



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Alex Young

CWA 'F' #1-12

12-2S-37W Cheyenne,KS

Start Date: 2019.02.05 @ 17:31:00

End Date: 2019.02.06 @ 02:42:45

Job Ticket #: 65399 DST #: 1

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

Printed: 2019.02.12 @ 16:20:29



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N. Water STE 300
Wichita KS 67202
ATTN: Alex Young

12-2S-37W Cheyenne,KS
CWA 'F' #1-12
Job Ticket: 65399 **DST#: 1**
Test Start: 2019.02.05 @ 17:31:00

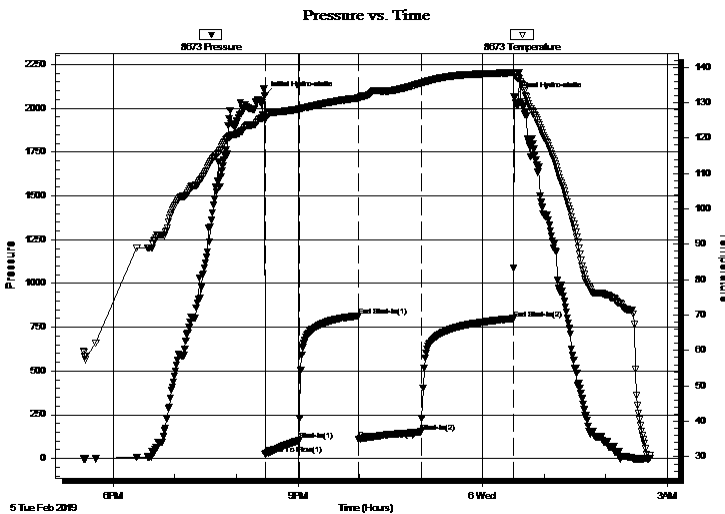
GENERAL INFORMATION:

Formation: **Oread**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:28:00
Time Test Ended: 02:42:45
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #77
Interval: **4190.00 ft (KB) To 4263.00 ft (KB) (TVD)**
Reference Elevations: 3392.00 ft (KB)
Total Depth: 4263.00 ft (KB) (TVD) 3387.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8673 Outside
Press@RunDepth: 151.89 psig @ 4191.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.02.05 End Date: 2019.02.06 Last Calib.: 2019.02.06
Start Time: 17:31:05 End Time: 02:42:45 Time On Btm: 2019.02.05 @ 20:27:45
Time Off Btm: 2019.02.06 @ 00:30:30

TEST COMMENT: 30 - IFP - Surface blow built to 4 1/4"
60 - ISI - No Return
60 - FFP - Surface blow built up to 8 1/4"
90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2074.16	125.93	Initial Hydro-static
1	22.59	125.34	Open To Flow (1)
34	101.53	128.12	Shut-In(1)
91	815.43	131.28	End Shut-In(1)
92	108.76	131.11	Open To Flow (2)
153	151.89	135.44	Shut-In(2)
242	798.72	138.42	End Shut-In(2)
243	2067.71	138.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
82.00	OCM - 40%o - 60%m	0.40
124.00	OCWM - 20%o - 30%w - 50%m	0.61
62.00	OCWM - 20%o - 40%w - 40%m	0.64

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

12-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 65399

DST#: 1

ATTN: Alex Young

Test Start: 2019.02.05 @ 17:31:00

Tool Information

Drill Pipe:	Length: 3975.82 ft	Diameter: 3.25 inches	Volume: 40.79 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: 206.18 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 41.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4190.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	101.00 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			4167.00	
Hydraulic tool	5.00			4172.00	
Jars	5.00			4177.00	
Safety Joint	3.00			4180.00	
Packer	5.00			4185.00	28.00 Bottom Of Top Packer
Packer	5.00			4190.00	
Stubb	1.00			4191.00	
Recorder	0.00	8360	Inside	4191.00	
Recorder	0.00	8673	Outside	4191.00	
Perforations	5.00		Outside	4196.00	
Change Over Sub	1.00		Outside	4197.00	
Drill Pipe	62.00			4259.00	
Change Over Sub	1.00			4260.00	
Bullnose	3.00			4263.00	73.00 Bottom Packers & Anchor

Total Tool Length: 101.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

12-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 65399

DST#: 1

ATTN: Alex Young

Test Start: 2019.02.05 @ 17:31:00

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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
82.00	OCM - 40%o - 60%m	0.403
124.00	OCWM - 20%o - 30%w - 50%m	0.610
62.00	OCWM - 20%o - 40%w - 40%m	0.635

