



DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526+0486

ATTN: Jim C. Musgrove/ Lyl

Mauler #3

S20-19S-14W Barton,KS

Start Date: 2017.02.24 @ 18:57:00

End Date: 2017.02.25 @ 00:16:15

Job Ticket #: 63506 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.02.27 @ 13:15:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

GENERAL INFORMATION:

Formation: **LKC 'A'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:13:30

Time Test Ended: 00:16:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3210.00 ft (KB) To 3240.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3240.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934 Outside

Press@RunDepth: 20.32 psig @ 3211.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.24 End Date: 2017.02.25

Last Calib.: 2017.02.25

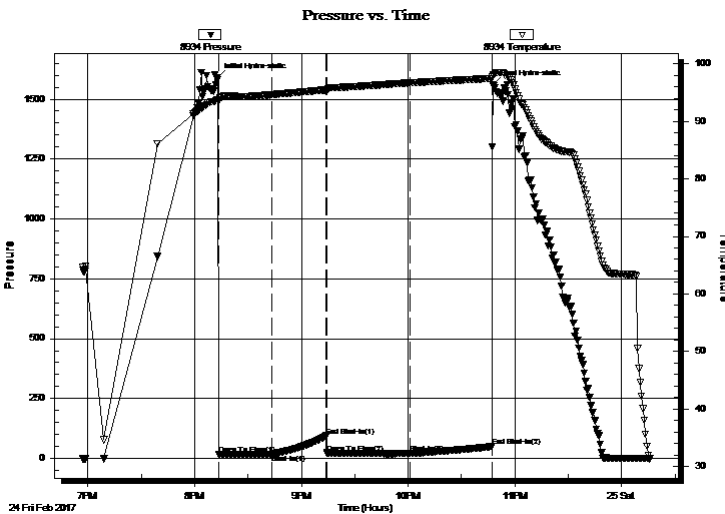
Start Time: 18:57:05 End Time: 00:16:14

Time On Btm: 2017.02.24 @ 20:13:00

Time Off Btm: 2017.02.24 @ 22:47:45

TEST COMMENT: 30-IF-Weak Blow ; Built from 1" to 2"
30-ISI-No Blow Back
45-FF-Very Weak Surface Blow
45-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1591.50	93.74	Initial Hydro-static
1	15.45	93.51	Open To Flow (1)
31	17.94	94.60	Shut-In(1)
61	93.90	95.44	End Shut-In(1)
62	20.17	95.44	Open To Flow (2)
109	20.32	96.65	Shut-In(2)
154	49.15	97.41	End Shut-In(2)
155	1560.03	97.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud w/oil specks 100% M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

Tool Information

Drill Pipe:	Length: 3200.00 ft	Diameter: 3.80 inches	Volume: 44.89 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 32000.00 lb
			<u>Total Volume: 44.89 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 29000.00 lb
Depth to Top Packer:	3210.00 ft			Final 29000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3191.00	
Shut In Tool	5.00			3196.00	
Hydraulic tool	5.00			3201.00	
Packer	5.00			3206.00	20.00 Bottom Of Top Packer
Packer	4.00			3210.00	
Stubb	1.00			3211.00	
Recorder	0.00	9120	Inside	3211.00	
Recorder	0.00	8934	Outside	3211.00	
Perforations	25.00			3236.00	
Bullnose	4.00			3240.00	30.00 Bottom Packers & Anchor
Total Tool Length:	50.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w /oil specks 100% M	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0

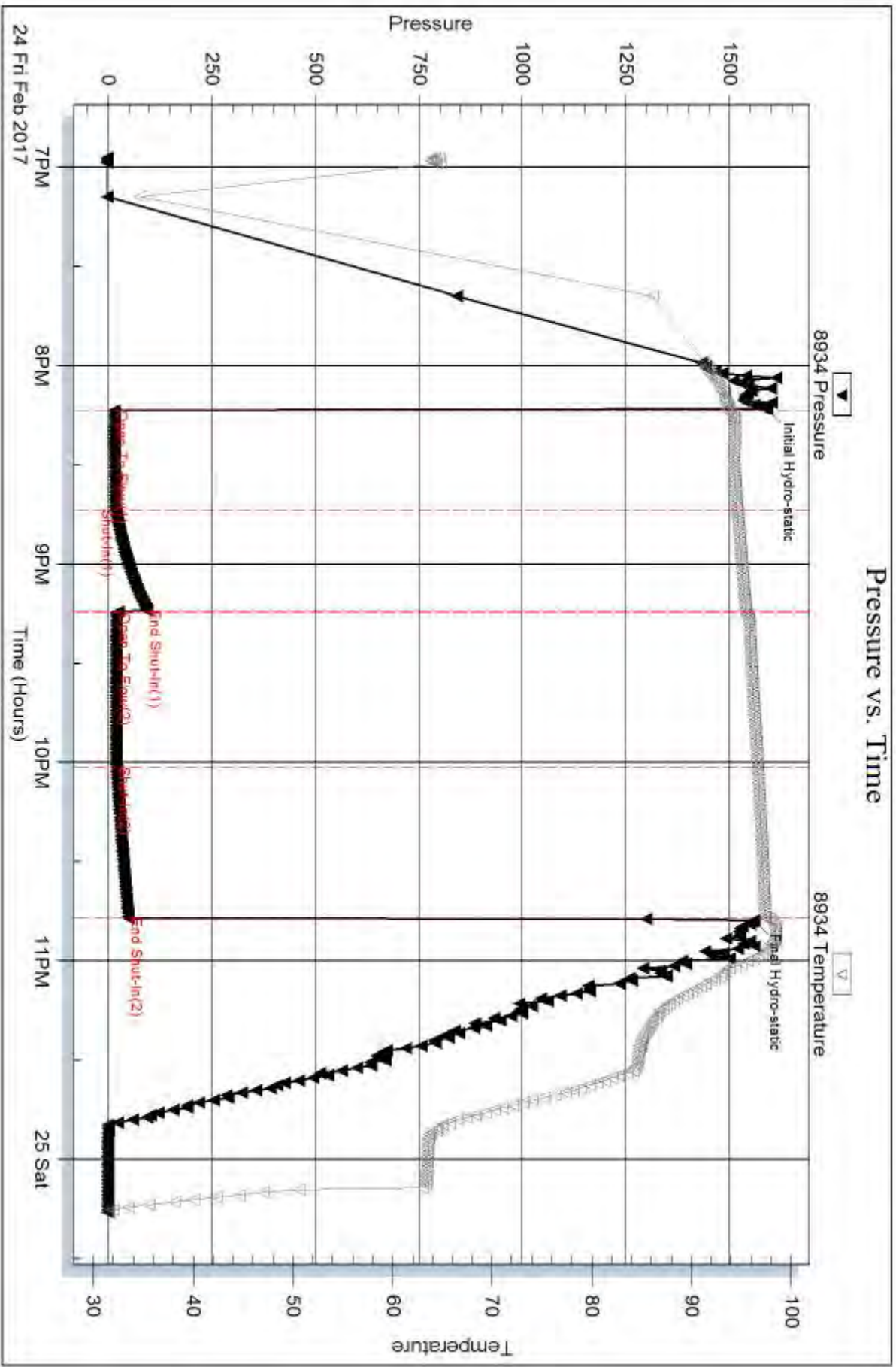
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



