

TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.10.29 @ 05:33:00

End Date: 2019.10.29 @ 12:48:30

Job Ticket #: 66322 DST #: 1

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

Printed: 2019.11.04 @ 15:53:50



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66322

DST#: 1

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 05:33:00

GENERAL INFORMATION:

Formation: **LKC B-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:25:30

Time Test Ended: 12:48:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3280.00 ft (KB) To 3320.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3320.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 25.64 psig @ 3281.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.29

End Date: 2019.10.29

Last Calib.: 2019.10.29

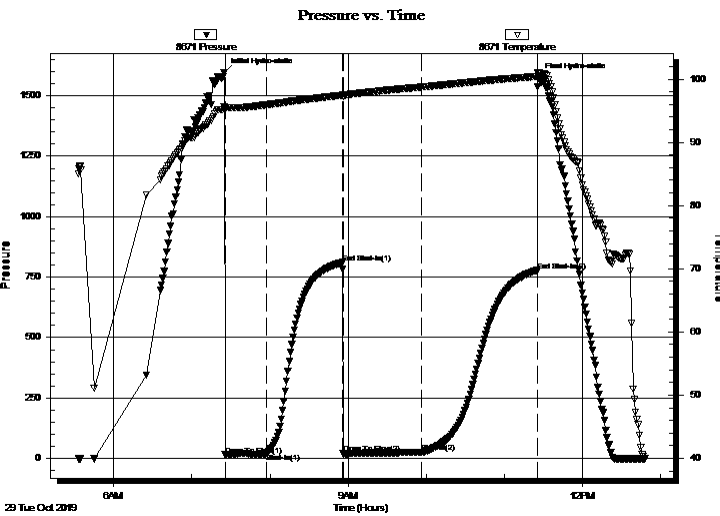
Start Time: 05:33:05

End Time: 12:48:29

Time On Btm: 2019.10.29 @ 07:25:00

Time Off Btm: 2019.10.29 @ 11:26:15

TEST COMMENT: 30 - IFP - Surface blow built up to 3/4"
60 - ISI - No Return
60 - FFP - Faint surface blow started in 10 mins and built up to weak blow
90 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1596.39	95.60	Initial Hydro-static
1	15.14	95.29	Open To Flow (1)
33	21.04	95.93	Shut-In(1)
91	810.77	97.45	End Shut-In(1)
91	20.52	97.19	Open To Flow (2)
152	25.64	98.74	Shut-In(2)
240	774.93	100.41	End Shut-In(2)
242	1575.65	101.05	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

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66322

DST#: 1

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 05:33:00

Tool Information

Drill Pipe:	Length: 3231.38 ft	Diameter: 3.25 inches	Volume: 33.16 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 33.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.37 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3280.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3257.00	
Hydraulic tool	5.00			3262.00	
Jars	5.00			3267.00	
Safety Joint	3.00			3270.00	
Packer	5.00			3275.00	28.00 Bottom Of Top Packer
Packer	5.00			3280.00	
Stubb	1.00			3281.00	
Recorder	0.00	8360	Inside	3281.00	
Recorder	0.00	8671	Outside	3281.00	
Perforations	36.00			3317.00	
Bullnose	3.00			3320.00	40.00 Bottom Packers & Anchor

Total Tool Length: 68.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66322

DST#: 1

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 05:33:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3300.00 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

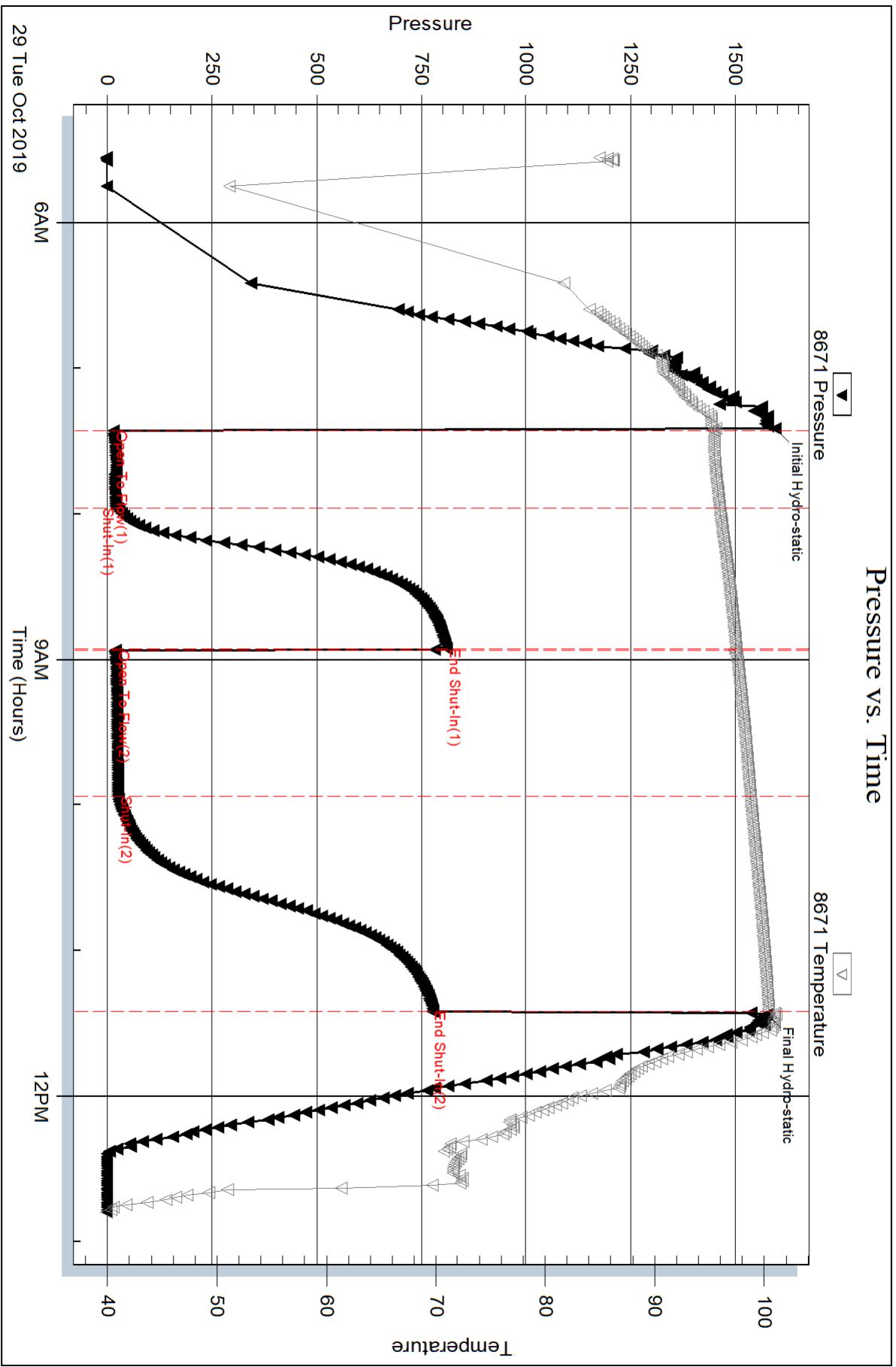
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



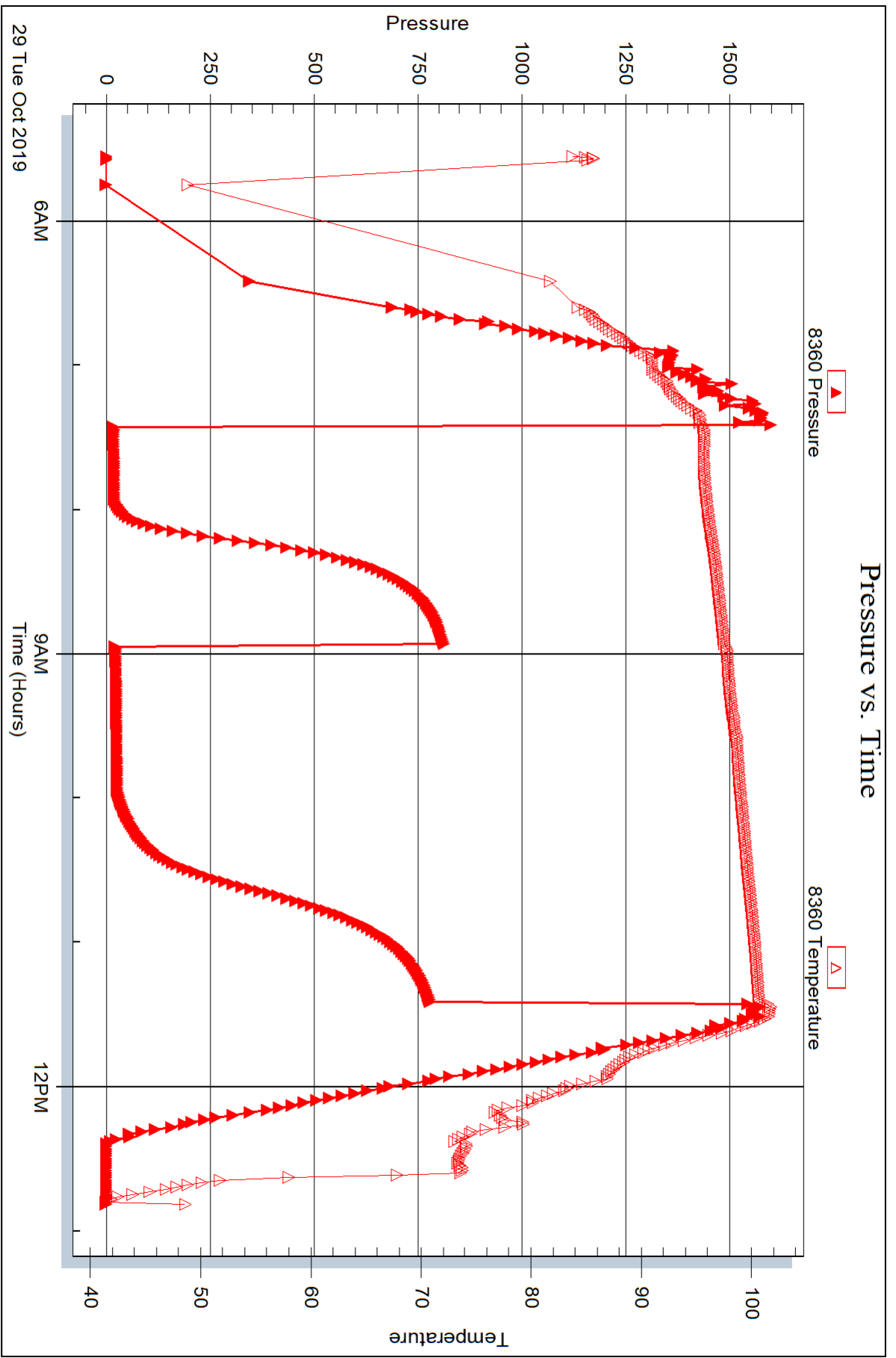
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Rathbun #19-2

