



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

Alan Unit #1-26

26-16s-37w Wichita,KS

Start Date: 2017.03.20 @ 04:53:22

End Date: 2017.03.20 @ 13:26:52

Job Ticket #: 65675 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.29 @ 10:47:53

Mull Drilling Co Inc
26-16s-37w Wichita,KS
Alan Unit #1-26
DST # 1
LKC A
2017.03.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

26-16s-37w Wichita, KS

Alan Unit #1-26

Job Ticket: 65675

DST#: 1

Test Start: 2017.03.20 @ 04:53:22

GENERAL INFORMATION:

Formation: **LKC A**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:42:52
 Time Test Ended: 13:26:52
 Interval: **4020.00 ft (KB) To 4060.00 ft (KB) (TVD)**
 Total Depth: 4060.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 3354.00 ft (KB)
 3344.00 ft (CF)
 KB to GR/CF: 10.00 ft

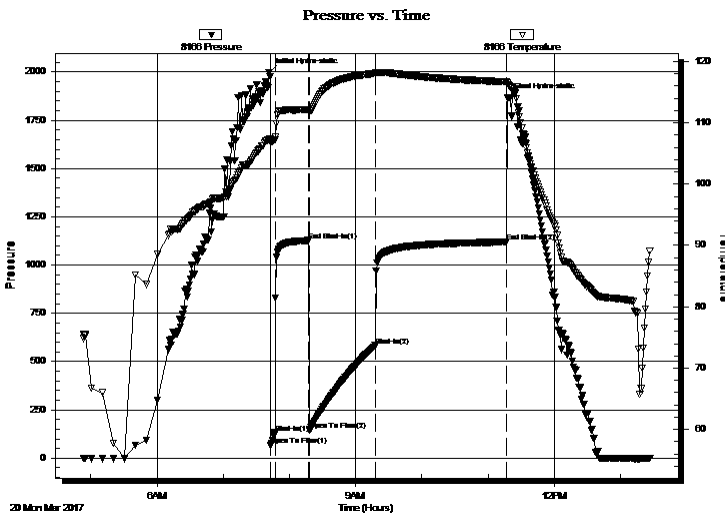
Serial #: 8166

Outside

Press@RunDepth: 582.19 psig @ 4021.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.20 End Date: 2017.03.20 Last Calib.: 2017.03.20
 Start Time: 04:53:27 End Time: 13:26:52 Time On Btm: 2017.03.20 @ 07:41:22
 Time Off Btm: 2017.03.20 @ 11:17:22

TEST COMMENT: IF: BOB in 4 min.
 IS: No return.
 FF: BOB in 4 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1997.92	107.21	Initial Hydro-static
2	65.64	106.87	Open To Flow (1)
6	131.43	107.20	Shut-In(1)
36	1127.36	112.16	End Shut-In(1)
37	143.63	111.90	Open To Flow (2)
96	582.19	118.01	Shut-In(2)
215	1119.44	116.67	End Shut-In(2)
216	1865.53	116.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
930.00	mcw 95%w 5%m	11.39
325.00	nw 50%w 50%m	4.56

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 65675 **DST#: 1**
Test Start: 2017.03.20 @ 04:53:22

Tool Information

Drill Pipe:	Length: 3835.00 ft	Diameter: 3.80 inches	Volume: 53.79 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 54.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4020.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	67.00 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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Stubb	1.00			3994.00	
Shut In Tool	5.00			3999.00	
Hydraulic tool	5.00			4004.00	
Jars	5.00			4009.00	
Safety Joint	2.00			4011.00	
Packer	5.00			4016.00	27.00 Bottom Of Top Packer
Packer	4.00			4020.00	
Stubb	1.00			4021.00	
Recorder	0.00	8875	Inside	4021.00	
Recorder	0.00	8166	Outside	4021.00	
Perforations	1.00			4022.00	
Change Over Sub	1.00			4023.00	
Drill Pipe	31.00			4054.00	
Change Over Sub	1.00			4055.00	
Bullnose	5.00			4060.00	40.00 Bottom Packers & Anchor

Total Tool Length: 67.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

26-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

Alan Unit #1-26

Job Ticket: 65675

DST#: 1

ATTN: Kevin Kessler

Test Start: 2017.03.20 @ 04:53:22

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.35 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
930.00	mcw 95%w 5%m	11.388
325.00	mw 50%w 50%m	4.559

Total Length: 1255.00 ft Total Volume: 15.947 bbl

Num Fluid Samples: 0

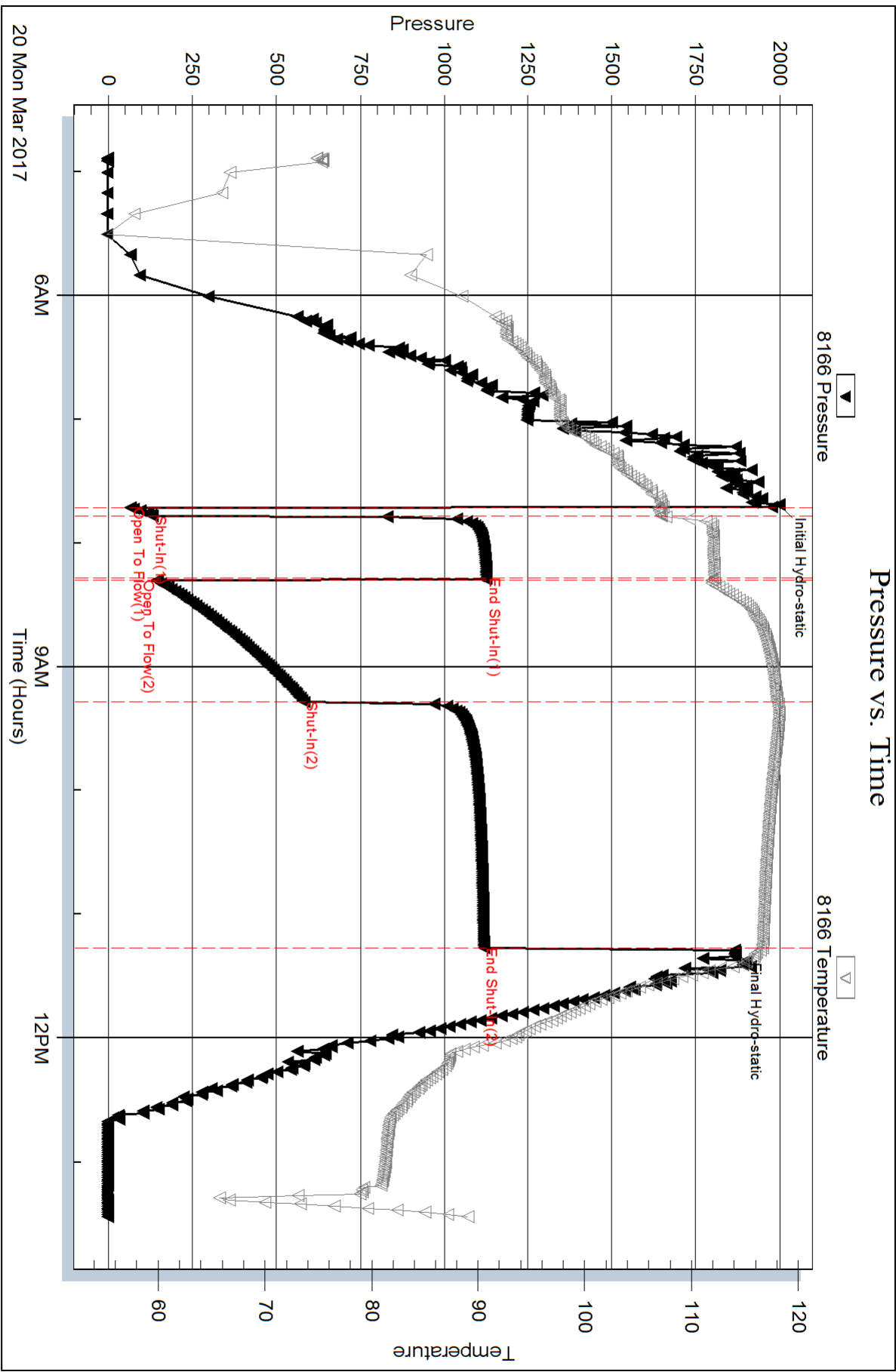
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .27@81=19000