Total Length: 268.00 ft Total Volume: 1.648 bbl

Num Fluid Samples: 0

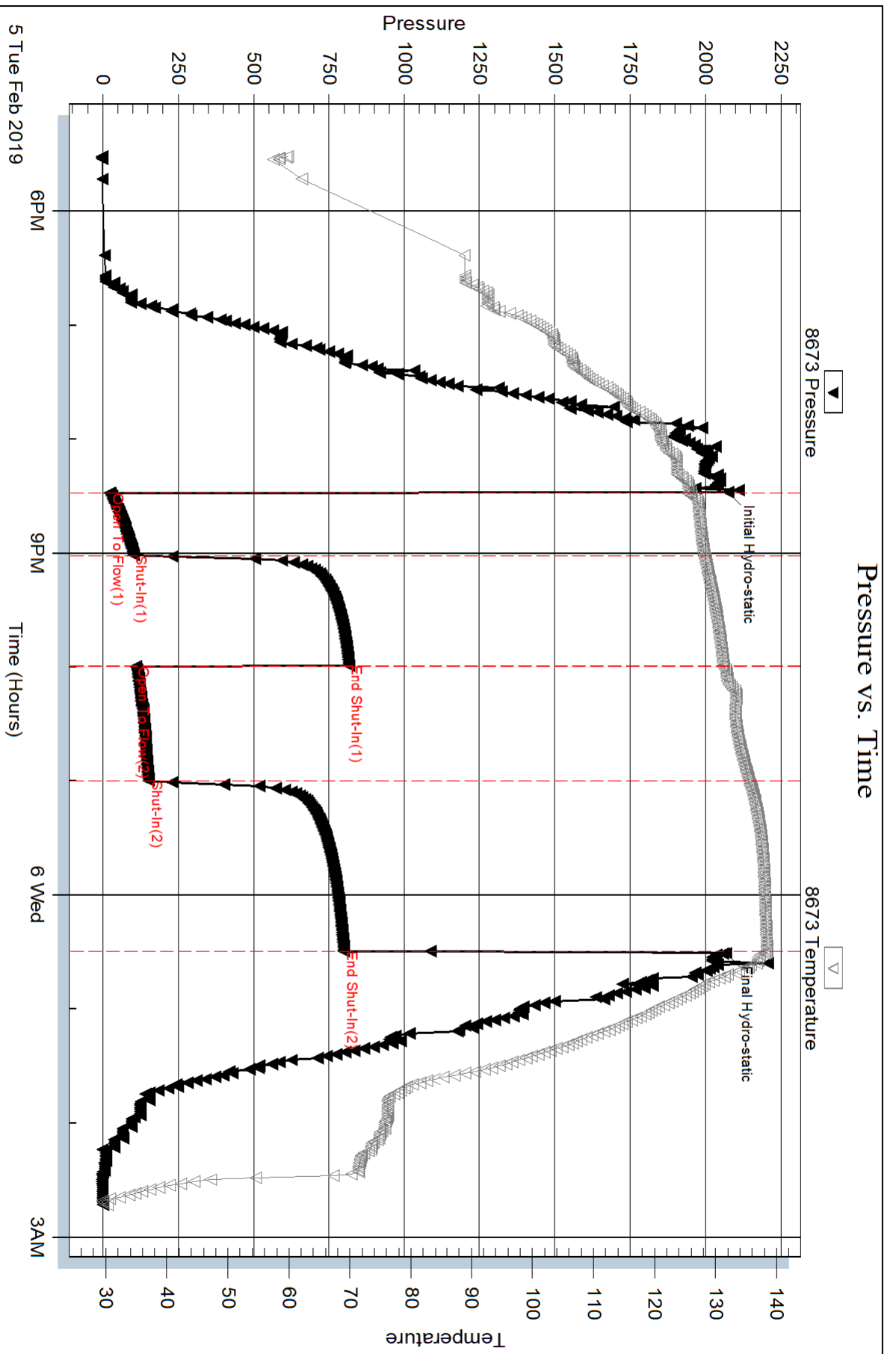
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



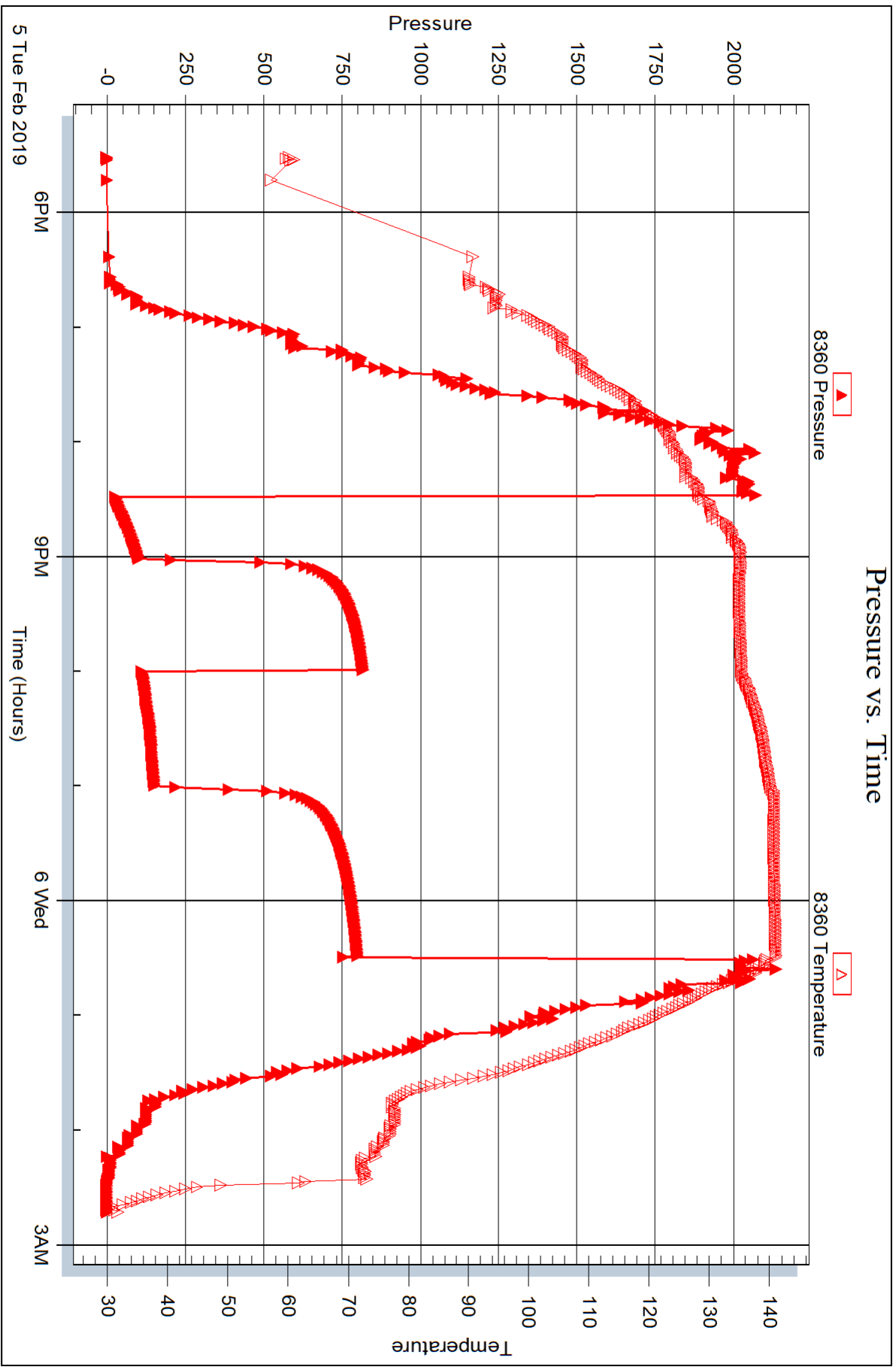
Serial #: 8360

Inside

Murfin Drilling Co.