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.10.29 @ 18:20:00

End Date: 2019.10.30 @ 01:16:45

Job Ticket #: 66323 DST #: 2

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

Printed: 2019.11.04 @ 15:49:33



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66323

DST#: 2

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 18:20:00

GENERAL INFORMATION:

Formation: **LKC E & F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:40:30

Time Test Ended: 01:16:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3315.00 ft (KB) To 3339.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3339.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 35.18 psig @ 3316.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.29 End Date: 2019.10.30

Last Calib.: 2019.10.30

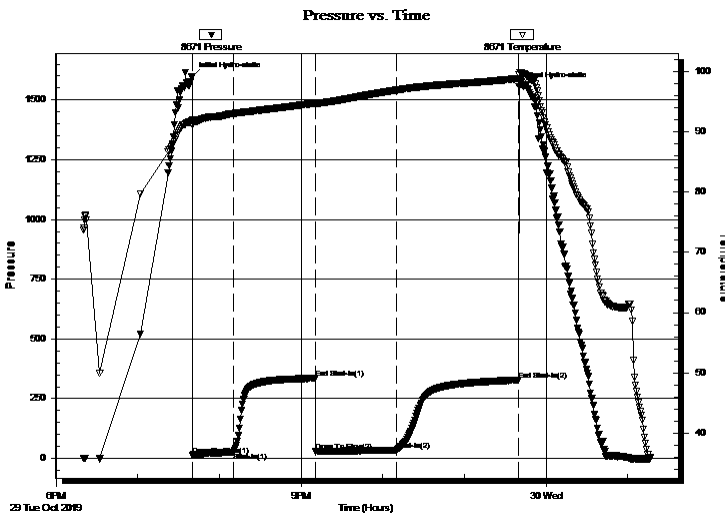
Start Time: 18:20:05 End Time: 01:16:44

Time On Btm: 2019.10.29 @ 19:40:15

Time Off Btm: 2019.10.29 @ 23:40:15

TEST COMMENT: 30 - IFP - Surface blow built up to 1 1/4"
60 - ISI - No Return
60 - FFP - Faint blow started 10 mins in and built to 1/2"
90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1598.37	91.90	Initial Hydro-static
1	13.86	91.13	Open To Flow (1)
30	26.89	93.00	Shut-In(1)
91	335.31	94.67	End Shut-In(1)
91	30.77	94.52	Open To Flow (2)
150	35.18	96.88	Shut-In(2)
240	327.45	98.78	End Shut-In(2)
240	1555.23	99.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
32.00	OCWM 30%o - 30%w - 40%m	0.17

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66323

DST#: 2

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 18:20:00

Tool Information

Drill Pipe:	Length: 3262.32 ft	Diameter: 3.25 inches	Volume: 33.47 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 33.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	4.31 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3315.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3292.00	
Hydraulic tool	5.00			3297.00	
Jars	5.00			3302.00	
Safety Joint	3.00			3305.00	
Packer	5.00			3310.00	28.00 Bottom Of Top Packer
Packer	5.00			3315.00	
Stubb	1.00			3316.00	
Recorder	0.00	8360	Inside	3316.00	
Recorder	0.00	8671	Outside	3316.00	
Perforations	20.00			3336.00	
Bullnose	3.00			3339.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66323

DST#: 2

ATTN: Robert Hendrix

Test Start: 2019.10.29 @ 18:20:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
32.00	OCWM 30%o - 30%w - 40%m	0.173

Total Length: 32.00 ft Total Volume: 0.173 bbl

Num Fluid Samples: 0

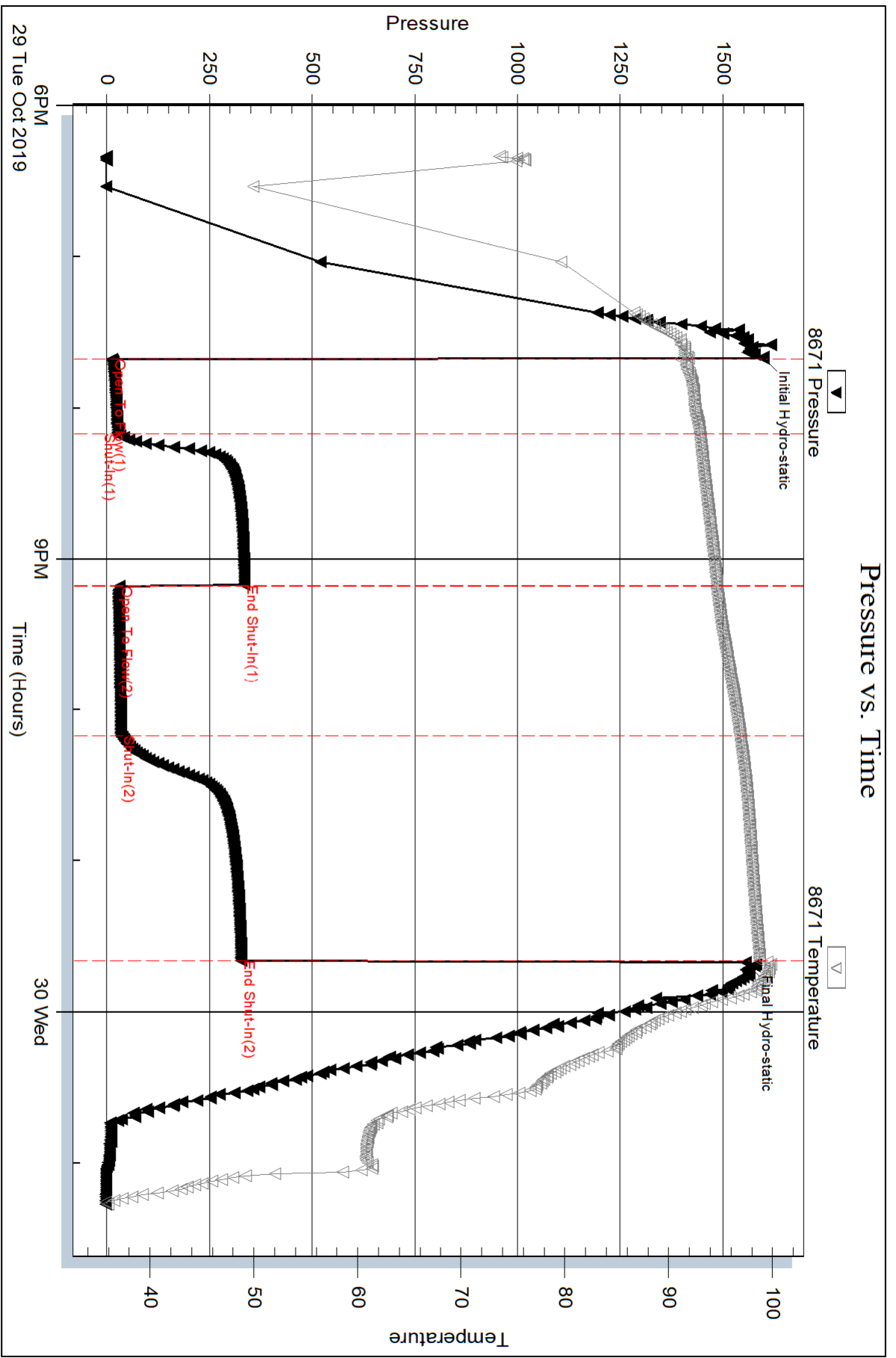
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.10.30 @ 15:27:00

End Date: 2019.10.30 @ 22:48:00

Job Ticket #: 66324 DST #: 3

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

Printed: 2019.11.04 @ 15:48:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66324

DST#: 3

ATTN: Robert Hendrix

Test Start: 2019.10.30 @ 15:27:00

GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:06:15

Time Test Ended: 22:48:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3430.00 ft (KB) To 3460.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3460.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 34.69 psig @ 3431.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.30