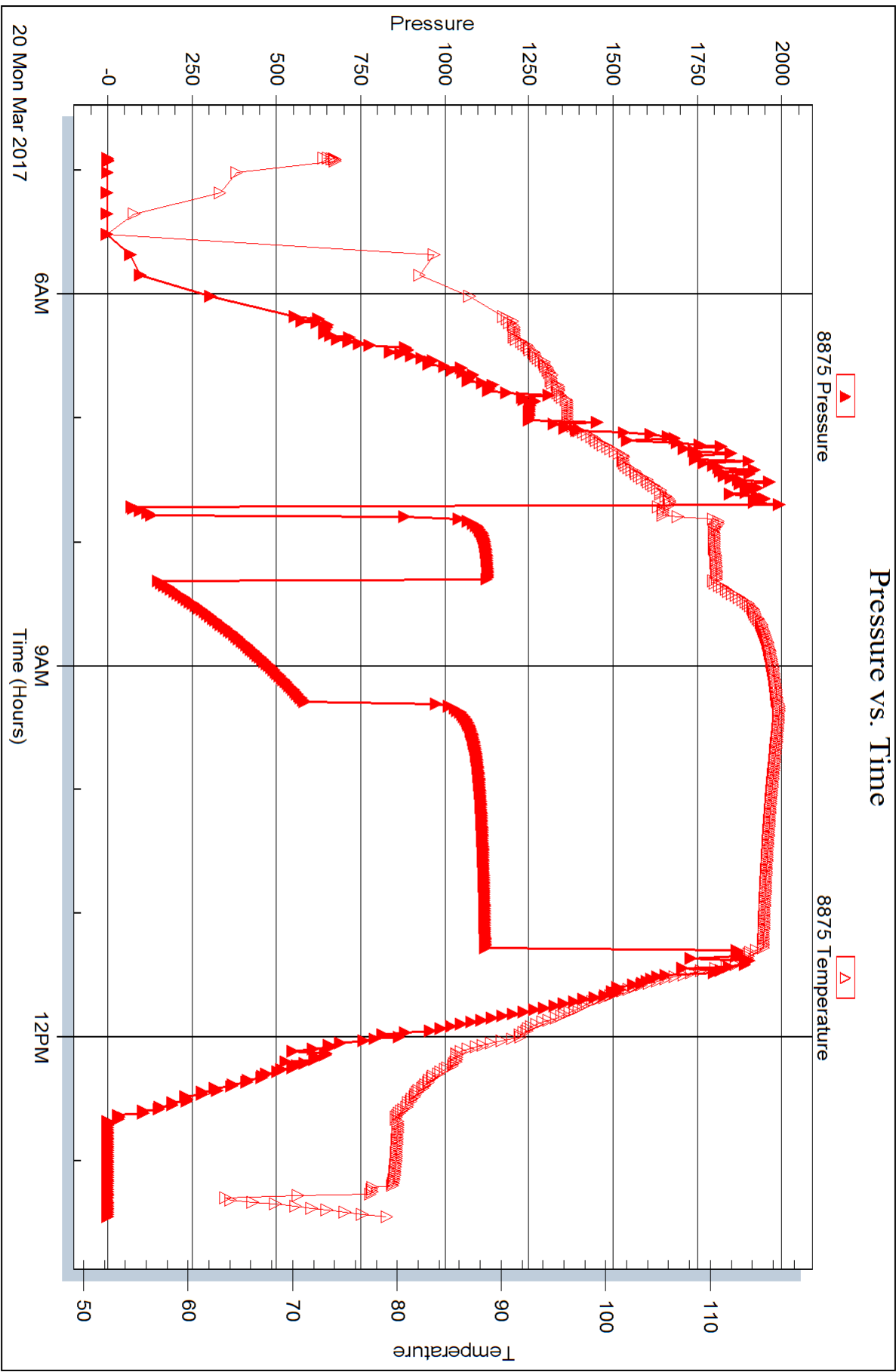
Serial #: 8875

Inside

Mull Drilling Co Inc

Alan Unit #1-26

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65675

Printed: 2017.03.29 @ 10:47:54



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

Alan Unit #1-26

26-16s-37w Wichita,KS

Start Date: 2017.03.20 @ 21:46:21

End Date: 2017.03.21 @ 06:25:51

Job Ticket #: 63776 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.29 @ 10:47:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkw y
 Wichita, KS 67206
 ATTN: Kevin Kessler

26-16s-37w Wichita, KS

Alan Unit #1-26

Job Ticket: 63776

DST#: 2

Test Start: 2017.03.20 @ 21:46:21

GENERAL INFORMATION:

Formation: **LKC C-D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:59:51
 Time Test Ended: 06:25:51
 Interval: **4050.00 ft (KB) To 4100.00 ft (KB) (TVD)**
 Total Depth: 4100.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 79
 Reference Elevations: 3354.00 ft (KB)
 3344.00 ft (CF)
 KB to GR/CF: 10.00 ft

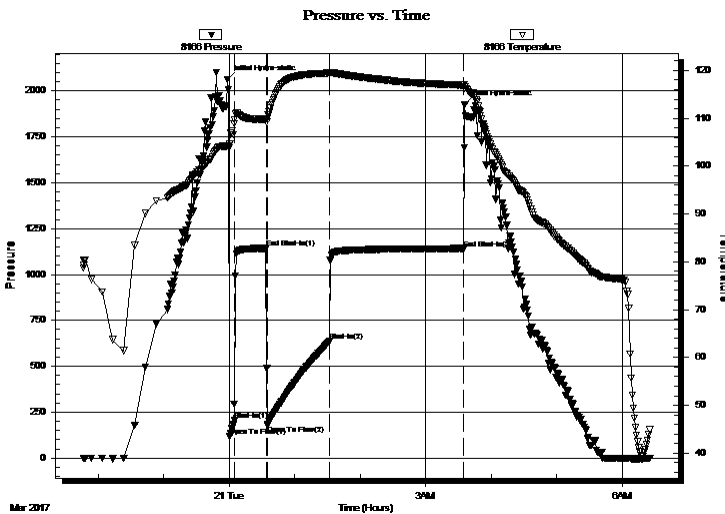
Serial #: 8166

Outside

Press@RunDepth: 634.41 psig @ 4051.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.20 End Date: 2017.03.21 Last Calib.: 2017.03.21
 Start Time: 21:46:26 End Time: 06:25:51 Time On Btm: 2017.03.20 @ 23:58:21
 Time Off Btm: 2017.03.21 @ 03:35:51

TEST COMMENT: IF: BOB in 4 min.
 IS: No return.
 FF: BOB in 4 min.
 FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2063.15	104.31	Initial Hydro-static
2	116.21	103.92	Open To Flow (1)
7	203.39	109.69	Shut-In(1)
36	1142.43	109.80	End Shut-In(1)
37	176.15	109.95	Open To Flow (2)
94	634.41	119.43	Shut-In(2)
217	1141.05	116.92	End Shut-In(2)
218	1925.49	116.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 80%w 20%m	0.95
217.00	w cm 10%w 90%m	3.04

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63776 **DST#: 2**
Test Start: 2017.03.20 @ 21:46:21

Tool Information

Drill Pipe:	Length: 3867.00 ft	Diameter: 3.80 inches	Volume: 54.24 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 55.14 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4050.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	77.00 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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Stubb	1.00			4024.00	
Shut In Tool	5.00			4029.00	
Hydraulic tool	5.00			4034.00	
Jars	5.00			4039.00	
Safety Joint	2.00			4041.00	
Packer	5.00			4046.00	27.00 Bottom Of Top Packer
Packer	4.00			4050.00	
Stubb	1.00			4051.00	
Recorder	0.00	8875	Inside	4051.00	
Recorder	0.00	8166	Outside	4051.00	
Perforations	10.00			4061.00	
Change Over Sub	1.00			4062.00	
Drill Pipe	32.00			4094.00	
Change Over Sub	1.00			4095.00	
Bullnose	5.00			4100.00	50.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc

26-16s-37w Wichita,KS

1700 N Waterfront Pkwy
Wichita, KS 67206

Alan Unit #1-26

Job Ticket: 63776

DST#: 2

ATTN: Kevin Kessler

Test Start: 2017.03.20 @ 21:46:21

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

25000 ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.14 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw 80%w 20%m	0.951
217.00	w cm 10%w 90%m	3.044

