



DRILL STEM TEST REPORT

Prepared For: **Rama Operating Co Inc**

101 S. Main
Stafford KS 67578

ATTN: Josh Austin

Wallace #11-29

29-19s-9w

Start Date: 2019.07.30 @ 22:21:00

End Date: 2019.07.31 @ 04:44:50

Job Ticket #: 65802 DST #: 1

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

Printed: 2019.08.02 @ 11:23:41



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65802

DST#: 1

ATTN: Josh Austin

Test Start: 2019.07.30 @ 22:21:00

GENERAL INFORMATION:

Formation: **LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:25:40

Time Test Ended: 04:44:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 2937.00 ft (KB) To 2954.00 ft (KB) (TVD)

Reference Elevations: 1727.00 ft (KB)

Total Depth: 2954.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6772 Inside

Press@RunDepth: 48.24 psig @ 2938.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.07.30

End Date:

2019.07.31

Last Calib.: 2019.07.31

Start Time: 22:21:01

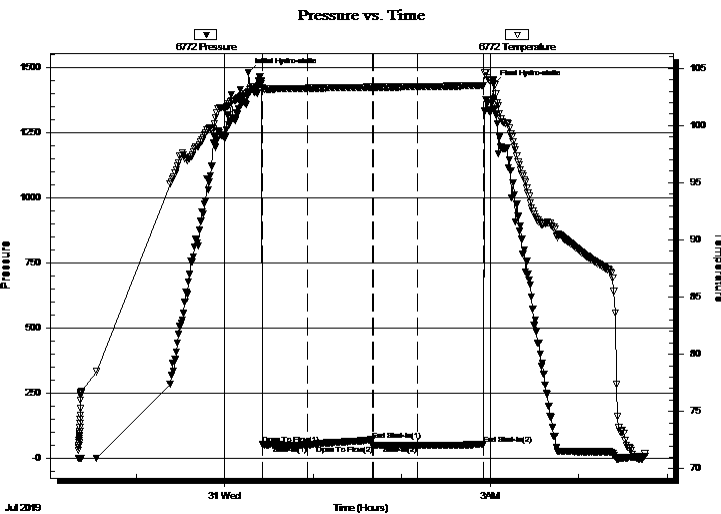
End Time:

04:44:50

Time On Btm: 2019.07.31 @ 00:16:20

Time Off Btm: 2019.07.31 @ 03:02:00

TEST COMMENT: IF-30- Built to 11.8"
ISI-45- No blow back
FF-30- Built to 3"
FSI-45- No blow back



PRESSURE SUMMARY

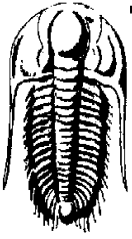
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1479.76	102.91	Initial Hydro-static
10	52.74	103.24	Open To Flow (1)
40	50.99	103.25	Shut-In(1)
84	70.37	103.35	End Shut-In(1)
85	49.66	103.37	Open To Flow (2)
115	48.24	103.38	Shut-In(2)
160	53.65	103.49	End Shut-In(2)
166	1434.61	104.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	OSM 100%M	0.25

Gas Rates

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

**TRILOBITE TESTING, INC.****DRILL STEM TEST REPORT**

Rama Operating Co Inc
101 S. Main
Stafford KS 67578
ATTN: Josh Austin

29-19s-9w**Wallace #11-29**

Job Ticket: 65802

DST#: 1

Test Start: 2019.07.30 @ 22:21:00

GENERAL INFORMATION:Formation: **LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:25:40

Time Test Ended: 04:44:50

Interval: **2937.00 ft (KB) To 2954.00 ft (KB) (TVD)**

Total Depth: 2954.00 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: 1727.00 ft (KB)

1715.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 6769 Outside

Press@RunDepth: psig @ 2938.00 ft (KB)

Start Date: 2019.07.30

End Date:

2019.07.31

Start Time: 22:21:01

End Time:

04:44:50

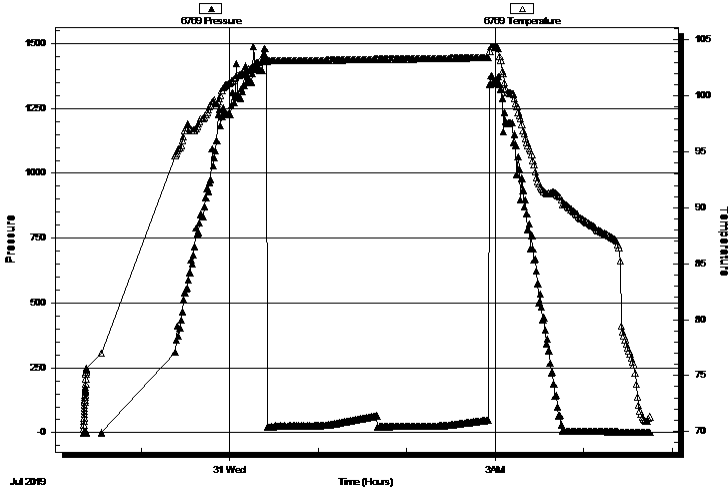
Capacity: 8000.00 psig

Last Calib.: 2019.07.31

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-30- Built to 11.8"
ISI-45- No blow back
FF-30- Built to 3"
FSI-45- No blow back

Pressure vs. Time**PRESSURE SUMMARY**

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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	OSM 100%M	0.25

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65802

DST#: 1

ATTN: Josh Austin

Test Start: 2019.07.30 @ 22:21:00

Tool Information

Drill Pipe:	Length: 2708.00 ft	Diameter: 3.80 inches	Volume: 37.99 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 39.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	2937.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	17.00 ft			
Tool Length:	37.00 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			2918.00	
Shut In Tool	5.00			2923.00	
Hydraulic tool	5.00			2928.00	
Packer	5.00			2933.00	20.00 Bottom Of Top Packer
Packer	4.00			2937.00	
Stubb	1.00			2938.00	
Recorder	0.00	6772	Inside	2938.00	
Recorder	0.00	6769	Outside	2938.00	
Perforations	13.00			2951.00	
Bullnose	3.00			2954.00	17.00 Bottom Packers & Anchor
Total Tool Length:	37.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65802

DST#: 1

ATTN: Josh Austin

Test Start: 2019.07.30 @ 22:21:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	OSM 100%M	0.246

Total Length: 50.00 ft Total Volume: 0.246 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