End Date: 2019.10.30

Last Calib.: 2019.10.30

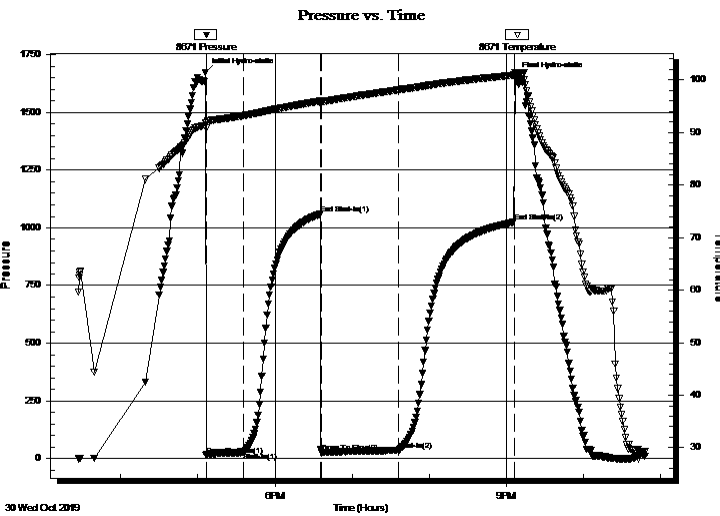
Start Time: 15:27:05

End Time: 22:47:59

Time On Btm: 2019.10.30 @ 17:06:00

Time Off Btm: 2019.10.30 @ 21:07:00

TEST COMMENT: 30 - IFP - Surface blow built up to 3 1/4' in diesel
60 - ISI - No Return
60 - FFP - Surface blow started right away and built to 5 3/4" in diesel
90 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1674.22	91.91	Initial Hydro-static
1	14.80	90.82	Open To Flow (1)
29	25.34	93.19	Shut-In(1)
90	1059.66	96.00	End Shut-In(1)
91	25.10	95.85	Open To Flow (2)
150	34.69	98.10	Shut-In(2)
240	1024.57	100.90	End Shut-In(2)
241	1655.77	101.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
47.00	MCO - 30% m - 70% o	0.33
15.00	Free Oil - 100% o	0.15

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66324

DST#: 3

ATTN: Robert Hendrix

Test Start: 2019.10.30 @ 15:27:00

Tool Information

Drill Pipe:	Length: 3388.85 ft	Diameter: 3.25 inches	Volume: 34.77 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 34.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.84 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3430.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3407.00	
Hydraulic tool	5.00			3412.00	
Jars	5.00			3417.00	
Safety Joint	3.00			3420.00	
Packer	5.00			3425.00	28.00 Bottom Of Top Packer
Packer	5.00			3430.00	
Stubb	1.00			3431.00	
Recorder	0.00	8360	Inside	3431.00	
Recorder	0.00	8671	Outside	3431.00	
Perforations	26.00			3457.00	
Bullnose	3.00			3460.00	30.00 Bottom Packers & Anchor

Total Tool Length: 58.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66324

DST#: 3

ATTN: Robert Hendrix

Test Start: 2019.10.30 @ 15:27:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
47.00	MCO - 30%m - 70%o	0.327
15.00	Free Oil - 100%o	0.154

Total Length: 62.00 ft Total Volume: 0.481 bbf

Num Fluid Samples: 0

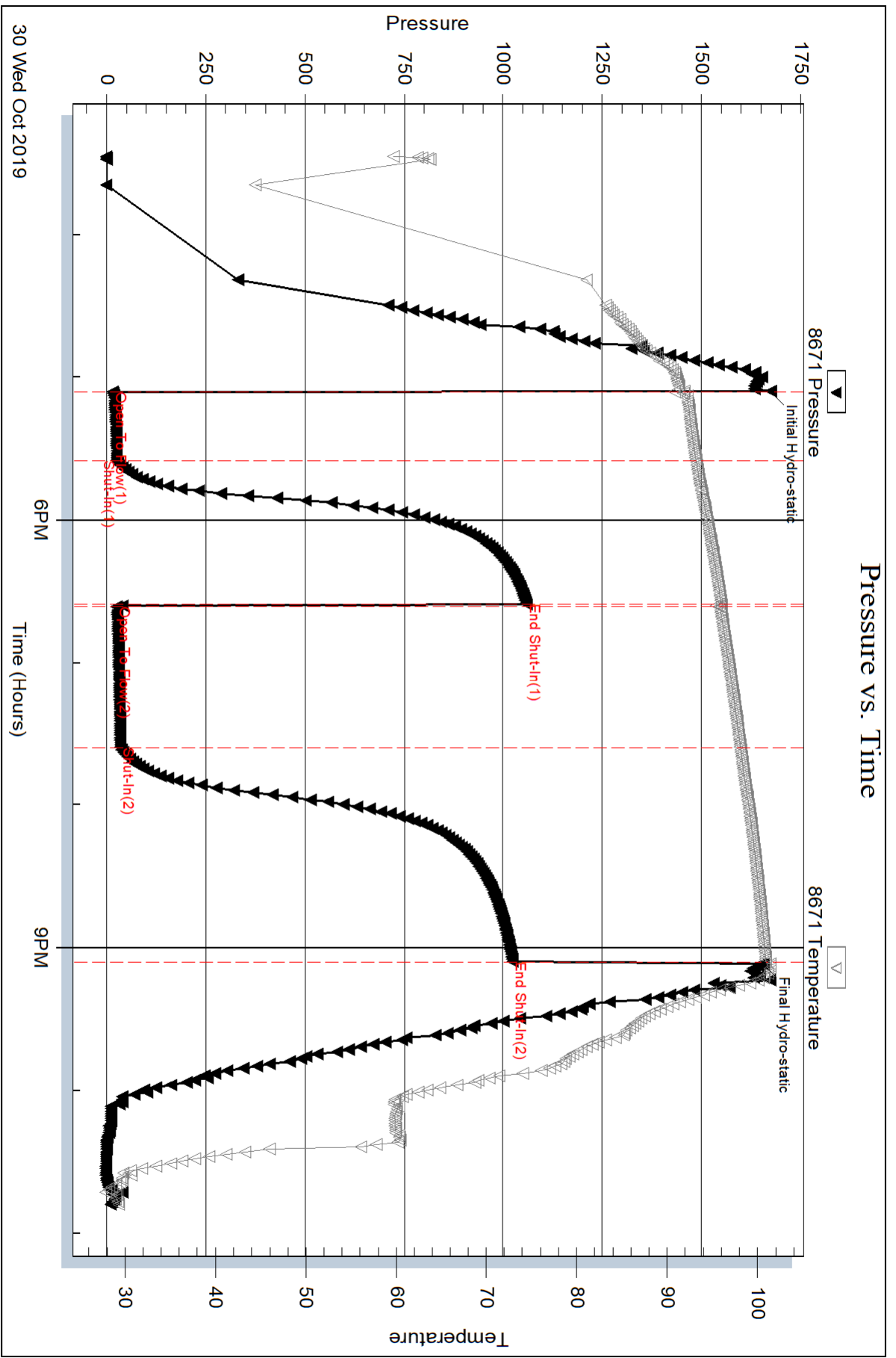
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity - 24 @ 60 deg.



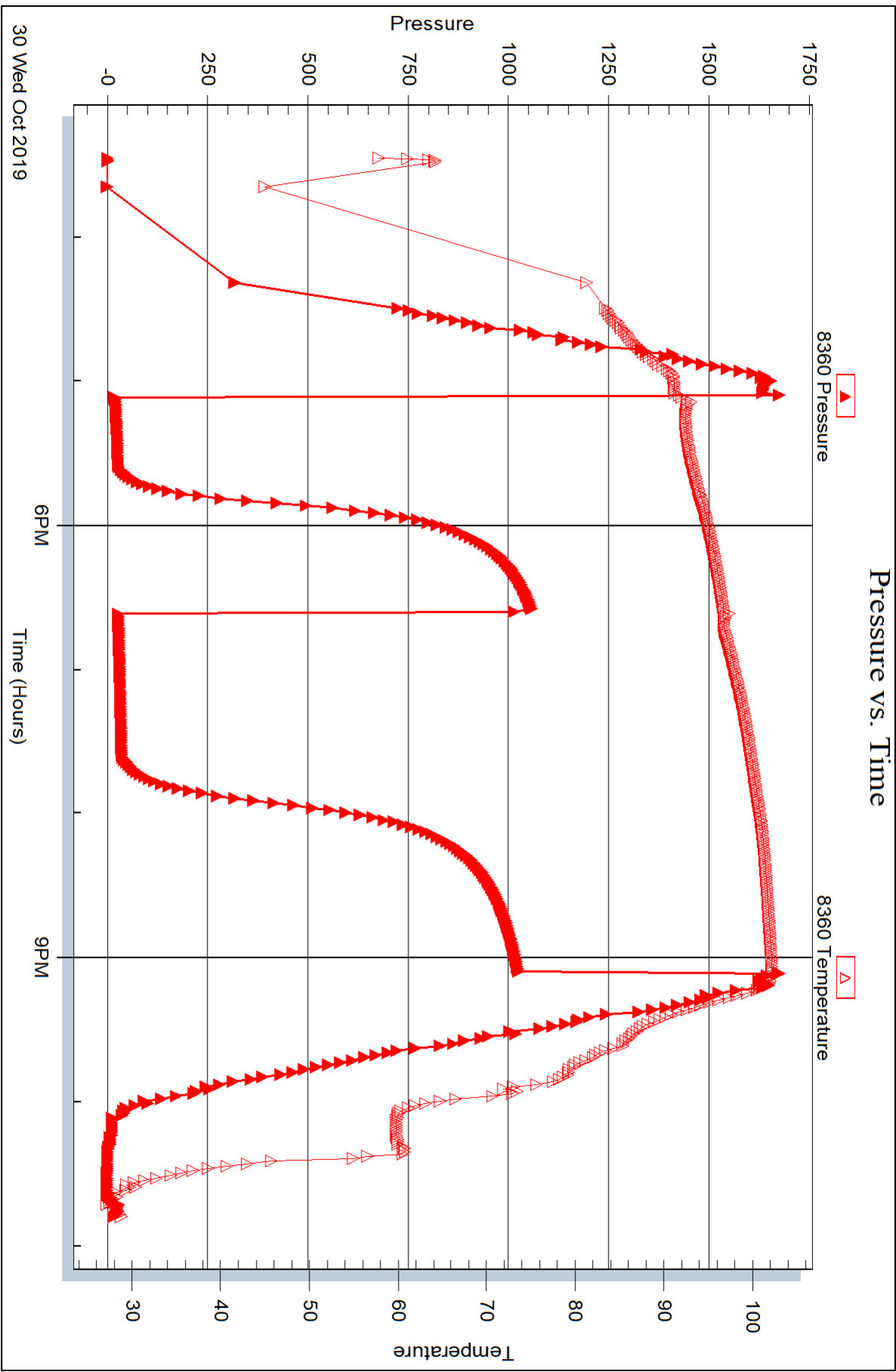
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Rathbun #19-2

