DST#: 6**
Test Start: 2017.01.22 @ 23:39:00

Tool Information

Drill Pipe:	Length: 3388.00 ft	Diameter: 3.80 inches	Volume: 47.52 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 58000.00 lb
		Total Volume: - bbl		Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3522.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	78.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			3503.00	
Shut In Tool	5.00			3508.00	
Hydraulic tool	5.00			3513.00	
Packer	5.00			3518.00	20.00 Bottom Of Top Packer
Packer	4.00			3522.00	
Stubb	1.00			3523.00	
Recorder	0.00	8368	Inside	3523.00	
Recorder	0.00	9120	Outside	3523.00	
Perforations	19.00			3542.00	
Change Over Sub	1.00			3543.00	
Drill Pipe	32.00			3575.00	
Change Over Sub	1.00			3576.00	
Bullnose	4.00			3580.00	58.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64666 **DST#: 6**
Test Start: 2017.01.22 @ 23:39:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
600.00	Mud	7.314

Total Length: 600.00 ft Total Volume: 7.314 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

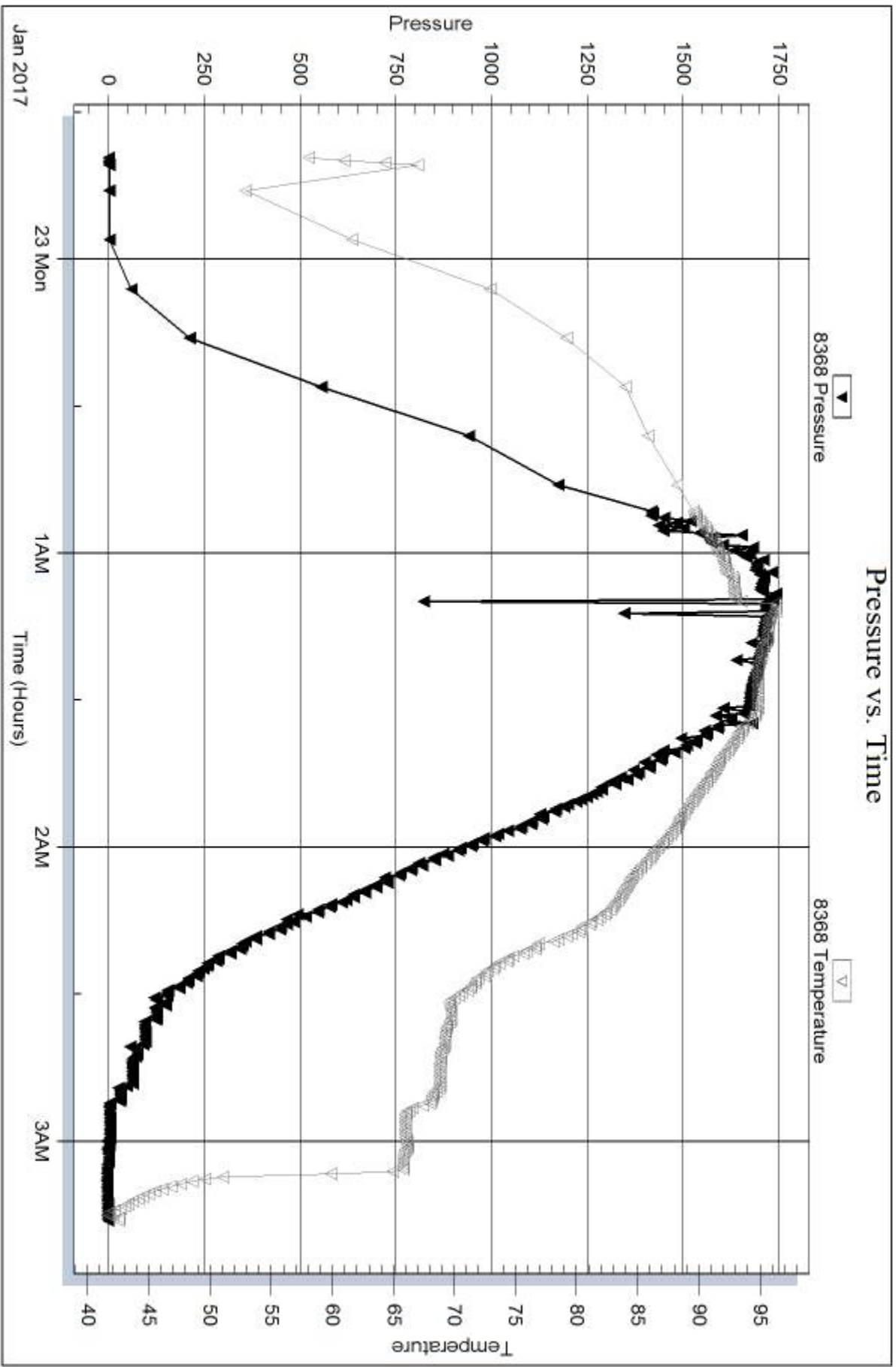
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Inside

Jaspar Co.

Boss #1

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 64666

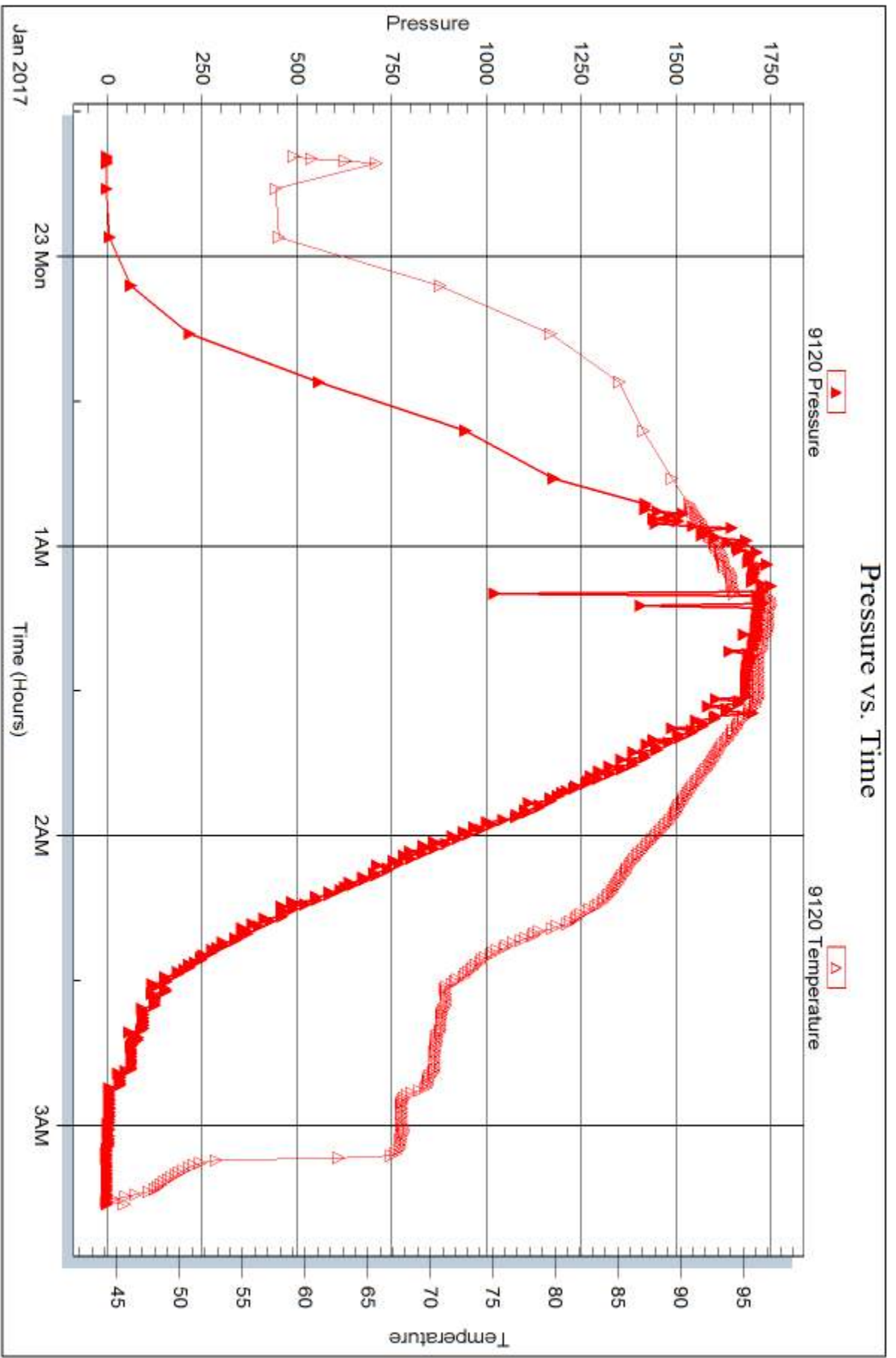
Printed: 2017.01.26 @ 10:51:46

Serial #: 9120

Outside Jasper Co.

Boss #1

DST Test Number: 6





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.23 @ 03:58:00

End Date: 2017.01.23 @ 11:41:15

Job Ticket #: 64667 DST #: 7

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

Printed: 2017.01.26 @ 10:50:56

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 7 LKC 'H.K' 2017.01.23



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64667 **DST#: 7**
Test Start: 2017.01.23 @ 03:58:00

GENERAL INFORMATION:

Formation: **LKC 'H-K'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:01:30
Time Test Ended: 11:41:15
Interval: **3500.00 ft (KB) To 3580.00 ft (KB) (TVD)**
Total Depth: 3330.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft

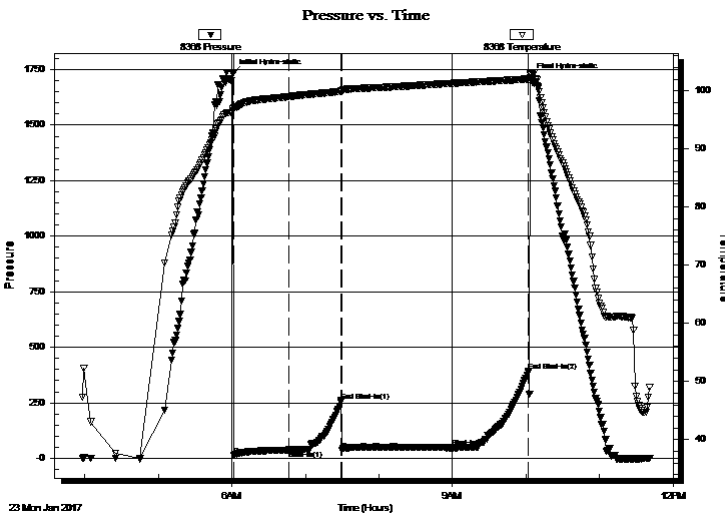
Serial #: 8368

Inside

Press@RunDepth: 48.26 psig @ 3501.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.23 End Date: 2017.01.23 Last Calib.: 2017.01.23
Start Time: 03:58:15 End Time: 11:41:15 Time On Btm: 2017.01.23 @ 06:01:00
Time Off Btm: 2017.01.23 @ 10:03:15

TEST COMMENT: 45-IF-Weak Blow ; Built to 2 1/2"
45-ISI-No Blow Back
90-FF-Very Weak Blow ; Built to 1 1/2"
60-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1731.85	96.90	Initial Hydro-static
1	15.07	96.99	Open To Flow (1)
46	37.78	98.99	Shut-In(1)
89	259.26	99.94	End Shut-In(1)
89	37.76	99.91	Open To Flow (2)
179	48.26	101.28	Shut-In(2)
241	392.19	102.02	End Shut-In(2)
243	1712.91	102.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil 100% O	0.02
65.00	OCM 20% O 80% M	0.32