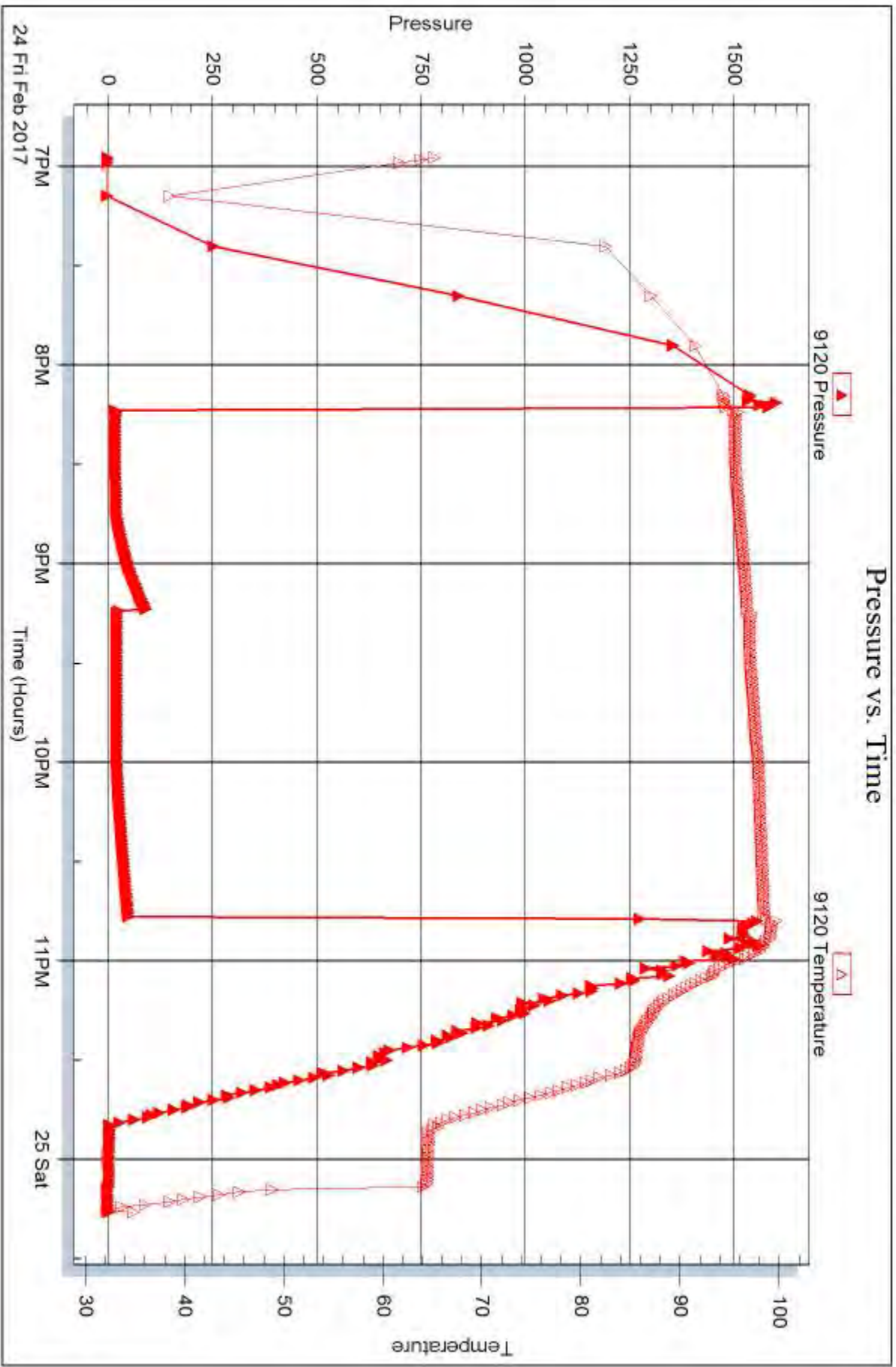
Serial #: 9120

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63506

Printed: 2017.02.27 @ 13:15:52



DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526+0486

ATTN: Jim C. Musgrove/ Lyl

Mauler #3

S20-19S-14W Barton,KS

Start Date: 2017.02.25 @ 19:59:00

End Date: 2017.02.26 @ 01:04:30

Job Ticket #: 63507 DST #: 2

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DRILL STEM TEST REPORT

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

GENERAL INFORMATION:

Formation: **Lower LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:21:15

Time Test Ended: 01:04:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3343.00 ft (KB) To 3452.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3452.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934

Inside

Press@RunDepth: 20.14 psig @ 3352.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.25

End Date:

2017.02.26

Last Calib.:

2017.02.26

Start Time: 19:59:05

End Time:

01:04:29

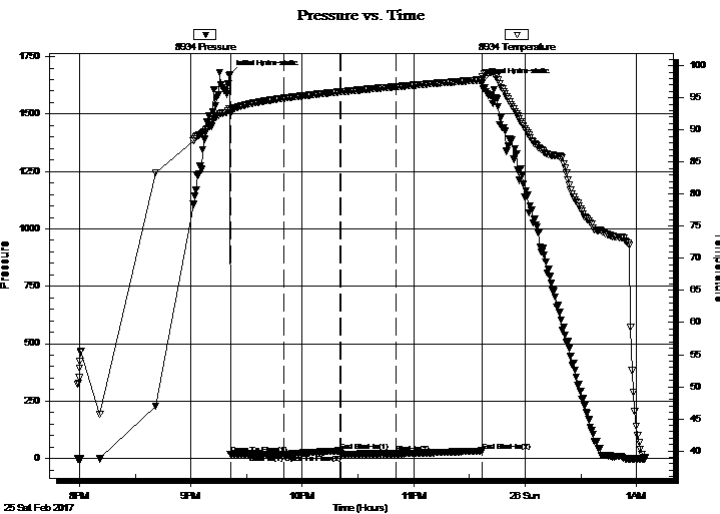
Time On Btm:

2017.02.25 @ 21:21:00

Time Off Btm:

2017.02.25 @ 23:36:45

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface blow to 2"
30-ISI-No Blow Back
30-Very Weak Surface Blow
45-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1671.59	93.36	Initial Hydro-static
1	18.59	92.54	Open To Flow (1)
30	18.05	94.96	Shut-In(1)
60	33.21	95.94	End Shut-In(1)
60	17.06	95.95	Open To Flow (2)
90	20.14	96.74	Shut-In(2)
136	32.51	97.81	End Shut-In(2)
136	1635.30	98.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil specks 100% M	0.07

* Recovery from multiple tests

Gas Rates

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



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 ATTN: Jim C. Musgrove/ Lyl

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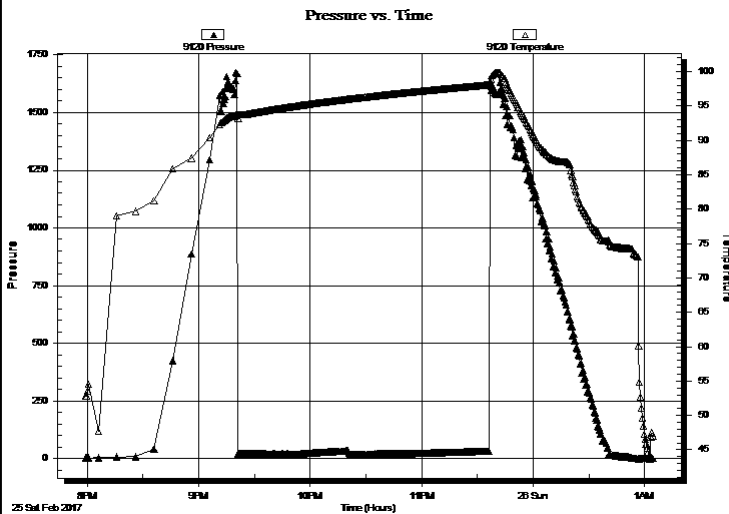
Mauler #3
 Job Ticket: 63507 **DST#: 2**
 Test Start: 2017.02.25 @ 19:59:00

GENERAL INFORMATION:

Formation: **Lower LKC**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:21:15 Tester: Spencer J. Staab
 Time Test Ended: 01:04:30 Unit No: 84
 Interval: **3343.00 ft (KB) To 3452.00 ft (KB) (TVD)** Reference Elevations: 1891.00 ft (KB)
 Total Depth: 3452.00 ft (KB) (TVD) 1883.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 9120 **Inside**
 Press@RunDepth: psig @ 3352.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.02.25 End Date: 2017.02.26 Last Calib.: 2017.02.26
 Start Time: 19:59:15 End Time: 01:04:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface blow to 2"
 30-ISI-No Blow Back
 30-Very Weak Surface Blow
 45-No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil specks 100% M	0.07

* Recovery from multiple tests

Gas Rates

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



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TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

Tool Information

Drill Pipe:	Length: 3327.00 ft	Diameter: 3.80 inches	Volume: 46.67 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 35000.00 lb
			<u>Total Volume: 46.67 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3343.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	109.00 ft			
Tool Length:	129.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3324.00	
Shut In Tool	5.00			3329.00	
Hydraulic tool	5.00			3334.00	
Packer	5.00			3339.00	20.00 Bottom Of Top Packer
Packer	4.00			3343.00	
Stubb	1.00			3344.00	
Perforations	7.00			3351.00	
Change Over Sub	1.00			3352.00	
Recorder	0.00	9120	Inside	3352.00	
Recorder	0.00	8934	Inside	3352.00	
Drill Pipe	95.00			3447.00	
Change Over Sub	1.00			3448.00	
Bullnose	4.00			3452.00	109.00 Bottom Packers & Anchor

Total Tool Length: 129.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

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: 50.00 sec/qt

Cushion Volume: bbl

Water Loss: 9.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 7000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w /oil specks 100% M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