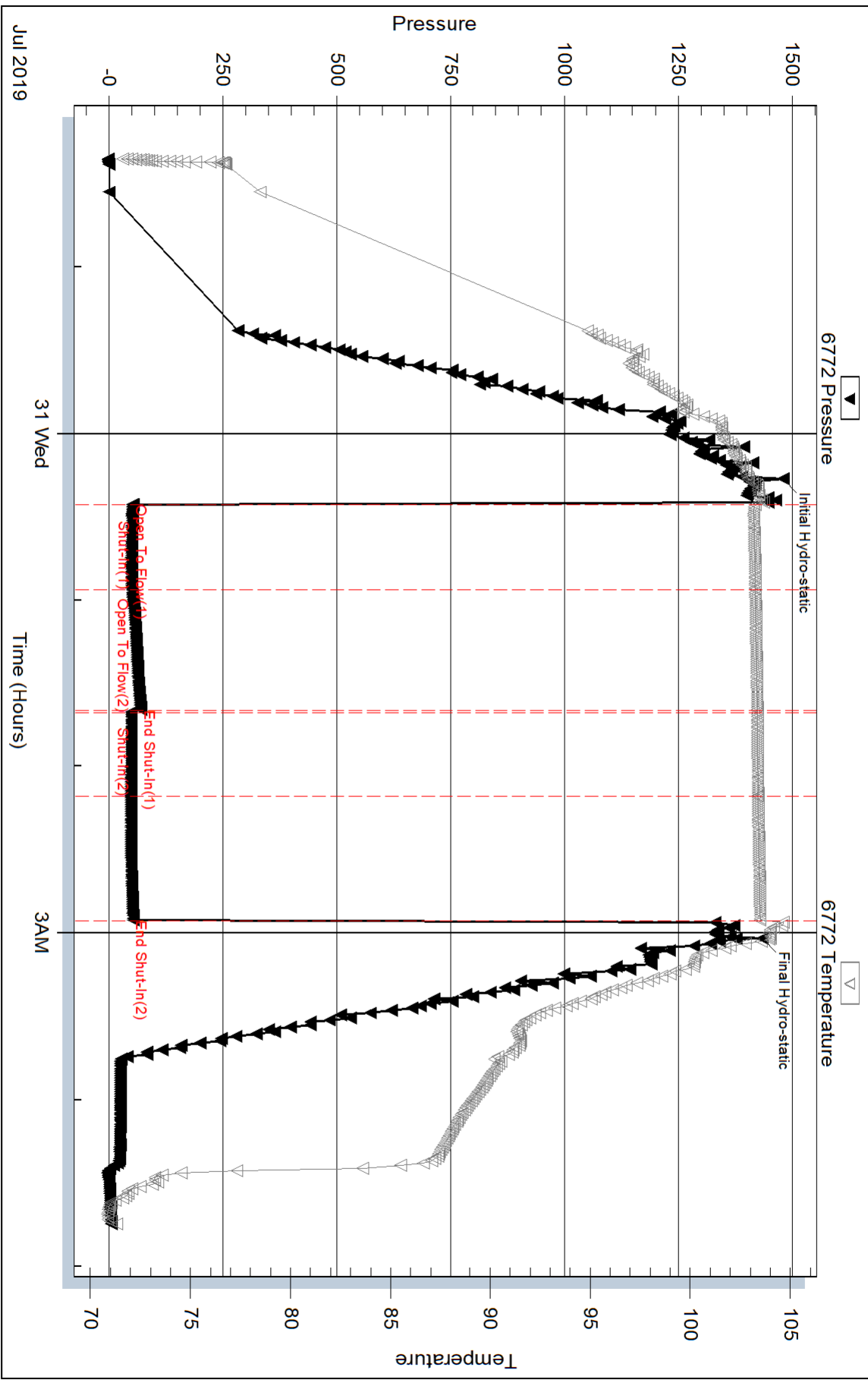
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

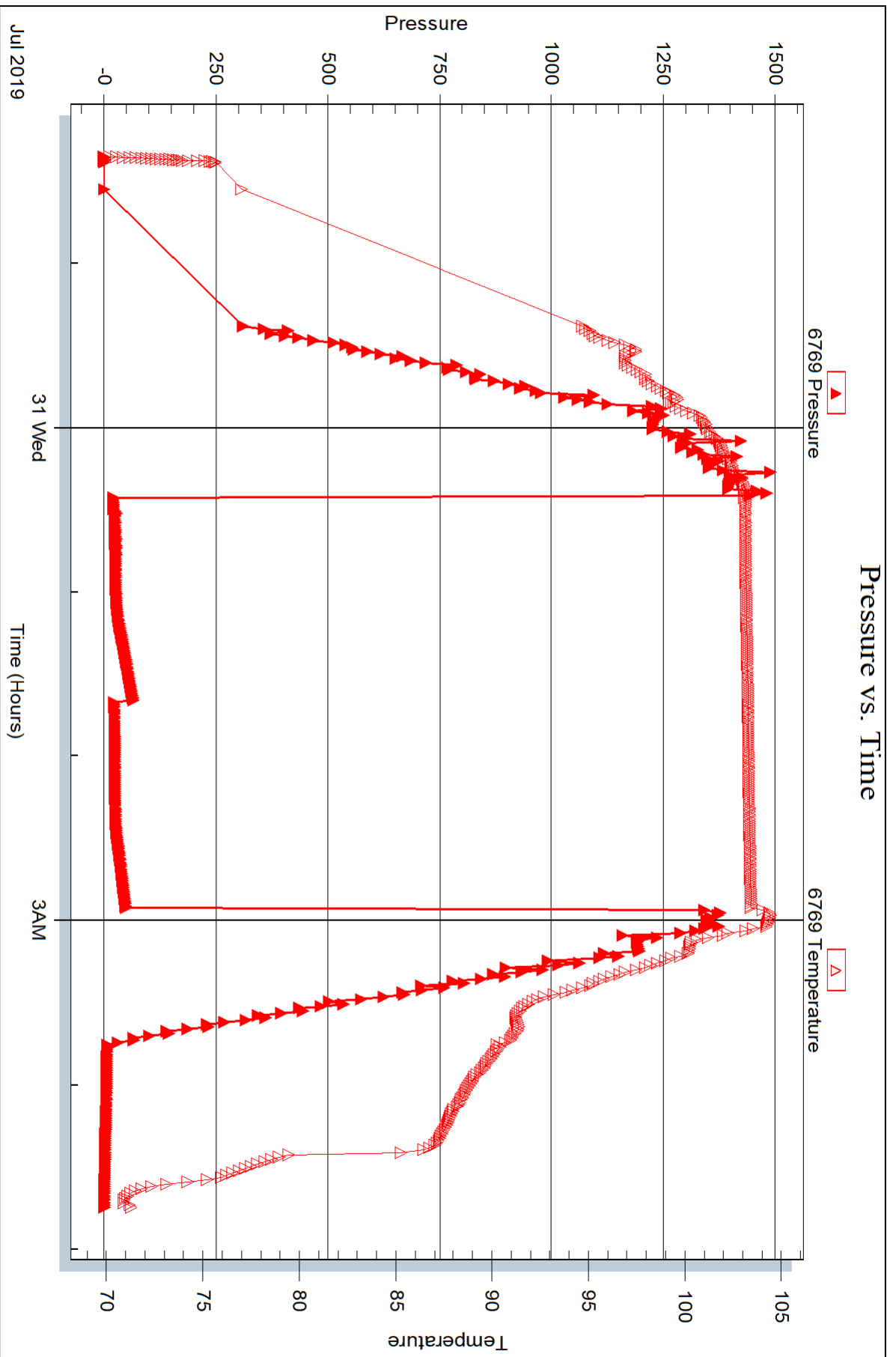


Serial #: 6769

Outside Rama Operating Co Inc

Wallace #11-29

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Rama Operating Co Inc**

101 S. Main
Stafford KS 67578

ATTN: Josh Austin

Wallace #11-29

29-19s-9w

Start Date: 2019.08.01 @ 00:47:00

End Date: 2019.08.01 @ 06:22:09

Job Ticket #: 65803 DST #: 2

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

Printed: 2019.08.02 @ 11:23:12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65803

DST#: 2

ATTN: Josh Austin

Test Start: 2019.08.01 @ 00:47:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:33:50

Time Test Ended: 06:22:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3190.00 ft (KB) To 3240.00 ft (KB) (TVD)

Reference Elevations: 1727.00 ft (KB)

Total Depth: 3240.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6772

Inside

Press@RunDepth: 51.25 psig @ 3191.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.08.01

End Date:

2019.08.01

Last Calib.:

2019.08.01

Start Time: 00:47:01

End Time:

06:22:10

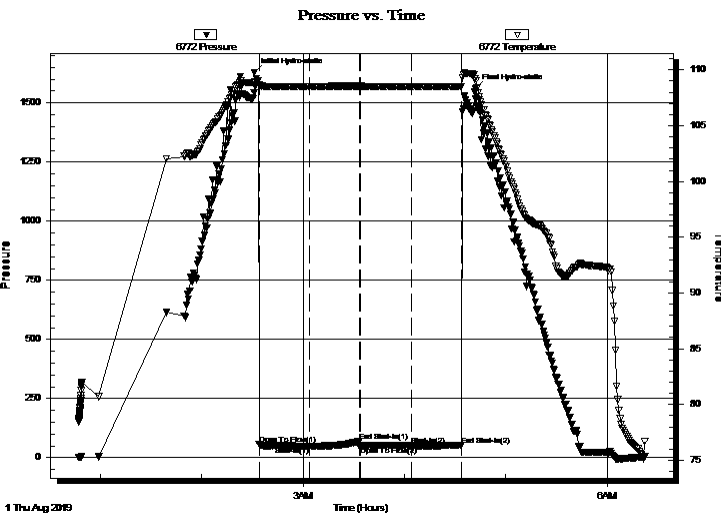
Time On Btm:

2019.08.01 @ 02:31:10

Time Off Btm:

2019.08.01 @ 04:42:00

TEST COMMENT: IF-30- Built to 1.8"
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	1628.92	108.89	Initial Hydro-static
3	56.38	108.67	Open To Flow (1)
33	48.86	108.52	Shut-In(1)
63	69.76	108.57	End Shut-In(1)
63	49.35	108.55	Open To Flow (2)
93	51.25	108.52	Shut-In(2)
123	53.60	108.53	End Shut-In(2)
131	1560.77	109.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20%O 80%M	0.05

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65803

DST#: 2

ATTN: Josh Austin

Test Start: 2019.08.01 @ 00:47:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:33:50

Time Test Ended: 06:22:09

Interval: **3190.00 ft (KB) To 3240.00 ft (KB) (TVD)**

Total Depth: 3240.00 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: 1727.00 ft (KB)

1715.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 6769

Outside

Press@RunDepth: psig @ 3191.00 ft (KB)

Start Date: 2019.08.01

End Date:

2019.08.01

Start Time: 00:47:01

End Time:

06:22:20

Capacity: 8000.00 psig

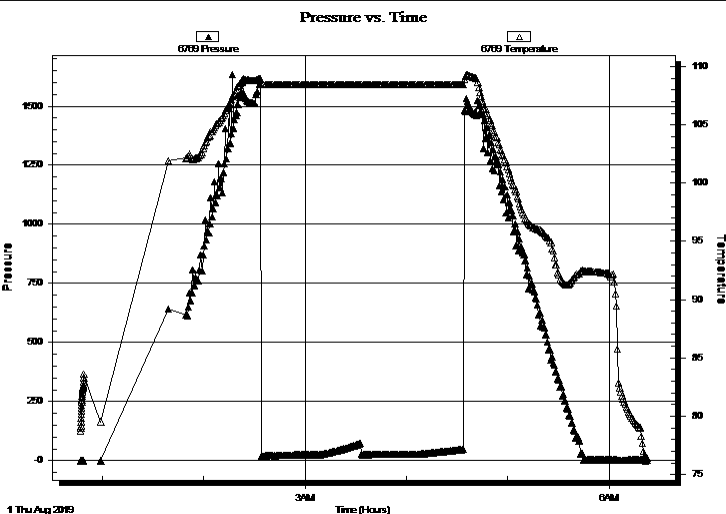
Last Calib.:

2019.08.01

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-30- Built to 1.8"
ISI-30- No blow back
FF-30- No blow
FSI-30- No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 20%O 80%M	0.05

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65803

DST#: 2

ATTN: Josh Austin

Test Start: 2019.08.01 @ 00:47:00

Tool Information

Drill Pipe:	Length: 2963.00 ft	Diameter: 3.80 inches	Volume: 41.56 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 42.62 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	3190.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	70.00 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			3171.00	
Shut In Tool	5.00			3176.00	
Hydraulic tool	5.00			3181.00	
Packer	5.00			3186.00	20.00 Bottom Of Top Packer
Packer	4.00			3190.00	
Stubb	1.00			3191.00	
Recorder	0.00	6772	Inside	3191.00	
Recorder	0.00	6769	Outside	3191.00	
Perforations	12.00			3203.00	
Change Over Sub	1.00			3204.00	
Drill Pipe	32.00			3236.00	
Change Over Sub	1.00			3237.00	
Bullnose	3.00			3240.00	50.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65803

DST#: 2

ATTN: Josh Austin

Test Start: 2019.08.01 @ 00:47:00

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: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 20%O 80%M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

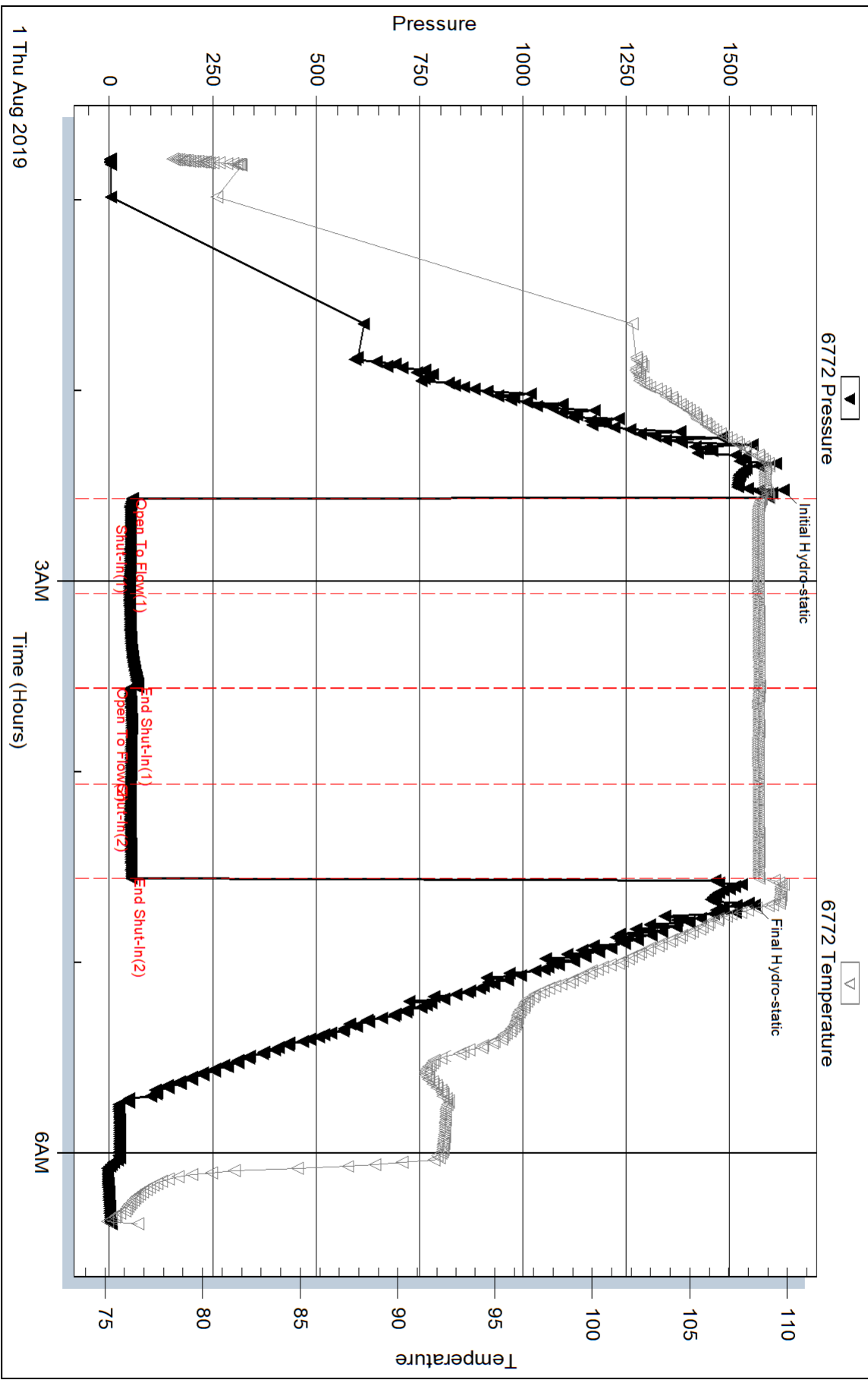
Serial #:

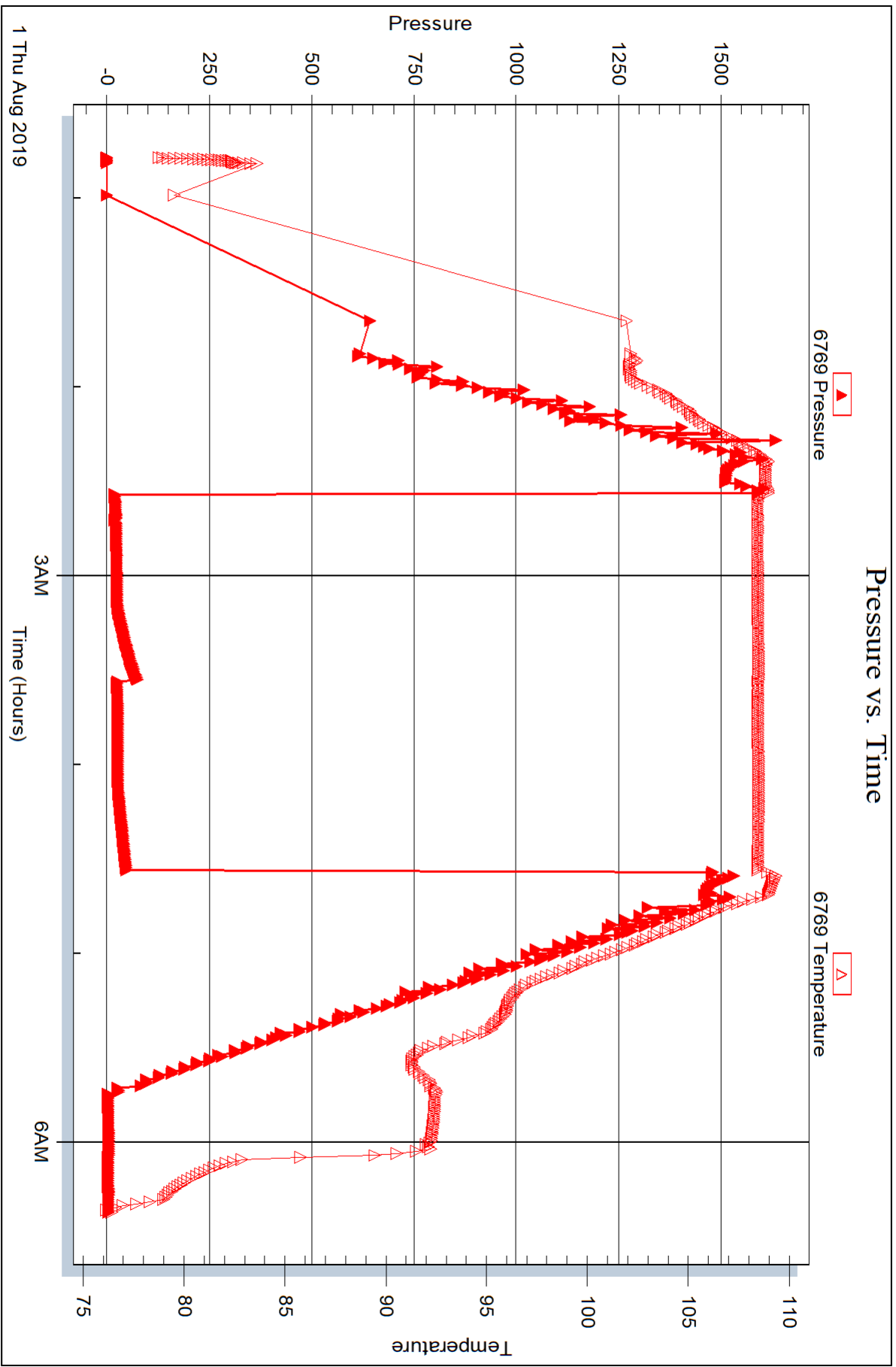
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Rama Operating Co Inc**

101 S. Main
Stafford KS 67578

ATTN: Josh Austin

Wallace #11-29

29-19s-9w

Start Date: 2019.08.01 @ 11:20:00

End Date: 2019.08.01 @ 16:48:50

Job Ticket #: 65804 DST #: 3

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

Printed: 2019.08.02 @ 11:19:19



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65804

DST#: 3

ATTN: Josh Austin

Test Start: 2019.08.01 @ 11:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:41:00

Time Test Ended: 16:48:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3240.00 ft (KB) To 3248.00 ft (KB) (TVD)

Reference Elevations: 1727.00 ft (KB)

Total Depth: 3248.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6772

Inside

Press@RunDepth: 77.28 psig @ 3241.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.08.01

End Date:

2019.08.01

Last Calib.:

2019.08.01

Start Time: 11:20:01

End Time:

16:48:50

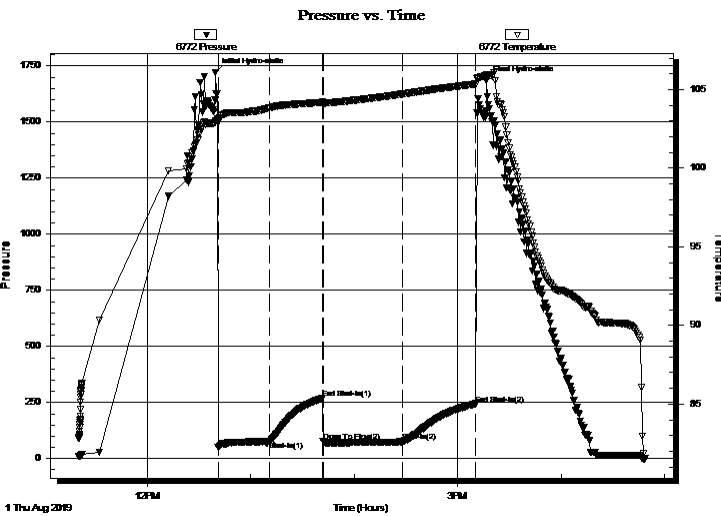
Time On Btm:

2019.08.01 @ 12:39:30

Time Off Btm:

2019.08.01 @ 15:16:40

TEST COMMENT: IF-30- Built to 6.8"
ISI-30- No blow back
FF-45- Built to 9"
FSI-45- No blow back



PRESSURE SUMMARY

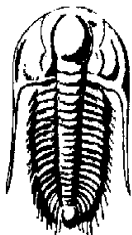
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1721.53	102.96	Initial Hydro-static
2	50.76	102.93	Open To Flow (1)
32	76.42	103.83	Shut-In(1)
62	267.94	104.20	End Shut-In(1)
63	76.09	104.15	Open To Flow (2)
109	77.28	104.71	Shut-In(2)
151	244.48	105.35	End Shut-In(2)
158	1684.26	105.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	GSOCM 20%G 10%O 70%M	0.31
64.00	GOCM 20%G 30%O 50%M	0.31
0.00	GIP 190'	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65804

DST#: 3

ATTN: Josh Austin

Test Start: 2019.08.01 @ 11:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:41:00

Time Test Ended: 16:48:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3240.00 ft (KB) To 3248.00 ft (KB) (TVD)

Reference Elevations: 1727.00 ft (KB)

Total Depth: 3248.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6769 Outside

Press@RunDepth: psig @ 3241.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.08.01

End Date:

2019.08.01

Last Calib.:

2019.08.01

Start Time: 11:20:01

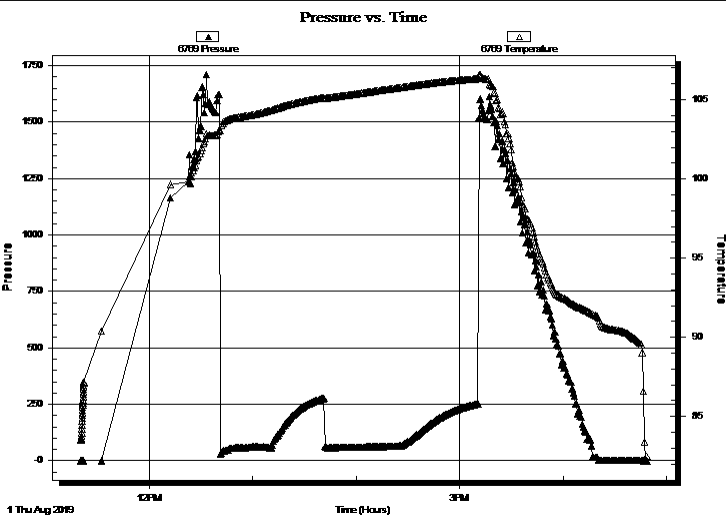
End Time:

16:48:50

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-30- Built to 6.8"
ISI-30- No blow back
FF-45- Built to 9"
FSI-45- No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
64.00	GSO CM 20%G 10%O 70%M	0.31
64.00	GOCM 20%G 30%O 50%M	0.31
0.00	GIP 190'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65804

DST#: 3

ATTN: Josh Austin

Test Start: 2019.08.01 @ 11:20:00

Tool Information

Drill Pipe:	Length: 3027.00 ft	Diameter: 3.80 inches	Volume: 42.46 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 43.52 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	3240.00 ft			Final	61000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	28.00 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			3221.00	
Shut In Tool	5.00			3226.00	
Hydraulic tool	5.00			3231.00	
Packer	5.00			3236.00	20.00 Bottom Of Top Packer
Packer	4.00			3240.00	
Stubb	1.00			3241.00	
Recorder	0.00	6772	Inside	3241.00	
Recorder	0.00	6769	Outside	3241.00	
Perforations	4.00			3245.00	
Bullnose	3.00			3248.00	8.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65804

DST#: 3

ATTN: Josh Austin

Test Start: 2019.08.01 @ 11:20:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
64.00	GSOCM 20%G 10%O 70%M	0.315
64.00	GOCM 20%G 30%O 50%M	0.315
0.00	GIP 190'	0.000

Total Length: 128.00 ft Total Volume: 0.630 bbl

Num Fluid Samples: 0

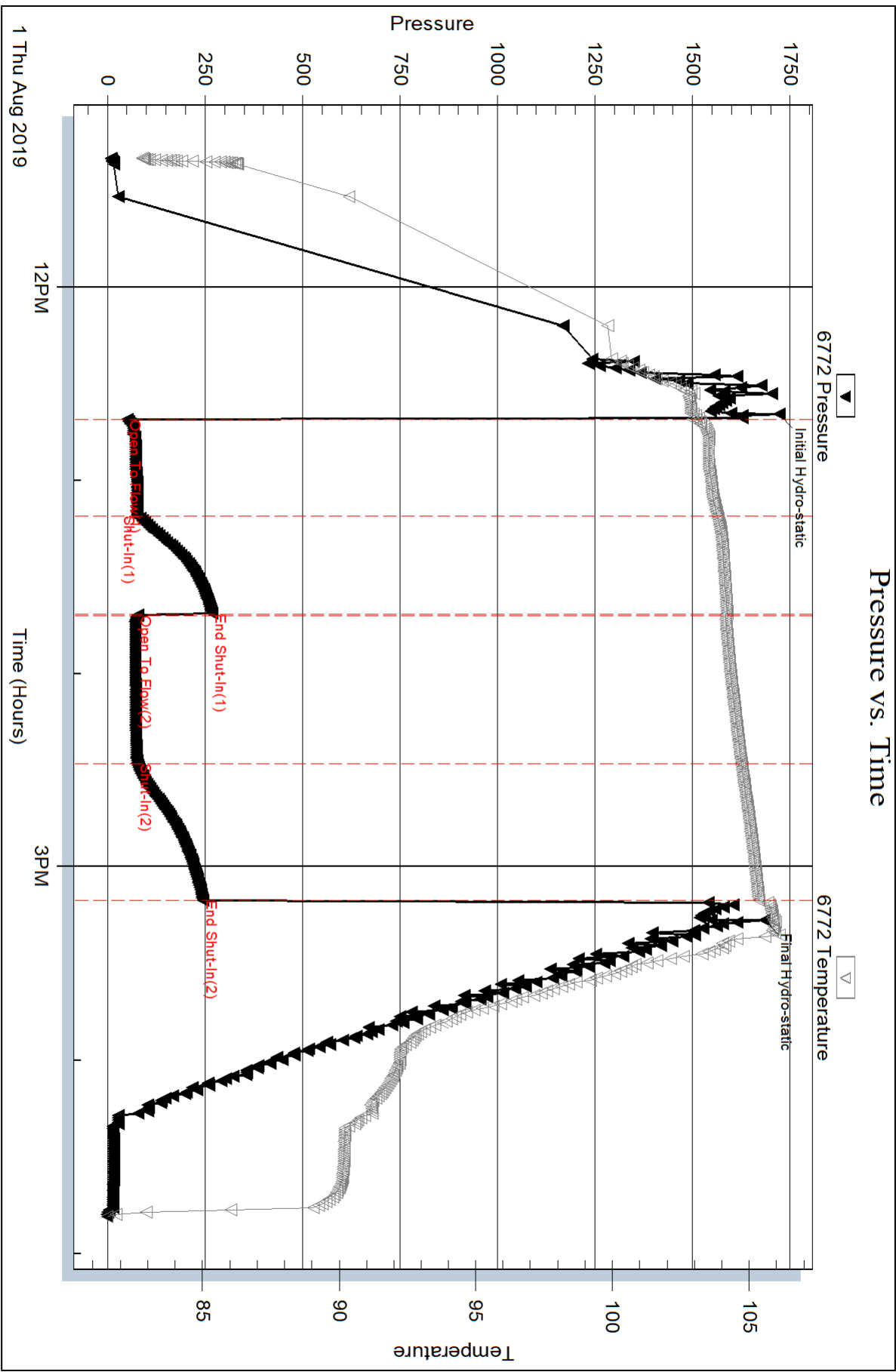
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