Total Length: ft Total Volume: 15.301 bbl

Num Fluid Samples: 0

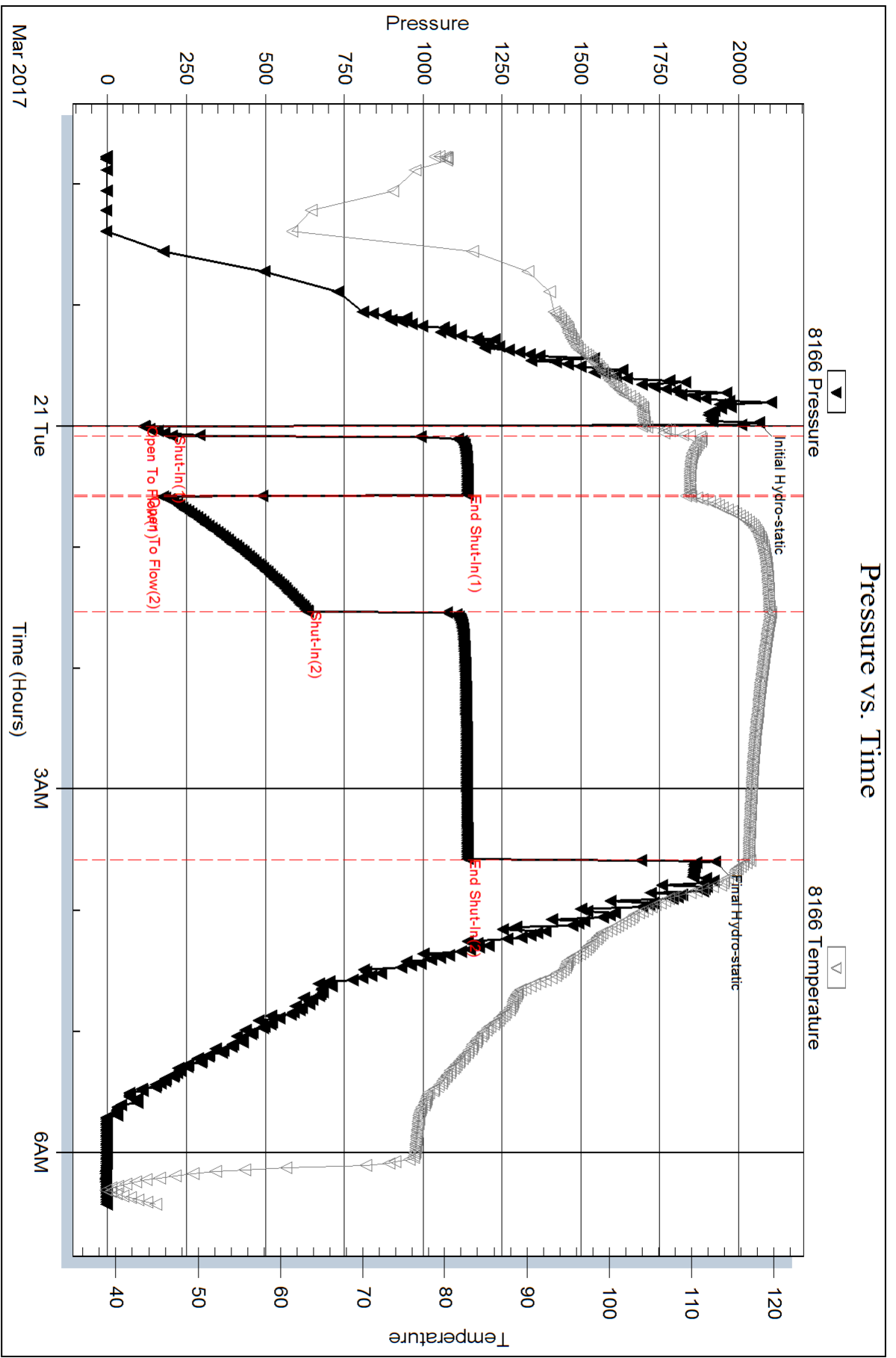
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .44@44=25000



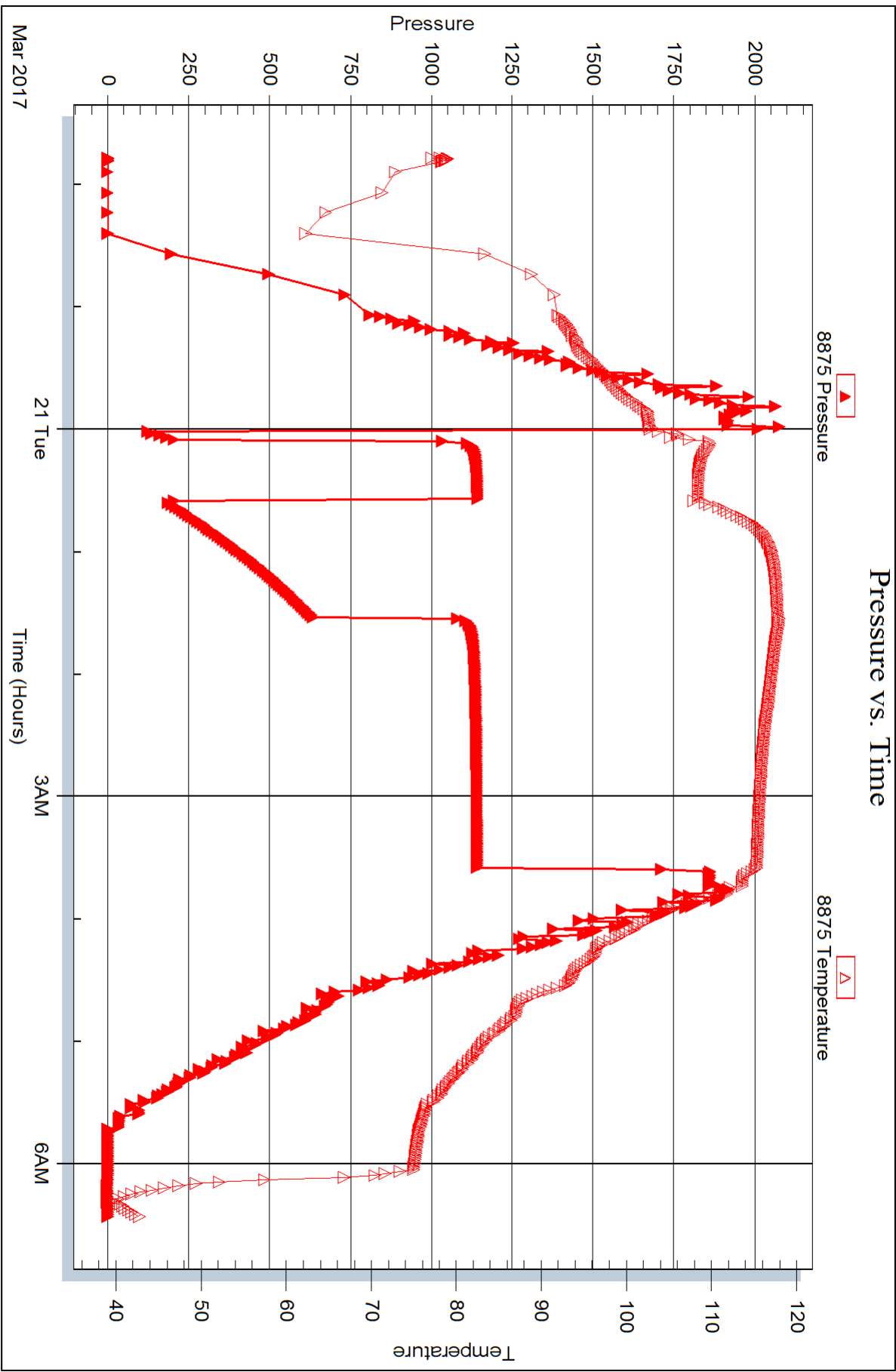
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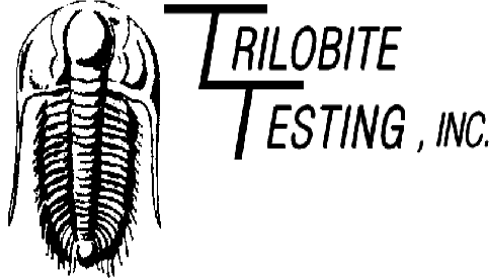
Inside

Mull Drilling Co Inc

Alan Unit #1-26

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

Alan Unit #1-26

26-16s-37w Wichita,KS

Start Date: 2017.03.21 @ 00:17:15

End Date: 2017.03.21 @ 08:35:15

Job Ticket #: 63702 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.29 @ 10:47:08



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS

Alan Unit #1-26

Job Ticket: 63702

DST#: 3

Test Start: 2017.03.21 @ 00:17:15

GENERAL INFORMATION:

Formation: **LKC H-I**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:44:00
 Time Test Ended: 08:35:15
 Interval: **4240.00 ft (KB) To 4285.00 ft (KB) (TVD)**
 Total Depth: 4285.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3354.00 ft (KB)
 3344.00 ft (CF)
 KB to GR/CF: 10.00 ft

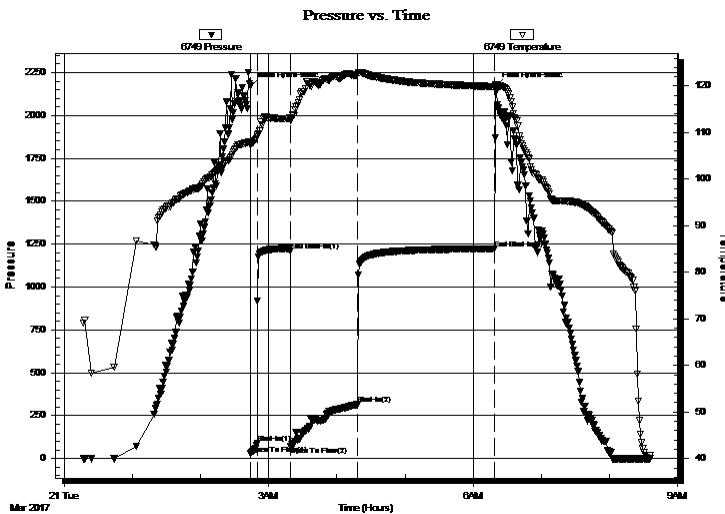
Serial #: 6749

Outside

Press@RunDepth: 314.57 psig @ 4280.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.21 End Date: 2017.03.21 Last Calib.: 2017.03.22
 Start Time: 00:17:15 End Time: 08:35:15 Time On Btm: 2017.03.21 @ 02:43:45
 Time Off Btm: 2017.03.21 @ 06:19:30

