



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Woolsey Operation Company LLC

22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 62100

DST#: 1

Test Start: 2018.01.24 @ 10:10:00

GENERAL INFORMATION:

Formation: **lola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:13:32

Time Test Ended: 17:26:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/80

Interval: 4440.00 ft (KB) To 4474.00 ft (KB) (TVD)

Reference Elevations: 2284.00 ft (KB)

Total Depth: 4474.00 ft (KB) (TVD)

2272.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6755 Inside

Press@RunDepth: 146.90 psig @ 4470.00 ft (KB)

Capacity: psig

Start Date: 2018.01.24

End Date:

2018.01.24

Last Calib.:

2018.01.24

Start Time: 10:10:01

End Time:

17:26:02

Time On Btm:

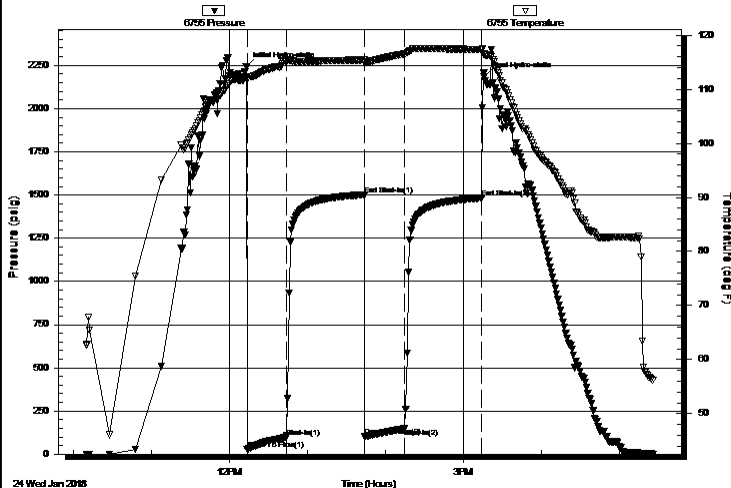
2018.01.24 @ 12:13:02

Time Off Btm:

2018.01.24 @ 15:16:02

TEST COMMENT: I.F. 30 Minutes/ Tool slide 10 feet before open/ Blow built to 2 inch then died to 1 inch
I.S.I. 60 Minutes/ No blow back
F.F. 30 Minutes/ Blow built to 3/4 inch then died to surface blow
F.S.I. 60 Minutes/ No blow back

Pressure vs. Time



PRESSURE SUMMARY

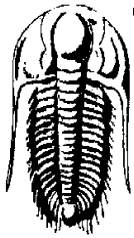
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2240.88	112.40	Initial Hydro-static
1	28.29	111.85	Open To Flow (1)
31	96.62	115.28	Shut-In(1)
91	1501.29	115.40	End Shut-In(1)
92	102.23	114.99	Open To Flow (2)
122	146.90	116.56	Shut-In(2)
182	1483.13	117.37	End Shut-In(2)
183	2184.04	116.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	Muddy Water w/skim of oil	0.63
0.00	Mud 20% Water 80%	0.00
124.00	Muddy Water/ Mud 5% Water 95%	1.08

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
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22/28S/19W/Kiowa

125 N Market
Suite 100
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ATTN: Bill Klaver

McFadden B-1

Job Ticket: 62100

DST#: 1

Test Start: 2018.01.24 @ 10:10:00

GENERAL INFORMATION:

Formation: **lola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:13:32

Time Test Ended: 17:26:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/80

Interval: 4440.00 ft (KB) To 4474.00 ft (KB) (TVD)

Reference Elevations: 2284.00 ft (KB)

Total Depth: 4474.00 ft (KB) (TVD)

2272.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6752 Outside

Press@RunDepth: 1483.60 psig @ 4471.00 ft (KB)

Capacity: psig

Start Date: 2018.01.24

End Date:

2018.01.24

Last Calib.:

2018.01.24

Start Time: 10:10:01

End Time:

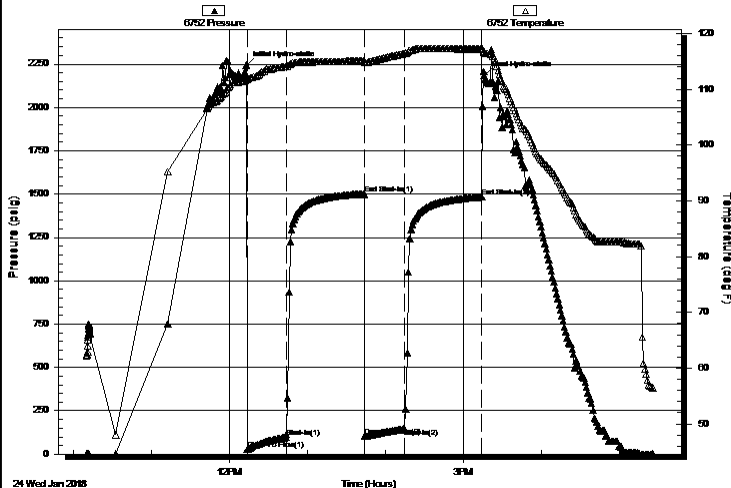
17:26:02

Time On Btm: 2018.01.24 @ 12:13:02

Time Off Btm: 2018.01.24 @ 15:16:02

TEST COMMENT: I.F. 30 Minutes/ Tool slide 10 feet before open/ Blow built to 2 inch then died to 1 inch
I.S.I. 60 Minutes/ No blow back
F.F. 30 Minutes/ Blow built to 3/4 inch then died to surface blow
F.S.I. 60 Minutes/ No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2241.09	112.03	Initial Hydro-static
1	27.13	111.71	Open To Flow (1)
31	97.12	114.10	Shut-In(1)
91	1501.61	115.05	End Shut-In(1)
92	102.29	114.77	Open To Flow (2)
122	146.99	116.44	Shut-In(2)
182	1483.60	117.20	End Shut-In(2)
183	2184.41	116.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	Muddy Water w/skim of oil	0.63
0.00	Mud 20% Water 80%	0.00
124.00	Muddy Water/ Mud 5% Water 95%	1.08

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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DRILL STEM TEST REPORT

FLUID SUMMARY

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22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 62100

DST#: 1

Test Start: 2018.01.24 @ 10:10:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 67.00 sec/qt

Water Loss: 8.78 in³

Resistivity: ohm.m

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

deg API

Water Salinity: 42000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	Muddy Water w/skim of oil	0.625
0.00	Mud 20% Water 80%	0.000
124.00	Muddy Water/ Mud 5% Water 95%	1.084