CWA F#1-12

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 653399

Printed: 2019.02.12 @ 16:20:30



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Alex Young

CWA 'F' #1-12

12-2S-37W Cheyenne,KS

Start Date: 2019.02.07 @ 09:36:00

End Date: 2019.02.07 @ 17:51:30

Job Ticket #: 65400 DST #: 2

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

Printed: 2019.02.12 @ 16:20:11

Murfin Drilling Co. 12-2S-37W Cheyenne,KS CWA 'F' #1-12 DST # 2 LKC A-D 2019.02.07



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

12-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 65400

DST#: 2

ATTN: Alex Young

Test Start: 2019.02.07 @ 09:36:00

Tool Information

Drill Pipe:	Length: 4041.82 ft	Diameter: 3.25 inches	Volume: 41.47 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: 206.18 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 42.48 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4270.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	140.00 ft			
Tool Length:	168.00 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			4247.00	
Hydraulic tool	5.00			4252.00	
Jars	5.00			4257.00	
Safety Joint	3.00			4260.00	
Packer	5.00			4265.00	28.00 Bottom Of Top Packer
Packer	5.00			4270.00	
Stubb	1.00			4271.00	
Recorder	0.00	8360	Inside	4271.00	
Recorder	0.00	8673	Outside	4271.00	
Perforations	10.00		Outside	4281.00	
Change Over Sub	1.00		Outside	4282.00	
Drill Pipe	124.00			4406.00	
Change Over Sub	1.00			4407.00	
Bullnose	3.00			4410.00	140.00 Bottom Packers & Anchor

Total Tool Length: 168.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

12-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 65400

DST#: 2

ATTN: Alex Young

Test Start: 2019.02.07 @ 09:36:00

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: 79.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM - 10%o - 90%m	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

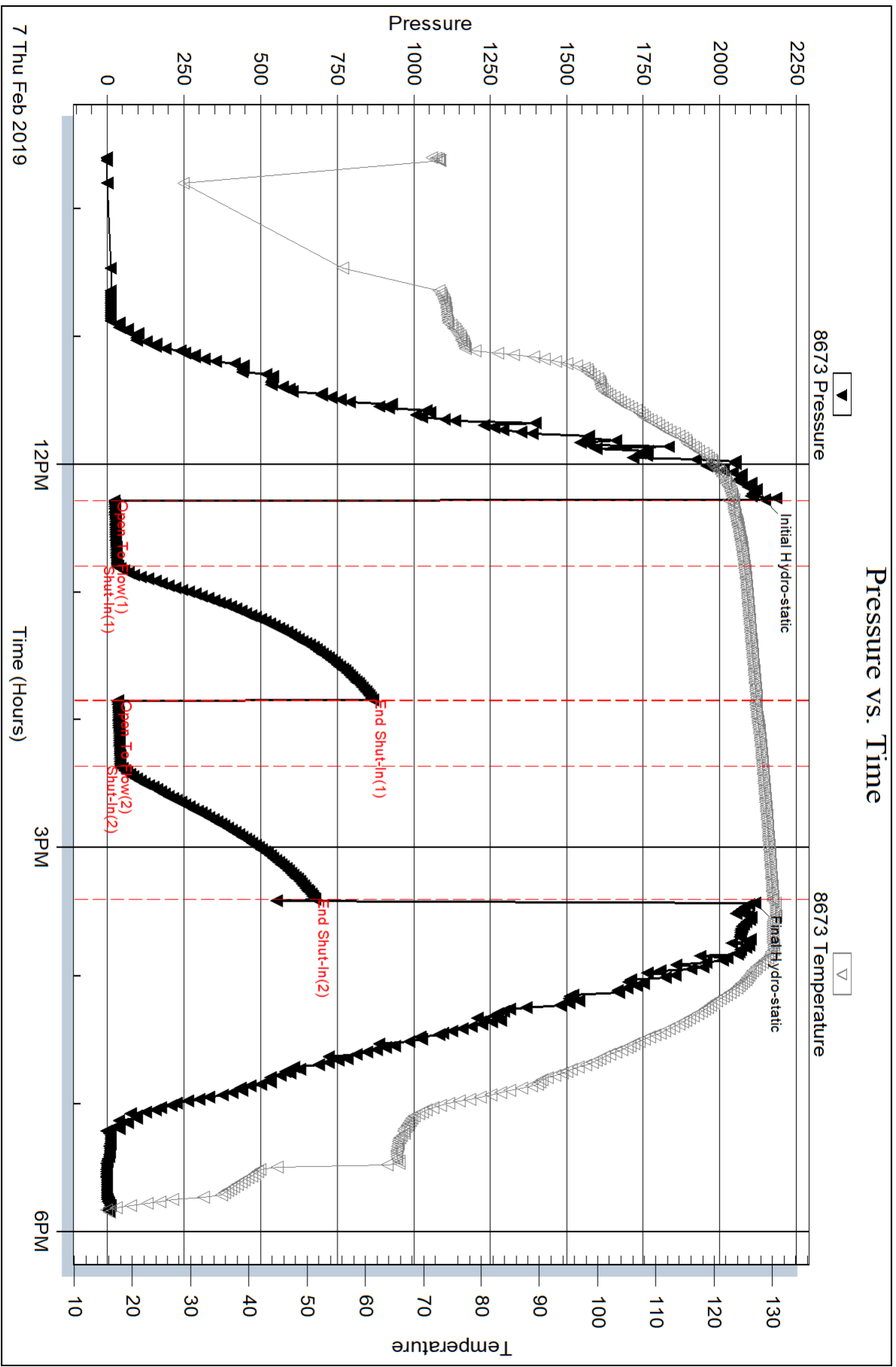
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