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 66324

Printed: 2019.11.04 @ 15:48:05



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.10.31 @ 09:49:00

End Date: 2019.10.31 @ 17:28:00

Job Ticket #: 66325 DST #: 4

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

Printed: 2019.11.04 @ 15:27:24



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66325

DST#: 4

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 09:49:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:28:00

Time Test Ended: 17:28:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3550.00 ft (KB) To 3567.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3567.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 129.50 psig @ 3551.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.31

End Date: 2019.10.31

Last Calib.: 2019.10.31

Start Time: 09:49:05

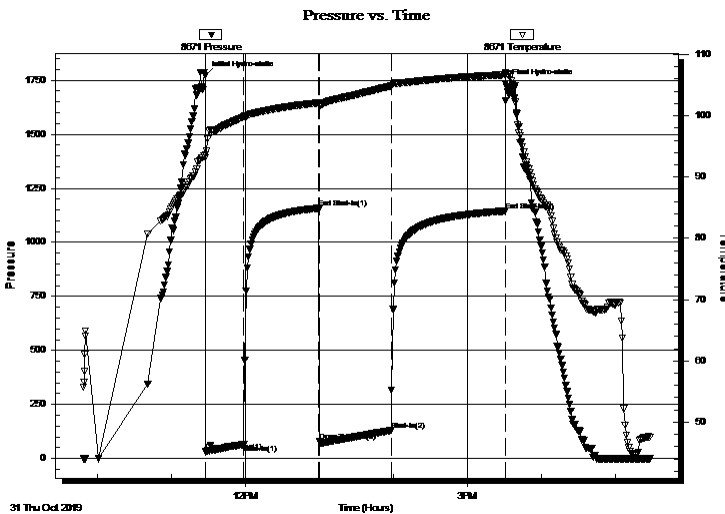
End Time: 17:27:59

Time On Btm: 2019.10.31 @ 11:27:45

Time Off Btm: 2019.10.31 @ 15:31:00

TEST COMMENT: 30 - IFP - Surface blow built to B.o.B. in 22 mins
60 - ISI - Faint return started 15 mins in and stayed at a faint blow
60 - FFP - Surface blow built to B.o.B. in 35 mins
90 - FSI - Faint return started 10 mins in and stayed at a faint blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1770.12	93.69	Initial Hydro-static
1	31.77	93.15	Open To Flow (1)
31	65.70	99.79	Shut-In(1)
92	1158.19	102.09	End Shut-In(1)
93	77.91	101.73	Open To Flow (2)
151	129.50	104.85	Shut-In(2)
243	1145.03	106.68	End Shut-In(2)
244	1735.49	107.06	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
82.00	GWMCO - 10%g - 5%w - 15%m - 70%o	0.69
228.00	Free Oil - 100%o	2.34

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66325

DST#: 4

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 09:49:00

Tool Information

Drill Pipe:	Length: 3515.78 ft	Diameter: 3.25 inches	Volume: 36.07 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 36.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.77 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3550.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	17.00 ft			
Tool Length:	45.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3527.00	
Hydraulic tool	5.00			3532.00	
Jars	5.00			3537.00	
Safety Joint	3.00			3540.00	
Packer	5.00			3545.00	28.00 Bottom Of Top Packer
Packer	5.00			3550.00	
Stubb	1.00			3551.00	
Recorder	0.00	8360	Inside	3551.00	
Recorder	0.00	8671	Outside	3551.00	
Perforations	13.00			3564.00	
Bullnose	3.00			3567.00	17.00 Bottom Packers & Anchor

Total Tool Length: 45.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66325

DST#: 4

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 09:49:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

23 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 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
82.00	GWMCO - 10%g - 5%w - 15%m - 70%o	0.686
228.00	Free Oil - 100%o	2.339

Total Length: 310.00 ft Total Volume: 3.025 bbl

Num Fluid Samples: 0

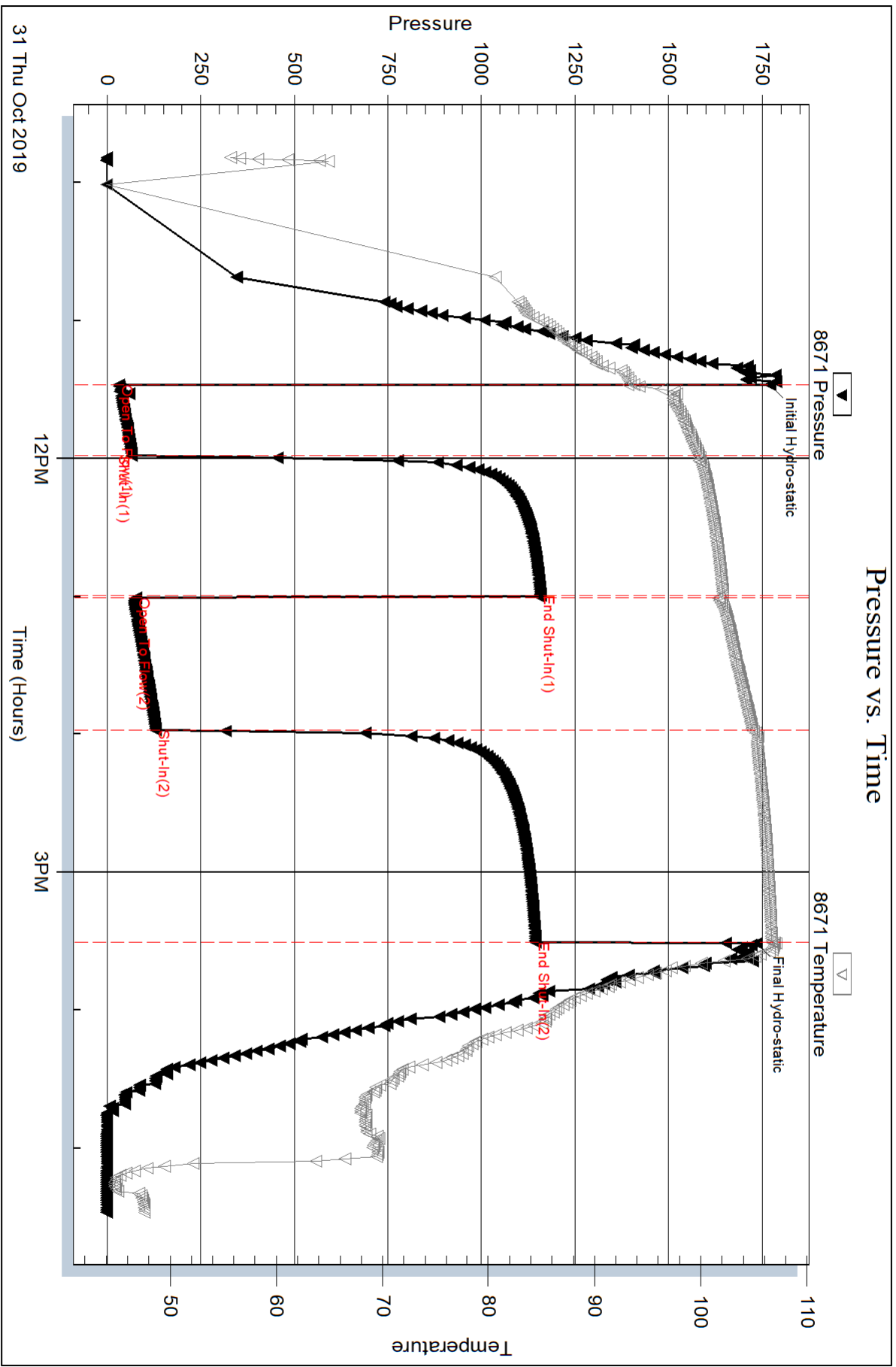
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity - 23 @ 60 deg.