Total Length: 248.00 ft

Total Volume: 1.709 bbl

Num Fluid Samples: 0

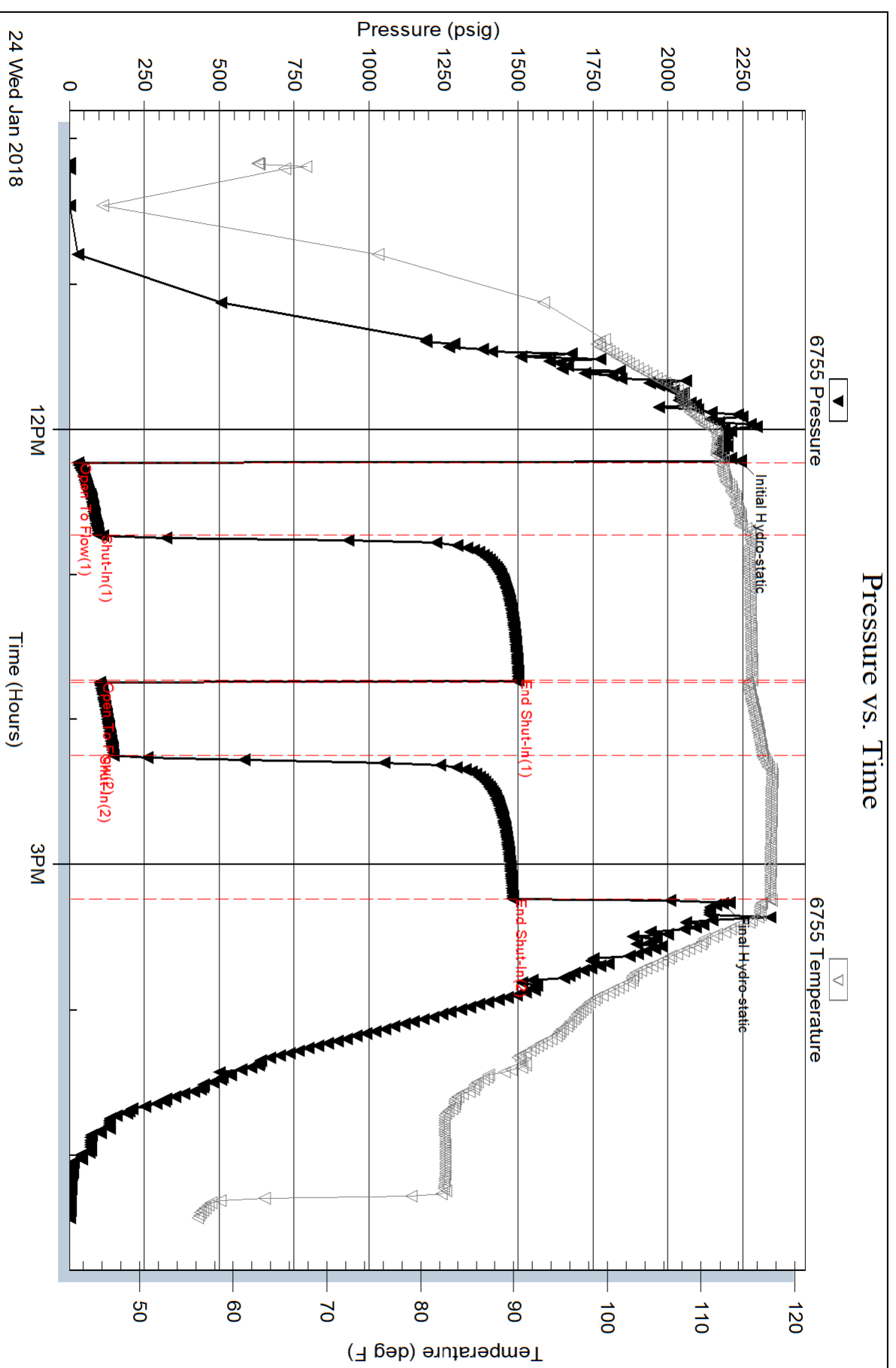
Num Gas Bombs: 0

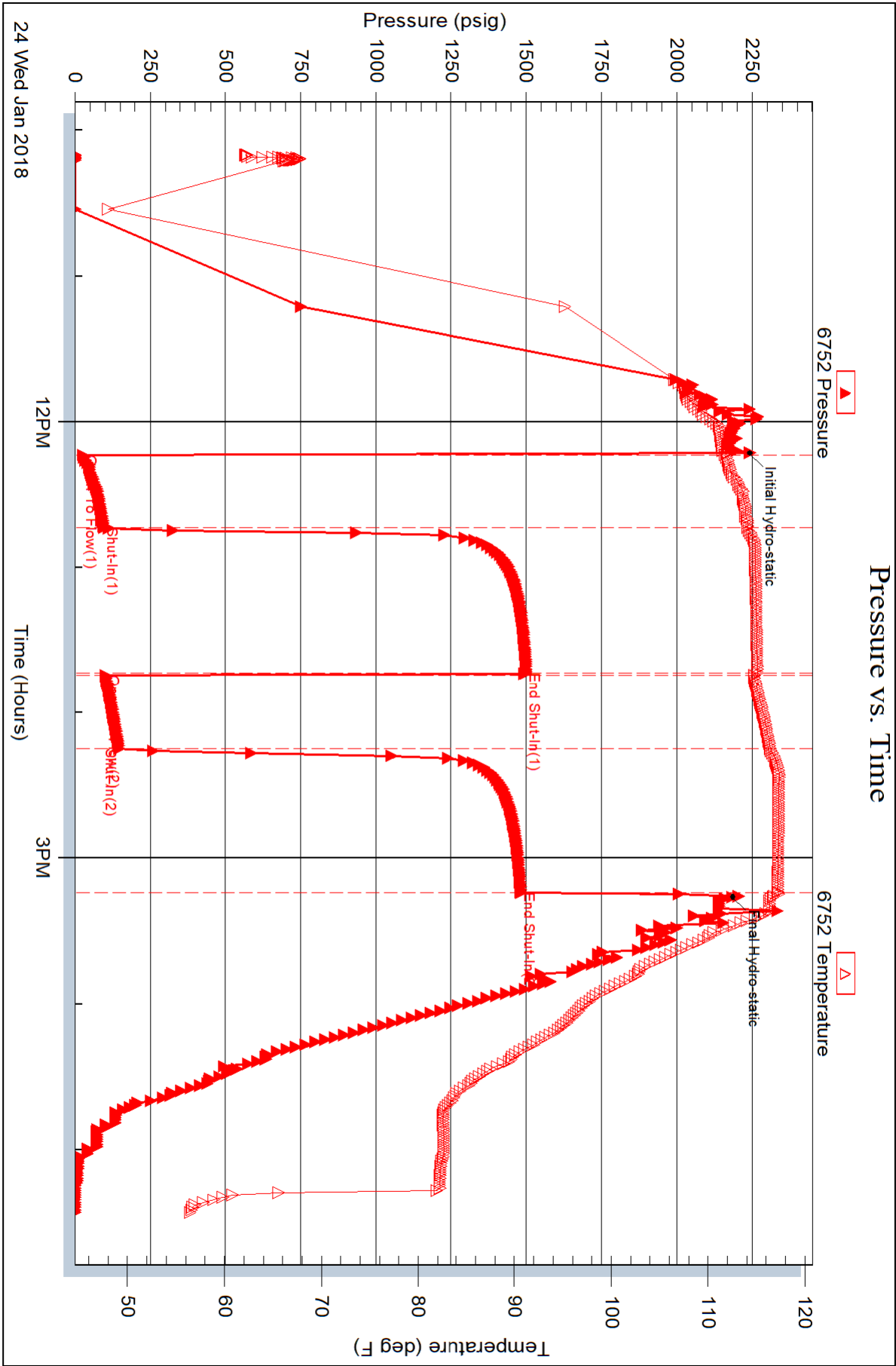
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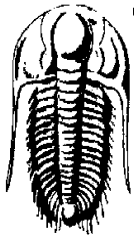
Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .204 ohms @ 57 deg.