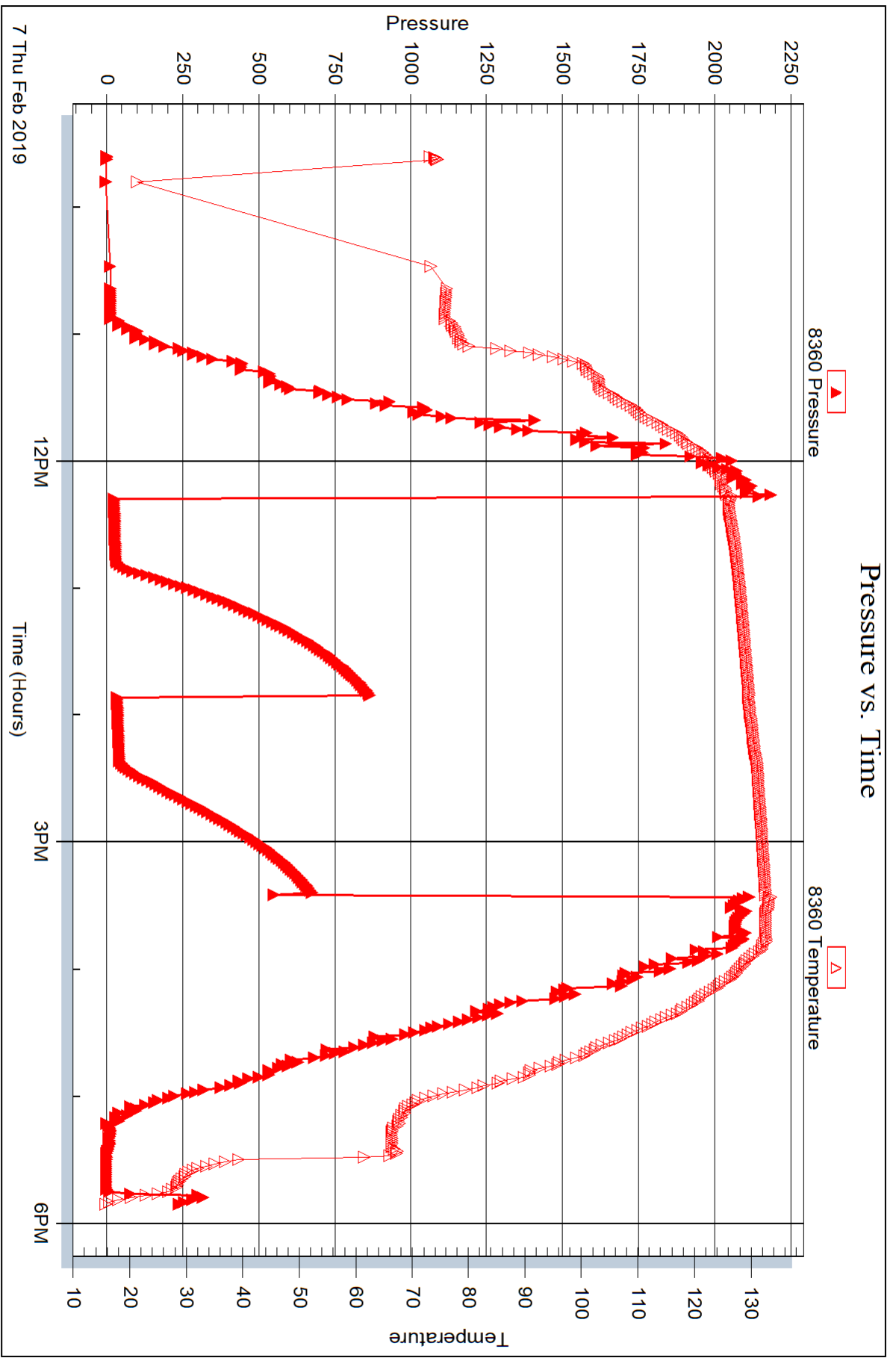
Serial #: 8360

Inside

Murfin Drilling Co.

CWA F#1-12

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Alex Young

CWA 'F' #1-12

12-2S-37W Cheyenne,KS

Start Date: 2019.02.08 @ 05:39:00

End Date: 2019.02.08 @ 14:12:15

Job Ticket #: 64601 DST #: 3

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

Printed: 2019.02.12 @ 16:19:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

12-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 64601

DST#: 3

ATTN: Alex Young

Test Start: 2019.02.08 @ 05:39:00

Tool Information

Drill Pipe:	Length: 4196.82 ft	Diameter: 3.25 inches	Volume: 43.06 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: 206.18 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 44.07 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4408.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	90.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4385.00	
Hydraulic tool	5.00			4390.00	
Jars	5.00			4395.00	
Safety Joint	3.00			4398.00	
Packer	5.00			4403.00	28.00 Bottom Of Top Packer
Packer	5.00			4408.00	
Stubb	1.00			4409.00	
Recorder	0.00	8360	Inside	4409.00	
Recorder	0.00	8673	Outside	4409.00	
Perforations	25.00		Outside	4434.00	
Change Over Sub	1.00		Outside	4435.00	
Drill Pipe	31.00			4466.00	
Change Over Sub	1.00			4467.00	
Bullnose	3.00			4470.00	62.00 Bottom Packers & Anchor

Total Tool Length: 90.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

12-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 64601

DST#: 3

ATTN: Alex Young

Test Start: 2019.02.08 @ 05:39:00

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: 81.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM - 5%o - 95%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