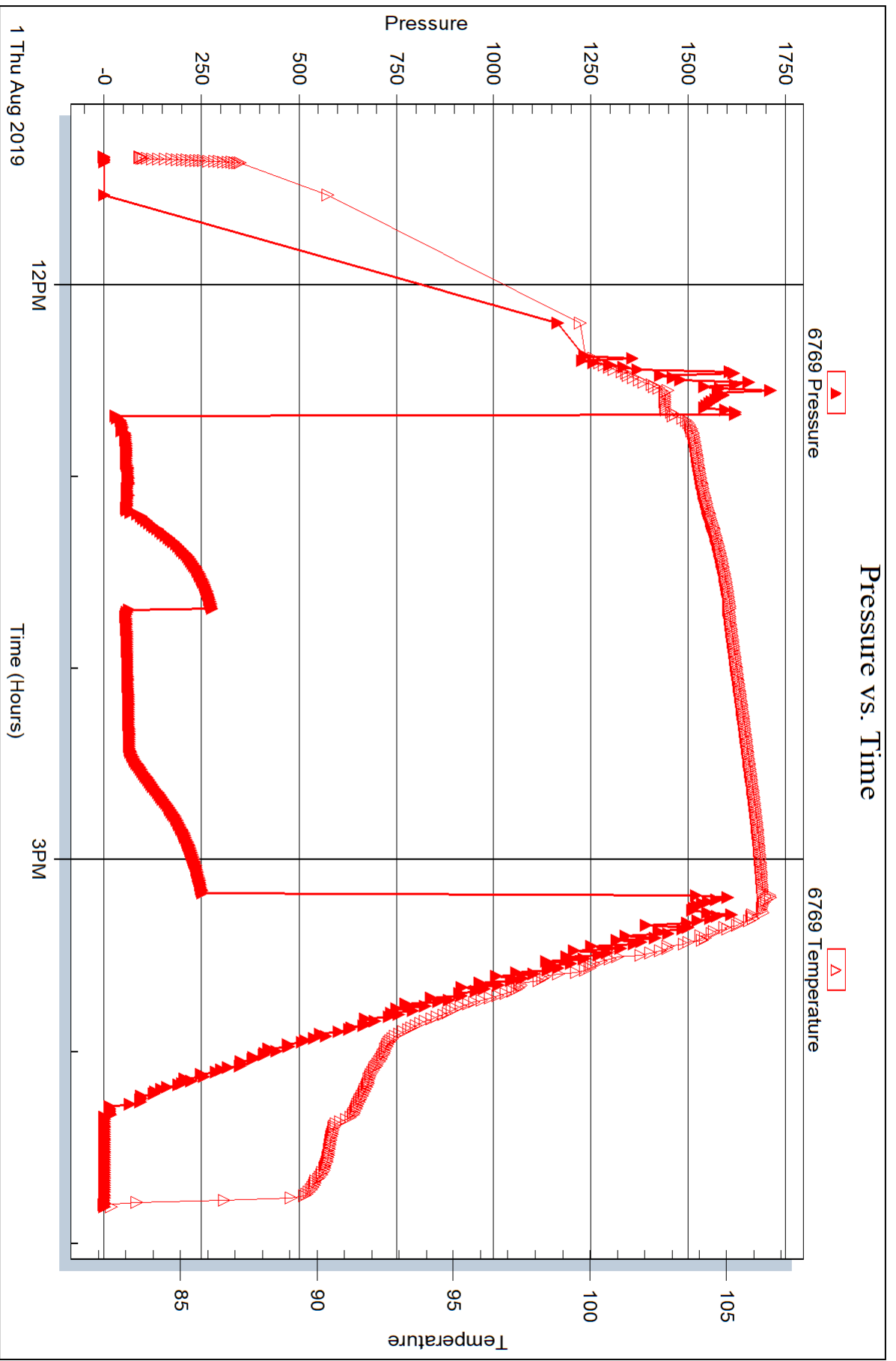


Serial #: 6769

Outside Rama Operating Co Inc

Wallace #11-29

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 65804

Printed: 2019.08.02 @ 11:19:21



DRILL STEM TEST REPORT

Prepared For: **Rama Operating Co Inc**

101 S. Main
Stafford KS 67578

ATTN: Josh Austin

Wallace #11-29

29-19s-9w

Start Date: 2019.08.01 @ 21:49:00

End Date: 2019.08.02 @ 03:15:09

Job Ticket #: 65805 DST #: 4

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

Printed: 2019.08.02 @ 11:18:08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65805

DST#: 4

ATTN: Josh Austin

Test Start: 2019.08.01 @ 21:49:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:32:40

Time Test Ended: 03:15:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: 3248.00 ft (KB) To 3258.00 ft (KB) (TVD)

Reference Elevations: 1727.00 ft (KB)

Total Depth: 3258.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6772 Inside

Press@RunDepth: 71.60 psig @ 3249.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.08.01

End Date:

2019.08.02

Last Calib.:

2019.08.02

Start Time: 21:49:01

End Time:

03:15:10

Time On Btm:

2019.08.01 @ 23:24:30

Time Off Btm:

2019.08.02 @ 01:34:00

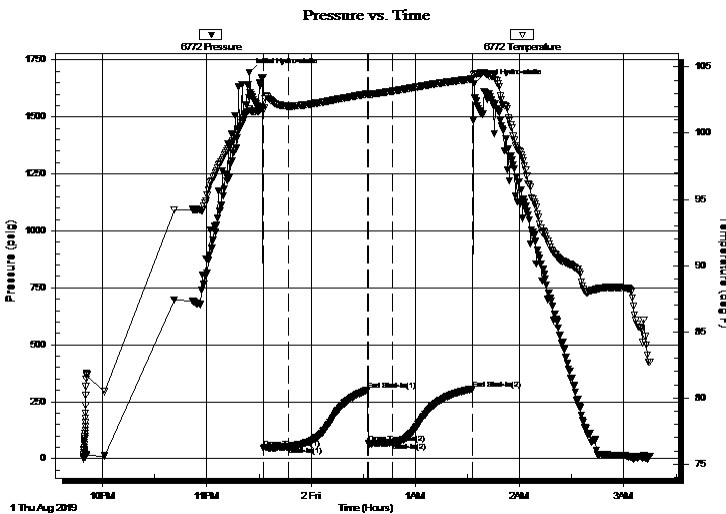
TEST COMMENT: IF-15-BOB 12 mins 10 secs total build of 14.7"

ISI-45- No blow back

FF-15- Built to 6"

FSI-45- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1695.19	101.87	Initial Hydro-static
9	46.53	101.72	Open To Flow (1)
23	52.56	102.05	Shut-In(1)
68	300.10	102.97	End Shut-In(1)
69	66.09	102.92	Open To Flow (2)
83	71.60	103.18	Shut-In(2)
129	306.10	104.10	End Shut-In(2)
130	1645.85	104.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	MCO 40%M 60%O	0.31
64.00	CO 100%O	0.31
0.00	GIP 190'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65805

DST#: 4

ATTN: Josh Austin

Test Start: 2019.08.01 @ 21:49:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:32:40

Time Test Ended: 03:15:09

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 66

Interval: **3248.00 ft (KB) To 3258.00 ft (KB) (TVD)**

Reference Elevations: 1727.00 ft (KB)

Total Depth: 3258.00 ft (KB) (TVD)

1715.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6769 Outside

Press@RunDepth: psig @ 3249.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.08.01

End Date:

2019.08.02

Last Calib.:

2019.08.02

Start Time: 21:49:01

End Time:

03:15:10

Time On Btm:

Time Off Btm:

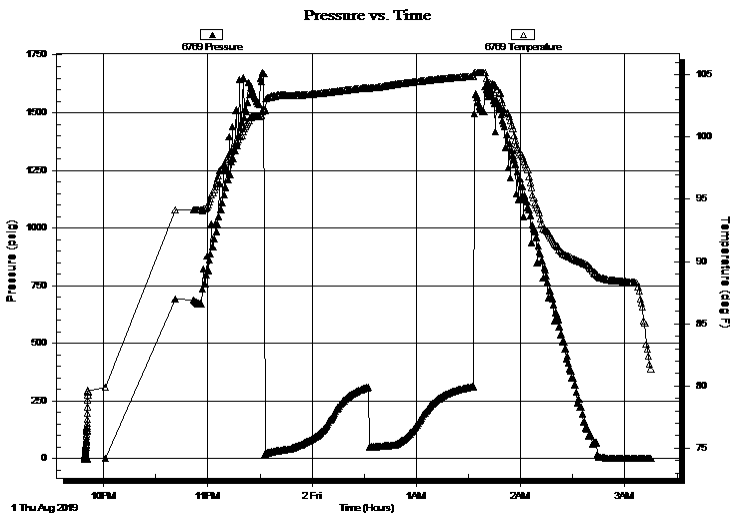
TEST COMMENT: IF-15-BOB 12 mins 10 secs total build of 14.7"

ISI-45- No blow back

FF-15- Built to 6"

FSI-45- No blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
64.00	MCO 40%M 60%O	0.31
64.00	CO 100%O	0.31
0.00	GIP 190'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65805

DST#: 4

ATTN: Josh Austin

Test Start: 2019.08.01 @ 21:49:00

Tool Information

Drill Pipe:	Length: 3027.00 ft	Diameter: 3.80 inches	Volume: 42.46 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 215.00 ft	Diameter: 2.25 inches	Volume: 1.06 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 43.52 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3248.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	30.00 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			3229.00	
Shut In Tool	5.00			3234.00	
Hydraulic tool	5.00			3239.00	
Packer	5.00			3244.00	20.00 Bottom Of Top Packer
Packer	4.00			3248.00	
Stubb	1.00			3249.00	
Recorder	0.00	6772	Inside	3249.00	
Recorder	0.00	6769	Outside	3249.00	
Perforations	6.00			3255.00	
Bullnose	3.00			3258.00	10.00 Bottom Packers & Anchor
Total Tool Length:	30.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Rama Operating Co Inc