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22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63051

DST#: 2

Test Start: 2018.01.25 @ 23:56:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:17:02

Time Test Ended: 11:55:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/ 80

Interval: 4820.00 ft (KB) To 4864.00 ft (KB) (TVD)

Reference Elevations: 2284.00 ft (KB)

Total Depth: 4864.00 ft (KB) (TVD)

2272.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6755 Inside

Press@RunDepth: 489.99 psig @ 4821.00 ft (KB)

Capacity: psig

Start Date: 2018.01.25

End Date:

2018.01.26

Last Calib.:

2018.01.26

Start Time: 23:56:01

End Time:

11:55:47

Time On Btm:

2018.01.26 @ 02:16:17

Time Off Btm:

2018.01.26 @ 06:36:17

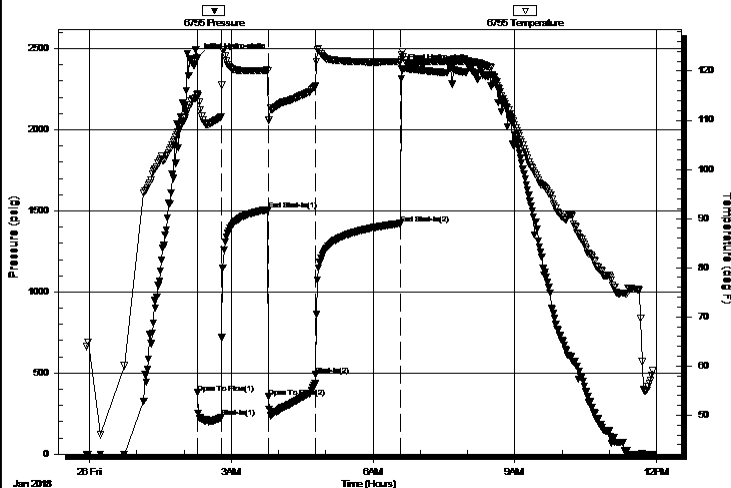
TEST COMMENT: I.F. 30 Minutes/ Blow built to BOB in 15 sec./ Gas to surface in 3 minutes

I.S.I. 60 Minutes/ Blow back built to BOB

F.F. 60 Minutes/ Blow built to BOB in 3 sec.

F.S.I. 90 Minutes/ No blow back - hose plugged with hulls

Pressure vs. Time



PRESSURE SUMMARY

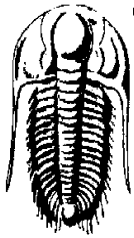
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2442.23	115.07	Initial Hydro-static
1	378.28	115.34	Open To Flow (1)
31	226.48	110.71	Shut-In(1)
91	1506.01	120.13	End Shut-In(1)
91	353.89	110.01	Open To Flow (2)
151	489.99	116.90	Shut-In(2)
259	1422.32	121.97	End Shut-In(2)
260	2375.86	123.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	Oil cut Muddy Gas	2.25
0.00	20% Oil 35% Mud 45% Gas	0.00
1178.00	Gassy Oil	10.30
0.00	35% Gas 65% Oil	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	14.00	443.60
Last Gas Rate	0.50	18.00	218.56
Max. Gas Rate	0.50	32.00	313.00



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22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63051

DST#: 2

Test Start: 2018.01.25 @ 23:56:00

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:17:02

Time Test Ended: 11:55:47

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/ 80

Interval: **4820.00 ft (KB) To 4864.00 ft (KB) (TVD)**

Total Depth: 4864.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 2284.00 ft (KB)

2272.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 67752

Press@RunDepth: 1422.85 psig @ ft (KB)

Start Date: 2018.01.25

End Date:

2018.01.26

Start Time: 23:56:01

End Time:

11:55:47

Capacity: psig

Last Calib.: 2018.01.26

Time On Btm: 2018.01.26 @ 02:16:02

Time Off Btm: 2018.01.26 @ 06:37:32

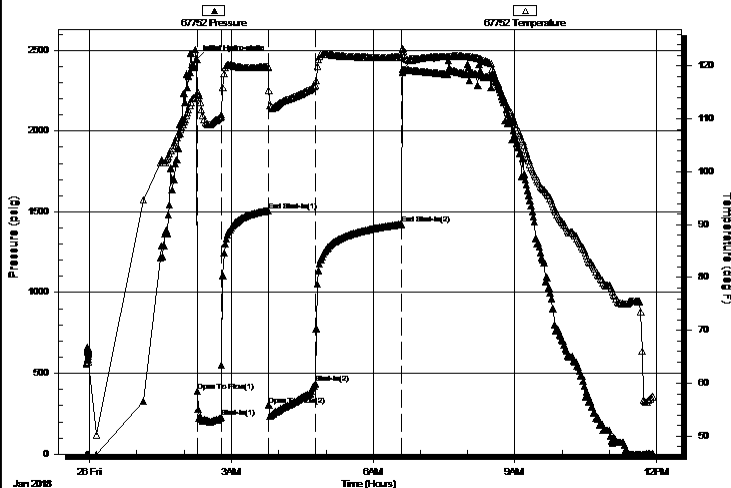
TEST COMMENT: I.F. 30 Minutes/ Blow built to BOB in 15 sec./ Gas to surface in 3 minutes

I.S.I. 60 Minutes/ Blow back built to BOB

F.F. 60 Minutes/ Blow built to BOB in 3 sec.

F.S.I. 90 Minutes/ No blow back - hose plugged with hulls

Pressure vs. Time



PRESSURE SUMMARY

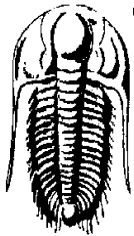
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2442.38	114.69	Initial Hydro-static
1	390.29	114.62	Open To Flow (1)
31	226.37	110.44	Shut-In (1)
91	1506.30	119.81	End Shut-In (1)
92	302.28	115.40	Open To Flow (2)
151	435.98	116.44	Shut-In (2)
260	1422.85	121.72	End Shut-In (2)
262	2378.26	123.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	Oil cut Muddy Gas	2.25
0.00	20% Oil 35% Mud 45% Gas	0.00
1178.00	Gassy Oil	10.30
0.00	35% Gas 65% Oil	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	14.00	443.60
Last Gas Rate	0.50	18.00	218.56
Max. Gas Rate	0.50	32.00	313.00



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FLUID SUMMARY

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22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63051

DST#: 2

Test Start: 2018.01.25 @ 23:56:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 8.77 in³

Resistivity: ohm.m

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

39 deg API

ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	Oil cut Muddy Gas	2.251
0.00	20% Oil 35% Mud 45% Gas	0.000
1178.00	Gassy Oil	10.299
0.00	35% Gas 65% Oil	0.000

Total Length: 1488.00 ft

Total Volume: 12.550 bbl

Num Fluid Samples: 0

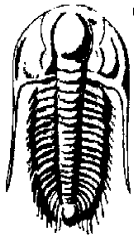
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE
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DRILL STEM TEST REPORT

GAS RATES

Woolsey Operation Company LLC

22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63051

DST#: 2

Test Start: 2018.01.25 @ 23:56:00

Gas Rates Information

Temperature: 59 (deg F)