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64667 **DST#: 7**
Test Start: 2017.01.23 @ 03:58:00

Tool Information

Drill Pipe:	Length: 3388.00 ft	Diameter: 3.80 inches	Volume: 47.52 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 58000.00 lb
		Total Volume: - bbl		Tool Chased ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3500.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	1	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			3481.00	
Shut In Tool	5.00			3486.00	
Hydraulic tool	5.00			3491.00	
Packer	5.00			3496.00	20.00 Bottom Of Top Packer
Packer	4.00			3500.00	
Stubb	1.00			3501.00	
Recorder	0.00	8368	Inside	3501.00	
Recorder	0.00	9120	Outside	3501.00	
Perforations	9.00			3510.00	
Change Over Sub	1.00			3511.00	
Drill Pipe	64.00			3575.00	
Change Over Sub	1.00			3576.00	
Bullnose	4.00			3580.00	80.00 Bottom Packers & Anchor

Total Tool Length: 100.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64667 **DST#: 7**
Test Start: 2017.01.23 @ 03:58:00

Mud and Cushion Information

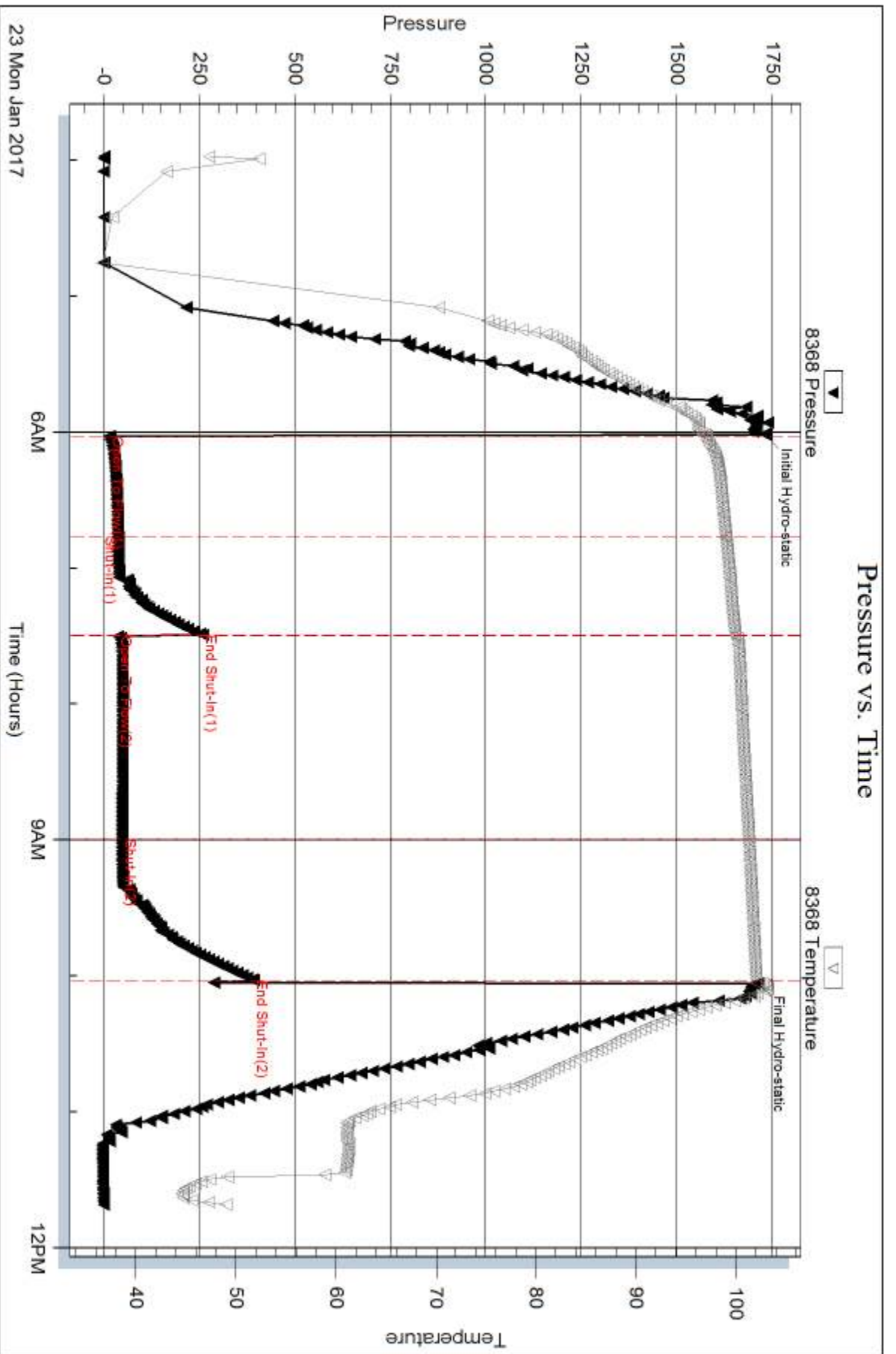
Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Clean Oil 100% O	0.025
65.00	OCM 20% O 80% M	0.320

Total Length: 70.00 ft Total Volume: 0.345 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

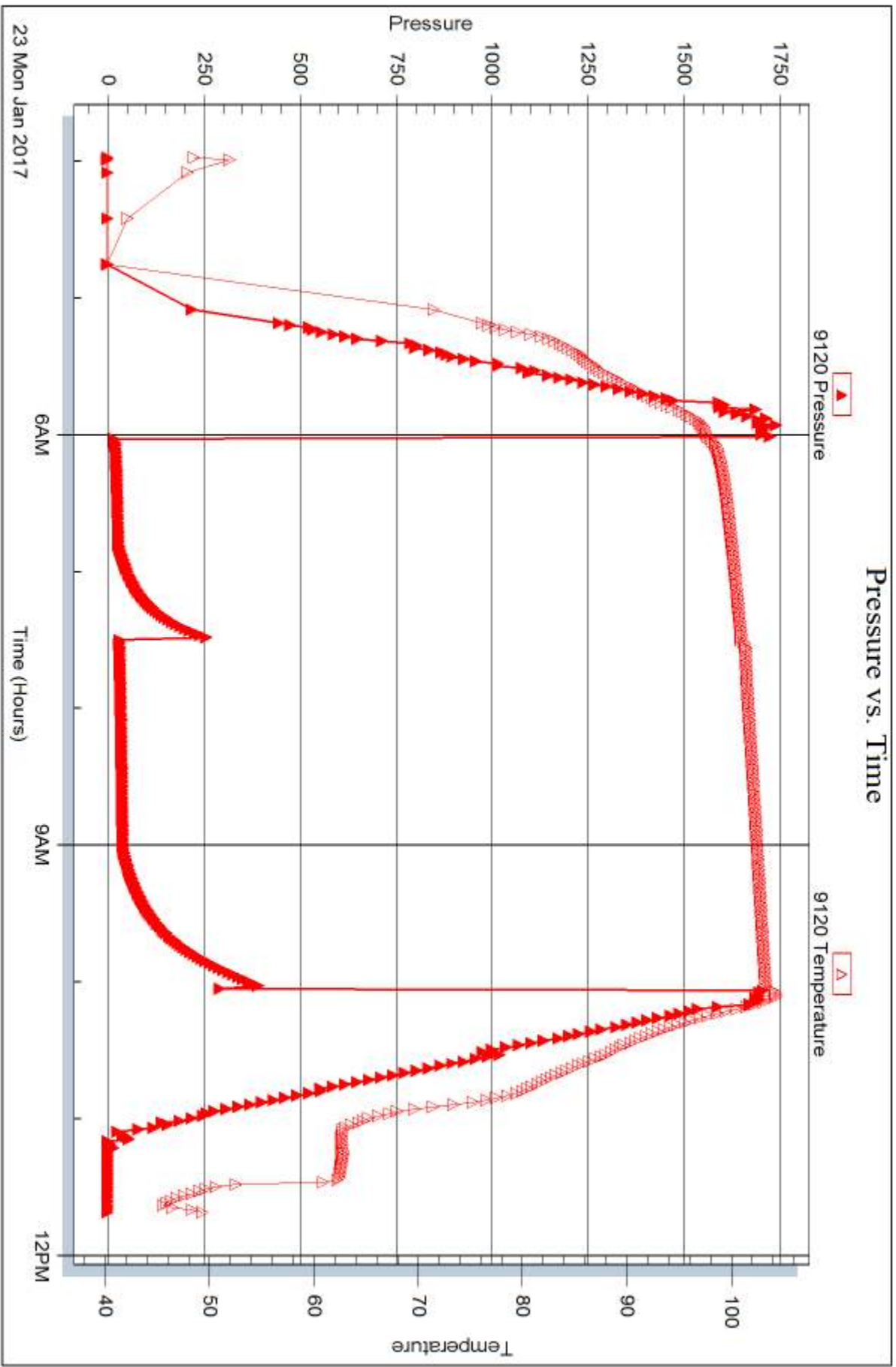


Serial #: 9120

Outside Jasper Co.

Boss #1

DST Test Number: 7





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.23 @ 19:25:00

End Date: 2017.01.24 @ 01:51:30

Job Ticket #: 64668 DST #: 8

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

Printed: 2017.01.26 @ 10:50:29

Jaspar Co.
S11-7S-20W Rooks,KS
Boss #1
DST # 8
LKC.L
2017.01.23



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

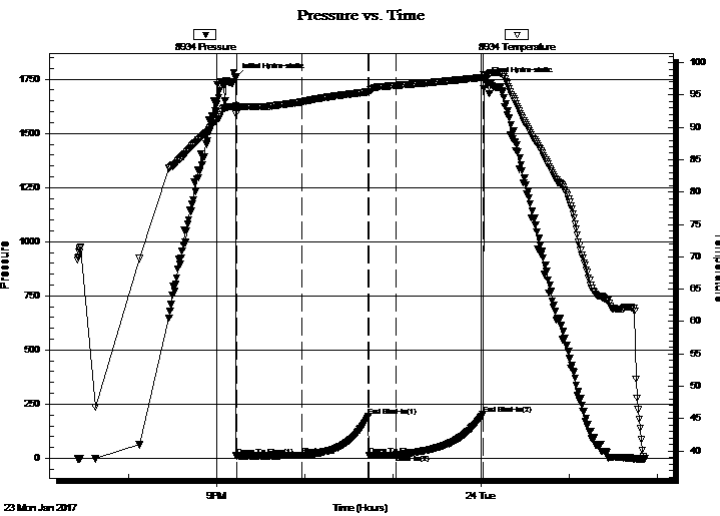
S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64668 **DST#: 8**
Test Start: 2017.01.23 @ 19:25:00

GENERAL INFORMATION:

Formation: **LKC 'L'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:13:15
Time Test Ended: 01:51:30
Interval: **3576.00 ft (KB) To 3595.00 ft (KB) (TVD)**
Total Depth: 3595.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84

Serial #: 8934 Outside
Press@RunDepth: 16.29 psig @ 3577.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.23 End Date: 2017.01.24 Last Calib.: 2017.01.24
Start Time: 19:25:05 End Time: 01:51:29 Time On Btm: 2017.01.23 @ 21:12:45
Time Off Btm: 2017.01.24 @ 00:02:30