TEST COMMENT: IF: Built to 2" blow
 IS: No return blow
 FF: BOB in 50 min.
 FS: No return blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2170.54	107.99	Initial Hydro-static
1	27.19	107.29	Open To Flow (1)
7	87.59	109.16	Shut-In(1)
36	1211.93	113.06	End Shut-In(1)
36	69.10	112.65	Open To Flow (2)
95	314.57	122.48	Shut-In(2)
215	1223.59	119.88	End Shut-In(2)
216	2169.04	120.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
181.00	mcw 30%m 70%w (collars)	0.89
124.00	w cm 40%w 60%m	1.74
139.00	mcw 30%m 70%w	1.95

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita, KS
Alan Unit #1-26
Job Ticket: 63702 **DST#: 3**
Test Start: 2017.03.21 @ 00:17:15

Tool Information

Drill Pipe:	Length: 4052.00 ft	Diameter: 3.80 inches	Volume: 56.84 bbl	Tool Weight: 2000.00 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: 181.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 57.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4240.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4213.00	
Shut In Tool	5.00			4218.00	
Hydraulic tool	5.00			4223.00	
Jars	5.00			4228.00	
Safety Joint	3.00			4231.00	
Packer	5.00			4236.00	28.00 Bottom Of Top Packer
Packer	4.00			4240.00	
Stubb	1.00			4241.00	
Perforations	6.00			4247.00	
Change Over Sub	1.00			4248.00	
Drill Pipe	31.00			4279.00	
Change Over Sub	1.00			4280.00	
Recorder	0.00	8672	Inside	4280.00	
Recorder	0.00	6749	Outside	4280.00	
Bullnose	5.00			4285.00	45.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc
1700 N Waterfront Pkw y
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63702 **DST#: 3**
Test Start: 2017.03.21 @ 00:17:15

Mud and Cushion Information

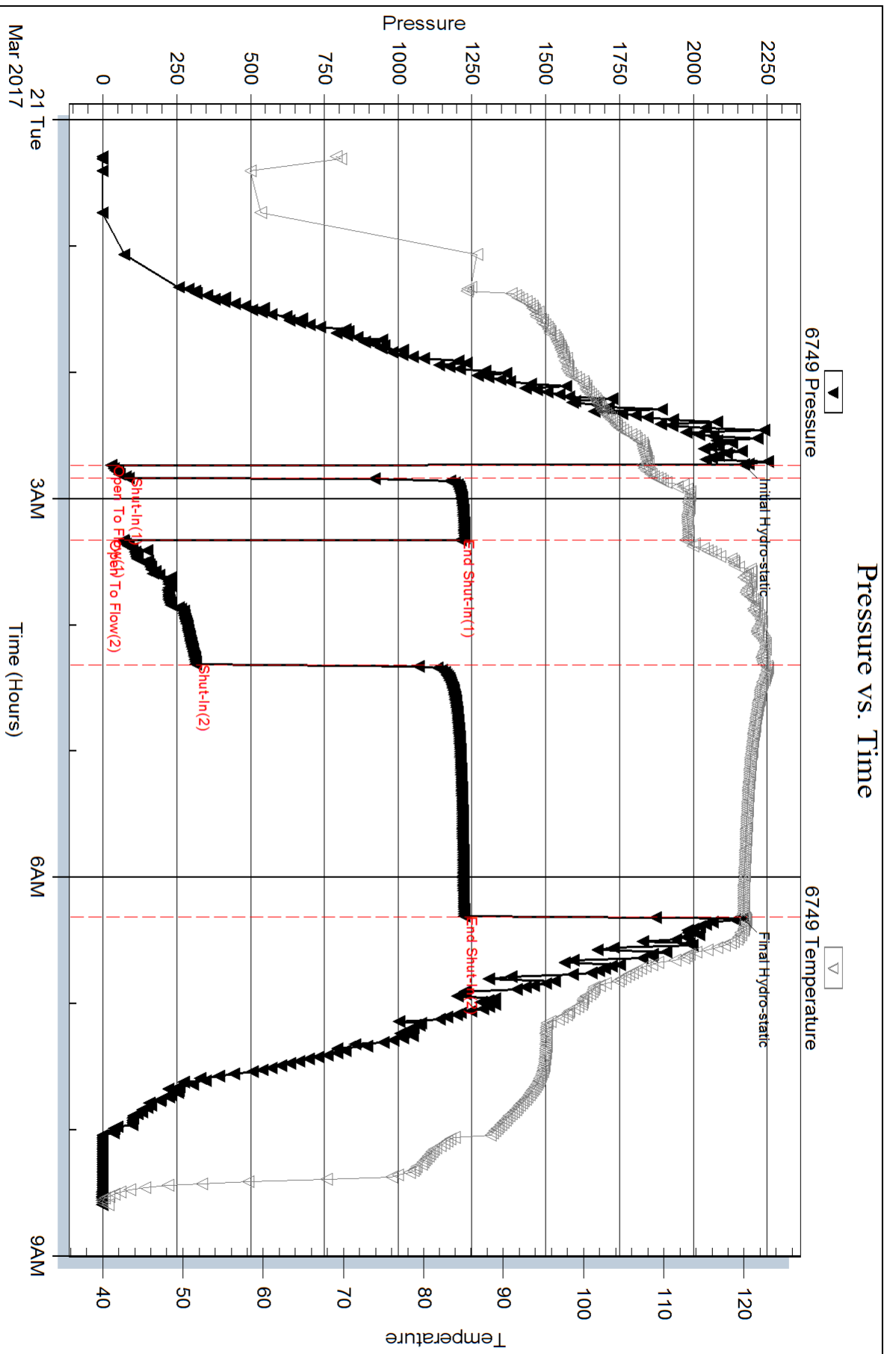
Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 22000 ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.16 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 4000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
181.00	mcw 30%m 70%w (collars)	0.890
124.00	w cm 40%w 60%m	1.739
139.00	mcw 30%m 70%w	1.950

Total Length: 444.00 ft Total Volume: 4.570 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: RW= 40.9@ .589= 22,000 ppm



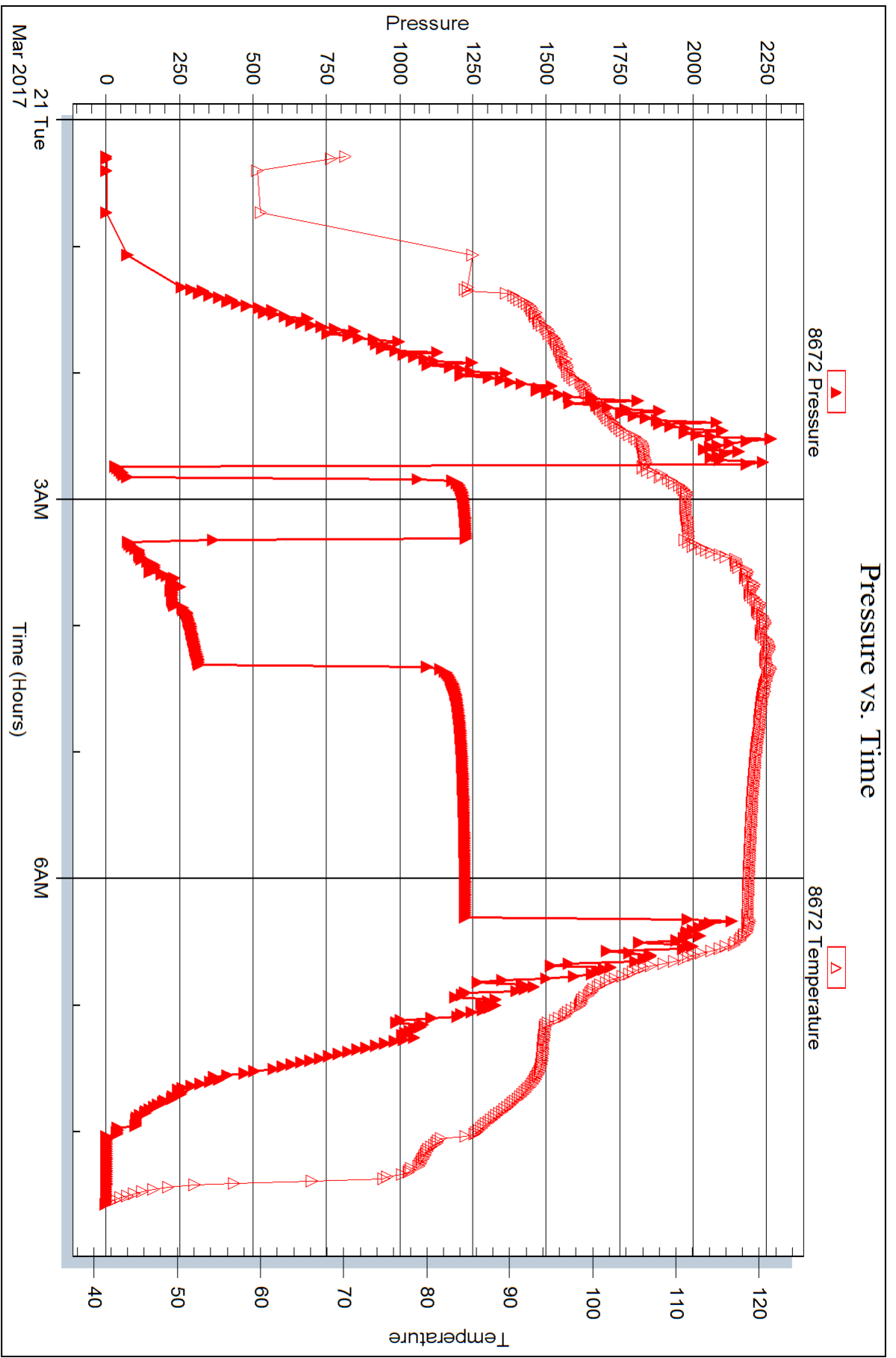
Serial #: 8672

Inside

Mull Drilling Co Inc

Alan Unit #1-26

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63702

Printed: 2017.03.29 @ 10:47:09



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

Alan Unit #1-26

26-16s-37w Wichita,KS

Start Date: 2017.03.22 @ 23:11:15

End Date: 2017.03.23 @ 08:01:45

Job Ticket #: 63703 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.29 @ 10:46:43