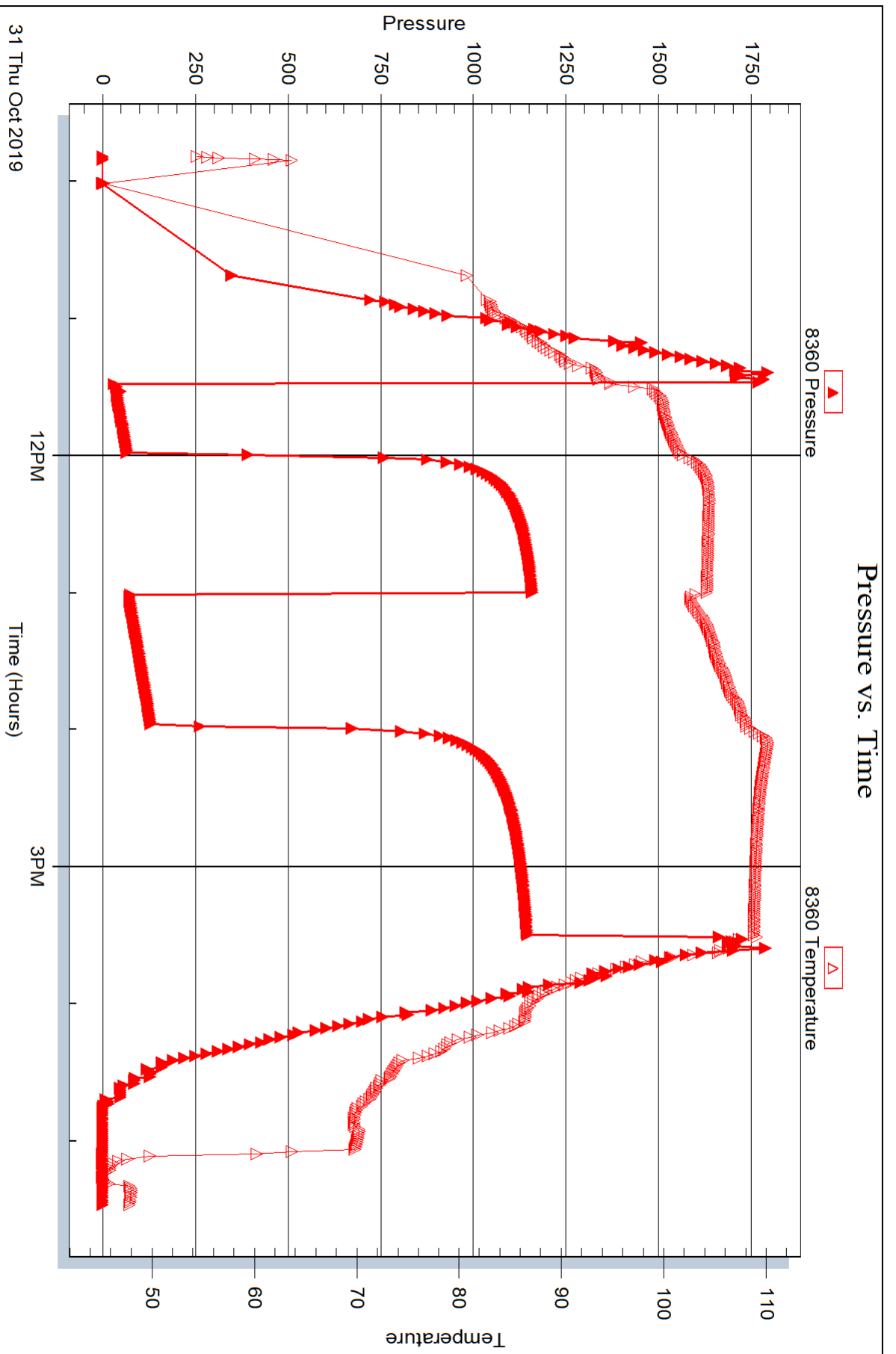
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Rathbun #19-2

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.10.31 @ 23:20:00

End Date: 2019.11.01 @ 07:05:15

Job Ticket #: 66326 DST #: 5

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

Printed: 2019.11.04 @ 15:24:18



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66326

DST#: 5

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 23:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:21:15

Time Test Ended: 07:05:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3565.00 ft (KB) To 3574.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3574.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 106.50 psig @ 3566.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.10.31

End Date:

2019.11.01

Last Calib.: 2019.11.01

Start Time: 23:20:05

End Time:

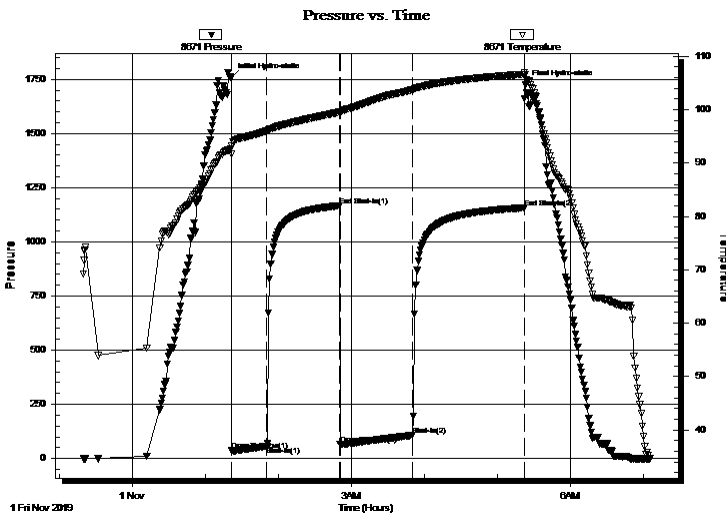
07:05:14

Time On Btm: 2019.11.01 @ 01:21:00

Time Off Btm: 2019.11.01 @ 05:22:45

TEST COMMENT: 30 - IFP - Surface blow slowly built to 9 1/2"
60 - ISI - No Return
60 - FFP - Surface blow built to B.o.B. in 50 mins
90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1758.63	92.63	Initial Hydro-static
1	37.00	91.66	Open To Flow (1)
30	56.43	96.04	Shut-In(1)
89	1166.31	99.51	End Shut-In(1)
90	66.06	99.22	Open To Flow (2)
150	106.50	103.71	Shut-In(2)
241	1157.07	106.62	End Shut-In(2)
242	1723.92	106.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WMCO - 15%w - 25%m - 60%o	1.12
124.00	Free Oil - 100%o	1.27

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66326

DST#: 5

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 23:20:00

Tool Information

Drill Pipe:	Length: 3515.78 ft	Diameter: 3.25 inches	Volume: 36.07 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 36.21 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.77 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3565.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3542.00	
Hydraulic tool	5.00			3547.00	
Jars	5.00			3552.00	
Safety Joint	3.00			3555.00	
Packer	5.00			3560.00	28.00 Bottom Of Top Packer
Packer	5.00			3565.00	
Stubb	1.00			3566.00	
Recorder	0.00	8360	Inside	3566.00	
Recorder	0.00	8671	Outside	3566.00	
Perforations	5.00			3571.00	
Bullnose	3.00			3574.00	9.00 Bottom Packers & Anchor

Total Tool Length: 37.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66326

DST#: 5

ATTN: Robert Hendrix

Test Start: 2019.10.31 @ 23:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

23 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 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
124.00	WMCO - 15%w - 25%m - 60%o	1.117
124.00	Free Oil - 100%o	1.272

Total Length: 248.00 ft Total Volume: 2.389 bbl

Num Fluid Samples: 0

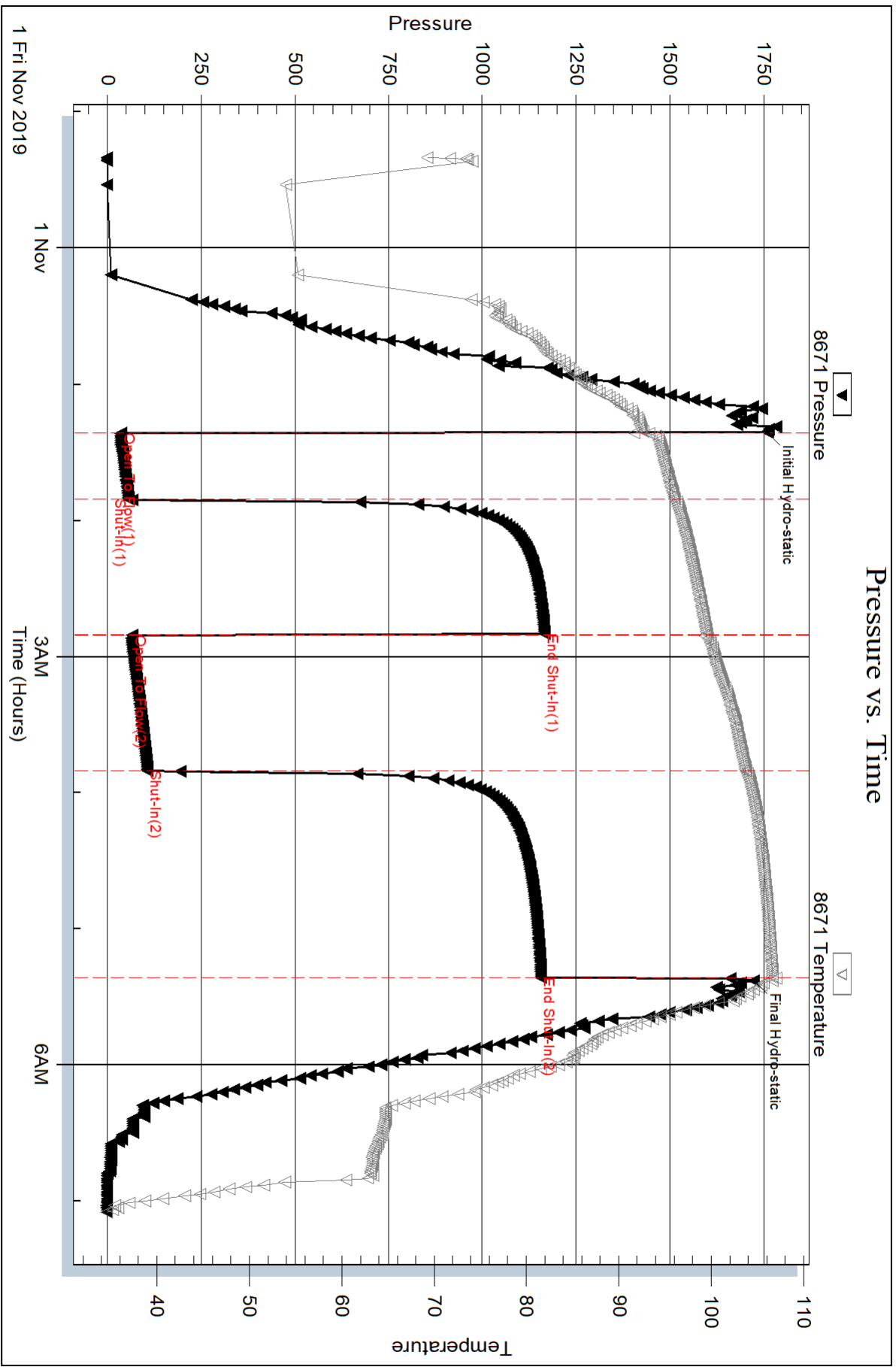
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity - 23 @ 60 deg.