TEST COMMENT: 45-IF-Very Weak Blow ; Built to 3/4"
45-ISI-No Blow
15-FF-No Blow
60-FSI-No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1755.17	93.29	Initial Hydro-static
1	10.35	92.84	Open To Flow (1)
46	12.44	93.94	Shut-In(1)
91	192.77	95.49	End Shut-In(1)
91	13.87	95.41	Open To Flow (2)
110	16.29	96.47	Shut-In(2)
169	204.86	97.71	End Shut-In(2)
170	1740.86	98.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 3% O 97% M	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64668 **DST#: 8**
Test Start: 2017.01.23 @ 19:25:00

Tool Information

Drill Pipe:	Length: 3451.00 ft	Diameter: 3.80 inches	Volume: 48.41 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	64000.00 lb
		Total Volume: - bbl		Tool Chased	ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	3576.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	19.00 ft				
Tool Length:	39.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3557.00	
Shut In Tool	5.00			3562.00	
Hydraulic tool	5.00			3567.00	
Packer	5.00			3572.00	20.00 Bottom Of Top Packer
Packer	4.00			3576.00	
Stubb	1.00			3577.00	
Recorder	0.00	8368	Inside	3577.00	
Recorder	0.00	8934	Outside	3577.00	
Perforations	14.00			3591.00	
Bullnose	4.00			3595.00	19.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64668 **DST#: 8**
Test Start: 2017.01.23 @ 19:25:00

Mud and Cushion Information

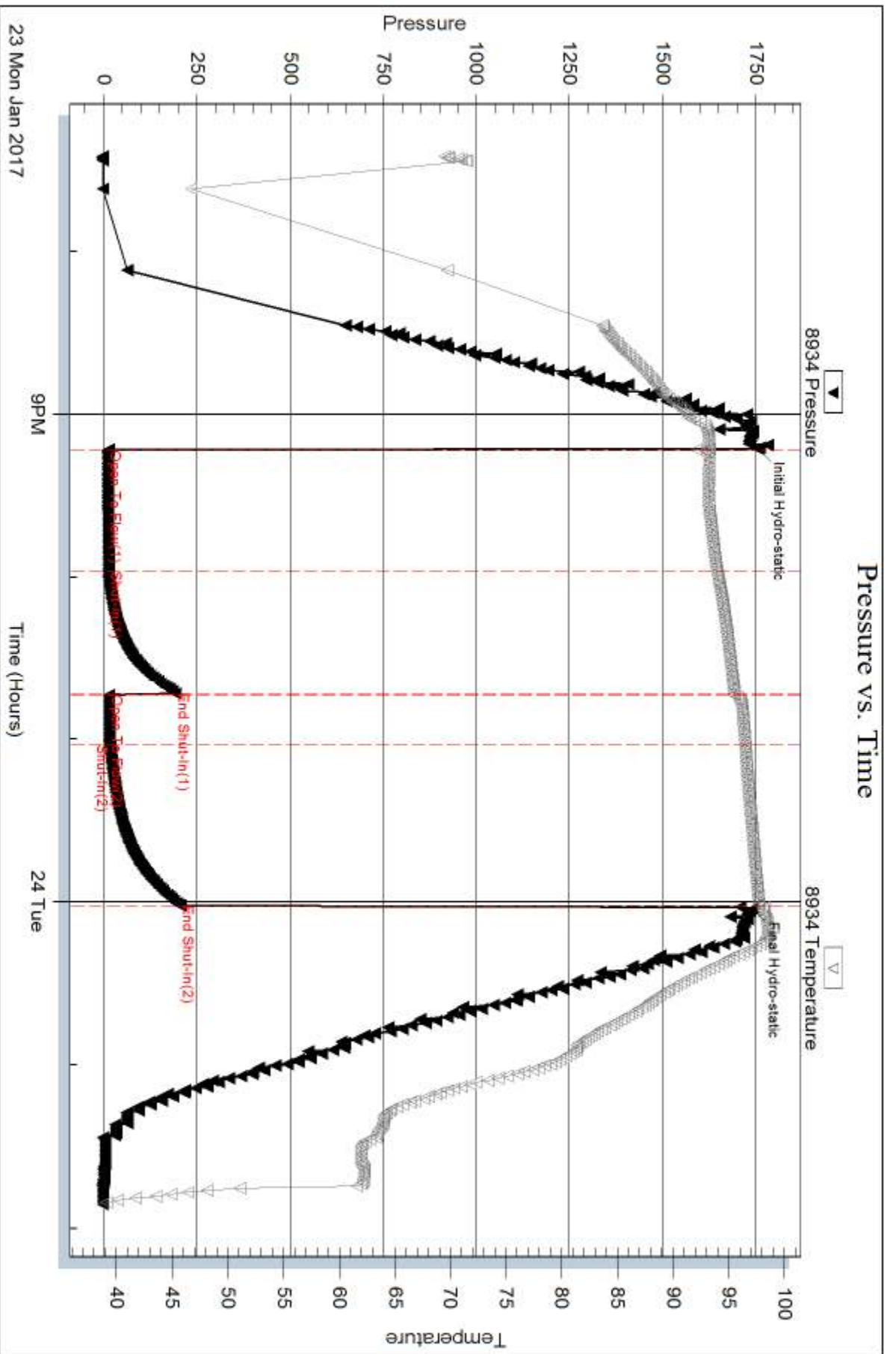
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 3% O 97% M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

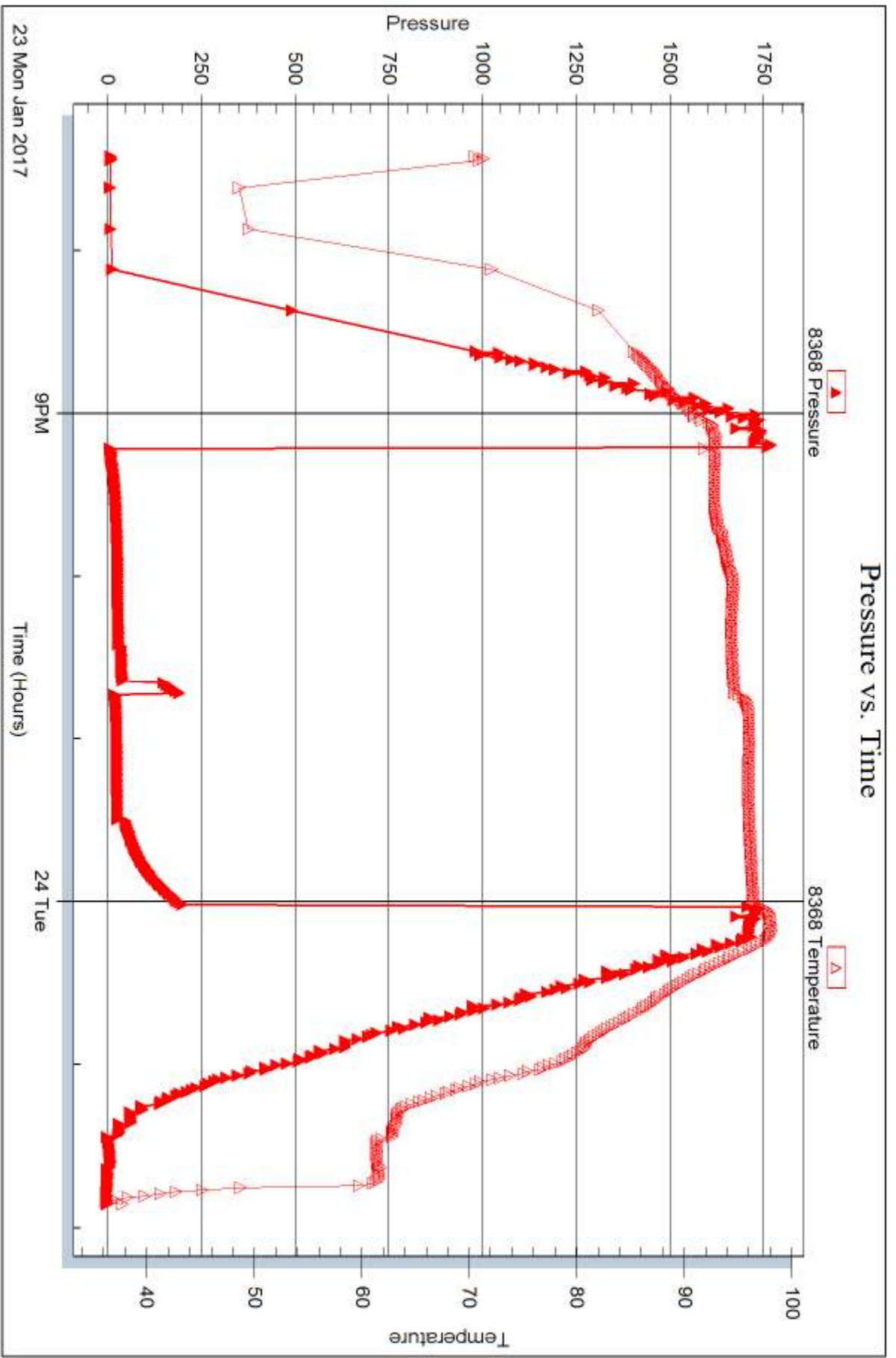


Serial #: 8368

Inside Jasper Co.

Boss #1

DST Test Number: 8





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.24 @ 14:44:00

End Date: 2017.01.24 @ 16:49:15

Job Ticket #: 64669 DST #: 9

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.01.26 @ 10:50:01



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

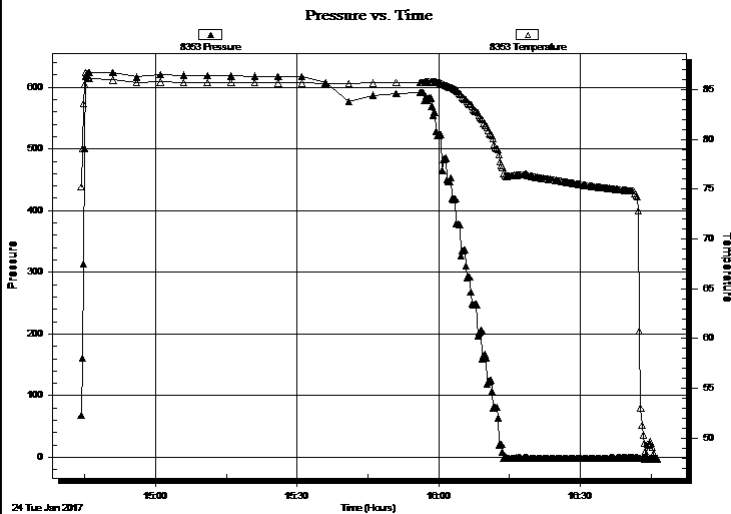
S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64669 **DST#: 9**
Test Start: 2017.01.24 @ 14:44:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 16:49:15
Interval: **3620.00 ft (KB) To 3669.00 ft (KB) (TVD)**
Total Depth: 3669.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8353 Inside
Press@RunDepth: psig @ 3631.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.24 End Date: 2017.01.24 Last Calib.: 2017.01.24
Start Time: 14:44:15 End Time: 16:46:15 Time On Btm:
Time Off Btm:

TEST COMMENT: Did not make it to bottom. hit bridge



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
200.00	Mud 100% M	1.71

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64669 **DST#: 9**
Test Start: 2017.01.24 @ 14:44:00