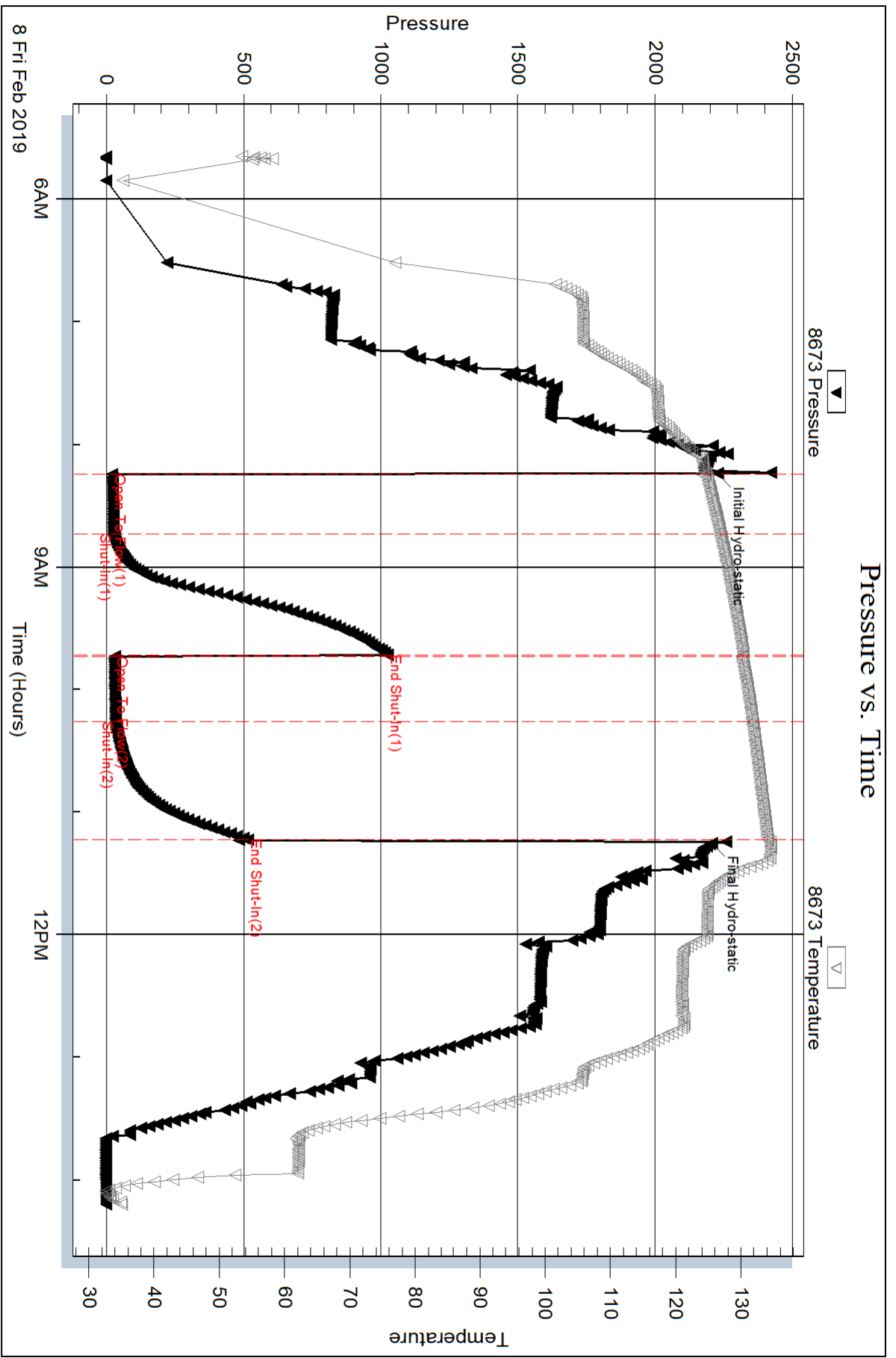
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