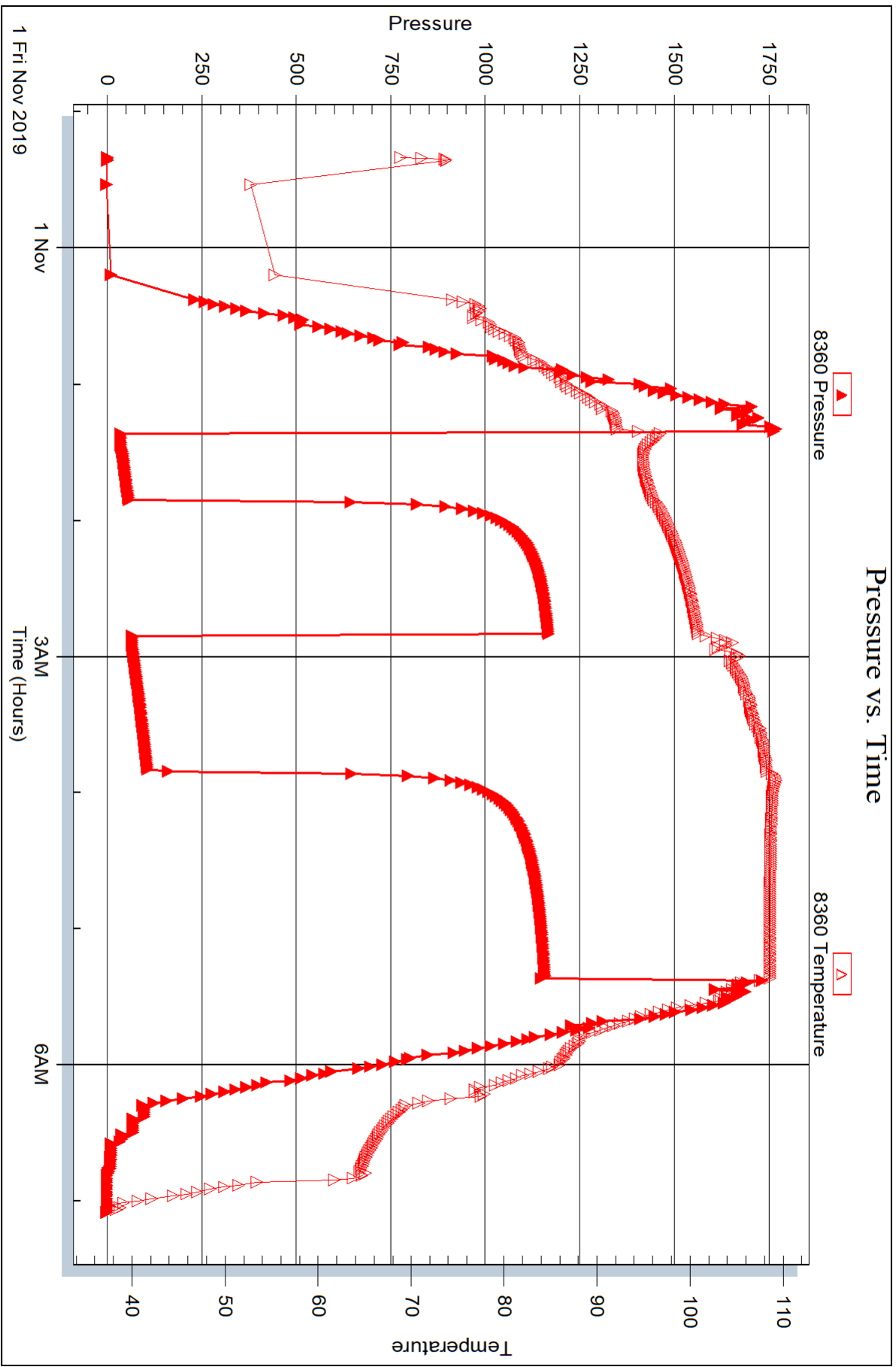
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Rathbun #19-2

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 66326

Printed: 2019.11.04 @ 15:24:19



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Robert Hendrix

Rathbun #19-2

19-11S-19W Ellis,KS

Start Date: 2019.11.01 @ 13:46:00

End Date: 2019.11.01 @ 20:57:45

Job Ticket #: 66327 DST #: 6

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

Printed: 2019.11.04 @ 15:21:55



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66327

DST#: 6

ATTN: Robert Hendrix

Test Start: 2019.11.01 @ 13:46:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:07:15

Time Test Ended: 20:57:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 77

Interval: 3572.00 ft (KB) To 3581.00 ft (KB) (TVD)

Reference Elevations: 1975.00 ft (KB)

Total Depth: 3581.00 ft (KB) (TVD)

1970.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8671 Outside

Press@RunDepth: 63.21 psig @ 3573.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.01 End Date: 2019.11.01

Last Calib.: 2019.11.01

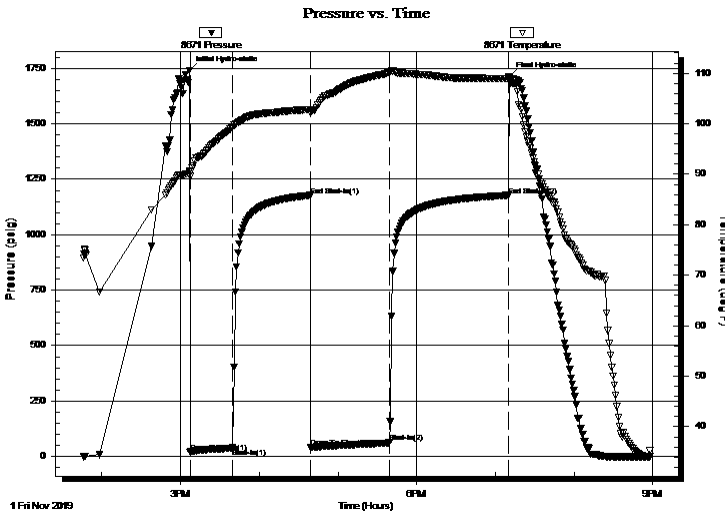
Start Time: 13:46:05 End Time: 20:57:44

Time On Btm: 2019.11.01 @ 15:07:00

Time Off Btm: 2019.11.01 @ 19:10:30

TEST COMMENT: 30 - IFP - Surface blow built up to 3"
60 - ISI - No Return
60 - FFP - Surface blow built up to 2 1/2"
90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1740.47	90.60	Initial Hydro-static
1	20.11	89.58	Open To Flow (1)
33	37.61	99.31	Shut-In(1)
92	1177.14	102.74	End Shut-In(1)
92	41.10	102.06	Open To Flow (2)
152	63.21	110.24	Shut-In(2)
243	1177.36	108.93	End Shut-In(2)
244	1711.01	109.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
112.00	OSMW - Oil Spots - 30%w - 70%w	0.99

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-11S-19W Ellis, KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66327

DST#: 6

ATTN: Robert Hendrix

Test Start: 2019.11.01 @ 13:46:00

Tool Information

Drill Pipe:	Length: 3547.45 ft	Diameter: 3.25 inches	Volume: 36.40 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: 28.99 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 36.54 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.44 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3572.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	37.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3549.00	
Hydraulic tool	5.00			3554.00	
Jars	5.00			3559.00	
Safety Joint	3.00			3562.00	
Packer	5.00			3567.00	28.00 Bottom Of Top Packer
Packer	5.00			3572.00	
Stubb	1.00			3573.00	
Recorder	0.00	8360	Inside	3573.00	
Recorder	0.00	8671	Outside	3573.00	
Perforations	5.00			3578.00	
Bullnose	3.00			3581.00	9.00 Bottom Packers & Anchor

Total Tool Length: 37.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-11S-19W Ellis,KS

250 N Water STE 300
Wichita KS 67202

Rathbun #19-2

Job Ticket: 66327

DST#: 6

ATTN: Robert Hendrix

Test Start: 2019.11.01 @ 13:46:00

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:

22000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
112.00	OSMW - Oil Spots - 30%m - 70%w	0.994