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS

Alan Unit #1-26

Job Ticket: 63703

DST#: 4

Test Start: 2017.03.22 @ 23:11:15

GENERAL INFORMATION:

Formation: **LKC L - Pleasanto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:32:45

Time Test Ended: 08:01:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

Interval: 4340.00 ft (KB) To 4415.00 ft (KB) (TVD)

Reference Elevations: 3354.00 ft (KB)

Total Depth: 4415.00 ft (KB) (TVD)

3344.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 6749

Outside

Press@RunDepth: 1075.73 psig @ 4410.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.03.22

End Date:

2017.03.23

Last Calib.:

2017.03.23

Start Time: 23:11:15

End Time:

08:01:45

Time On Btm:

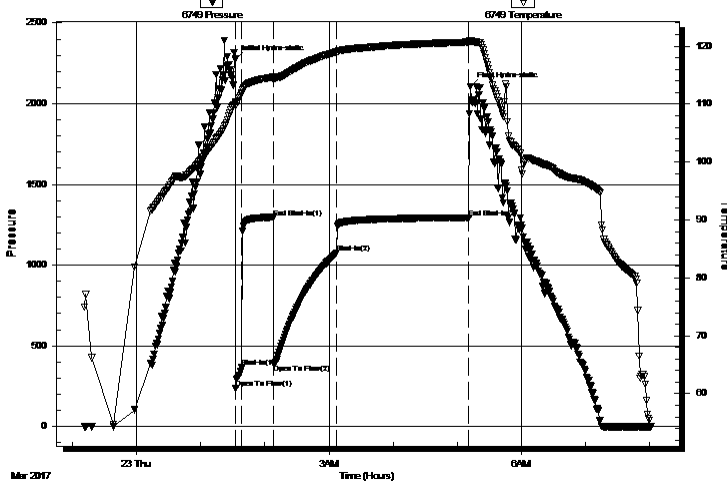
2017.03.23 @ 01:32:30

Time Off Btm:

2017.03.23 @ 05:12:15

TEST COMMENT: IF:BOB in 1 1/2 min.
IS:No return blow
FF:BOB in 1 1/2 min.
FS:No return blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2271.25	110.30	Initial Hydro-static
1	239.18	109.76	Open To Flow (1)
6	368.79	111.86	Shut-In(1)
36	1294.90	114.67	End Shut-In(1)
36	388.70	114.22	Open To Flow (2)
95	1075.73	119.02	Shut-In(2)
219	1294.01	120.69	End Shut-In(2)
220	2104.55	120.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1050.00	mcw 5% m 95% w (collars 182 ft)	13.07
310.00	w cm 35% w 65% m	4.35
496.00	w cm 20% w 80% m	6.96

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63703 **DST#: 4**
Test Start: 2017.03.22 @ 23:11:15

Tool Information

Drill Pipe:	Length: 4150.00 ft	Diameter: 3.80 inches	Volume: 58.21 bbl	Tool Weight: 2000.00 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4340.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	75.00 ft			
Tool Length:	103.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4313.00	
Shut In Tool	5.00			4318.00	
Hydraulic tool	5.00			4323.00	
Jars	5.00			4328.00	
Safety Joint	3.00			4331.00	
Packer	5.00			4336.00	28.00 Bottom Of Top Packer
Packer	4.00			4340.00	
Stubb	1.00			4341.00	
Perforations	3.00			4344.00	
Change Over Sub	1.00			4345.00	
Drill Pipe	64.00			4409.00	
Change Over Sub	1.00			4410.00	
Recorder	0.00	8672	Inside	4410.00	
Recorder	0.00	6749	Outside	4410.00	
Bullnose	5.00			4415.00	75.00 Bottom Packers & Anchor

Total Tool Length: 103.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63703 **DST#: 4**
Test Start: 2017.03.22 @ 23:11:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 23000 ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.95 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5400.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

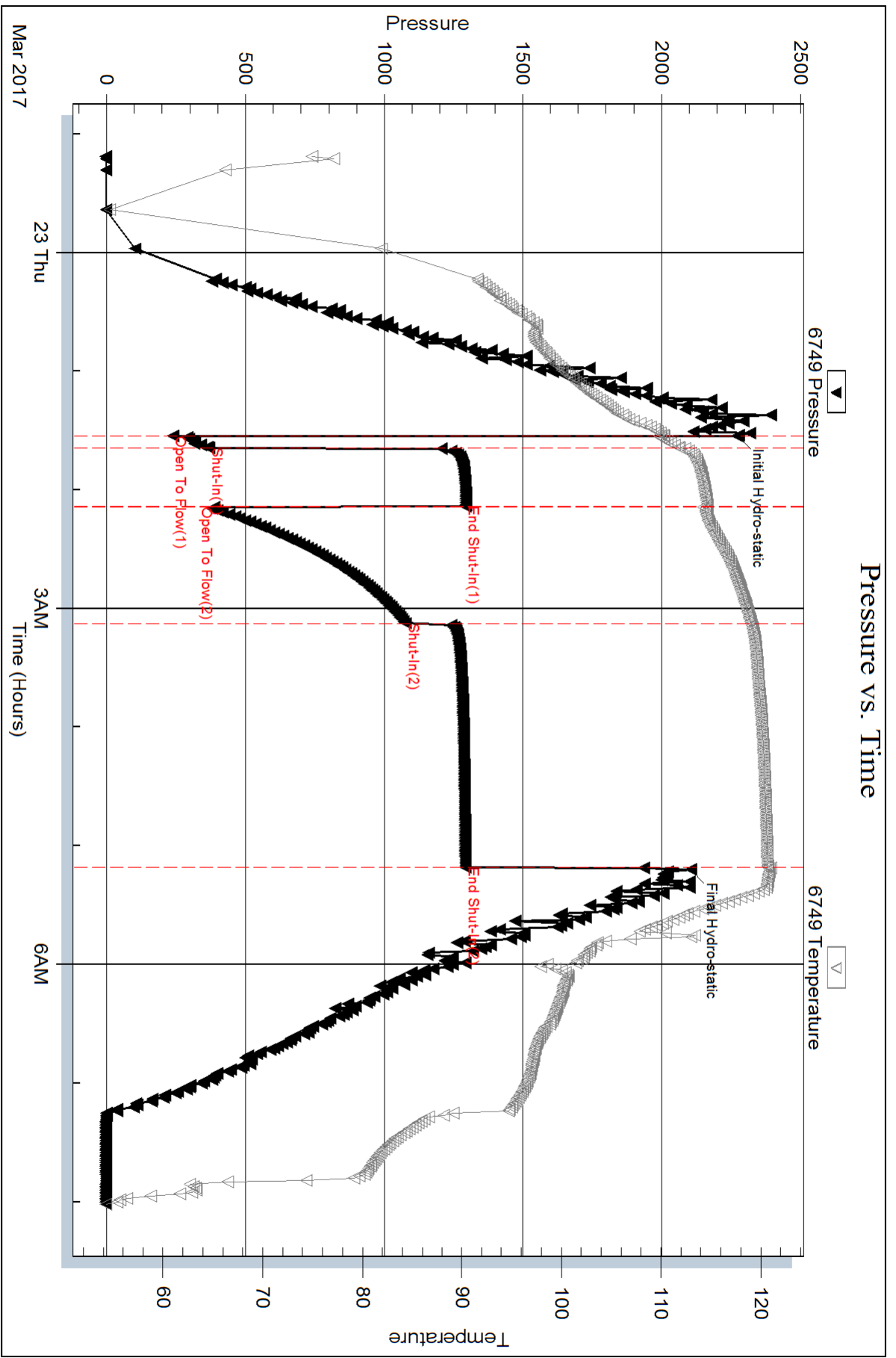
Length ft	Description	Volume bbl
1050.00	mcw 5% m 95% w (collars 182 ft)	13.071
310.00	w cm 35% w 65% m	4.348
496.00	w cm 20% w 80% m	6.958

Total Length: 1856.00 ft Total Volume: 24.377 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RW= .482@ 49.2*= 23,000 ppm