Tool Information

Drill Pipe:	Length: 3510.00 ft	Diameter: 3.80 inches	Volume: 49.24 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: - bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	lb
Depth to Top Packer:	3620.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	69.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3601.00	
Shut In Tool	5.00			3606.00	
Hydraulic tool	5.00			3611.00	
Packer	5.00			3616.00	20.00 Bottom Of Top Packer
Packer	4.00			3620.00	
Stubb	1.00			3621.00	
Perforations	10.00			3631.00	
Recorder	0.00	8353	Inside	3631.00	
Recorder	0.00	8934	Inside	3631.00	
Change Over Sub	1.00			3632.00	
Drill Pipe	32.00			3664.00	
Change Over Sub	1.00			3665.00	
Bullnose	4.00			3669.00	49.00 Bottom Packers & Anchor

Total Tool Length: 69.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

S11-7S-20W Rooks, KS

PO Box 1120
Hays KS 67601

Boss #1

Job Ticket: 64669

DST#: 9

ATTN: Jeff Lawler / Shane

Test Start: 2017.01.24 @ 14:44:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	Mud 100% M	1.712

Total Length: 200.00 ft Total Volume: 1.712 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

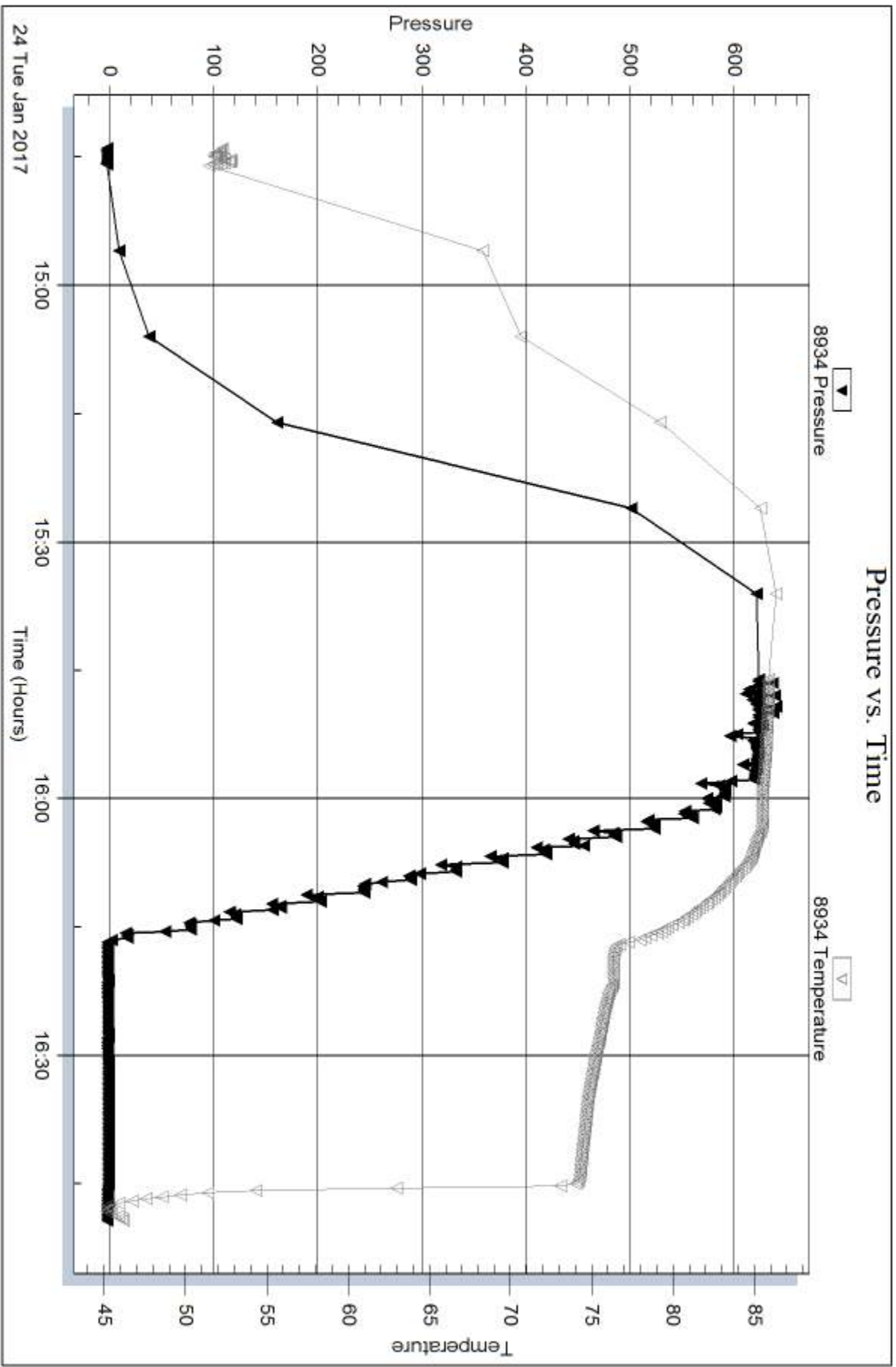
Recovery Comments:

Serial #: 8934

Inside Jasper Co.

Boss #1

DST Test Number: 9



Trilobite Testing, Inc

Ref. No: 64669

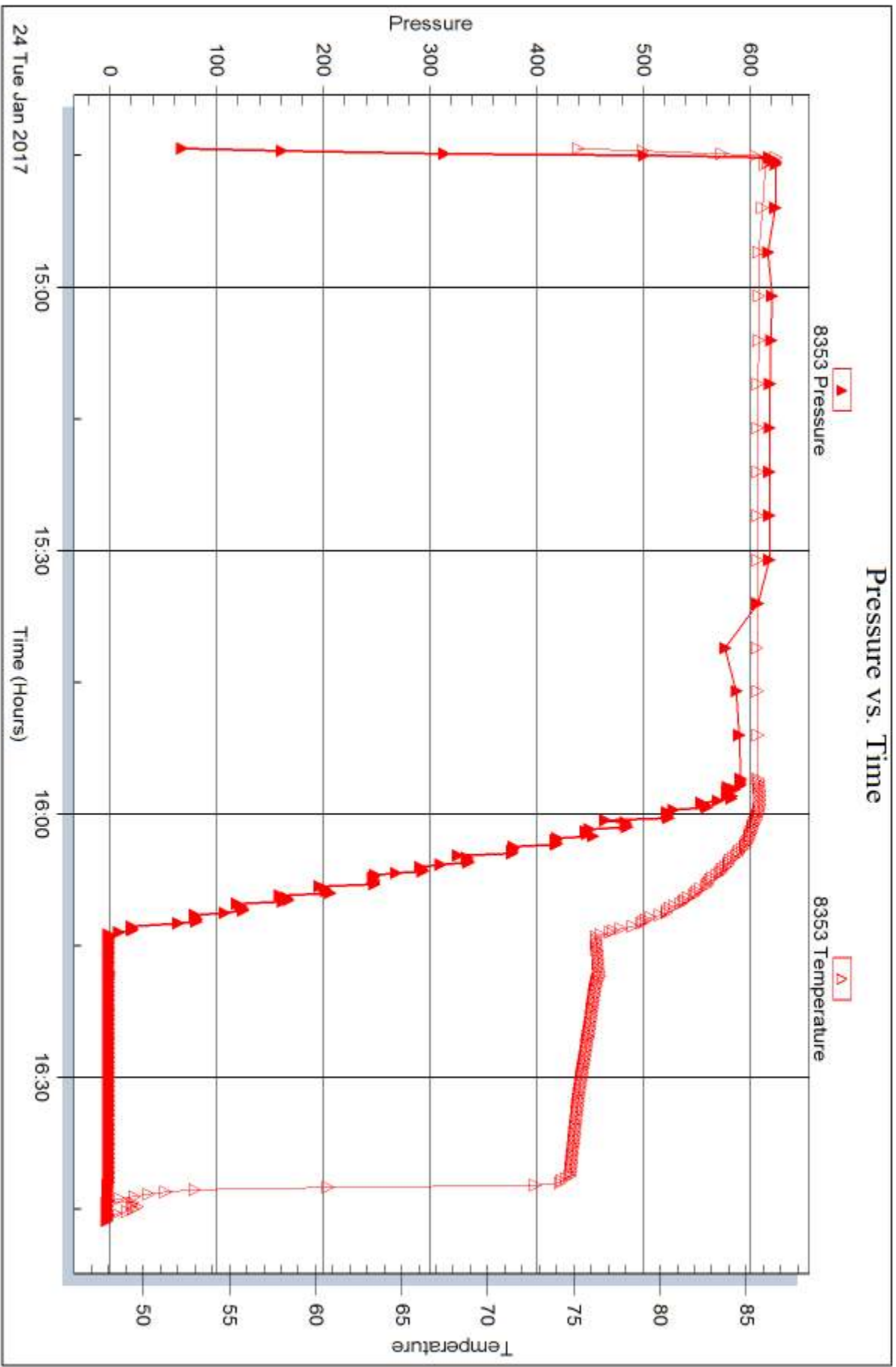
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Serial #: 8353

Inside Jasper Co.

Boss #1

DST Test Number: 9



Triobite Testing, Inc

Ref. No: 64669

Printed: 2017.01.26 @ 10:50:02



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.24 @ 19:49:00

End Date: 2017.01.25 @ 02:27:45

Job Ticket #: 64670 DST #: 10

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

Printed: 2017.01.26 @ 10:48:51

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 10 Arbuckle 2017.01.24



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

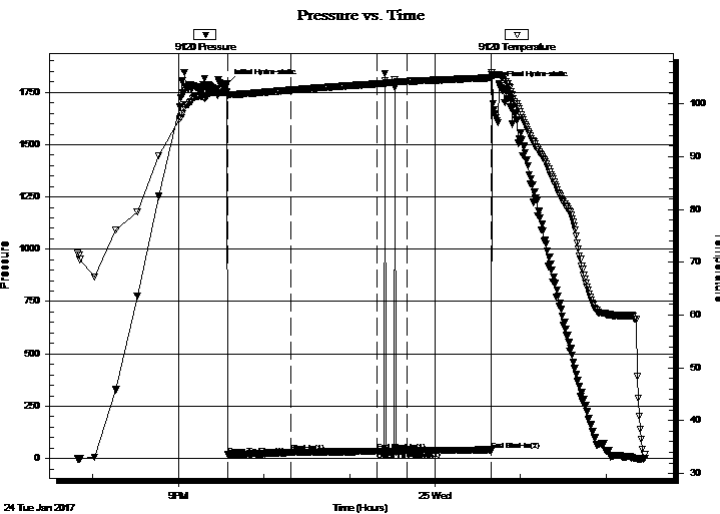
S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64670 **DST#: 10**
Test Start: 2017.01.24 @ 19:49:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:34:30
Time Test Ended: 02:27:45
Interval: **3620.00 ft (KB) To 3669.00 ft (KB) (TVD)**
Total Depth: 3669.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Reference Elevations: 2172.00 ft (KB)
2164.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 9120 Inside
Press@RunDepth: 37.97 psig @ 3621.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.24 End Date: 2017.01.25 Last Calib.: 2017.01.25
Start Time: 19:49:15 End Time: 02:27:45 Time On Btm: 2017.01.24 @ 21:34:15
Time Off Btm: 2017.01.25 @ 00:45:30