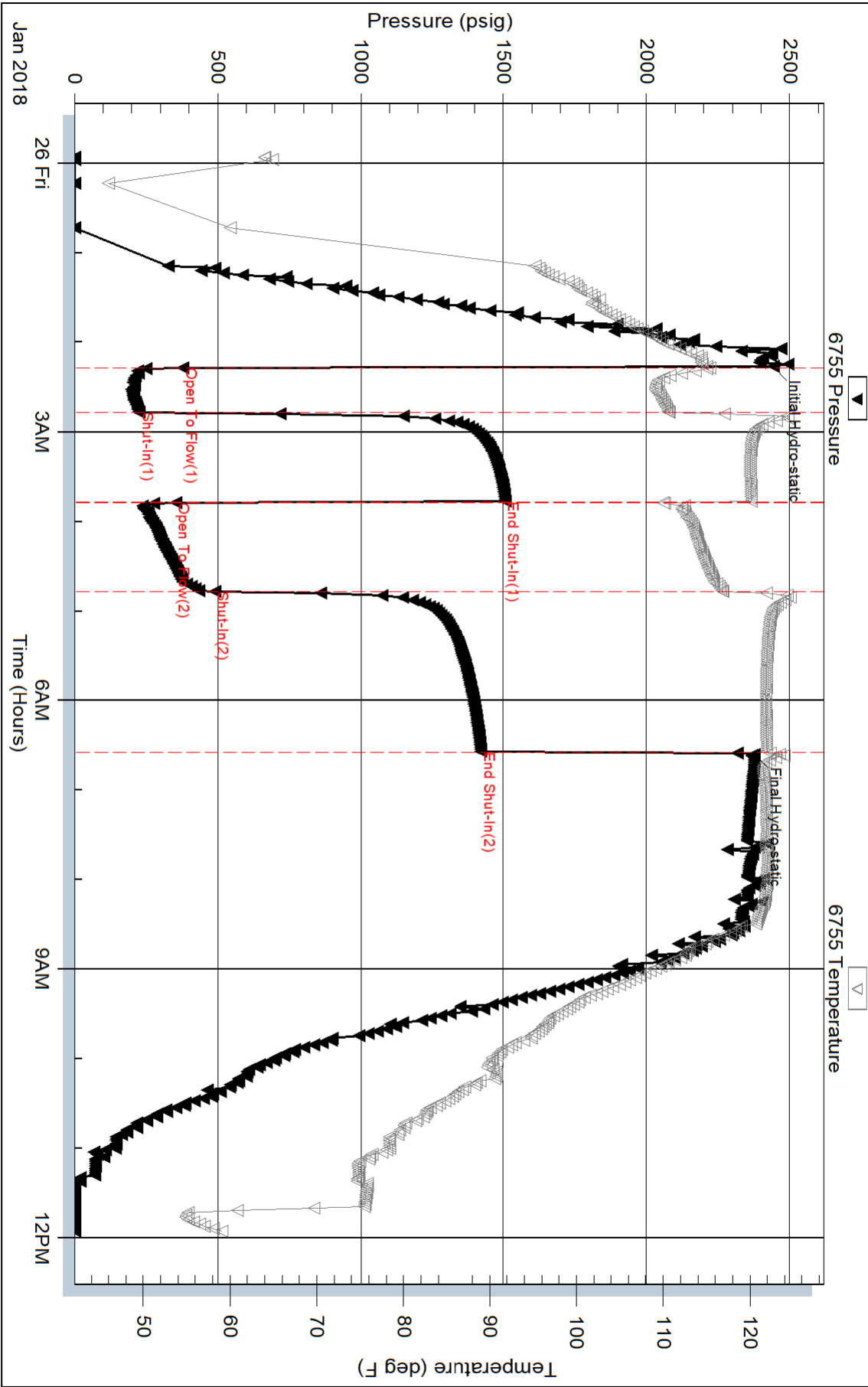
Relative Density: 0.65

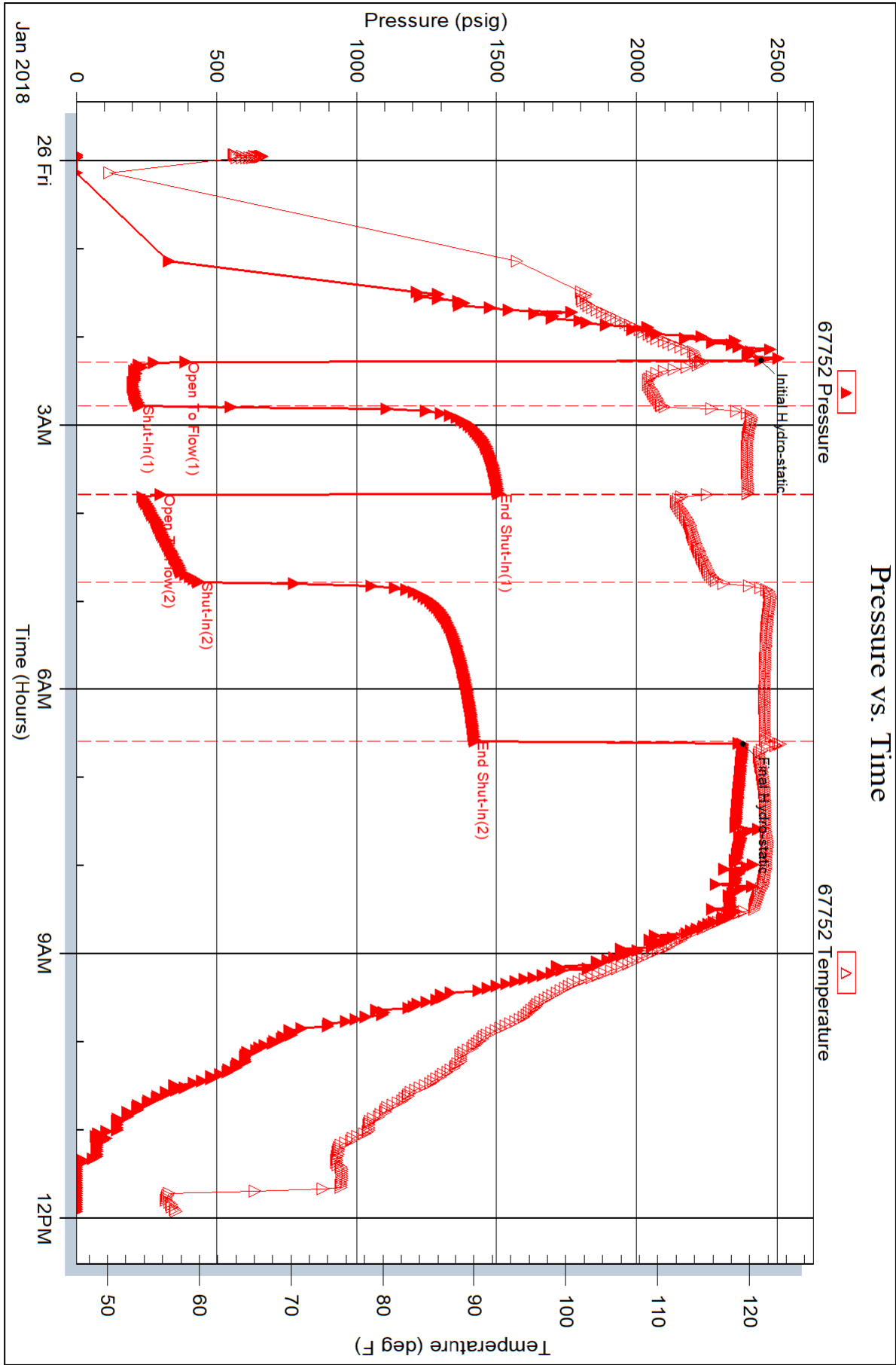
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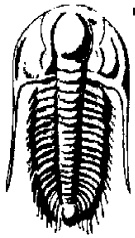
Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.75	14.00	443.60
1	20	0.75	7.00	334.26
1	30	0.75	7.00	334.26
2	10	0.50	32.00	313.00
2	20	0.50	26.00	272.53
2	30	0.50	24.00	259.04
2	40	0.50	22.00	245.54
2	50	0.50	20.00	232.05
2	60	0.50	18.00	218.56