Total Length: 112.00 ft Total Volume: 0.994 bbl

Num Fluid Samples: 0

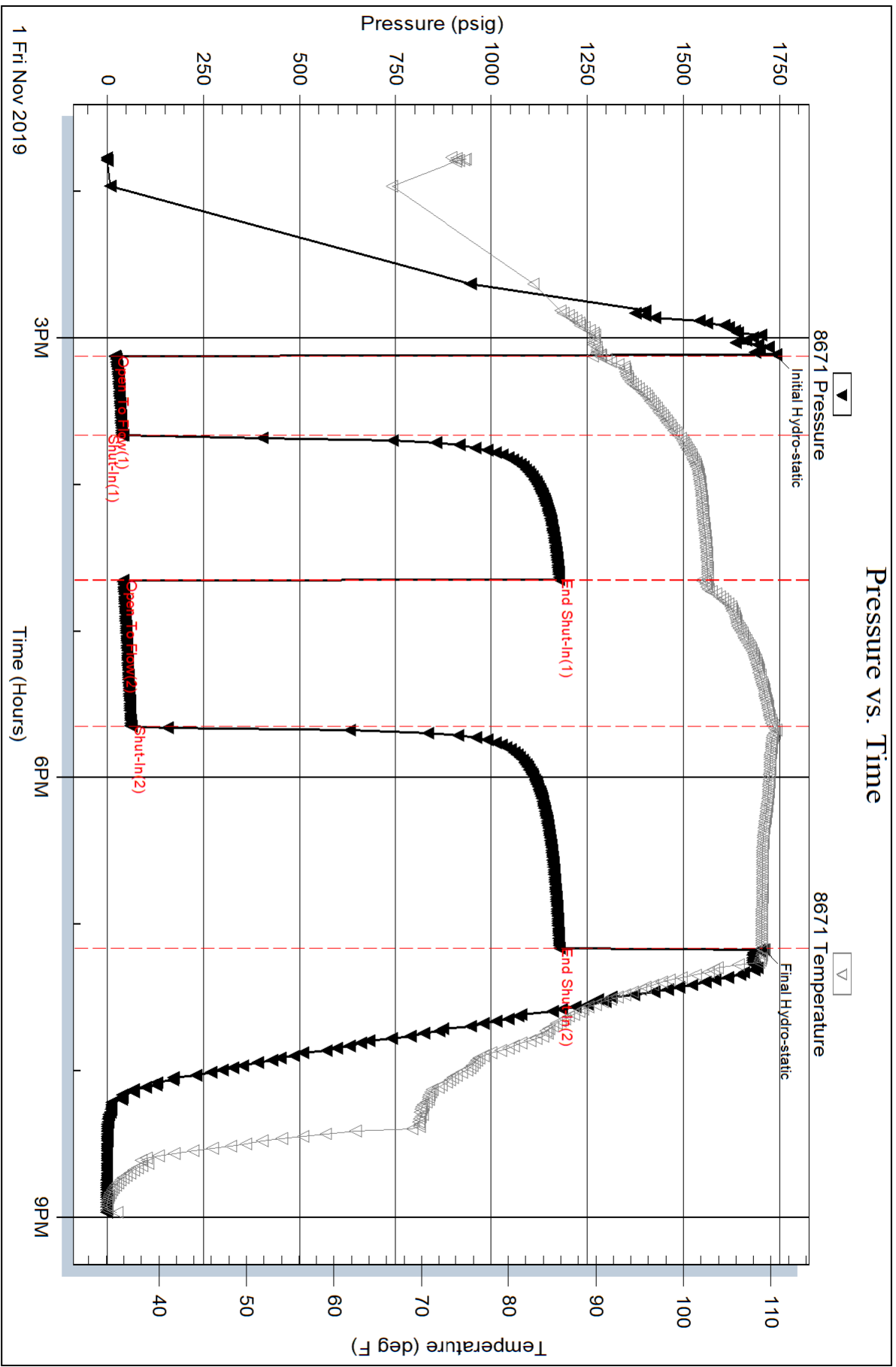
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Salinity - .486 @ 43 deg.



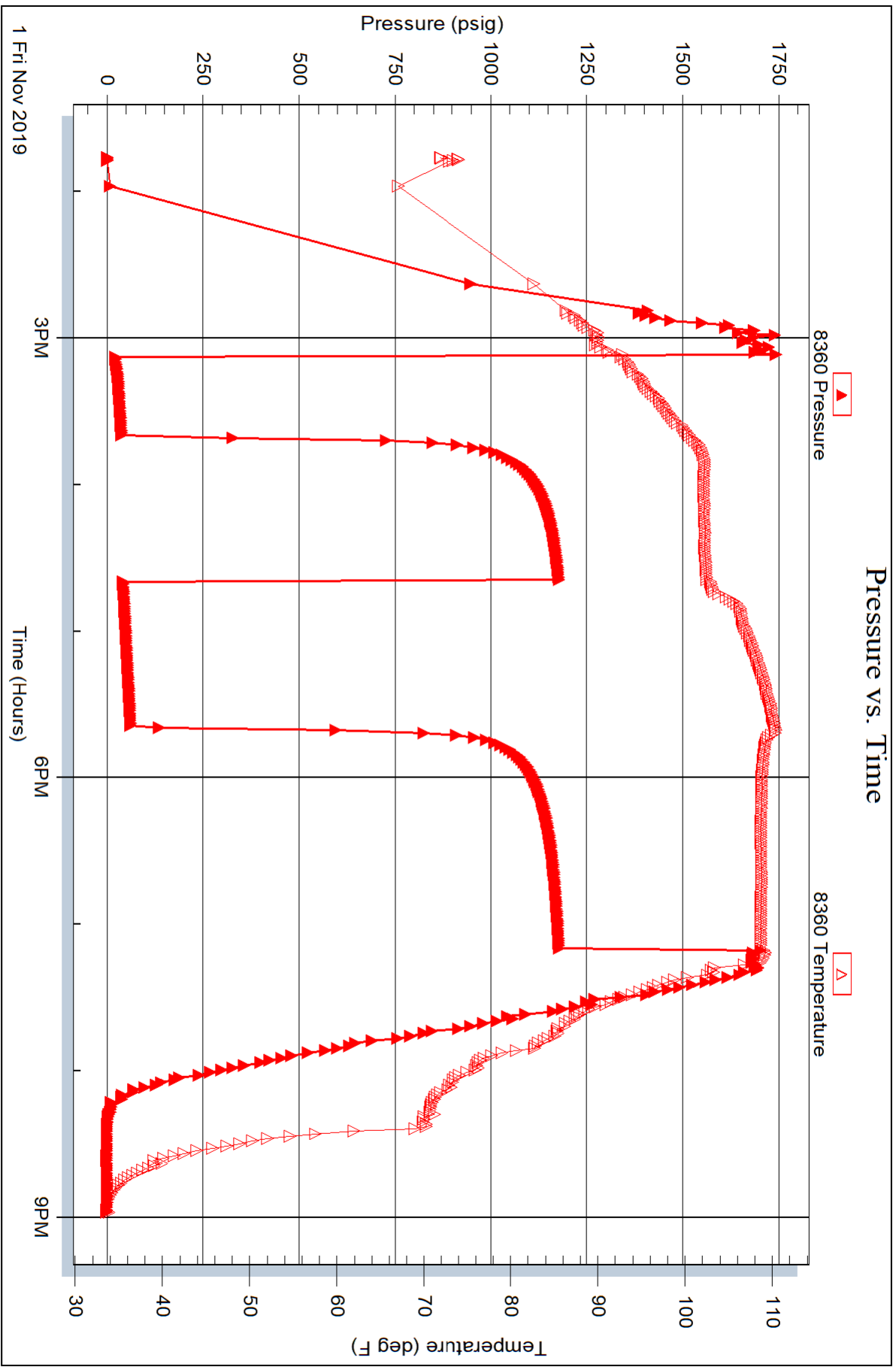
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Rathbun #19-2

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66322

NO.

Well Name & No. Bathbun #19-2 Test No. 1 Date 10-29-19
 Company Murfin Drilling Co. Inc. Elevation 1975 KB 1970 GL
 Address 250 N. Water Ste 300 Wichita ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #16
 Location: Sec. 19 Twp 11 Rge. 19W Co. Ellis State Ks

Interval Tested 3280'-3320' Zone Tested Lans B-D
 Anchor Length 40' Drill Pipe Run 3231.38 Mud Wt. 8.8
 Top Packer Depth 3275' Drill Collars Run 28.99' Vis 60
 Bottom Packer Depth 3280' Wt. Pipe Run 0 WL 7.6
 Total Depth 3320' Chlorides 3300 ppm System LCM 1#

Blow Description IFP - Surface blow built to 3/4"
ISI - No Return
FFP - Faint surface blow started in 10 mins & built up to weak blow
FSI - No Return

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

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

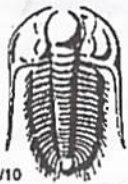
(A) Initial Hydrostatic <u>1596</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>4:00am</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>5:33am</u>
(C) First Final Flow <u>21</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>7:24am</u>
(D) Initial Shut-In <u>811</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>11:24am</u>
(E) Second Initial Flow <u>21</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>12:50pm</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>50 BIT</u> 50	Comments _____
(G) Final Shut-In <u>775</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1576</u>	<input type="checkbox"/> Straddle _____	

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> EM Tool _____
<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
<input type="checkbox"/> Day Standby _____	<input type="checkbox"/> Extra Copies _____
<input type="checkbox"/> Accessibility _____	Sub Total <u>0</u>
Sub Total <u>1575</u>	Total <u>1575</u>

Approved By _____ Our Representative Royal Fisher

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 66323

NO.