TEST COMMENT: 45-IF-Very Weak Surface Blow ; Died after 31 minutes
60-ISI-No Blow Back
20-FF-No Blow ; Flushed tw ice; still no Blow
60-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.95	102.25	Initial Hydro-static
1	17.08	101.59	Open To Flow (1)
45	29.04	102.63	Shut-In(1)
105	32.97	103.78	End Shut-In(1)
105	32.94	103.78	Open To Flow (2)
127	37.97	104.28	Shut-In(2)
186	41.53	104.96	End Shut-In(2)
192	1780.90	105.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 1% O 99% M	0.10

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64670 **DST#: 10**
Test Start: 2017.01.24 @ 19:49:00

Tool Information

Drill Pipe:	Length: 3516.00 ft	Diameter: 3.80 inches	Volume: 49.32 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
		Total Volume: - bbl		Tool Chased ft
Drill Pipe Above KB:	37.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3620.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	49.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	1	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			3601.00	
Shut In Tool	5.00			3606.00	
Hydraulic tool	5.00			3611.00	
Packer	5.00			3616.00	20.00 Bottom Of Top Packer
Packer	4.00			3620.00	
Stubb	1.00			3621.00	
Recorder	0.00	9120	Inside	3621.00	
Recorder	0.00	8934	Inside	3621.00	
Perforations	10.00			3631.00	
Change Over Sub	1.00			3632.00	
Drill Pipe	32.00			3664.00	
Change Over Sub	1.00			3665.00	
Bullnose	4.00			3669.00	49.00 Bottom Packers & Anchor

Total Tool Length: 69.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64670 **DST#: 10**
Test Start: 2017.01.24 @ 19:49:00

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 1% O 99% M	0.098

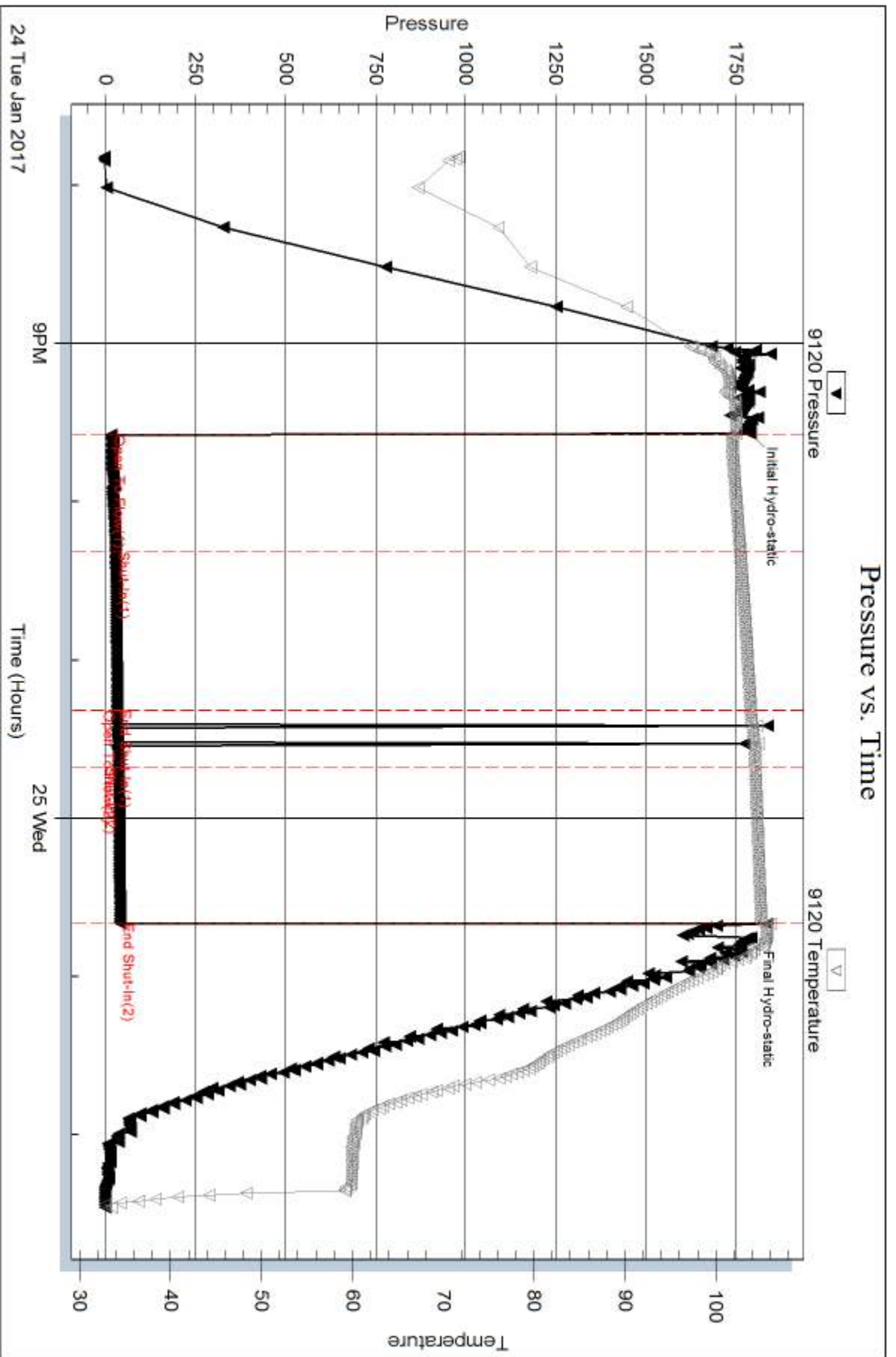
Total Length: 20.00 ft Total Volume: 0.098 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 9120

Inside Jasper Co.

Boss #1

DST Test Number: 10



Triobite Testing, Inc

Ref. No: 64670

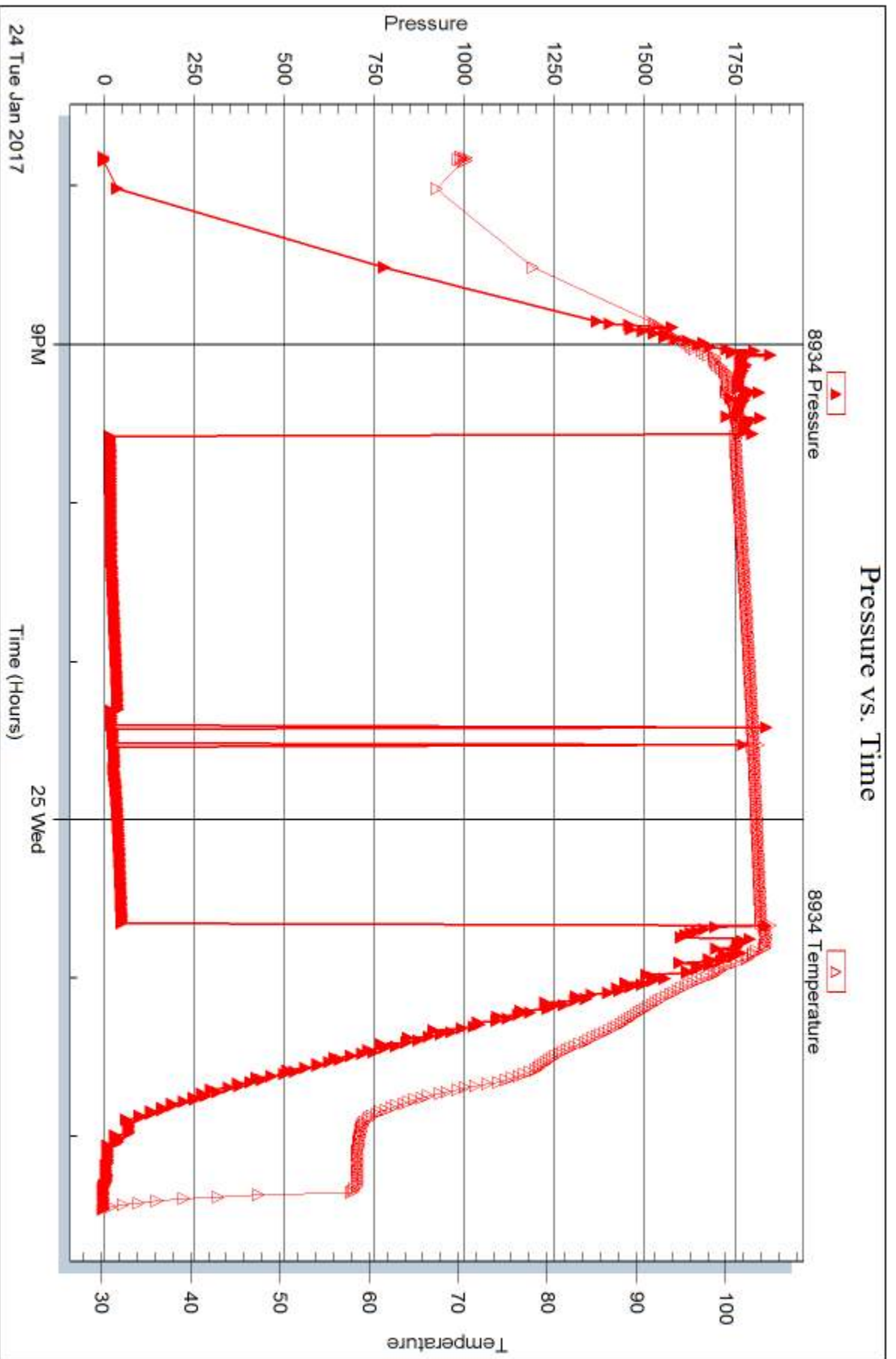
Printed: 2017.01.26 @ 10:48:52

Serial #: 8934

Inside Jasper Co.

Boss #1

DST Test Number: 10



Triobite Testing, Inc

Ref. No: 64670

Printed: 2017.01.26 @ 10:48:52



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays KS 67601

ATTN: Jeff Lawler / Shane

Boss #1

S11-7S-20W Rooks,KS

Start Date: 2017.01.25 @ 16:48:00

End Date: 2017.01.25 @ 22:30:15

Job Ticket #: 64671 DST #: 11

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

Printed: 2017.01.26 @ 10:45:53

Jaspar Co. S11-7S-20W Rooks,KS Boss #1 DST # 11 Arbuckle 2017.01.25



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Jaspar Co.
 PO Box 1120
 Hays KS 67601
 ATTN: Jeff Lawler / Shane

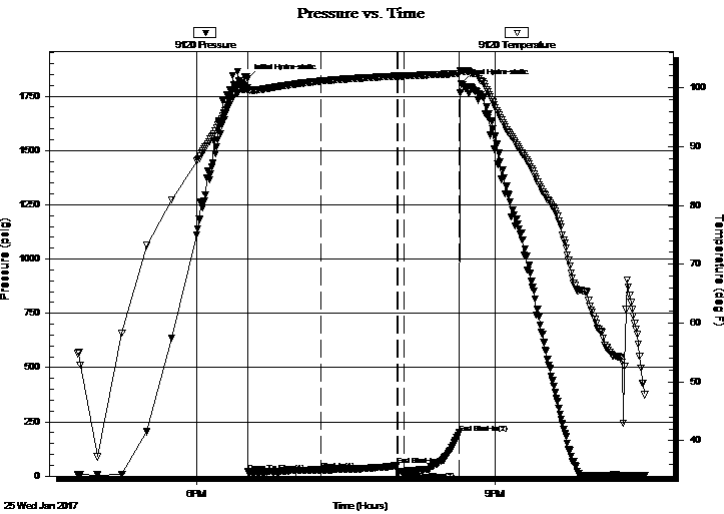
S11-7S-20W Rooks, KS
Boss #1
 Job Ticket: 64671 **DST#: 11**
 Test Start: 2017.01.25 @ 16:48:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:30:45
 Time Test Ended: 22:30:15
 Interval: **3644.00 ft (KB) To 3678.00 ft (KB) (TVD)**
 Total Depth: 3720.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Straddle (Reset)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2172.00 ft (KB)
 2164.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 9120 Inside
 Press@RunDepth: 23.34 psig @ 3660.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.01.25 End Date: 2017.01.25 Last Calib.: 2017.01.25
 Start Time: 16:48:15 End Time: 22:30:15 Time On Btm: 2017.01.25 @ 18:30:30
 Time Off Btm: 2017.01.25 @ 20:39:30