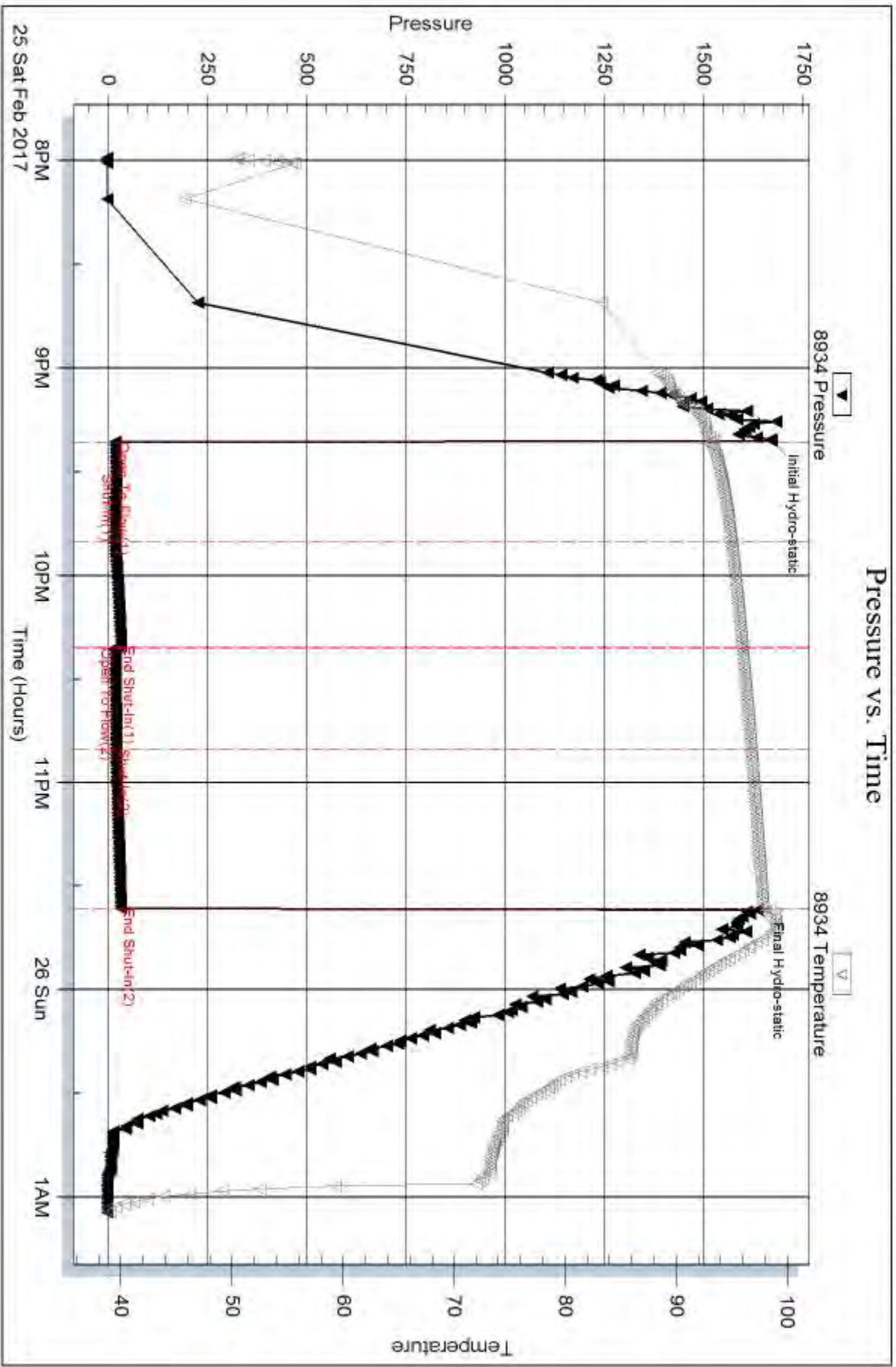
Serial #: 8934

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 63507

Printed: 2017.02.27 @ 13:15:26

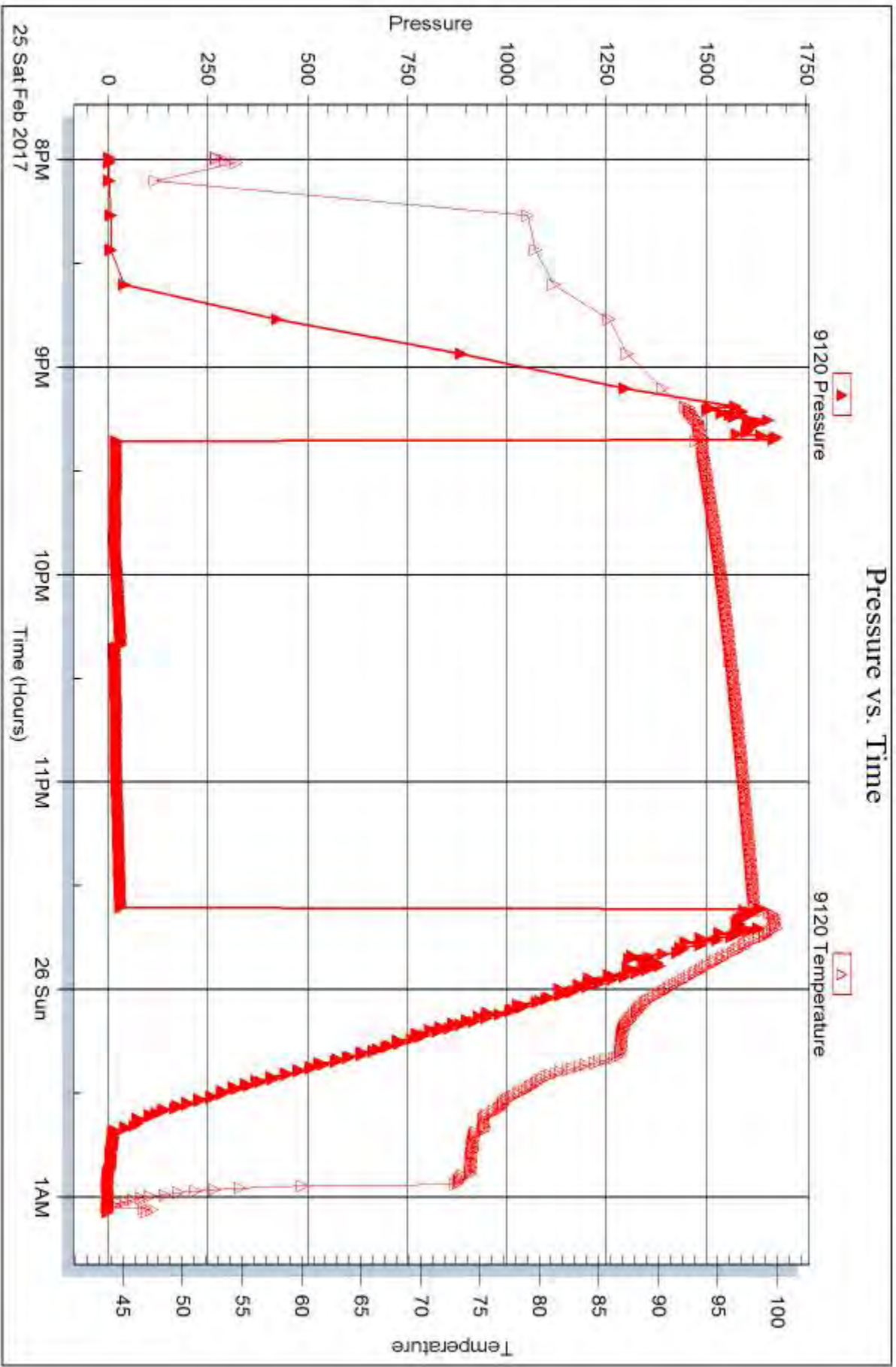
Serial #: 9120

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 63507

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ATTN: Jim C. Musgrove/ Lyl

Mauler #3

S20-19S-14W Barton,KS

Start Date: 2017.02.24 @ 18:57:00

End Date: 2017.02.25 @ 00:16:15

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S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

GENERAL INFORMATION:

Formation: **LKC 'A'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:13:30

Time Test Ended: 00:16:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3210.00 ft (KB) To 3240.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3240.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934 Outside

Press@RunDepth: 20.32 psig @ 3211.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.24 End Date: 2017.02.25

Last Calib.: 2017.02.25

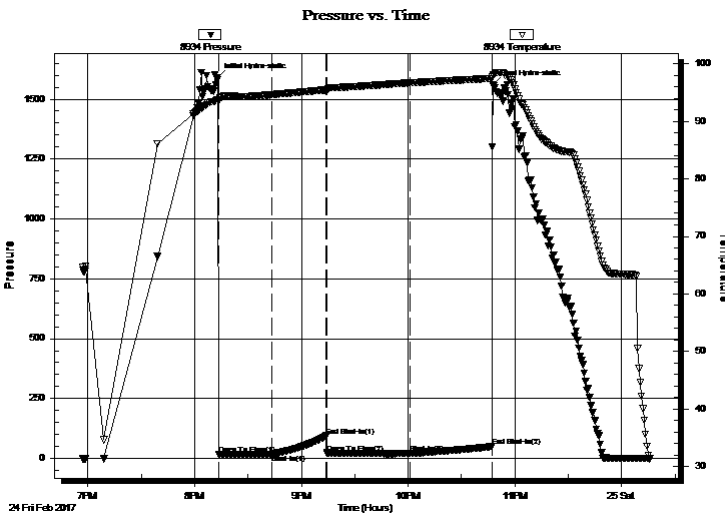
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Time On Btm: 2017.02.24 @ 20:13:00