Well Name & No. Bathbun #19-2 Test No. 2 Date 10-29-19
 Company Murfin Drilling Co. Inc. Elevation 1975 KB 1970 GL
 Address 250 N Water STE 300 Wichita Ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #16
 Location: Sec. 19 Twp 11S Rge. 19W Co. Ellis State Ks

Interval Tested 3315' - 3339' Zone Tested Lans - E&F
 Anchor Length 24' Drill Pipe Run 3262.32 Mud Wt. 9.1
 Top Packer Depth 3310' Drill Collars Run 28.99' Vis 57
 Bottom Packer Depth 3315' Wt. Pipe Run Ø WL 8.0
 Total Depth 3339' Chlorides 3900 ppm System LCM 1#

Blow Description IFP - Surface blow built up to 1 1/4"
ISI - No Return
FFP - Faint surface started 10 mins in and built to 1/2"
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>32'</u>	<u>OCWM</u>	<u>30</u>	<u>30</u>	<u>40</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

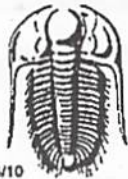
Rec Total 32' BHT 990 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1598 Test 1200 T-On Location 5:30 pm
 (B) First Initial Flow 14 Jars 250 T-Started 6:20 pm
 (C) First Final Flow 27 Safety Joint 75 T-Open 7:40 pm
 (D) Initial Shut-In 335 Circ Sub _____ T-Pulled 11:40 pm
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 1:17 am
 (F) Second Final Flow 35 Mileage 50 RT 50 Comments _____
 (G) Final Shut-In 327 Sampler _____
 (H) Final Hydrostatic 1555 Straddle _____ EM Tool _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Extra Packer _____ Ruined Packer _____
 Final Flow 60 Extra Recorder _____ Extra Copies _____
 Final Shut-In 90 Day Standby _____ Sub Total 0
 Sub Total 1575 Accessibility _____ Total 1575
 Sub Total 1575 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66324

NO.

Well Name & No. Bathbun #19-2 Test No. 3 Date 10-30-19
 Company Murkin Drilling Co. Inc. Elevation 1975 KB 1970 GL
 Address 250 N Water Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murkin #16
 Location: Sec. 19 Twp 11S Rge. 19W Co. Ellis State Ks

Interval Tested 3430' - 3460' Zone Tested Lansing - h
 Anchor Length 30' Drill Pipe Run 3388.85' Mud Wt. 9.1
 Top Packer Depth 3425' Drill Collars Run 28.99' Vis 50
 Bottom Packer Depth 3430' Wt. Pipe Run Ø WL 7.8
 Total Depth 3460' Chlorides 3803 ppm System LCM 2#

Blow Description FFP - Surface blow built up to 3 1/4" in diesel
~~FFP - Surface blow started right away and built to 5 3/4" in diesel~~
FFP - Surface blow started right away and built to 5 3/4" in diesel
EST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>47'</u>	<u>MCO</u>	<u>70</u>		<u>30</u>	
<u>15'</u>	<u>Free Oil</u>	<u>100</u>			
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 62' BHT 101°F Gravity 24 @ 60° API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>11674</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>3:02pm</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:27pm</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>5:05pm</u>
(D) Initial Shut-In <u>1060</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>9:05pm</u>
(E) Second Initial Flow <u>25</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>10:48pm</u>
(F) Second Final Flow <u>35</u>	<input checked="" type="checkbox"/> Mileage <u>50 R/T</u> 50	Comments _____
(G) Final Shut-In <u>1025</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>16570</u>	<input type="checkbox"/> Straddle _____	_____

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> EM Tool _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	<input type="checkbox"/> Extra Copies _____
	<input type="checkbox"/> Accessibility _____	Sub Total <u>0</u>
	Sub Total <u>1575</u>	Total <u>1575</u>

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

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66325

NO.

Well Name & No. Bathbun #19-2 Test No. 4 Date 10-31-19
 Company Murfin Drilling Co. Inc. Elevation 1975 KB 1970 GL
 Address 250 N Water Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #16
 Location: Sec. 19 Twp 11S Rge. 19W Co. Ellis State Ks

Interval Tested 3550' - 3567' Zone Tested Arbuckle
 Anchor Length 17' Drill Pipe Run 3515.78' Mud Wt. 9.2
 Top Packer Depth 3545' Drill Collars Run 28.99' Vis 59
 Bottom Packer Depth 3550' Wt. Pipe Run 0 WL 8.0
 Total Depth 3567' Chlorides 4700 ppm System LCM 2#

Blow Description TFP - Surface blow built to B.O.B in 22 mins
ISI - Faint return started 15 mins in and stayed at a faint blow
FFP - Surface blow built to B.O.B in 35 mins
FSL - Faint return started 10 mins in and stayed at a faint blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>82'</u>	<u>Feet of GWMCO</u>	<u>10</u>	<u>70</u>	<u>5</u>	<u>15</u>
<u>228'</u>	<u>Feet of Free Oil</u>	<u>100</u>			
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

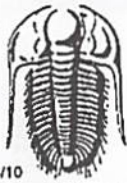
Rec Total 310' BHT 107°F Gravity 23@60 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>1770</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>9:00am</u>
(B) First Initial Flow <u>32</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>9:49am</u>
(C) First Final Flow <u>166</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:28am</u>
(D) Initial Shut-In <u>1158</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>3:28pm</u>
(E) Second Initial Flow <u>78</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>5:28pm</u>
(F) Second Final Flow <u>130</u>	<input checked="" type="checkbox"/> Mileage <u>50 R/T 50</u>	Comments
(G) Final Shut-In <u>1145</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1735</u>	<input type="checkbox"/> Straddle	

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1575</u>	Total <u>1575</u>

Approved By _____ Our Representative Royal Foster MP/DST Disc't _____

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66326

NO.

Well Name & No. Bathbun #19-2 Test No. 5 Date 10-31-19
 Company Murfin Drilling Co, Inc. Elevation 1975 KB 1970 GL
 Address 250 N Water St 300 Wichita Ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #16
 Location: Sec. 19 Twp 11S Rge. 19W Co. Ellis State Ks

Interval Tested 3565'-3574' Zone Tested Arbuckle
 Anchor Length 9' Drill Pipe Run 3515.78' Mud Wt. 9.2
 Top Packer Depth 3560' Drill Collars Run 28.99' Vis 59
 Bottom Packer Depth 3565' Wt. Pipe Run 0 WL 8.0
 Total Depth 3574' Chlorides 4700 ppm System LCM 2#

Blow Description IFP-Surface blow slowly built up to 9 1/2"
ISI - No return
FFP-Surface blow built to B.O.B. in 50 mins.
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>124'</u>	<u>WMCO</u>	<u>60</u>	<u>15</u>	<u>25</u>	
<u>124'</u>	<u>Free Oil</u>	<u>100</u>			
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 248' BHT 107°F Gravity 23@60 API RW @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 1759
- (B) First Initial Flow 37
- (C) First Final Flow 56
- (D) Initial Shut-In 1166
- (E) Second Initial Flow 166
- (F) Second Final Flow 107
- (G) Final Shut-In 1157
- (H) Final Hydrostatic 1724

- Test 1200
 - Jars 250
 - Safety Joint 75
 - Circ Sub _____
 - Hourly Standby _____
 - Mileage 50 R/T 50
 - Sampler _____
 - Straddle _____
 - Shale Packer _____
 - Extra Packer _____
 - Extra Recorder _____
 - Day Standby _____
 - Accessibility _____
- Sub Total 1575

- T-On Location 10:05pm
- T-Started 11:20pm
- T-Open 1:20am
- T-Pulled 5:20am
- T-Out 7:05am

Comments _____

EM Tool _____

Ruined Shale Packer _____

Ruined Packer _____

Extra Copies _____

Sub Total 0

Total 1575

Initial Open 30

Initial Shut-In 60

Final Flow 60

Final Shut-In 90

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66327

NO.

Well Name & No. Bathbun #19-2 Test No. 6 Date 11-1-19
 Company Murfin Drilling Co, Inc. Elevation 1975 KB 1970 GL
 Address 250 N Water Ste 300 Wichita ks 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #16
 Location: Sec. 19 Twp 11S Rge. 19 W Co. Ellis State ks

Interval Tested 3572' - 3581' Zone Tested Arbuckle
 Anchor Length 9' Drill Pipe Run 3547.45 Mud Wt. 9.3
 Top Packer Depth 3567' Drill Collars Run 28.99' Vis 54
 Bottom Packer Depth 3572' Wt. Pipe Run 0 WL 8.0
 Total Depth 3581' Chlorides 5600 ppm System LCM 3#

Blow Description JFP - Surface blow built up to 3"
IST - No return
EFP - Surface blow built up to 2 1/2"
FSL - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>112</u>	<u>asmw</u>	<u>spots</u>	<u>70</u>	<u>30</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 112' BHT 109°F Gravity _____ API RW 486 @ 4.3 °F Chlorides 22,000 ppm
 (A) Initial Hydrostatic 1740 Test 1200 T-On Location 1:00 pm
 (B) First Initial Flow 20 Jars 250 T-Started 1:46 pm
 (C) First Final Flow 38 Safety Joint 75 T-Open 3:08 pm
 (D) Initial Shut-In 1177 Circ Sub _____ T-Pulled 7:08 pm
 (E) Second Initial Flow 41 Hourly Standby _____ T-Out 8:58 pm
 (F) Second Final Flow 63 Mileage 50 R/T 50 Comments _____
 (G) Final Shut-In 1177 Sampler _____
 (H) Final Hydrostatic 1711 Straddle _____ EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1575
 Sub Total 1575 MP/DST Disc' _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Approved By _____ Our Representative Royal Foster

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