TEST COMMENT: 45-IF-Weak Blow ; Built to 1 1/4"
 45-ISI-No Blow Back
 5-FF-No Blow
 30-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1832.04	100.01	Initial Hydro-static
1	19.11	99.46	Open To Flow (1)
45	28.83	101.13	Shut-In(1)
91	50.69	101.98	End Shut-In(1)
91	22.29	101.97	Open To Flow (2)
95	23.34	102.01	Shut-In(2)
128	199.86	102.43	End Shut-In(2)
129	1808.89	102.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 5% O 95% M	0.10

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64671 **DST#: 11**
Test Start: 2017.01.25 @ 16:48:00

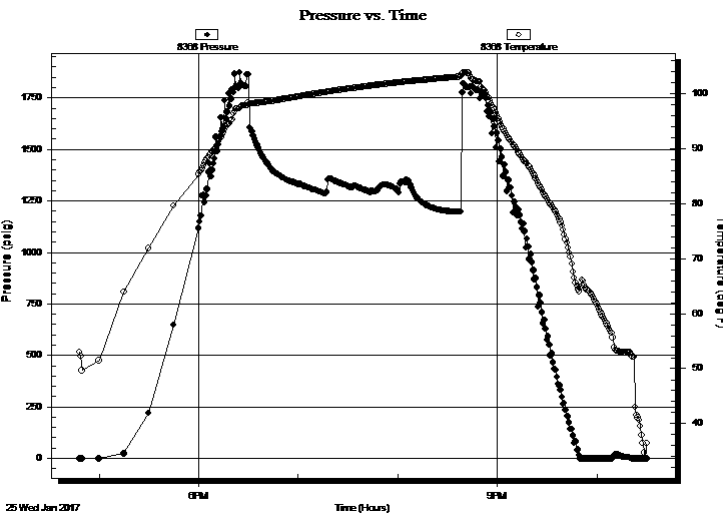
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Reset)
Time Tool Opened: 18:30:45 Tester: Spencer J. Staab
Time Test Ended: 22:30:15 Unit No: 84
Interval: 3644.00 ft (KB) To 3678.00 ft (KB) (TVD) Reference Elevations: 2172.00 ft (KB)
Total Depth: 3720.00 ft (KB) (TVD) 2164.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 8.00 ft

Serial #: 8368 Outside

Press@RunDepth: psig @ 3683.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.01.25 End Date: 2017.01.25 Last Calib.: 2017.01.25
Start Time: 16:48:15 End Time: 22:30:15 Time On Btm:
Time Off Btm:

TEST COMMENT: 45-IF-Weak Blow ; Built to 1 1/4"
45-ISI-No Blow Back
5-FF-No Blow
30-FSI-No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM 5% O 95% M	0.10

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64671 **DST#: 11**
Test Start: 2017.01.25 @ 16:48:00

Tool Information

Drill Pipe:	Length: 3515.00 ft	Diameter: 3.80 inches	Volume: 49.31 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
		Total Volume: - bbl		Tool Chased ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3644.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	3678.00 ft			
Interval between Packers:	34.00 ft			
Tool Length:	95.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3625.00	
Shut In Tool	5.00			3630.00	
Hydraulic tool	5.00			3635.00	
Packer	5.00			3640.00	20.00 Bottom Of Top Packer
Packer	4.00			3644.00	
Stubb	1.00			3645.00	
Perforations	15.00			3660.00	
Recorder	0.00	9120	Inside	3660.00	
Recorder	0.00	8934	Outside	3660.00	
Perforations	14.00			3674.00	
Blank Off Sub	1.00			3675.00	
top of s.packer	3.00			3678.00	34.00 Tool Interval
Packer	0.00			3678.00	
Stubb	1.00			3679.00	
Perforations	3.00			3682.00	
Change Over Sub	1.00			3683.00	
Recorder	0.00	8368	Outside	3683.00	
Drill Pipe	32.00			3715.00	
Change Over Sub	1.00			3716.00	
Bullnose	3.00			3719.00	41.00 Bottom Packers & Anchor

Total Tool Length: 95.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.
PO Box 1120
Hays KS 67601
ATTN: Jeff Lawler / Shane

S11-7S-20W Rooks, KS
Boss #1
Job Ticket: 64671 **DST#: 11**
Test Start: 2017.01.25 @ 16:48:00

Mud and Cushion Information

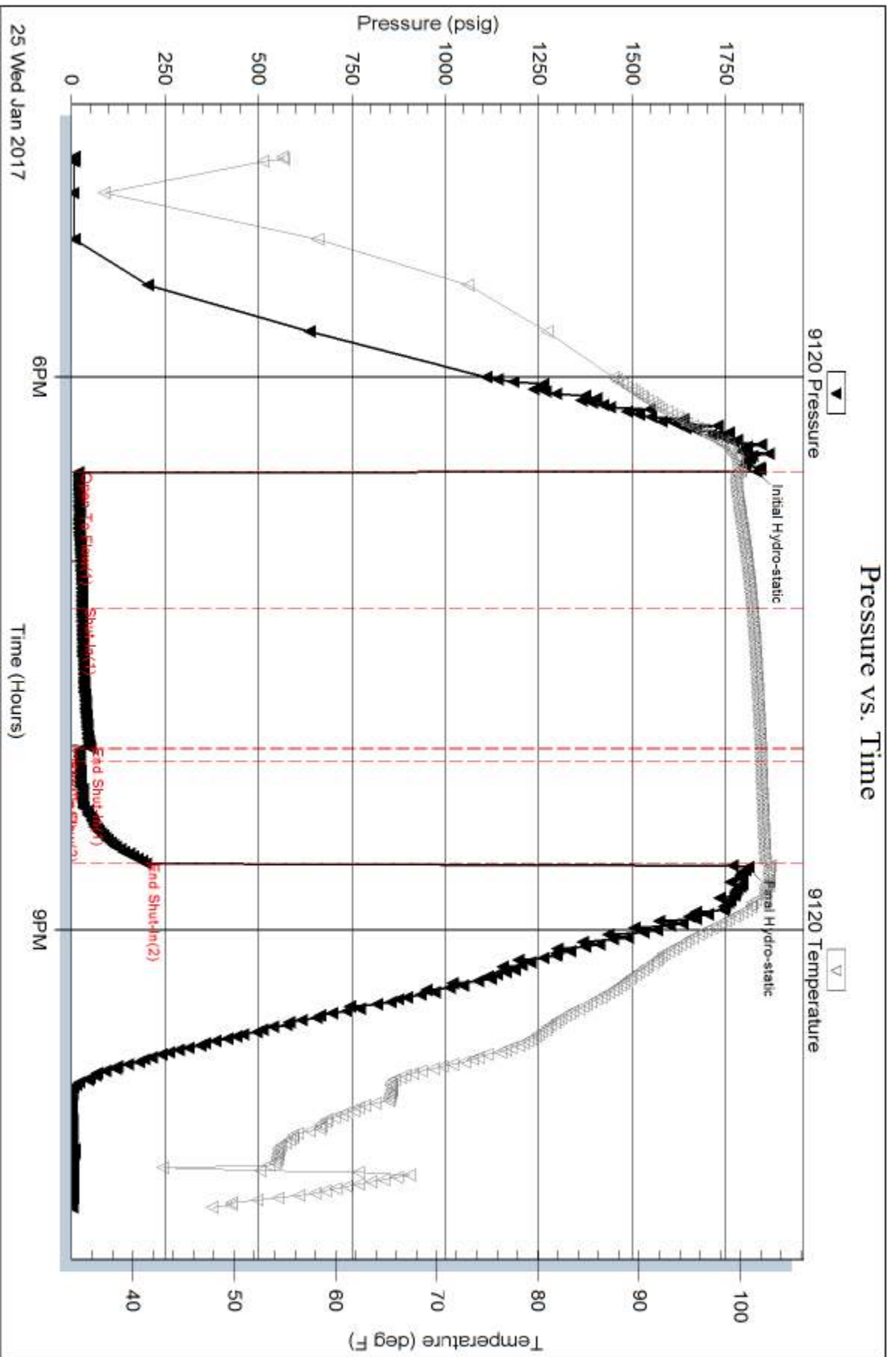
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM 5% O 95% M	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

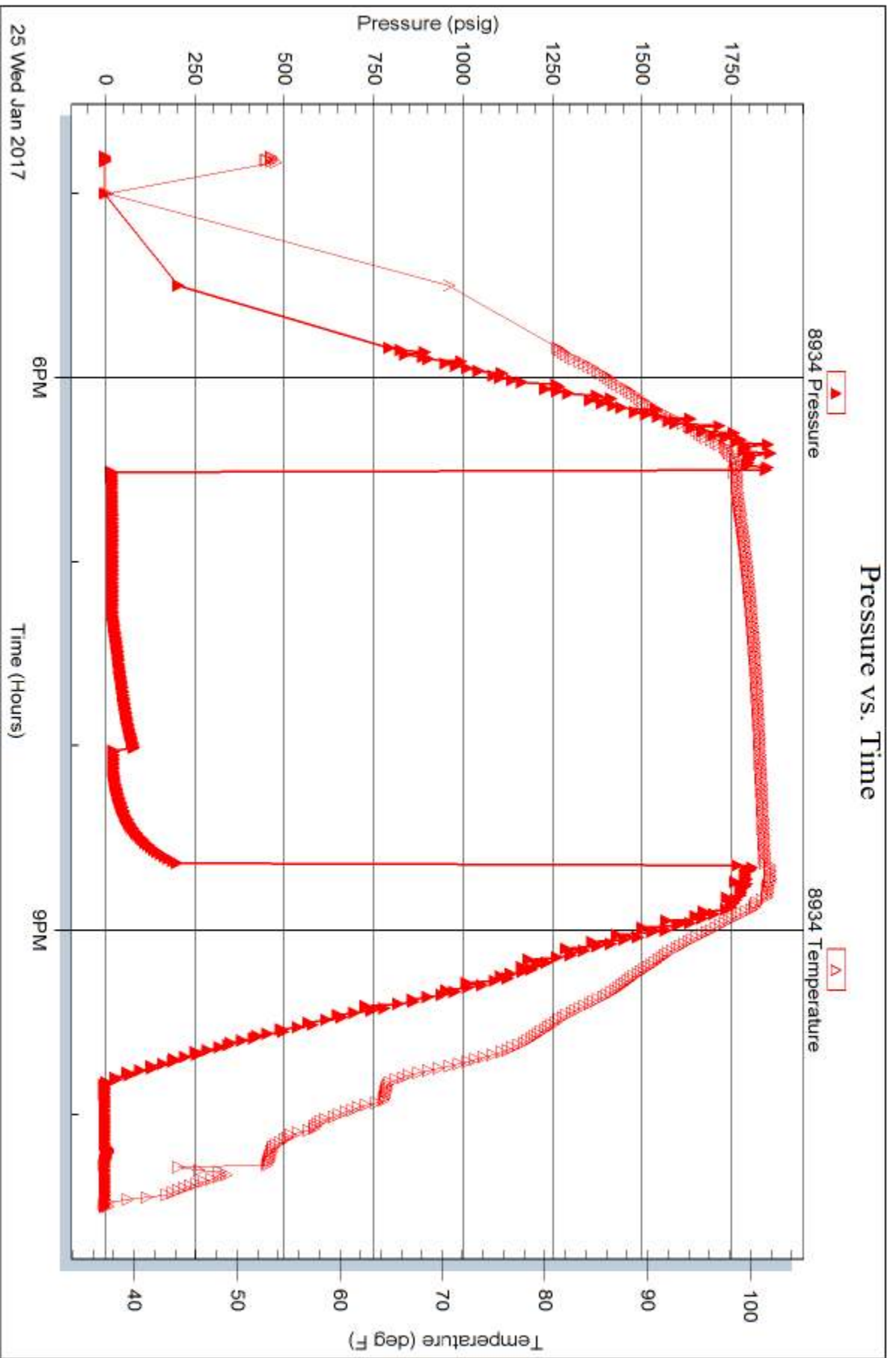


Serial #: 8934

Outside Jasper Co.