Pressure vs. Time







TRILOBITE
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DRILL STEM TEST REPORT

Woolsey Operation Company LLC

22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63052

DST#: 3

Test Start: 2018.01.26 @ 21:44:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:00:02

Time Test Ended: 06:26:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/80

Interval: 4865.00 ft (KB) To 4910.00 ft (KB) (TVD)

Reference Elevations: 2284.00 ft (KB)

Total Depth: 4910.00 ft (KB) (TVD)

2272.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

Serial #: 6755 Inside

Press@RunDepth: 126.28 psig @ 4866.00 ft (KB)

Capacity: psig

Start Date: 2018.01.26

End Date:

2018.01.27

Last Calib.:

2018.01.27

Start Time: 21:44:01

End Time:

06:26:02

Time On Btm:

2018.01.26 @ 23:59:02

Time Off Btm:

2018.01.27 @ 04:01:17

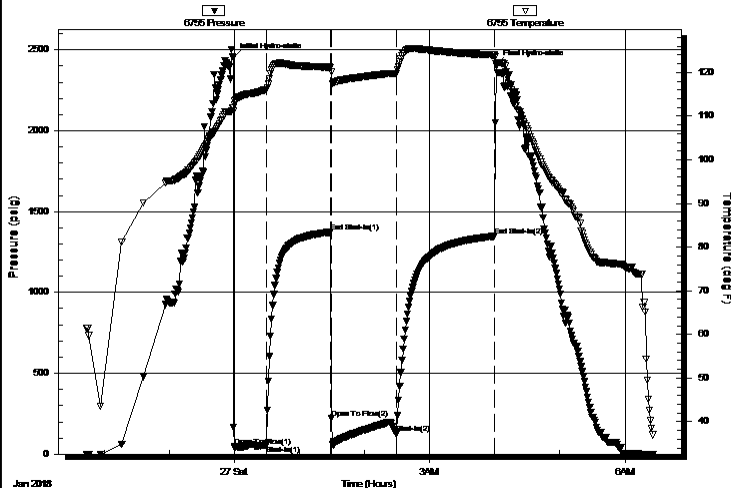
TEST COMMENT: I.F. 30 Minutes/ Blow to BOB in 3 minutes GTS in 25

I.S.I. 60 Minutes/ No blow back

F.F. 60 Minutes/ Blow to BOB in 5 seconds

F.S.I. 90 Minutes/ 1/2 inch blow back

Pressure vs. Time



PRESSURE SUMMARY

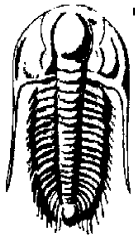
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2450.54	111.99	Initial Hydro-static
1	47.13	112.66	Open To Flow (1)
31	55.21	116.08	Shut-In (1)
90	1372.86	121.17	End Shut-In (1)
91	221.70	120.09	Open To Flow (2)
151	126.28	119.74	Shut-In (2)
241	1347.96	123.96	End Shut-In (2)
243	2411.21	122.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	Gassy Muddy Water	2.16
0.00	Gas 30% Mud 30% Water 40%	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	26.00	15.12
Last Gas Rate	0.13	80.00	35.33
Max. Gas Rate	0.13	80.00	35.33