29-19s-9w

101 S. Main
Stafford KS 67578

Wallace #11-29

Job Ticket: 65805

DST#: 4

ATTN: Josh Austin

Test Start: 2019.08.01 @ 21:49:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
64.00	MCO 40%M 60%O	0.315
64.00	CO 100%O	0.315
0.00	GIP 190'	0.000

Total Length: 128.00 ft Total Volume: 0.630 bbl

Num Fluid Samples: 0

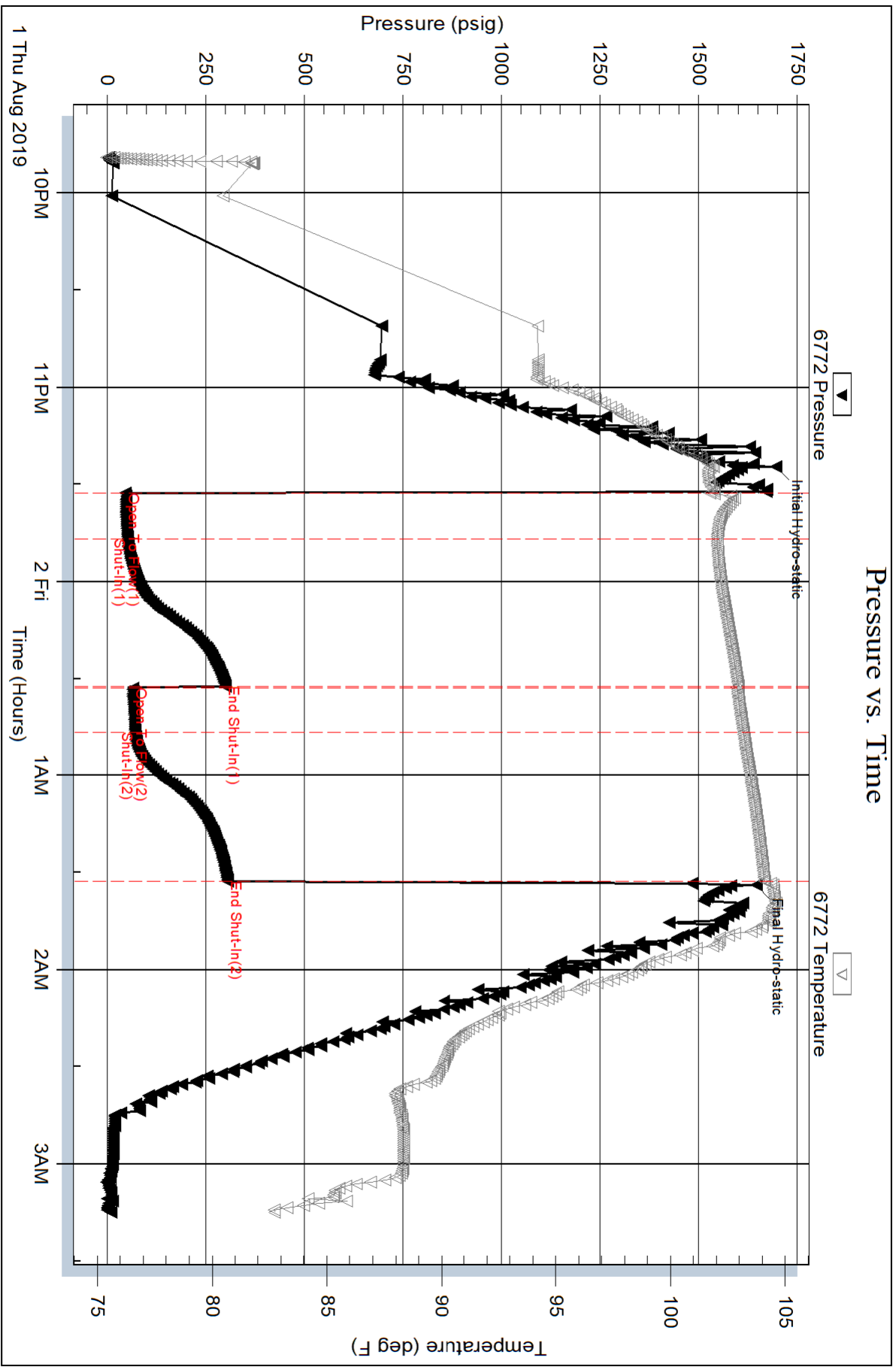
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

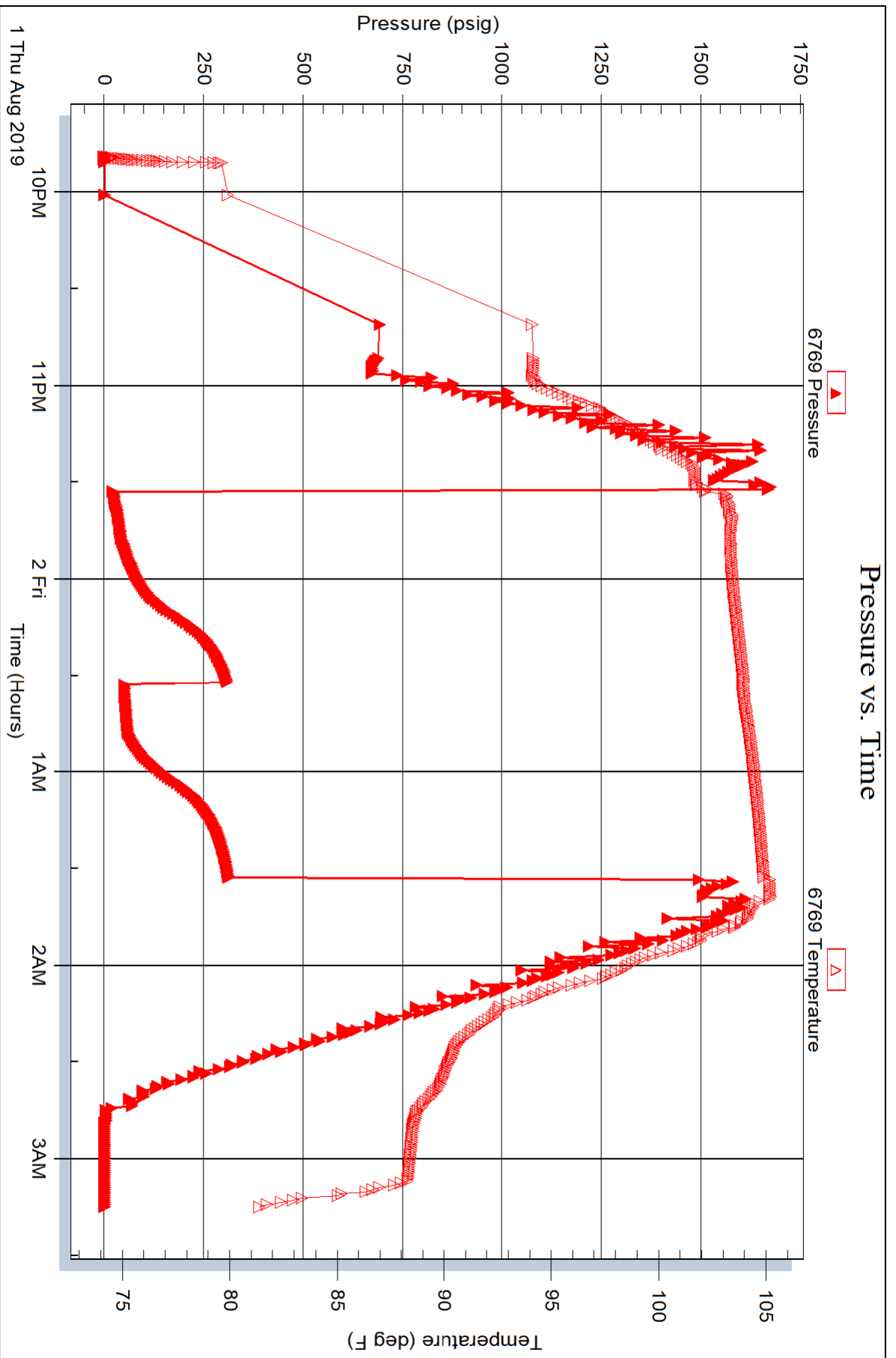


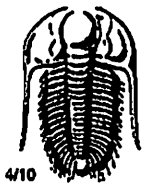
Serial #: 6769

Outside Rama Operating Co Inc

Wallace #11-29

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 65802

NO.