Time Off Btm: 2017.02.24 @ 22:47:45

TEST COMMENT: 30-IF-Weak Blow ; Built from 1" to 2"
30-ISI-No Blow Back
45-FF-Very Weak Surface Blow
45-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1591.50	93.74	Initial Hydro-static
1	15.45	93.51	Open To Flow (1)
31	17.94	94.60	Shut-In(1)
61	93.90	95.44	End Shut-In(1)
62	20.17	95.44	Open To Flow (2)
109	20.32	96.65	Shut-In(2)
154	49.15	97.41	End Shut-In(2)
155	1560.03	97.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud w/oil specks 100% M	0.21

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

Tool Information

Drill Pipe:	Length: 3200.00 ft	Diameter: 3.80 inches	Volume: 44.89 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 32000.00 lb
			<u>Total Volume: 44.89 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 29000.00 lb
Depth to Top Packer:	3210.00 ft			Final 29000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3191.00	
Shut In Tool	5.00			3196.00	
Hydraulic tool	5.00			3201.00	
Packer	5.00			3206.00	20.00 Bottom Of Top Packer
Packer	4.00			3210.00	
Stubb	1.00			3211.00	
Recorder	0.00	9120	Inside	3211.00	
Recorder	0.00	8934	Outside	3211.00	
Perforations	25.00			3236.00	
Bullnose	4.00			3240.00	30.00 Bottom Packers & Anchor
Total Tool Length:	50.00				



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FLUID SUMMARY

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S20-19S-14W Barton,KS

PO Box 486
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Mauler #3

Job Ticket: 63506

DST#: 1

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.24 @ 18:57:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w /oil specks 100% M	0.210

Total Length: 15.00 ft Total Volume: 0.210 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

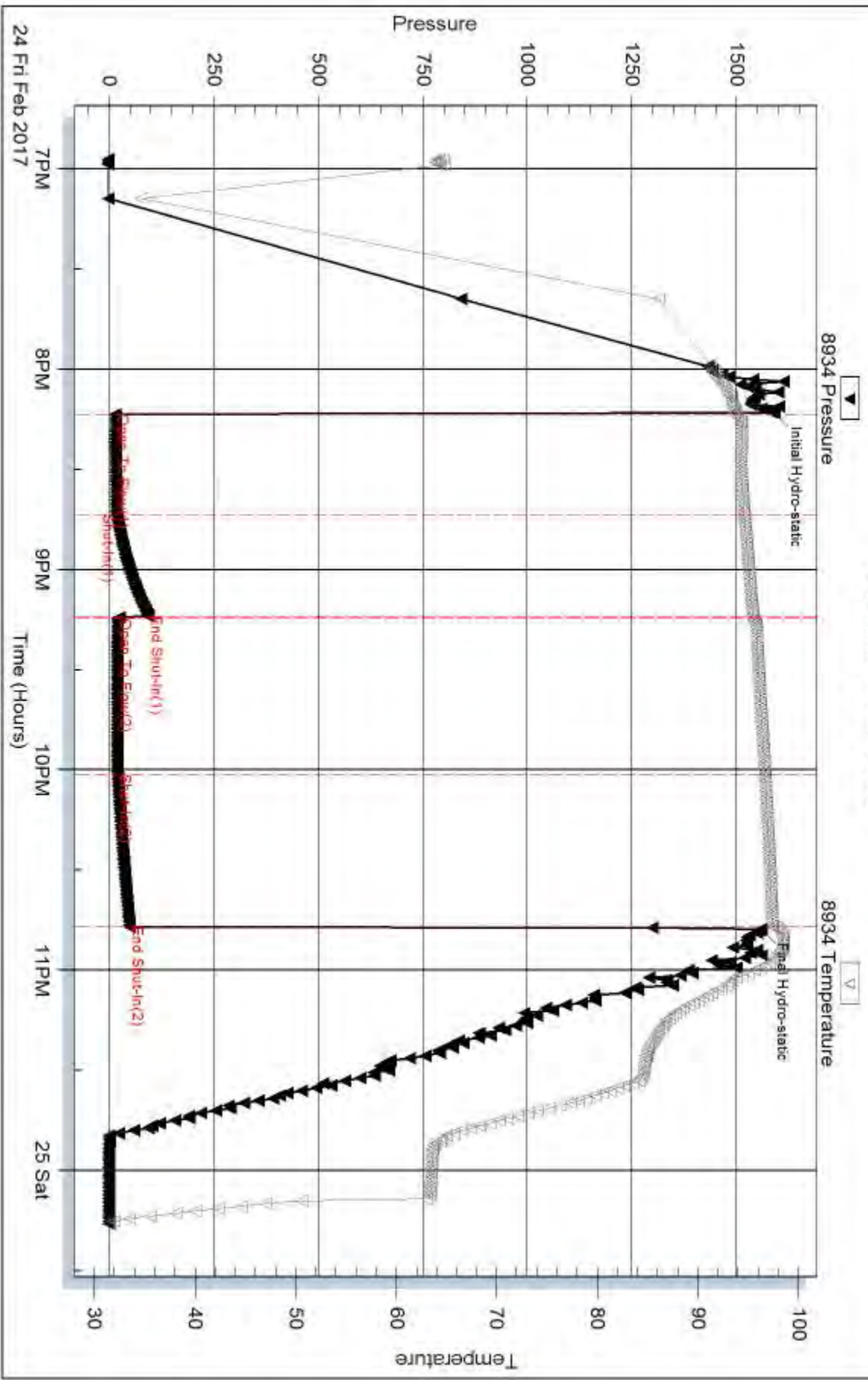
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