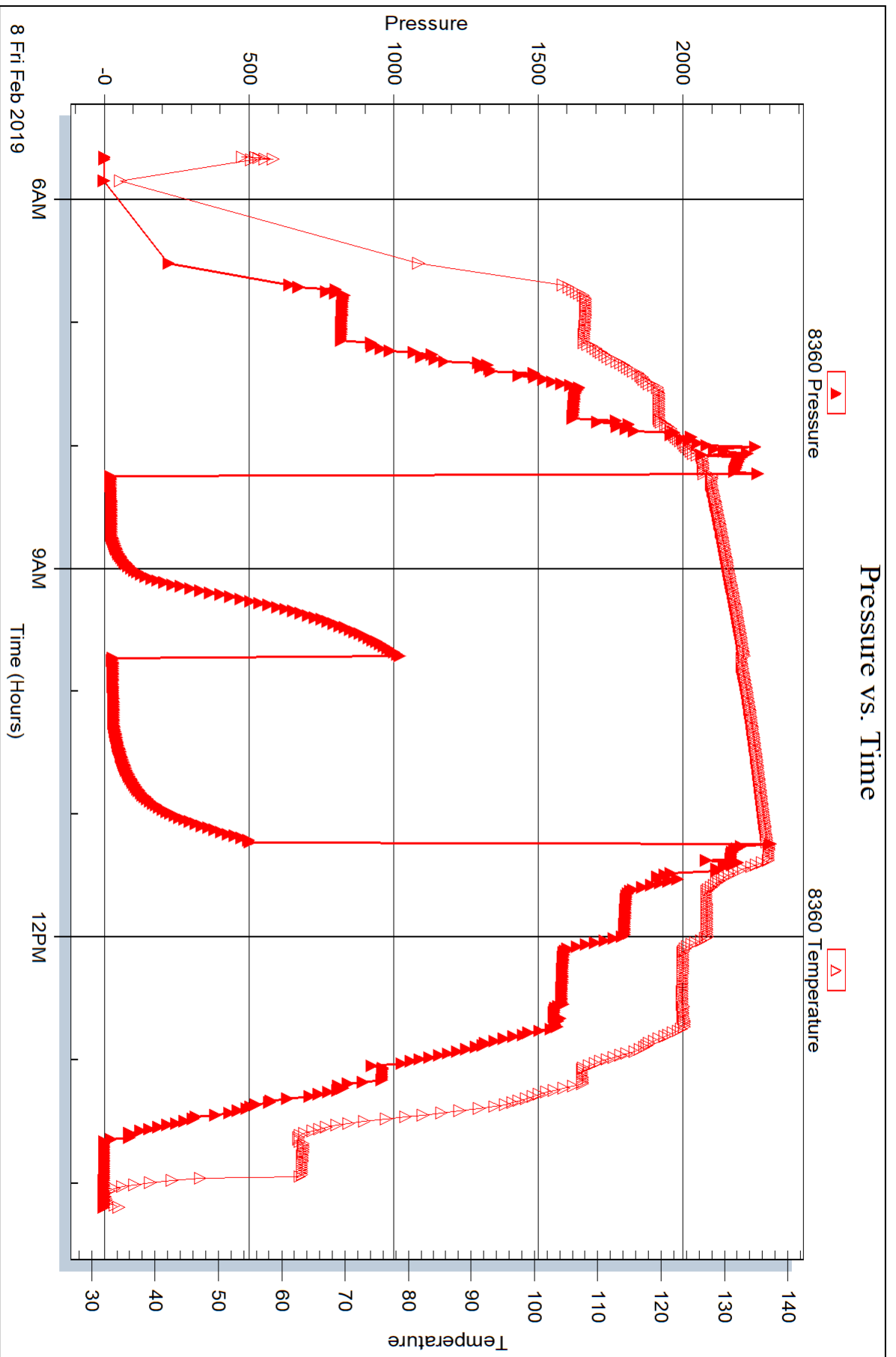
Serial #: 8360

Inside

Murfin Drilling Co.

CWA F#1-12

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Alex Young

CWA 'F' #1-12

12-2S-37W Cheyenne,KS

Start Date: 2019.02.09 @ 04:53:00

End Date: 2019.02.09 @ 12:02:30

Job Ticket #: 64602 DST #: 4

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

Printed: 2019.02.12 @ 16:19:30



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

12-2S-37W Cheyenne, KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 64602

DST#: 4

ATTN: Alex Young

Test Start: 2019.02.09 @ 04:53:00

Tool Information

Drill Pipe:	Length: 4258.82 ft	Diameter: 3.25 inches	Volume: 43.70 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: 206.18 ft	Diameter: 2.25 inches	Volume: 1.01 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 44.71 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4470.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	108.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4447.00	
Hydraulic tool	5.00			4452.00	
Jars	5.00			4457.00	
Safety Joint	3.00			4460.00	
Packer	5.00			4465.00	28.00 Bottom Of Top Packer
Packer	5.00			4470.00	
Stubb	1.00			4471.00	
Recorder	0.00	8360	Inside	4471.00	
Recorder	0.00	8673	Outside	4471.00	
Perforations	12.00		Outside	4483.00	
Change Over Sub	1.00		Outside	4484.00	
Drill Pipe	62.00			4546.00	
Change Over Sub	1.00			4547.00	
Bullnose	3.00			4550.00	80.00 Bottom Packers & Anchor

Total Tool Length: 108.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

12-2S-37W Cheyenne,KS

250 N. Water STE 300
Wichita KS 67202

CWA 'F' #1-12

Job Ticket: 64602

DST#: 4

ATTN: Alex Young

Test Start: 2019.02.09 @ 04:53:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OSM - Oil Spots - 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

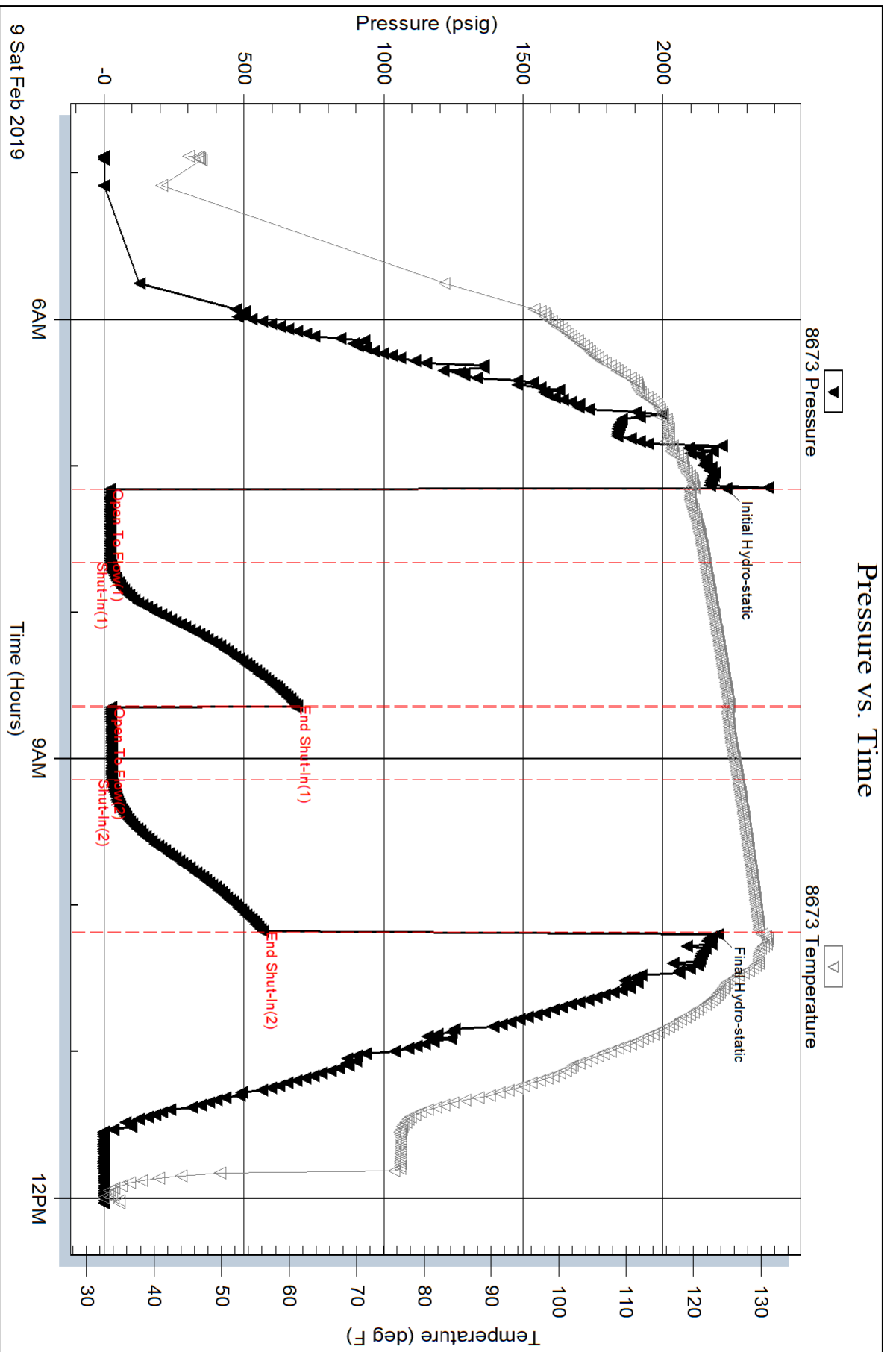
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