Boss #1

DST Test Number: 11



Triobite Testing, Inc

Ref. No: 64671

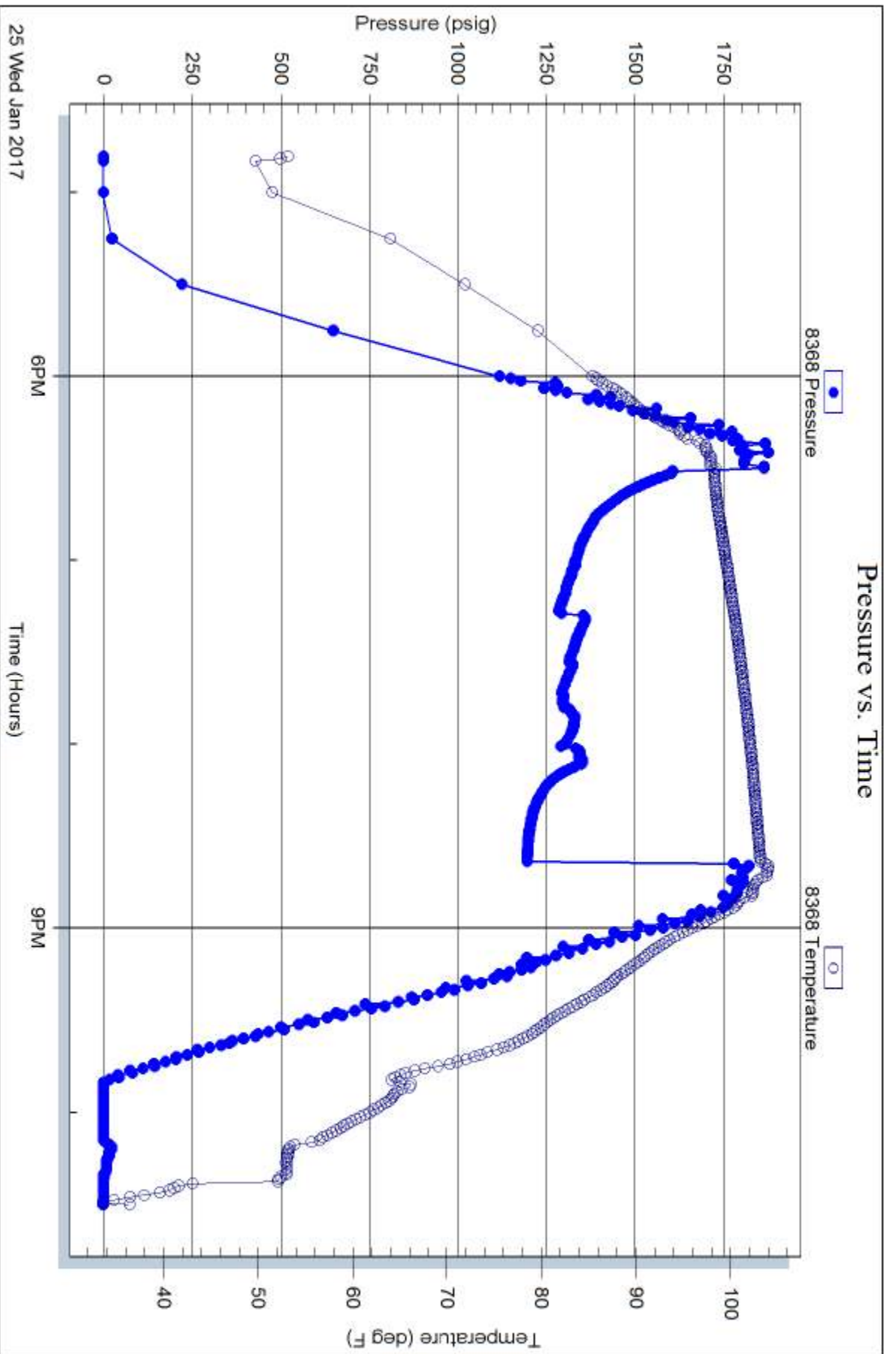
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Serial #: 8368

Outside Jasper Co.

Boss #1

DST Test Number: 11



Triobite Testing, Inc

Ref. No: 64671

Printed: 2017.01.26 @ 10:45:55



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64661

Well Name & No. Boss #1 Test No. 1 Date 1/20/2017
 Company Jasper Co. Elevation 2193 KB 2185 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays Ks, 67601
 Co. Rep / Geo. Jeff Lawler / Shame Vehige Rig WW#12
 Location: Sec. 11 Twp. 7s Rge. 20w Co. Rooks State Ks

Interval Tested 3286' - 3330 Zone Tested Oread
 Anchor Length 44' Drill Pipe Run 3168 Mud Wt. 8.7
 Top Packer Depth 3281' Drill Collars Run 121 Vis 77
 Bottom Packer Depth 3286' Wt. Pipe Run - WL 7.6
 Total Depth 3330' Chlorides 1,500 ppm System LCM 4#

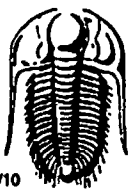
Blow Description 07-
150-
77-
750- **Did not make it to Bottom**
Hit Bridge 20 Stands in

Rec	Feet of	%gas	%oil	%water	%mud
<u>440</u>	<u>Mud</u>				

Rec Total 440 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test 850 T-On Location 06:00
 (B) First Initial Flow _____ Jars _____ T-Started 07:15
 (C) First Final Flow _____ Safety Joint _____ T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out _____
 (F) Second Final Flow _____ Mileage 124 R7 93 Comments Stacked out
 (G) Final Shut-In _____ Sampler _____ 20 Stands in, pulled
 (H) Final Hydrostatic _____ Straddle _____ tool
 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 943
 Accessibility _____ MP/DST Disc't _____
 Sub Total 943

Approved By _____ Our Representative Spencer J. Fral
 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.!!
Thank-you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64662

Well Name & No. Boss #1 Test No. 2 Date 1/20/2017
 Company Jasper Co Elevation 2193 KB 2185 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays Ks, 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig WV Drilling Rig #2
 Location: Sec. 17 Twp. 7S Rge. 20W Co. Rooks State KS

Interval Tested 3286'-3330' Zone Tested Oread
 Anchor Length 44' Drill Pipe Run 3168' Mud Wt. 9.1
 Top Packer Depth 3281' Drill Collars Run 121' Vis 51
 Bottom Packer Depth 3286' Wt. Pipe Run — WL 7.6
 Total Depth 3330 Chlorides 500 ppm System LCM 3#

Blow Description D7 - Strong Blow; Built to 8 inches
DSD - Very Weak Surface Blow after 37 minutes; Built to 8 inches
F7 - Fair Blow; Built to 5 1/4 inches
FSD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>WJCM</u>	<u>15</u>	<u>5</u>	<u>80</u>	<u>—</u>
<u>62</u>	<u>WCM</u>	<u>—</u>	<u>20</u>	<u>80</u>	<u>—</u>
<u>63</u>	<u>WCM</u>	<u>—</u>	<u>40</u>	<u>60</u>	<u>—</u>
<u>—</u>	<u>scum of oil on tool</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

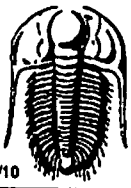
Rec Total 170 BHT 96° Gravity — API RW 431 @ 46° F Chlorides 23,500 ppm

(A) Initial Hydrostatic <u>1594</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>12:25</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars <u>—</u>	T-Started <u>12:58</u>
(C) First Final Flow <u>71</u>	<input type="checkbox"/> Safety Joint <u>—</u>	T-Open <u>14:42</u>
(D) Initial Shut-In <u>645</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>17:30</u>
(E) Second Initial Flow <u>73</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>19:23</u>
(F) Second Final Flow <u>90</u>	<input checked="" type="checkbox"/> Mileage <u>124 RT 93</u>	Comments <u>—</u>
(G) Final Shut-In <u>669</u>	<input type="checkbox"/> Sampler <u>—</u>	<u>—</u>
(H) Final Hydrostatic <u>1562</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
Initial Open <u>15</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>15</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby <u>—</u>	Total <u>1143</u>
	<input type="checkbox"/> Accessibility <u>—</u>	MP/DST Disc't <u>—</u>
	Sub Total <u>1143</u>	

Approved By — Our Representative Spencer J. Staal

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Thank-you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64663

Well Name & No. Bas#1 Test No. 3 Date 1/21/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road Smith PO Box 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig WW Drilling Rig #12
 Location: Sec. Jff Twp. 7s Rge. 20w Co. Rooks State KS

Interval Tested 3346' - 3400' Zone Tested Toronto - LHC 'a'
 Anchor Length 54' Drill Pipe Run 3237' Mud Wt. 9.1
 Top Packer Depth 3341' Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3346' Wt. Pipe Run — WL 7.6
 Total Depth 3400' Chlorides 500 ppm System LCM 3#

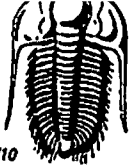
Blow Description 27-
450- Didnot Make it to Bottom
77-
750- Hit Bridge

Rec	Feet of	%gas	%oil	%water	%mud
400	Mud			100	

Rec Total 400 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test 850 T-On Location 04:13
 (B) First Initial Flow _____ Jars 250 T-Started 05:02
 (C) First Final Flow _____ Safety Joint _____ T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out _____
 (F) Second Final Flow _____ Mileage 124 RT 93 Comments Did not Make it to Bottom
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle _____
 Ruined Shale Packer _____
 Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1193 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Starb
 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.
Thank-you!!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64664

Well Name & No. Box #1 Test No. 4 Date 1/21/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig WW Drilling Rig #12
 Location: Sec. 11 Twp. 7s Rge. 20w Co. Rooks State Ks

Interval Tested 3346' - 3400' Zone Tested Toronto - LKC 'a'
 Anchor Length 54' Drill Pipe Run 3237' Mud Wt. 9.1
 Top Packer Depth 3341' Drill Collars Run 121' Vis 57
 Bottom Packer Depth 3346' Wt. Pipe Run - WL 7.6
 Total Depth 3400' Chlorides 750 ppm System LCM 3#