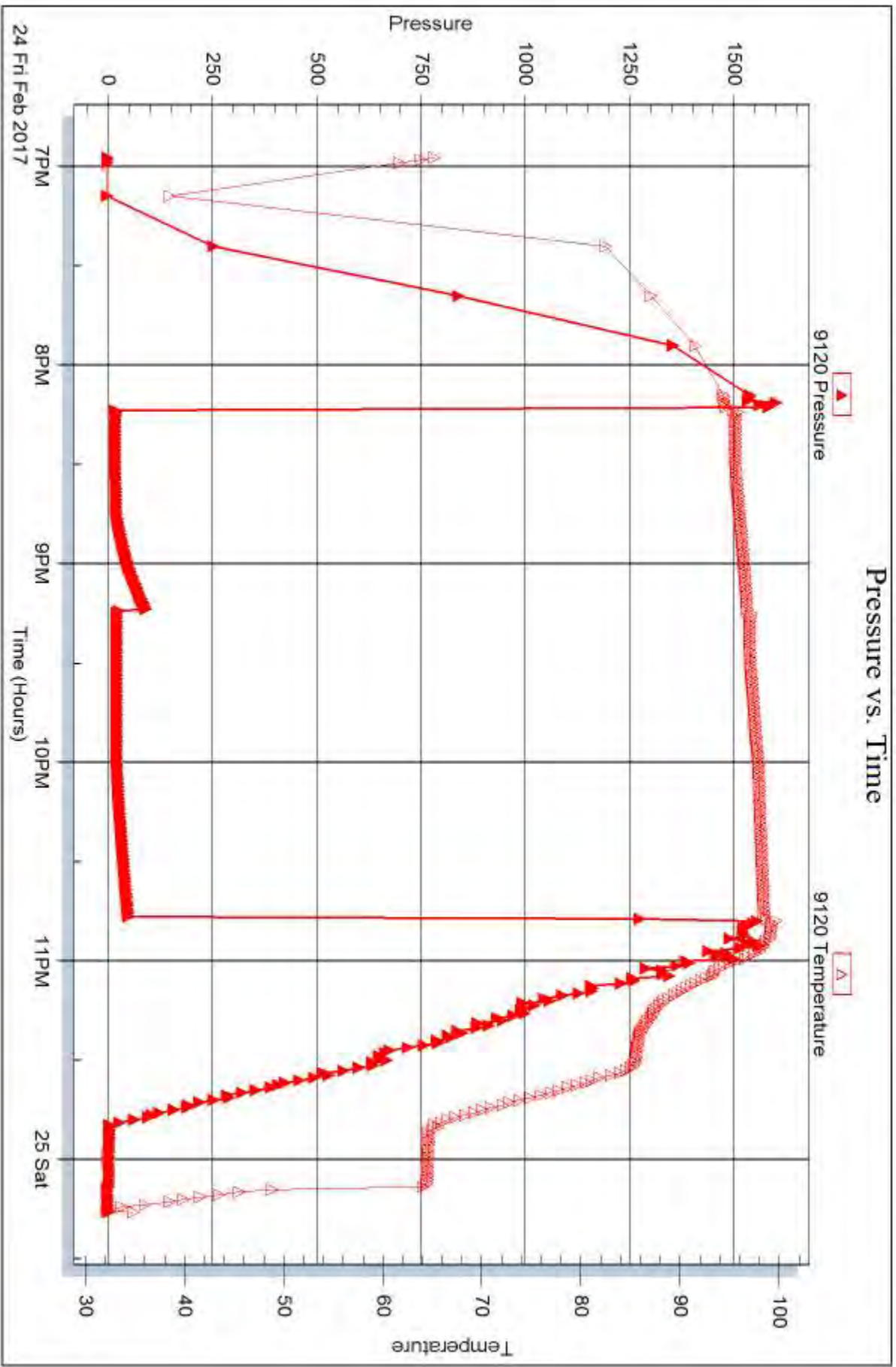
Serial #: 9120

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 1



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Ref. No: 63506

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Test Start: 2017.02.25 @ 19:59:00

GENERAL INFORMATION:

Formation: **Lower LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:21:15

Time Test Ended: 01:04:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3343.00 ft (KB) To 3452.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3452.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934

Inside

Press@RunDepth: 20.14 psig @ 3352.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.25

End Date:

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Last Calib.:

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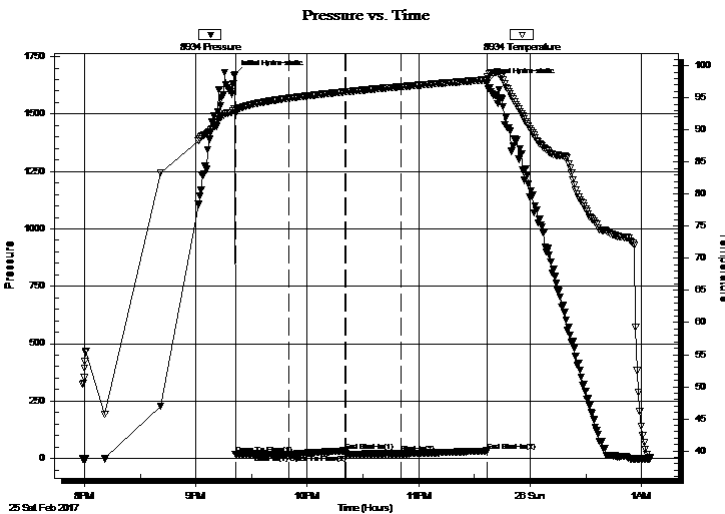
2017.02.25 @ 21:21:00

Time Off Btm:

2017.02.25 @ 23:36:45

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface blow to 2"
30-ISI-No Blow Back
30-Very Weak Surface Blow
45-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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30	18.05	94.96	Shut-In(1)
60	33.21	95.94	End Shut-In(1)
60	17.06	95.95	Open To Flow (2)
90	20.14	96.74	Shut-In(2)
136	32.51	97.81	End Shut-In(2)
136	1635.30	98.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil specks 100% M	0.07

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

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S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

GENERAL INFORMATION:

Formation: **Lower LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:21:15

Time Test Ended: 01:04:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3343.00 ft (KB) To 3452.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3452.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 9120 Inside

Press@RunDepth: psig @ 3352.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.25

End Date:

2017.02.26

Last Calib.:

2017.02.26

Start Time: 19:59:15

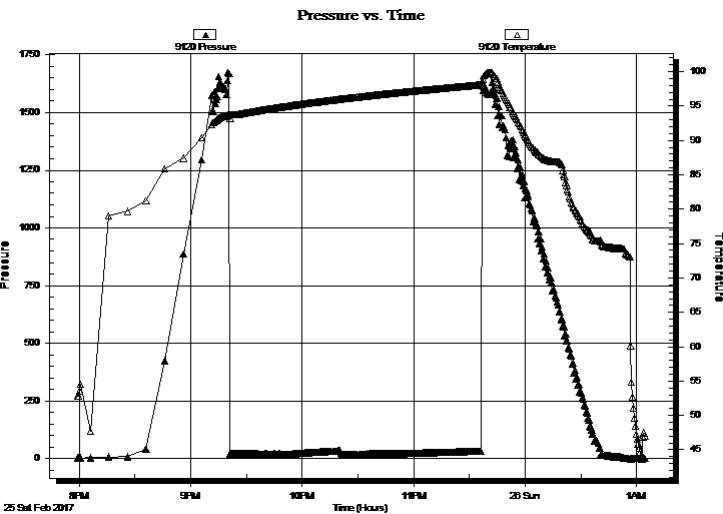
End Time:

01:04:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface blow to 2"
30-ISI-No Blow Back
30-Very Weak Surface Blow
45-No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil specks 100% M	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