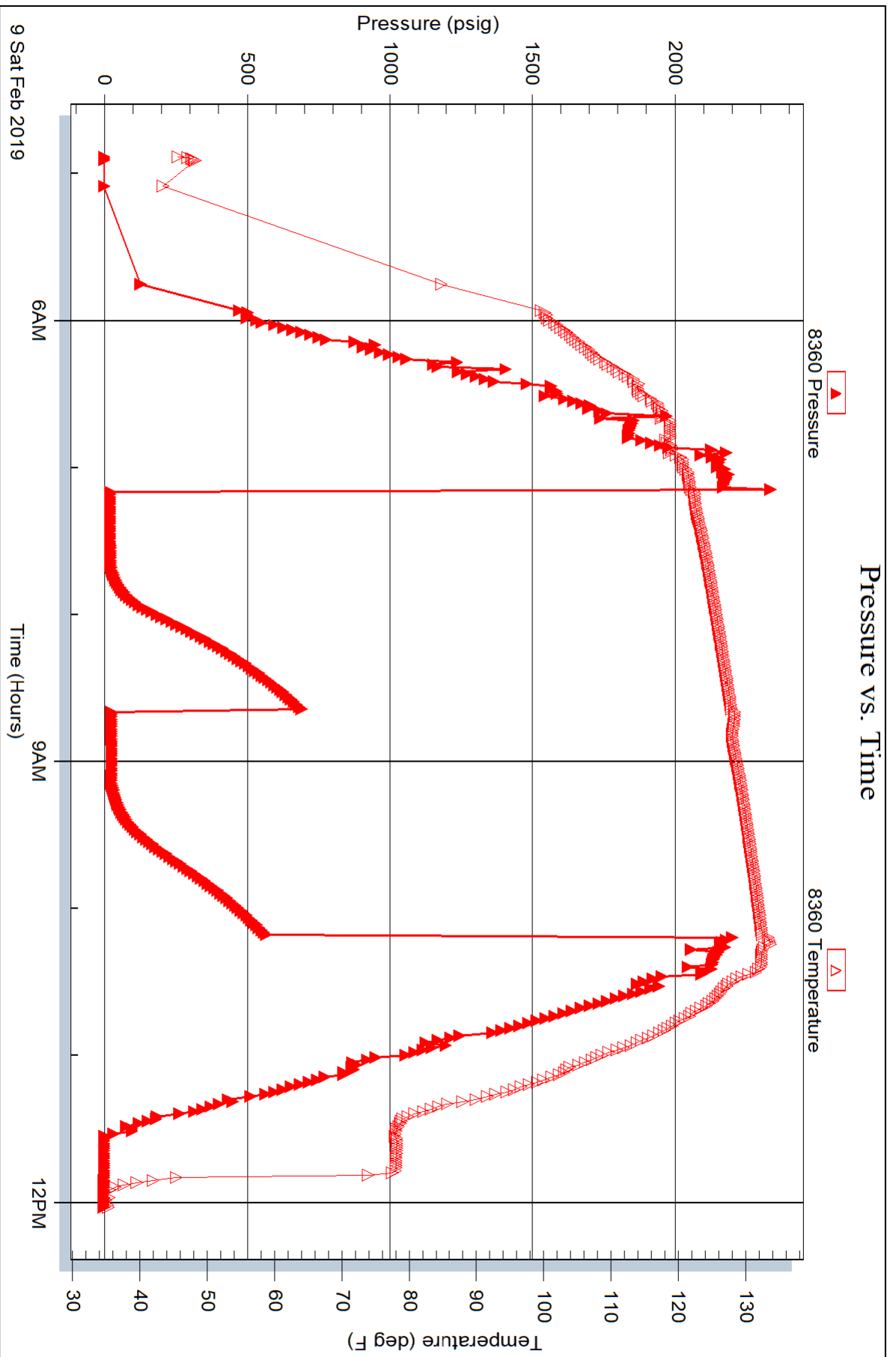
Serial #: 8360

Inside

Murfin Drilling Co.

CWA 'F' #1-12

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65399

Well Name & No. CWA 'F' #12 Test No. 1 Date 2-5-19
 Company Murfin Drilling Co. Elevation 3392 KB 3387 GL
 Address 250 W. Water St. 300 Wichita, Ks 67202
 Co. Rep / Geo. Alex Young Rig Murfin #3
 Location: Sec. 12 Twp 25 Rge. 37W Co. Cheyenne State Ks

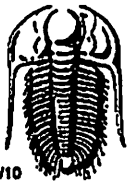
Interval Tested 4195' - 4268 Zone Tested Oread
 Anchor Length 73' Drill Pipe Run _____ Mud Wt. 9.0
 Top Packer Depth 4190' Drill Collars Run 20618 Vls 67
 Bottom Packer Depth 4195' Wt. Pipe Run 0 WL 6.0
 Total Depth 4268 Chlorides 800 ppm System LCM #4#
 Blow Description IFP - Surface blow built up to 4 1/4"
ISI - No Return
FFP - Surface blow built up to 8 1/4"
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>82'</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	
<u>124'</u>	<u>OCWM</u>	<u>20</u>	<u>30</u>	<u>50</u>	
<u>62'</u>	<u>OCWM</u>	<u>20</u>	<u>40</u>	<u>40</u>	
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 2168' BHT 138°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2074</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>3:30pm</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:31pm</u>
(C) First Final Flow <u>102</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:28pm</u>
(D) Initial Shut-In <u>815</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>10:28am</u>
(E) Second Initial Flow <u>109</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>2:44am</u>
(F) Second Final Flow <u>152</u>	<input checked="" type="checkbox"/> Mileage <u>116 RT</u> 116	Comments <u>rig was having</u> <u>problems with stuck</u> <u>freezing up</u>
(G) Final Shut-In <u>799</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> EM Tool _____
(H) Final Hydrostatic <u>2068</u>	<input checked="" type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1841</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1841</u>	