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Woolsey Operation Company LLC

22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63052

DST#: 3

Test Start: 2018.01.26 @ 21:44:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:00:02

Time Test Ended: 06:26:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Pratt/80

Interval: **4865.00 ft (KB) To 4910.00 ft (KB) (TVD)**

Total Depth: 4910.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 2284.00 ft (KB)

2272.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 6752 Outside

Press@RunDepth: 1348.62 psig @ 4867.00 ft (KB)

Start Date: 2018.01.26

End Date:

2018.01.27

Start Time: 21:44:01

End Time:

06:26:02

Capacity: psig

Last Calib.: 2018.01.27

Time On Btm: 2018.01.26 @ 23:59:17

Time Off Btm: 2018.01.27 @ 04:01:32

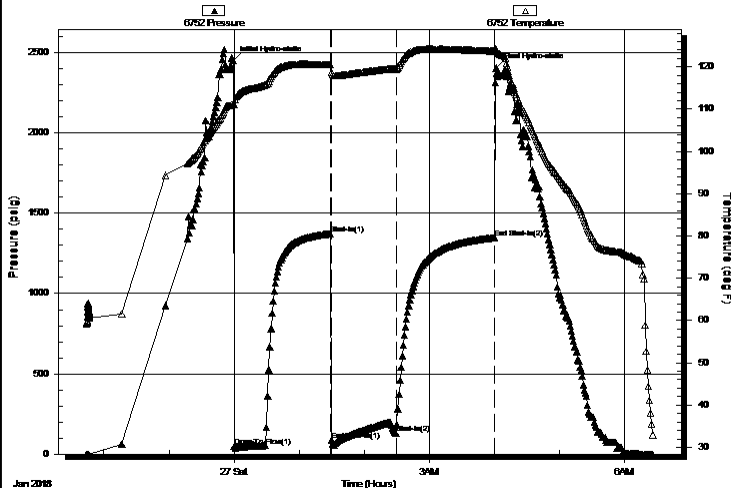
TEST COMMENT: I.F. 30 Minutes/ Blow to BOB in 3 minutes GTS in 25

I.S.I. 60 Mintues/ No blow back

F.F. 60 Mintues/ Blow to BOB in 5 seconds

F.S.I. 90 Mintues/ 1/2 inch blow back

Pressure vs. Time



PRESSURE SUMMARY

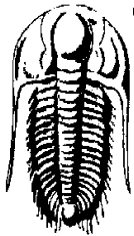
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2449.65	111.38	Initial Hydro-static
1	48.43	111.06	Open To Flow (1)
90	1373.03	120.53	Shut-In(1)
91	85.81	118.71	End Shut-In(1)
150	127.06	119.52	Shut-In(2)
241	1348.62	123.79	End Shut-In(2)
243	2404.54	123.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	Gassy Muddy Water	2.16
0.00	Gas 30% Mud 30% Water 40%	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	26.00	15.12
Last Gas Rate	0.13	80.00	35.33
Max. Gas Rate	0.13	80.00	35.33



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22/28S/19W/Kiowa

125 N Market
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ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63052

DST#: 3

Test Start: 2018.01.26 @ 21:44:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 8.78 in³

Resistivity: ohm.m

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

deg API

Water Salinity: 28000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	Gassy Muddy Water	2.164
0.00	Gas 30% Mud 30% Water 40%	0.000

Total Length: 300.00 ft Total Volume: 2.164 bbl

Num Fluid Samples: 0

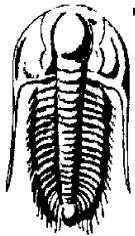
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .520 ohms @ 32 deg.



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DRILL STEM TEST REPORT

GAS RATES

Woolsey Operation Company LLC

22/28S/19W/Kiowa

125 N Market
Suite 100
Wichita, Kansas 67202+1729
ATTN: Bill Klaver

McFadden B-1

Job Ticket: 63052

DST#: 3

Test Start: 2018.01.26 @ 21:44:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	10	0.13	26.00	15.12
2	20	0.13	37.00	19.24
2	30	0.13	50.00	24.10
2	40	0.13	65.00	29.72
2	50	0.13	75.00	33.46
2	60	0.13	80.00	35.33

Serial #: 6755

Inside

Woodsey Operation Company LLC

McFadden B-1

DST Test Number: 3