Tool Information

Drill Pipe:	Length: 3327.00 ft	Diameter: 3.80 inches	Volume: 46.67 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	35000.00 lb
			<u>Total Volume: 46.67 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3343.00 ft			Final	34000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	109.00 ft				
Tool Length:	129.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3324.00	
Shut In Tool	5.00			3329.00	
Hydraulic tool	5.00			3334.00	
Packer	5.00			3339.00	20.00 Bottom Of Top Packer
Packer	4.00			3343.00	
Stubb	1.00			3344.00	
Perforations	7.00			3351.00	
Change Over Sub	1.00			3352.00	
Recorder	0.00	9120	Inside	3352.00	
Recorder	0.00	8934	Inside	3352.00	
Drill Pipe	95.00			3447.00	
Change Over Sub	1.00			3448.00	
Bullnose	4.00			3452.00	109.00 Bottom Packers & Anchor

Total Tool Length: 129.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63507

DST#: 2

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.25 @ 19:59:00

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: 50.00 sec/qt

Cushion Volume: bbl

Water Loss: 9.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 7000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w /oil specks 100% M	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

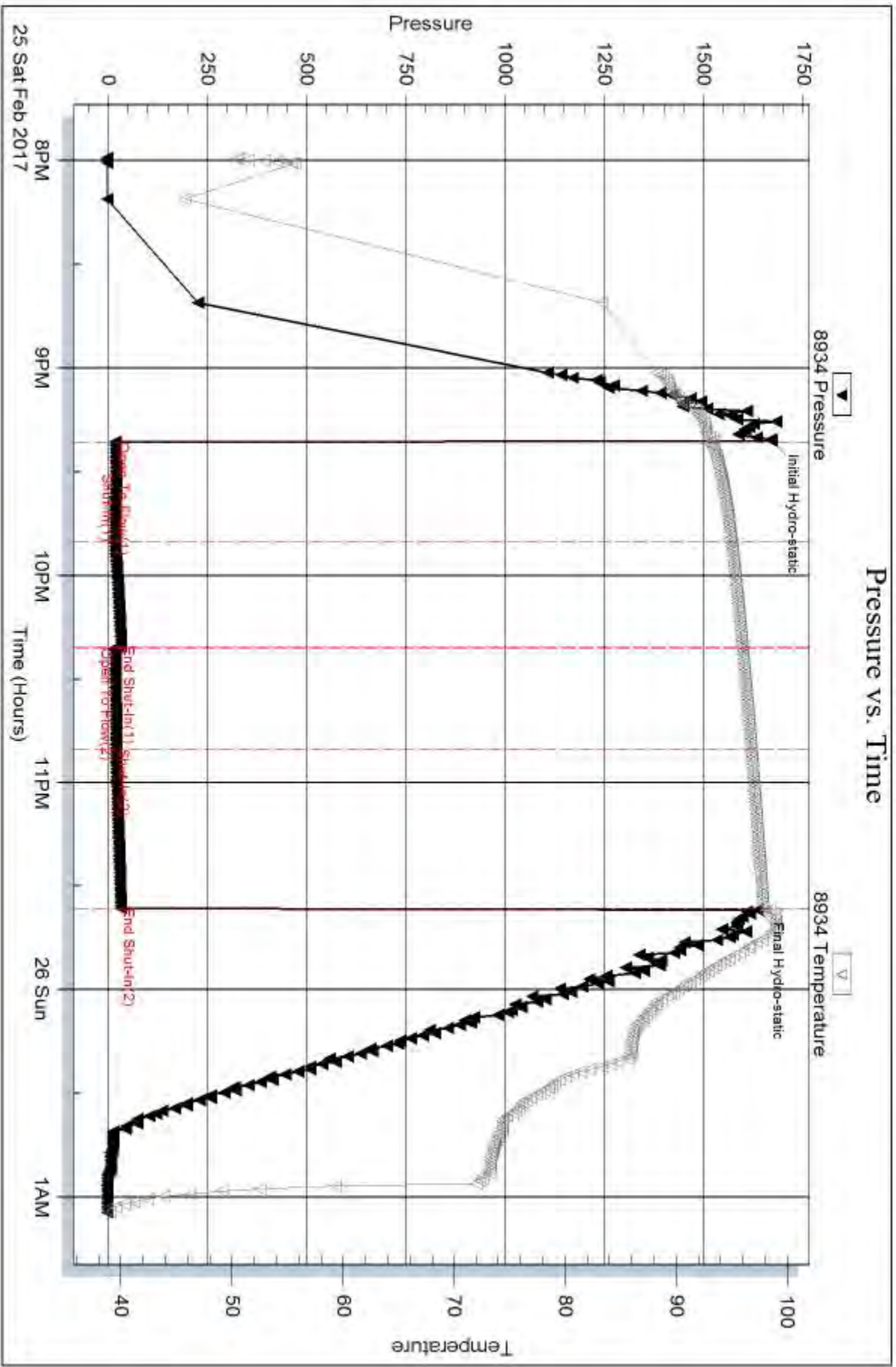
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