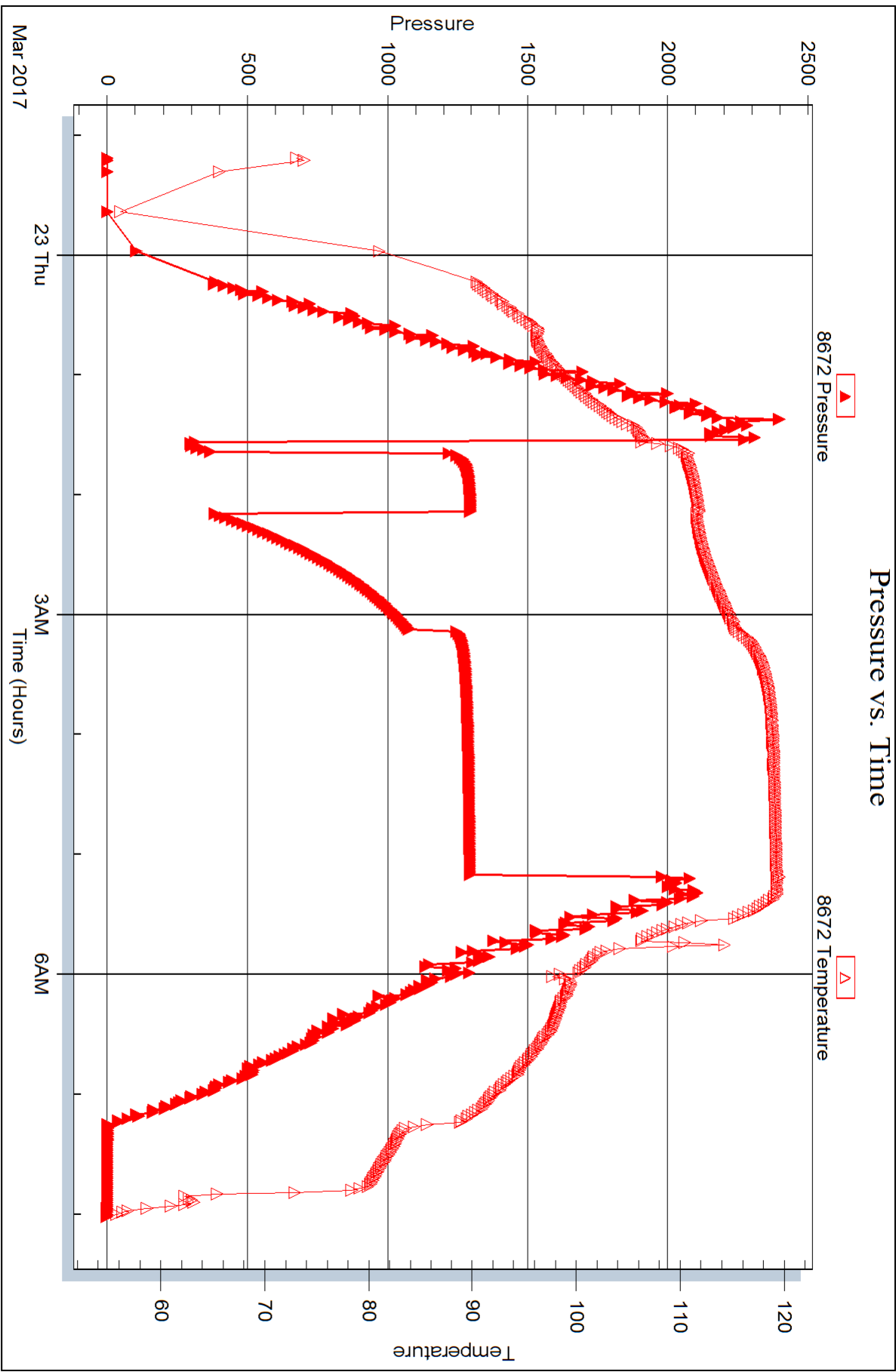
Serial #: 8672

Inside

Mull Drilling Co Inc

Alan Unit #1-26

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 63703

Printed: 2017.03.29 @ 10:46:44



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Co Inc**

1700 N Waterfront Pkwy
Wichita, KS 67206

ATTN: Kevin Kessler

Alan Unit #1-26

26-16s-37w Wichita,KS

Start Date: 2017.03.23 @ 19:16:15

End Date: 2017.03.24 @ 07:26:15

Job Ticket #: 63704 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2017.03.29 @ 10:45:31



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co Inc
 1700 N Waterfront Pkwy
 Wichita, KS 67206
 ATTN: Kevin Kessler

26-16s-37w Wichita, KS

Alan Unit #1-26

Job Ticket: 63704

DST#: 5

Test Start: 2017.03.23 @ 19:16:15

GENERAL INFORMATION:

Formation: **Marmaton**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:09:30 Tester: Mike Roberts
 Time Test Ended: 07:26:15 Unit No: 81
 Interval: **4420.00 ft (KB) To 4495.00 ft (KB) (TVD)** Reference Elevations: 3354.00 ft (KB)
 Total Depth: 4495.00 ft (KB) (TVD) 3344.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

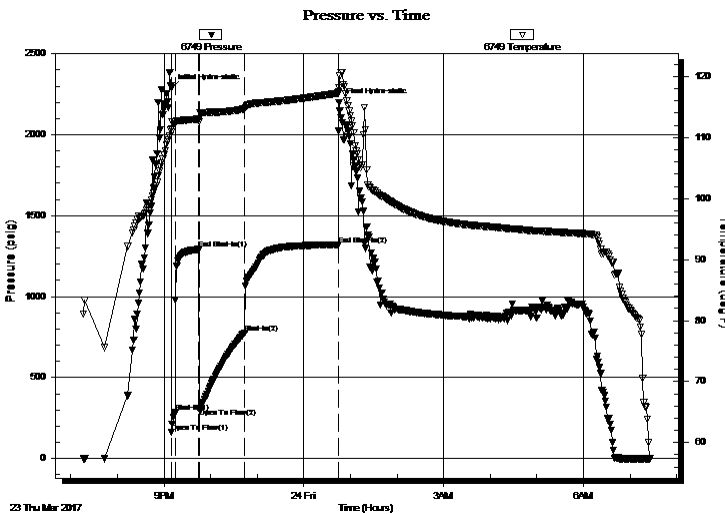
Serial #: 6749

Outside

Press@RunDepth: 775.73 psig @ 4490.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.03.23 End Date: 2017.03.24 Last Calib.: 2017.03.24
 Start Time: 19:16:15 End Time: 07:26:15 Time On Btm: 2017.03.23 @ 21:09:15
 Time Off Btm: 2017.03.24 @ 00:45:15

TEST COMMENT: IF:BOB in 3 min.
 IS:Built to weak surface blow
 FF:BOB in 3 min.
 FS:Built to 1" blow and died in 46 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2287.49	111.45	Initial Hydro-static
1	163.99	110.91	Open To Flow (1)
6	283.20	112.29	Shut-In(1)
36	1291.75	113.03	End Shut-In(1)
36	310.80	112.62	Open To Flow (2)
95	775.73	114.71	Shut-In(2)
215	1321.28	117.27	End Shut-In(2)
216	2199.66	118.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	gco 40%g 60%o (2 Collars)	0.59
1802.00	free oil 100%o	24.71
0.00	GIP= 310 ft	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63704 **DST#: 5**
Test Start: 2017.03.23 @ 19:16:15

Tool Information

Drill Pipe:	Length: 4215.00 ft	Diameter: 3.80 inches	Volume: 59.13 bbl	Tool Weight: 2000.00 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: 182.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 60.03 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4420.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	75.00 ft			
Tool Length:	103.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4393.00	
Shut In Tool	5.00			4398.00	
Hydraulic tool	5.00			4403.00	
Jars	5.00			4408.00	
Safety Joint	3.00			4411.00	
Packer	5.00			4416.00	28.00 Bottom Of Top Packer
Packer	4.00			4420.00	
Stubb	1.00			4421.00	
Perforations	3.00			4424.00	
Change Over Sub	1.00			4425.00	
Drill Pipe	64.00			4489.00	
Change Over Sub	1.00			4490.00	
Recorder	0.00	8672	Inside	4490.00	
Recorder	0.00	6749	Outside	4490.00	
Bullnose	5.00			4495.00	75.00 Bottom Packers & Anchor

Total Tool Length: 103.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co Inc
1700 N Waterfront Pkwy
Wichita, KS 67206
ATTN: Kevin Kessler

26-16s-37w Wichita,KS
Alan Unit #1-26
Job Ticket: 63704 **DST#: 5**
Test Start: 2017.03.23 @ 19:16:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 29 deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.77 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 6700.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