Blow Description SD - Very Weak Blow; Built to 1 inch
SD - No Blow Back
77 - Very Weak Surface Blow; few bubbles
7SD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>OCM</u>	<u>25</u>		<u>75</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

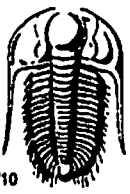
Rec Total 30 BHT 101° Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1629</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>08:55</u>
(B) First Initial Flow <u>12</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:14</u>
(C) First Final Flow <u>22</u>	<input type="checkbox"/> Safety Joint	T-Open <u>11:38</u>
(D) Initial Shut-In <u>109</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>14:38</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:15</u>
(F) Second Final Flow <u>22</u>	<input checked="" type="checkbox"/> Mileage <u>124 R7</u> 93	Comments <u>slide tool 2ft to bottom</u>
(G) Final Shut-In <u>60</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1613</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1393</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1393</u>	

Approved By _____ Our Representative Spencer J. Strub

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Thank-you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64665

Well Name & No. Box #1 Test No. 5 Date 1/22/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig WW Drilling Rig #12
 Location: Sec. 11 Twp. 7S Rge. 20W Co. Rooks State KS

Interval Tested 3455'-3494' Zone Tested LRC 'E-J'
 Anchor Length 39' Drill Pipe Run 3325' Mud Wt. 9.1
 Top Packer Depth 3450' Drill Collars Run 121' Vis 57
 Bottom Packer Depth 3455' Wt. Pipe Run - WL 7.6
 Total Depth 3494' Chlorides 750 ppm System LCM 3#

Blow Description J7 - Strong Blow; Built to 7 inches
JSD - No Blow Back
F7 - Strong Blow; Built to 6 1/2 inches
FSD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>63</u>	<u>09WCM</u>	<u>5</u>	<u>15</u>	<u>80</u>	
<u>117</u>	<u>09MCMW</u>	<u>5</u>	<u>1</u>	<u>50</u>	<u>44</u>
<u>10</u>	<u>WCM w/scum oil</u>	<u>41</u>	<u>10</u>	<u>90</u>	

Rec Total 190 BHT 100° Gravity - API RW 182 @ 46 °F Chlorides 66,000 ppm

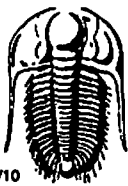
(A) Initial Hydrostatic 1695 Test 1050 T-On Location 4:25
 (B) First Initial Flow 17 Jars _____ T-Started 5:46
 (C) First Final Flow 56 Safety Joint _____ T-Open 7:26
 (D) Initial Shut-In 560 Circ Sub _____ T-Pulled 9:00
 (E) Second Initial Flow 72 Hourly Standby _____ T-Out 11:32
 (F) Second Final Flow 89 Mileage 124 R7 93
 (G) Final Shut-In 560 Sampler _____
 (H) Final Hydrostatic 1665 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 10
 Initial Shut-In 30
 Final Flow 10
 Final Shut-In 45

Sub Total 1143

MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Ahab
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64666

Well Name & No. Box # 1 Test No. 6 Date 1/22/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig W W Drilling Rig #12
 Location: Sec. 21 Twp. 7S Rge. 20W Co. Rooks State KS

Interval Tested 3522' - 3580' Zone Tested LKC 'd-j'
 Anchor Length 58' Drill Pipe Run 3388 Mud Wt. 9.2
 Top Packer Depth 3517' Drill Collars Run 121 Vis 55
 Bottom Packer Depth 3522' Wt. Pipe Run - WL 7.2
 Total Depth 3580' Chlorides 500 ppm System LCM 2 1/2#

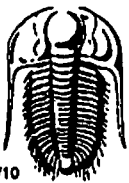
Blow Description 07-
150-
77- Packer failure
750-

Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic _____ Test _____ 850 _____ T-On Location 22:50
 (B) First Initial Flow _____ Jars _____ T-Started 23:39
 (C) First Final Flow _____ Safety Joint _____ T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 03:13 1/23/2017
 (F) Second Final Flow _____ Mileage 124 RY 93 _____ Comments Packer Failure
 (G) Final Shut-In _____ Sampler _____ Ruined Shale Packer _____
 (H) Final Hydrostatic _____ Straddle _____ Ruined Packer _____
 Initial Open _____ Shale Packer _____ Extra Copies _____
 Initial Shut-In _____ Extra Packer _____ Sub Total 0
 Final Flow _____ Extra Recorder _____ Total 943
 Final Shut-In _____ Day Standby _____ MP/DST Disc't _____
 Sub Total 943 Accessibility _____

Approved By _____ Our Representative Spencer J. Strub
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Thank you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64667

Well Name & No. Boss #1 Test No. 7 Date 1/23/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Laufer / Shane Vehige Rig WU Drilling Rig #12
 Location: Sec. 11 Twp. 7s Rge. 20w Co. Rooks State Ks

Interval Tested 3500' - 3580' Zone Tested LHC 'A-A'
 Anchor Length 80 Drill Pipe Run 3388' Mud Wt. 9.3
 Top Packer Depth 3495' Drill Collars Run 121' Vis 49
 Bottom Packer Depth 3500' Wt. Pipe Run - WL 72
 Total Depth 3580' Chlorides 500 ppm System LCM 2 1/2 #

Blow Description 17 - Weak Blow; Built to 2 1/2 inches
1SD - No Blow Back
77 - Very Weak Blow; Built to 1 and 1/2 inches
7SD - No Blow Back

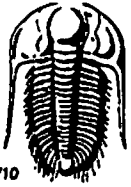
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Clean Oil</u>	<u>100</u>			
<u>65</u>	<u>OCM</u>	<u>20</u>		<u>80</u>	

Rec Total 70 BHT 103° Gravity 35° API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1731 Test 1050 T-On Location 03:15
 (B) First Initial Flow 15 Jars - T-Started 03:58
 (C) First Final Flow 37 Safety Joint - T-Open 06:01
 (D) Initial Shut-In 259 Circ Sub - T-Pulled 10:00
 (E) Second Initial Flow 37 Hourly Standby - T-Out 11:40
 (F) Second Final Flow 48 Mileage 124 RT Comments -
 (G) Final Shut-In 392 Sampler -
 (H) Final Hydrostatic 1712 Straddle -

Shale Packer 250 Ruined Shale Packer -
 Extra Packer - Ruined Packer -
 Extra Recorder - Extra Copies -
 Day Standby - Sub Total 0
 Accessibility - Total 1300
 Sub Total 1300 MP/DST Disc't -

Approved By _____ Our Representative Spencer J. Staal
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64668

Well Name & No. Box #1 Test No. 8 Date 1/23/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1881 Limestone Road South PO BOX 1120 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig 9W Drilling Rig #12
 Location: Sec. 11 Twp. 7s Rge. 20w Co. Rooks State KS

Interval Tested 3576'-3595' Zone Tested LKC 'L'
 Anchor Length 19' Drill Pipe Run 3451' Mud Wt. 9.3
 Top Packer Depth 3571' Drill Collars Run 121' Vis 49
 Bottom Packer Depth 3576' Wt. Pipe Run — WL 7.2
 Total Depth 3595' Chlorides 500 ppm System LCM 2 1/2 #

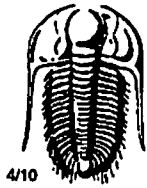
Flow Description 07- Very Weak Blow; Built to 34 inch
050- No Blow
77- No Blow
7SD- No Blow

Sec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OCM</u>	<u>3</u>		<u>97</u>	

Rec Total 10 BHT 98° Gravity — API RW — @ — ° F Chlorides — ppm

A) Initial Hydrostatic 1755 Test 1050 T-On Location 18:15
 B) First Initial Flow 10 Jars _____ T-Started 19:25
 C) First Final Flow 12 Safety Joint _____ T-Open 21:12
 D) Initial Shut-In 192 Circ Sub _____ T-Pulled 00:00 1/24/2017
 E) Second Initial Flow 13 Hourly Standby _____ T-Out 01:50
 F) Second Final Flow 16 Mileage 124 RT 93 Comments _____
 G) Final Shut-In 204 Sampler _____
 H) Final Hydrostatic 1740 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1143
 Accessibility _____ MP/DST-Disc't _____
 Sub Total 1143

Approved By _____ Our Representative Spencer J. Staal
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 Thank - you !!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64670

Well Name & No. Boss #1 Test No. 10 Date 1/24/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 168 Limestone Road South PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig W9W Drilling Rig #12
 Location: Sec. 11 Twp. 7S Rge. 20W Co. Rooks State KS

Interval Tested 3620' - 3669' Zone Tested Arbuckle
 Anchor Length 49' Drill Pipe Run 3516' Mud Wt. 9.3
 Top Packer Depth 3615' Drill Collars Run 121' Vis 51
 Bottom Packer Depth 3620' Wt. Pipe Run - WL 7.6
 Total Depth 3669 Chlorides 1000 ppm System LCM 3 1/2#

Blow Description 77 - Very Weak Surface Blow; died after 31 minutes
78 - No Blow Back
77 - No Blow; flushed twice; still no Blow
78 - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>OCM</u>			<u>99</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 20 BHT 106° Gravity - API RW - @ - °F Chlorides - ppm

- (A) Initial Hydrostatic 1790
- (B) First Initial Flow 17
- (C) First Final Flow 29
- (D) Initial Shut-In 32
- (E) Second Initial Flow 32
- (F) Second Final Flow 37
- (G) Final Shut-In 41
- (H) Final Hydrostatic 1780

- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 124 RT 93
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1143

T-On Location 18:10
 T-Started 19:49
 T-Open 21:34
 T-Pulled 00:40 1/25/2017
 T-Out 02:26
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1143
 MP/DST Disc't _____

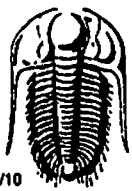
Initial Open 45
 Initial Shut-In 60
 Final Flow 20
 Final Shut-In 60

Approved By _____

Our Representative Spencer J. Staats

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Thank you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64671

Well Name & No. Boss #1 Test No. 11 Date 1/25/2017
 Company Jasper Co Elevation 2172 KB 2164 GL
 Address 1681 Limestone Road South PO BOX 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler / Shane Vehige Rig W W Drilling Rig #12
 Location: Sec. 11 Twp. 7N Rge. 20W Co. Rooks State Ks

Interval Tested 3644' - 3678' Zone Tested Arbuckle
 Anchor Length 34' 42' Tail Drill Pipe Run 3515 Mud Wt. 9.3
 Top Packer Depth 3644' Drill Collars Run 121 Vis 53
 Bottom Packer Depth 3678' Wt. Pipe Run — WL 7.6
 Total Depth 3720' Chlorides 1500 ppm System LCM 2 1/2

Blow Description 17 - Weak Blow; built to 1 1/4 inches
1SD - No Blow Back
77 - No Blow
7SD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>OCM</u>	<u>5</u>		<u>95</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 20' BHT 103° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1832</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>15:10</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars	T-Started <u>16:48</u>
(C) First Final Flow <u>23</u>	<input type="checkbox"/> Safety Joint	T-Open <u>18:30</u>
(D) Initial Shut-In <u>50</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>20:37</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>22:29</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>124 R7</u> 93	Comments
(G) Final Shut-In <u>199</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1808</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>5</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>1743</u>
	Sub Total <u>1743</u>	MP/DST Disc't

Approved By _____ Our Representative Spencer J. Staal
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