Well Name & No. Wallace 11-29 Test No. 1 Date 7-30-2019
 Company Rama Operating Co Inc Elevation 1727 KB 1715 GL
 Address 101 S. Main St Stafford KS 67578+1429
 Co. Rep / Geo. Josh Austin Rig Sterling Rig 4
 Location: Sec. 29 Twp 19S Rge. 9W Co. Rice State KS

Interval Tested 2937-2954 Zone Tested LKC 'B' zone
 Anchor Length 17' Drill Pipe Run 2708 Mud Wt. 8.9
 Top Packer Depth 2932 Drill Collars Run 215 Vis 62
 Bottom Packer Depth 2937 Wt. Pipe Run _____ WL 6.4
 Total Depth 2954 Chlorides 4,700 ppm System LCM 2#

Blow Description IF - built to 11.8"
ISI - no blow back
FF - built to 3"
FSD - no blow back

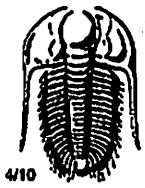
Rec	Feet of	%gas	%oil	%water	%mud
<u>50'</u>	<u>DSM</u>			<u>100%</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50' BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1479 Test 1200 T-On Location 9:33 PM
 (B) First Initial Flow 52 Jars _____ T-Started 10:21
 (C) First Final Flow 50 Safety Joint _____ T-Open 12:26 AM
 (D) Initial Shut-In 70 Circ Sub _____ T-Pulled 2:56
 (E) Second Initial Flow 49 Hourly Standby _____ T-Out 4:45
 (F) Second Final Flow 48 Mileage 46 m. RT ⁴⁶ Comments _____
 (G) Final Shut-In 53 Sampler _____
 (H) Final Hydrostatic 1434 Straddle _____ EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1246
 Sub Total 1246 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 65803

NO.

Well Name & No. Wallace 11-29 Test No. 2 Date 8-1-2019
 Company Rama Operating Co Inc Elevation 1727 KB 1715 GL
 Address 101 S. Main St Stafford KS 67578+1429
 Co. Rep / Geo. Josh Austin Rig Sterling Rig 4
 Location: Sec. 29 Twp 19S Rge. 9W Co. Rice State KS

Interval Tested 3190-3240 Zone Tested Arkuckle
 Anchor Length 50' Drill Pipe Run 2963 Mud Wt. 9.2
 Top Packer Depth 3185 Drill Collars Run 215 Vis 47
 Bottom Packer Depth 3190 Wt. Pipe Run --- WL 9.2
 Total Depth 3240 Chlorides 8,100 ppm System LCM #
 Blow Description IF - built to 1.8"
ISI - no blow back
FF - was dead
FSE - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>O.C.M.</u>		<u>20</u>	<u>80</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 109 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1628 Test 1200 T-On Location 12:10 AM
 (B) First Initial Flow 56 Jars _____ T-Started 12:47
 (C) First Final Flow 48 Safety Joint _____ T-Open 2:34
 (D) Initial Shut-In 69 Circ Sub _____ T-Pulled 4:34
 (E) Second Initial Flow 49 Hourly Standby _____ T-Out 6:22
 (F) Second Final Flow 91 Mileage 46mi RT 46 Comments _____
 (G) Final Shut-In 53 Sampler _____
 (H) Final Hydrostatic 1560 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1246

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

Sub Total 0
 Total 1246
 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 65804

NO.

Well Name & No. Wallace 11-29 Test No. 3 Date 8-1-2019
 Company Rama Operating Co Inc Elevation 1727 KB 1715 GL
 Address 1015. main st Stafford KS 67578+1429
 Co. Rep / Geo. Josh Austin Rig Sterling Rig 4
 Location: Sec. 29 Twp 19S Rge. 9w Co. Rice State KS

Interval Tested 3240-3248 Zone Tested Arbuckle
 Anchor Length 8' Drill Pipe Run 3027 Mud Wt. 9.1
 Top Packer Depth 3235 Drill Collars Run 215 Vis 62
 Bottom Packer Depth 3240 Wt. Pipe Run --- WL 8.4
 Total Depth 3248 Chlorides 6300 ppm System LCM 3#

Blow Description IF - built to 6.8"
EST - no blow back
FF - built to 9"
FSTI - no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>6H</u>	<u>610.0 M.</u>	<u>20</u>	<u>30</u>	<u>50</u>	
<u>6H</u>	<u>650.0 M.</u>	<u>20</u>	<u>10</u>	<u>70</u>	
Rec	Feet of <u>190' GIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

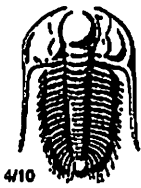
Rec Total 128' BHT 105 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1721 Test 1200 T-On Location 11:05 AM
 (B) First Initial Flow 50 Jars _____ T-Started 11:20
 (C) First Final Flow 76 Safety Joint _____ T-Open 12:42 PM
 (D) Initial Shut-In 267 Circ Sub _____ T-Pulled 4:49
 (E) Second Initial Flow 76 Hourly Standby _____ T-Out 5:49
 (F) Second Final Flow 77 Mileage 46mi RT 46 Comments damaged a packer rubber
 (G) Final Shut-In 244 Sampler _____
 (H) Final Hydrostatic 1684 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 45 Extra Recorder _____ Ruined Packer 320
 Final Shut-In 45 Day Standby _____ Extra Copies _____
 Sub Total 1246 Accessibility _____ Sub Total 0
 Total _____ 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 65805

NO.

Well Name & No. Wallace 11-29 Test No. 4 Date 8-1-2019
 Company Rama Operating Co Inc Elevation 1727 KB 1715 GL
 Address 101 S. main St Stafford KS 67578+1429
 Co. Rep / Geo. Josh Austin Rig Sterling Rig 4
 Location: Sec. 29 Twp 19s Rge. 9w Co. Rice State KS

Interval Tested 3248-3258 Zone Tested Arbuckle
 Anchor Length 10' Drill Pipe Run 3027 Mud Wt. 9.1
 Top Packer Depth 3243 Drill Collars Run 215 Vis BZ
 Bottom Packer Depth 3248 Wt. Pipe Run _____ WL 8.4
 Total Depth 3258 Chlorides 6300 ppm System LCM 3#

Blow Description IF-BOB 12 mins 10sec total build of 14.7"
IST- no blow back
FF- built to 6"
FSD- no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>64</u>	<u>C.O.</u>	<u>100</u>			
<u>64</u>	<u>M.C.O.</u>	<u>60</u>		<u>40</u>	
	<u>GIP 190'</u>				

Rec Total 128' BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1695</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>9:30 PM</u>
(B) First Initial Flow <u>46</u>	<input type="checkbox"/> Jars _____	T-Started <u>9:49</u>
(C) First Final Flow <u>52</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>11:32</u>
(D) Initial Shut-In <u>300</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1:32 AM</u>
(E) Second Initial Flow <u>66</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>3:15</u>
(F) Second Final Flow <u>71</u>	<input checked="" type="checkbox"/> Mileage <u>46 mi Rt 46</u>	Comments <u>Loaded tools after test</u>
(G) Final Shut-In <u>306</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1645</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____

Initial Open <u>15</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>15</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1246</u>
	Sub Total <u>1246</u>	MP/DST Disc't _____

Approved By [Signature] Our Representative Benmy Mulligan

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