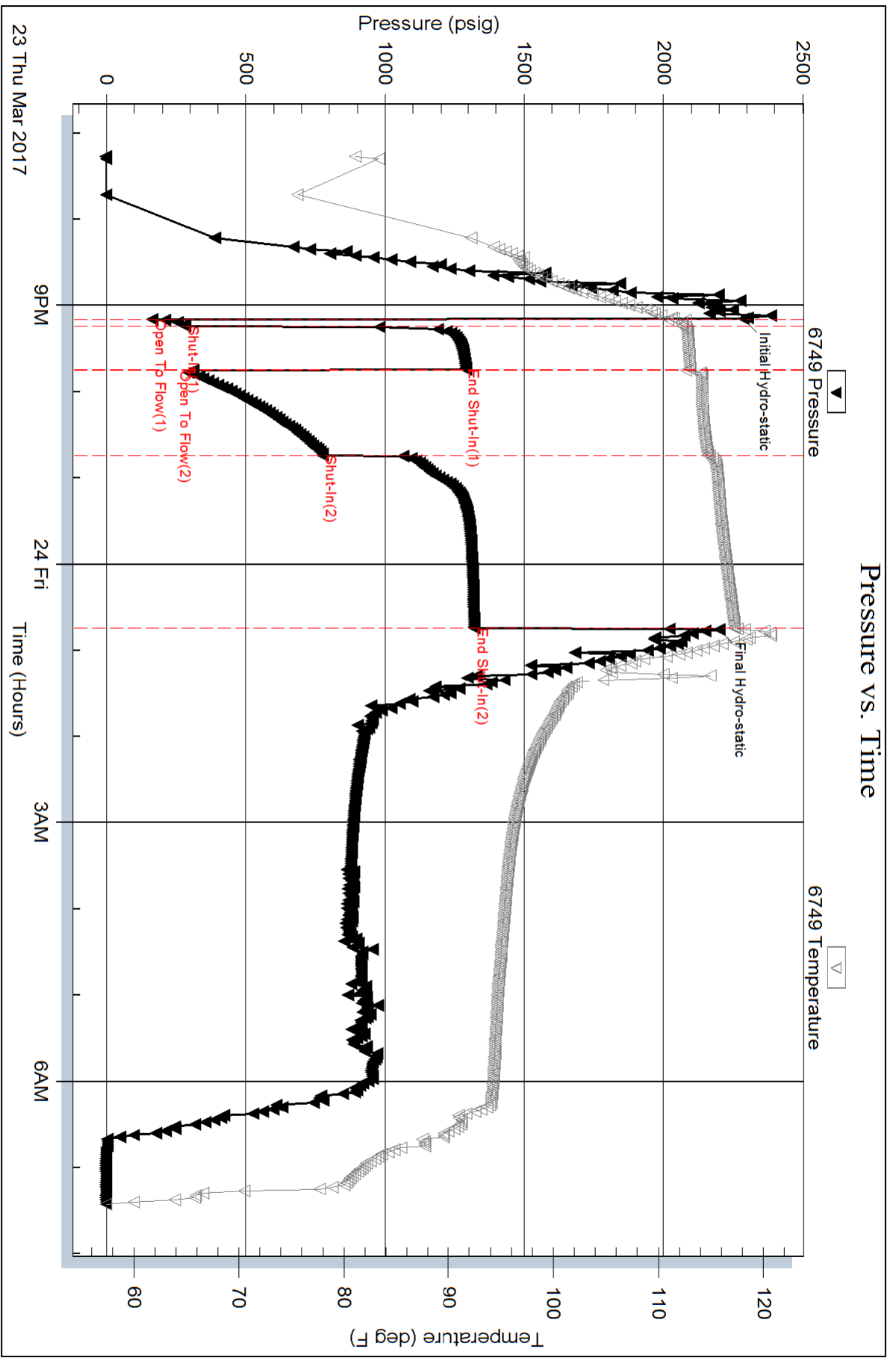
Length ft	Description	Volume bbl
120.00	gco 40%g 60%o (2 Collars)	0.590
1802.00	free oil 100%o	24.713
0.00	GIP= 310 ft	0.000

Total Length: 1922.00 ft Total Volume: 25.303 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: API= 29 @ 60 corrected to 29



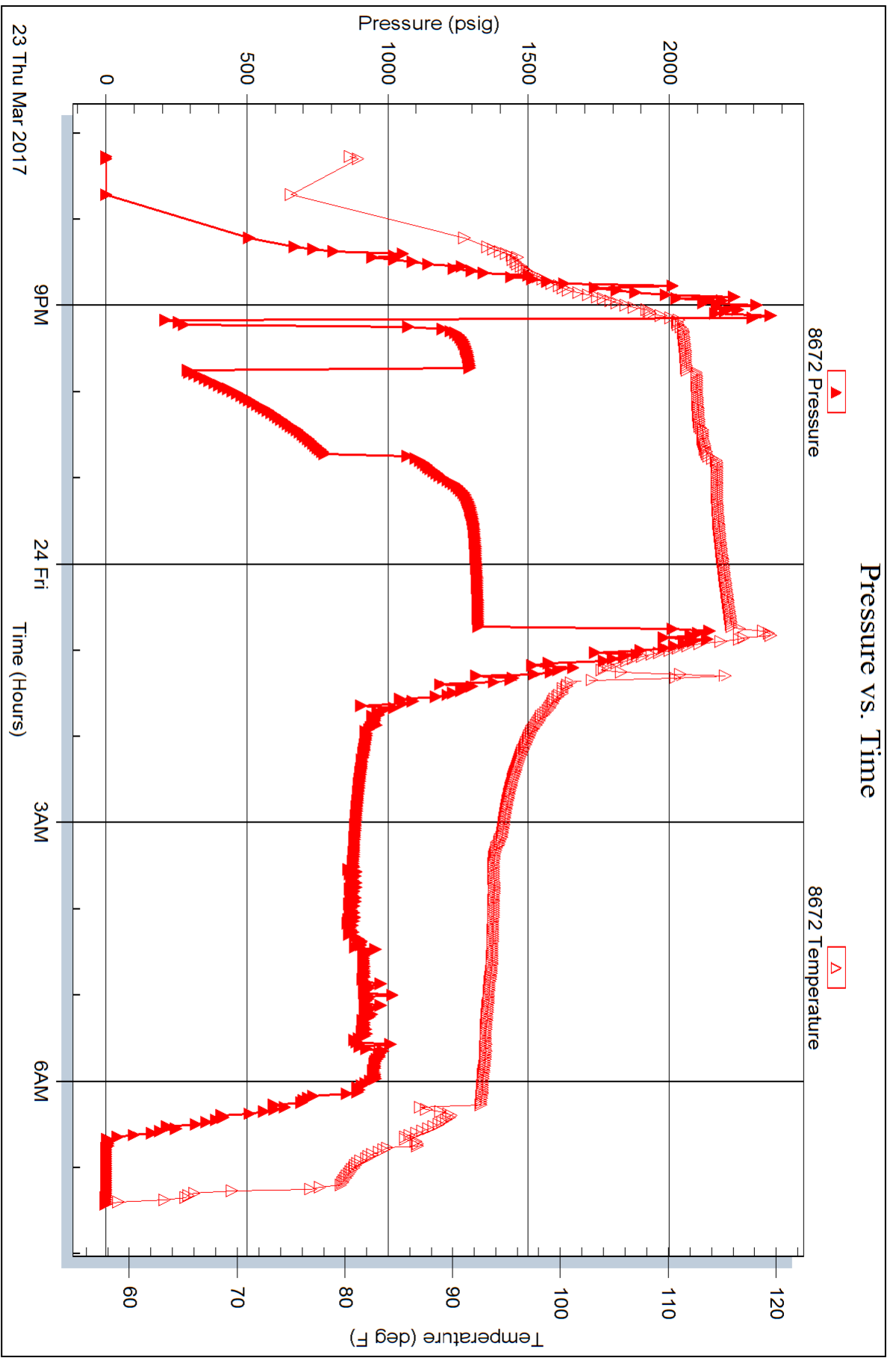
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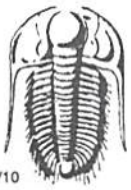
Inside

Mull Drilling Co Inc

Alan Unit #1-26

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63776**

Well Name & No. Alm unit 1-26 Test No. 2 Date 3-20-17
 Company Mull Drilling Co Inc Elevation 3354 KB 3344 GL
 Address 1700 N Waterfront Pkwy Wichita, KS 67206
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 26 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4050 4100 Zone Tested Lansing C-D
 Anchor Length 50 Drill Pipe Run 3867 Mud Wt. 9.2
 Top Packer Depth 4045 Drill Collars Run 182 Vis 65
 Bottom Packer Depth 4050 Wt. Pipe Run — WL 7.2
 Total Depth 4100 Chlorides 3500 ppm System LCM 2
 Blow Description IF: BoB in 4 min.
IS: No return.
FF: BoB in 4 min.
FS: No return.