Approved By _____ Our Representative Alex Young
 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

NO. 65400

Well Name & No. CWA F' #1-12 Test No. 2 Date 2-7-19
 Company Murkin Drilling Co. Elevation 3392 KB 3387 GL
 Address 250 N. Water Ste. 300 Wichita ks 67202
 Co. Rep / Geo. Alex Young Rig Murkin #3
 Location: Sec. 12 Twp 2S Rge. 37W Co. Cheyenne State ks

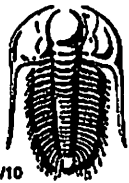
Interval Tested 4270-4410 Zone Tested LKC A-D
 Anchor Length 140' Drill Pipe Run 4041.82 Mud Wt. 9.1
 Top Packer Depth 4265' Drill Collars Run 206.8 Vis 79
 Bottom Packer Depth 4270' Wt. Pipe Run 0 WL 5.6
 Total Depth 4410 Chlorides ~~900~~ 900 ppm System LCM 3H
 Blow Description IIF - Surface blow built up to 3 inches
FSI - No Return
IIF - Surface blow only built up to 1/4"
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60'</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 60' BHT 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2146</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>6:15am</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>9:30am</u>
(C) First Final Flow <u>32</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:16</u>
(D) Initial Shut-In <u>865</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>3:20pm</u>
(E) Second Initial Flow <u>35</u>	<input checked="" type="checkbox"/> Hourly Standby <u>2hrs</u> .5h 40	T-Out <u>5:52pm</u>
(F) Second Final Flow <u>42</u>	<input checked="" type="checkbox"/> Mileage <u>116 RT</u> 116	Comments <u>Gas failed to</u>
(G) Final Shut-In <u>678</u>	<input type="checkbox"/> Sampler _____	<u>mention they were</u>
(H) Final Hydrostatic <u>2115</u>	<input type="checkbox"/> Straddle _____	<u>running short trip</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<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>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1881</u>
	Sub Total <u>1881</u>	MP/DST Disc't _____

Approved By _____ 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

Test Ticket

NO. 64601

Well Name & No. CWA 'F' # 1-12 Test No. 3 Date 2-8-19
 Company Murkin Drilling Co. Elevation 3392 KB 3387 GL
 Address 250 N. Water St. 300 Wichita Ks 67202
 Co. Rep / Geo. Alex Young Rig Murkin #3
 Location: Sec. 12 Twp 2S Rge. 37W Co. cheyenne State Ks

Interval Tested 4408-4470' Zone Tested LKC-C
 Anchor Length 62' Drill Pipe Run 4196.82 Mud Wt. 9.1
 Top Packer Depth 4403' Drill Collars Run 206.18 Vis 81
 Bottom Packer Depth 4408' Wt. Pipe Run 0 WL 6.0
 Total Depth 4470' Chlorides 900 ppm System LCM 4#

Blow Description JFP-Surface blow built up to 1 1/4"
ISI-No Return
FSP-No Surface blow
FBI-No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>OCM</u>	<u>5</u>		<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10' BHT 134PF Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2228 Test 1150 T-On Location 4:15am
 (B) First Initial Flow 21 Jars 250 T-Started 5:39am
 (C) First Final Flow 25 Safety Joint 75 T-Open 8:13am
 (D) Initial Shut-In 1025 Circ Sub _____ T-Pulled 11:13am
 (E) Second Initial Flow 30 Hourly Standby _____ T-Out 2:11pm
 (F) Second Final Flow 32 Mileage 116 R/T 116 Comments _____
 (G) Final Shut-In 516 Sampler _____
 (H) Final Hydrostatic 2206 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1593
 Accessibility _____ MP/DST Disc't _____

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

Sub Total 1593

Approved By _____ Our Representative Ryan Jones
 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

NO. 64602

Well Name & No. CWA'F' #1-12 Test No. 4 Date 2-9-19
 Company Martin Drilling Co. Elevation 3392 KB 3387 GL
 Address 250 N. Water St. 300 Wichita, KS 67202
 Co. Rep / Geo. Alex Young Rig Martin #3
 Location: Sec. 12 Twp 2S Rge. 32W Co. Cheyenne State Ks

Interval Tested 4470-4550 Zone Tested LHC-H4J
 Anchor Length ~~4440~~ 80' Drill Pipe Run 4258.82 Mud Wt. 9.1
 Top Packer Depth 4465 Drill Collars Run 206.18' Vis 52
 Bottom Packer Depth 4470 Wt. Pipe Run 0 WL 60
 Total Depth 4550 Chlorides 1000 ppm System LCM 3#

Blow Description IFF - surface blow built up to 1"
ISI - No Return
FFP - No surface blow
FST - No Return

Rec	Feet of	%gas	spots	%oil	%water	%mud
<u>10'</u>	<u>asm</u>				<u>100</u>	
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud
Rec	Feet of	%gas		%oil	%water	%mud

Rec Total 10' BHT 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2226 Test 1150 T-On Location 4:15am
 (B) First Initial Flow 20 Jars 250 T-Started 4:53am
 (C) First Final Flow 22 Safety Joint 75 T-Open 7:08am
 (D) Initial Shut-In 689 Circ Sub _____ T-Pulled 10:08am
 (E) Second Initial Flow 25 Hourly Standby _____ T-Out 12:01pm
 (F) Second Final Flow 26 Mileage 116 R/T 232 Comments picked up tool @ 7:30pm to 8:20pm on 2-10-19
 (G) Final Shut-In 570 Sampler _____ Ruined Shale Packer _____
 (H) Final Hydrostatic 2197 Straddle _____ Ruined Packer _____

Initial Open 30 Shale Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Packer _____ Sub Total 0
 Final Flow 30 Extra Recorder _____ Total 1707
 Final Shut-In 60 Day Standby _____ MP/DST Disc't _____
 Sub Total 1707 Accessibility _____

Approved By _____ Our Representative [Signature]

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