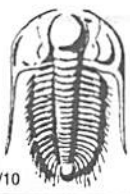
Rec	Feet of	%gas	%oil	%water	%mud
<u>217</u>	<u>WCM</u>		<u>10</u>	<u>90</u>	
<u>186</u>	<u>MCW</u>		<u>80</u>	<u>20</u>	
<u>806</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1209 BHT 116 Gravity — API RW .44 @ 44° F Chlorides 25,000 ppm
 (A) Initial Hydrostatic 2063 Test 1150 T-On Location 21:00
 (B) First Initial Flow 116 Jars 250 T-Started 21:46
 (C) First Final Flow 203 Safety Joint 75 T-Open 23:58
 (D) Initial Shut-In 1142 Circ Sub N/C T-Pulled 5:33
 (E) Second Initial Flow 176 Hourly Standby _____ T-Out 6:25
 (F) Second Final Flow 634 Mileage 78 58.50 Comments _____
 (G) Final Shut-In 1141 Sampler _____
 (H) Final Hydrostatic 1925 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1533.50

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120

Sub Total 0
 Total 1533.50
 MP/DST Disc't _____

Approved By Kevin Kessler Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65675**

Well Name & No. Alan unit 1-26 Test No. 1 Date 3-20-17
 Company Mull Drilling Co Inc Elevation 3354 KB 3344 GL
 Address 1700 N Waterfront Pkwy Wichita, KS 67206
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 26 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4020 4060 Zone Tested Lansing A
 Anchor Length 40 Drill Pipe Run 3835 Mud Wt. 8.7
 Top Packer Depth 4015 Drill Collars Run 182 Vis 57
 Bottom Packer Depth 4020 Wt. Pipe Run WL 6.4
 Total Depth 4060 Chlorides 1700 ppm System LCM 3

Blow Description IF: BoB in 4 min.
IS: No return.
FF: BoB in 4 min.
FS: No return.

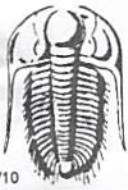
Rec	Feet of	%gas	%oil	%water	%mud
<u>325</u>	<u>mw</u>		<u>50</u>	<u>50</u>	
<u>930</u>	<u>mcw</u>		<u>95</u>	<u>5</u>	

Rec Total 1255 BHT 118 Gravity API RW .27 @ 91 °F Chlorides 19,000 ppm
 (A) Initial Hydrostatic 1997 Test 1150 T-On Location 3:35
 (B) First Initial Flow 65 Jars 250 T-Started 4:53
 (C) First Final Flow 131 Safety Joint 75 T-Open 7:41
 (D) Initial Shut-In 1127 Circ Sub NIL T-Pulled 11:16
 (E) Second Initial Flow 143 Hourly Standby T-Out 13:27
 (F) Second Final Flow 582 Mileage 78 - 58.50 Comments
 (G) Final Shut-In 1119 Sampler
 (H) Final Hydrostatic 1865 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1533.50

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120

Approved By Kevin Kessler Our Representative [Signature]

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

3-4-5 (1-2) Me (Turkey)

Test Ticket

NO. 63702

Well Name & No. Alan Unit #1-26 Test No. 3 Date 3-21-17
 Company Mull Drilling Co Inc Elevation 3354 KB 3344 GL
 Address 1700 N Waterfront PKwy Wichita KS 67206
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 26 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4240-4285 Zone Tested H-I
 Anchor Length 45 Drill Pipe Run 4052 Mud Wt. 9.2
 Top Packer Depth 4235 Drill Collars Run 182 Vis ~~7~~ 57
 Bottom Packer Depth 4240 Wt. Pipe Run Ø WL 7.2
 Total Depth 4285 Chlorides 4000 ppm System LCM 2
 Blow Description IF: Built to 2" Blow
IS: No Return Blow
FF: BOB in 50 Min
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>139</u>	<u>WCM</u>		<u>2</u>	<u>98</u>	
<u>124</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	
<u>181</u>	<u>MCM</u>		<u>70</u>	<u>30</u>	

Rec Total 444 BHT _____ Gravity — API RW _____ @ _____ °F Chlorides _____ ppm

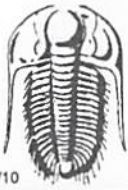
(A) Initial Hydrostatic 2170 Test \$1150.00/- T-On Location 22:10
 (B) First Initial Flow 27 Jars \$250.00/- T-Started 00:17
 (C) First Final Flow 87 Safety Joint \$75.00/- T-Open 02:45
 (D) Initial Shut-In 1211 Circ Sub NC T-Pulled 06:20
 (E) Second Initial Flow 69 Hourly Standby _____ T-Out 08:35
 (F) Second Final Flow 314 Mileage 78RT = \$58.50/- Comments _____
 (G) Final Shut-In 1223 Sampler _____
 (H) Final Hydrostatic 2169 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1533.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total \$1533.50/-

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120

Approved By Kevin Kessler

Our Representative Mike Roberts

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63703**

Well Name & No. Alan Unit #1-26 Test No. 4 Date 3-22-17
 Company Mull Drilling Co Inc. Elevation 3354 KB 3344 GL
 Address 1700 N. Waterfront Pkwy Wichita KS 67206
 Co. Rep / Geo. Kevin Kessler Rig Duke 7
 Location: Sec. 26 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4340-4415 Zone Tested Lansing L - Pleasanton
 Anchor Length 75' Drill Pipe Run 4150 Mud Wt. 9.3
 Top Packer Depth 4335 Drill Collars Run 182 Vis 65
 Bottom Packer Depth 4340 Wt. Pipe Run 0 WL 8.0
 Total Depth 4415 Chlorides 5400 ppm System LCM 2

Blow Description IF: BOB 1 1/2 Min
IS: NO Return Blow
FF: BOB 1 1/2 Min
FS: ~~NO~~ NO Return Blow

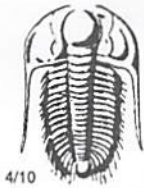
Rec	Feet of	%gas	%oil	%water	%mud
<u>496</u>	<u>WCM</u>		<u>20</u>	<u>80</u>	
<u>310</u>	<u>WCM</u>		<u>35</u>	<u>65</u>	
<u>1050</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1856 BHT 121 Gravity — API RW .482 @ 49.2° F Chlorides 23000 ppm
 (A) Initial Hydrostatic 2271 Test \$ 1150.00/- T-On Location 22:10
 (B) First Initial Flow 239 Jars \$ 250.00/- T-Started 23:11
 (C) First Final Flow 368 Safety Joint \$ 75.00/- T-Open 01:34
 (D) Initial Shut-In 1294 Circ Sub NC T-Pulled 05:09
 (E) Second Initial Flow 388 Hourly Standby _____ T-Out 08:01
 (F) Second Final Flow 1075 Mileage 78RT = \$58.80/- Comments _____
 (G) Final Shut-In 1294 Sampler _____
 (H) Final Hydrostatic 2104 Straddle _____

Initial Open 5 Ruined Shale Packer _____
 Initial Shut-In 30 Ruined Packer _____
 Final Flow 60 Extra Copies _____
 Final Shut-In 120 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1533.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total \$1533.50/-

Approved By Kevin Kessler Our Representative Mike Roberts

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63704**

Well Name & No. Alan Unit #1-26 Test No. 5 Date 3-23-17
 Company Mull Drilling Co Inc. Elevation 3354 KB 3344 GL
 Address 1700 N. Waterfront Pkwy Wichita KS 67206
 Co. Rep / Geo. Kevin Kessler Rig _____
 Location: Sec. 26 Twp. 16S Rge. 37W Co. Wichita State KS

Interval Tested 4420-4495 Zone Tested Marmaton
 Anchor Length 75' Drill Pipe Run 4215 Mud Wt. 9.5
 Top Packer Depth 4415 Drill Collars Run 182 Vis 65
 Bottom Packer Depth 4420 Wt. Pipe Run Ø WL 8.8
 Total Depth 4495 Chlorides 6700 ppm System LCM 2
 Blow Description IF! BOB in 3 Min
IS! Weak Surface Blow
FF! BOB in 3 Min
FS! Built to 1" Died in 46 Min

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>Ø</u>	Feet of <u>GIP = 310'</u>	<u>100</u>			
Rec <u>180</u>	Feet of <u>Oil</u>		<u>100</u>		
Rec <u>120</u>	Feet of <u>gco (2 collars)</u>	<u>40</u>	<u>60</u>		
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 1922 BHT 118 Gravity 29 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2287</u>	<input checked="" type="checkbox"/> Test <u>\$1150.00/-</u>	T-On Location <u>18:45</u>
(B) First Initial Flow <u>163</u>	<input checked="" type="checkbox"/> Jars <u>\$250.00/-</u>	T-Started <u>19:16</u>
(C) First Final Flow <u>283</u>	<input checked="" type="checkbox"/> Safety Joint <u>\$75.00/-</u>	T-Open <u>21:09</u>
(D) Initial Shut-In <u>1291</u>	<input checked="" type="checkbox"/> Circ Sub. <u>Dropped Bar 50</u>	T-Pulled <u>00:44</u>
(E) Second Initial Flow <u>310</u>	<input type="checkbox"/> Hourly Standby <u>.75hr 60</u>	T-Out <u>07:26</u>
(F) Second Final Flow <u>775</u>	<input checked="" type="checkbox"/> Mileage <u>78 RT = \$58.00/-</u>	Comments <u>Wait on truck 3 HRS</u>
(G) Final Shut-In <u>1321</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2199</u>	<input type="checkbox"/> Straddle _____	
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1643.50</u>
	Sub Total <u>\$1583.50/-</u>	MP/DST Disc't _____

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 120

Approved By Ken O'Kern Our Representative Mike Roberts

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