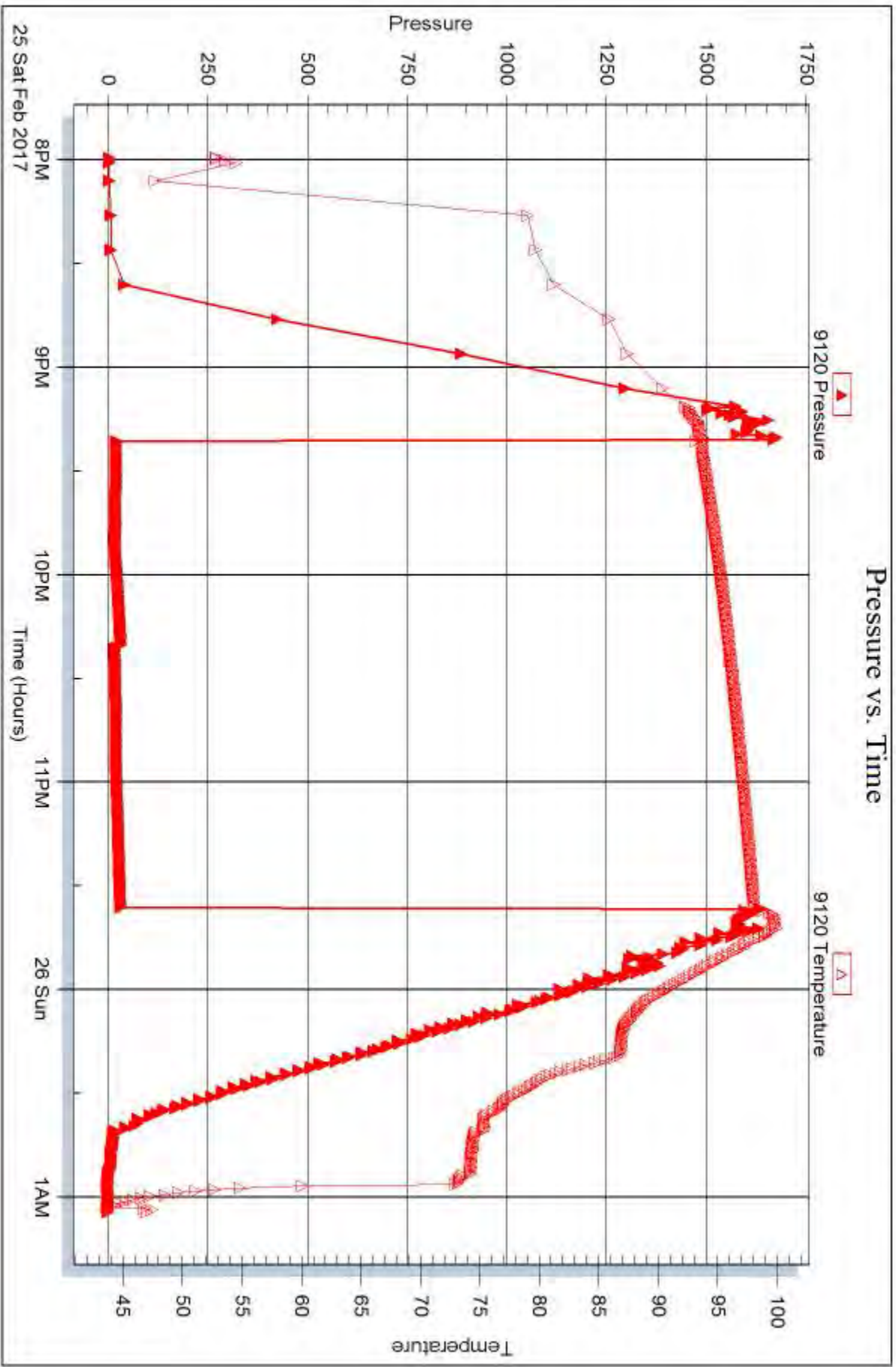
Serial #: 9120

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 63507

Printed: 2017.02.27 @ 13:15:26



DRILL STEM TEST REPORT

Prepared For: **Grady Bolding Corp.**

PO Box 486
Ellinwood, KS 67526+0486

ATTN: Jim C. Musgrove/ Lyl

Mauler #3

S20-19S-14W Barton,KS

Start Date: 2017.02.26 @ 12:08:00

End Date: 2017.02.26 @ 18:00:30

Job Ticket #: 63508 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.02.27 @ 13:14:36

Grady Bolding Corp. S20-19S-14W Barton,KS Mauler #3 DST # 3 Conglomerate 2017.02.26



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63508

DST#: 3

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.26 @ 12:08:00

GENERAL INFORMATION:

Formation: **Conglomerate**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:42:30

Time Test Ended: 18:00:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3440.00 ft (KB) To 3551.00 ft (KB) (TVD)

Reference Elevations: 1891.00 ft (KB)

Total Depth: 3551.00 ft (KB) (TVD)

1883.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934

Inside

Press@RunDepth: 140.11 psig @ 3451.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.26

End Date:

2017.02.26

Last Calib.:

2017.02.26

Start Time: 12:08:05

End Time:

18:00:29

Time On Btm:

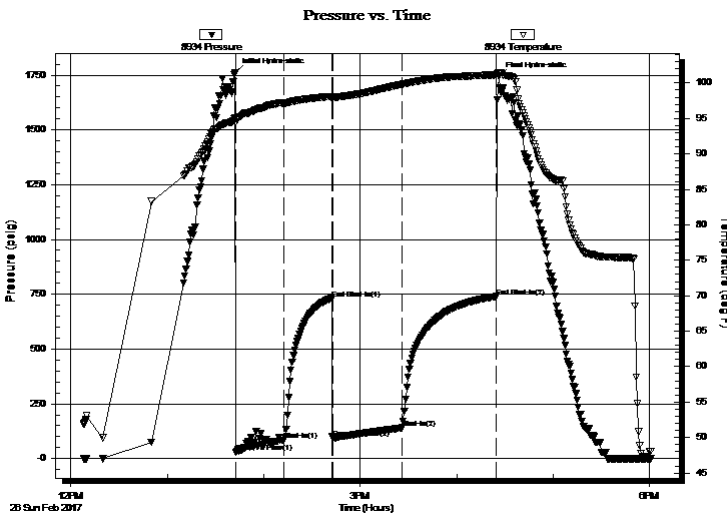
2017.02.26 @ 13:42:15

Time Off Btm:

2017.02.26 @ 16:26:00

TEST COMMENT: 30-IF-BOB in 23 minutes
30-ISI-Very Weak Surface Blow Back; few bubbles
45-FF-BOB in 31 minutes
60-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1762.13	95.09	Initial Hydro-static
1	27.62	94.50	Open To Flow (1)
31	84.87	97.10	Shut-In(1)
60	727.26	98.11	End Shut-In(1)
61	94.15	97.97	Open To Flow (2)
104	140.11	99.81	Shut-In(2)
163	739.01	101.16	End Shut-In(2)
164	1745.22	101.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 2%O 98%M	0.14
120.00	SWGCM 1% W 2% G 97%M	1.68
120.00	SGWCM 5%G 8%W 87%M	1.68

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63508

DST#: 3

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.26 @ 12:08:00

Tool Information

Drill Pipe:	Length: 3423.00 ft	Diameter: 3.80 inches	Volume: 48.02 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 36000.00 lb
			<u>Total Volume: 48.02 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3440.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	111.00 ft			
Tool Length:	131.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3421.00	
Shut In Tool	5.00			3426.00	
Hydraulic tool	5.00			3431.00	
Packer	5.00			3436.00	20.00 Bottom Of Top Packer
Packer	4.00			3440.00	
Stubb	1.00			3441.00	
Perforations	9.00			3450.00	
Change Over Sub	1.00			3451.00	
Recorder	0.00	9120	Inside	3451.00	
Recorder	0.00	8934	Inside	3451.00	
Drill Pipe	95.00			3546.00	
Change Over Sub	1.00			3547.00	
Bullnose	4.00			3551.00	111.00 Bottom Packers & Anchor

Total Tool Length: 131.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Grady Bolding Corp.

S20-19S-14W Barton,KS

PO Box 486
Ellinwood, KS 67526+0486

Mauler #3

Job Ticket: 63508

DST#: 3

ATTN: Jim C. Musgrove/ Lyl

Test Start: 2017.02.26 @ 12:08:00

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:

26000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
10.00	SOCM 2%O 98%M	0.140
120.00	SWGCM 1% W 2% G 97%M	1.683
120.00	SGWCM 5%G 8%W 87%M	1.683

Total Length: 250.00 ft

Total Volume: 3.506 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

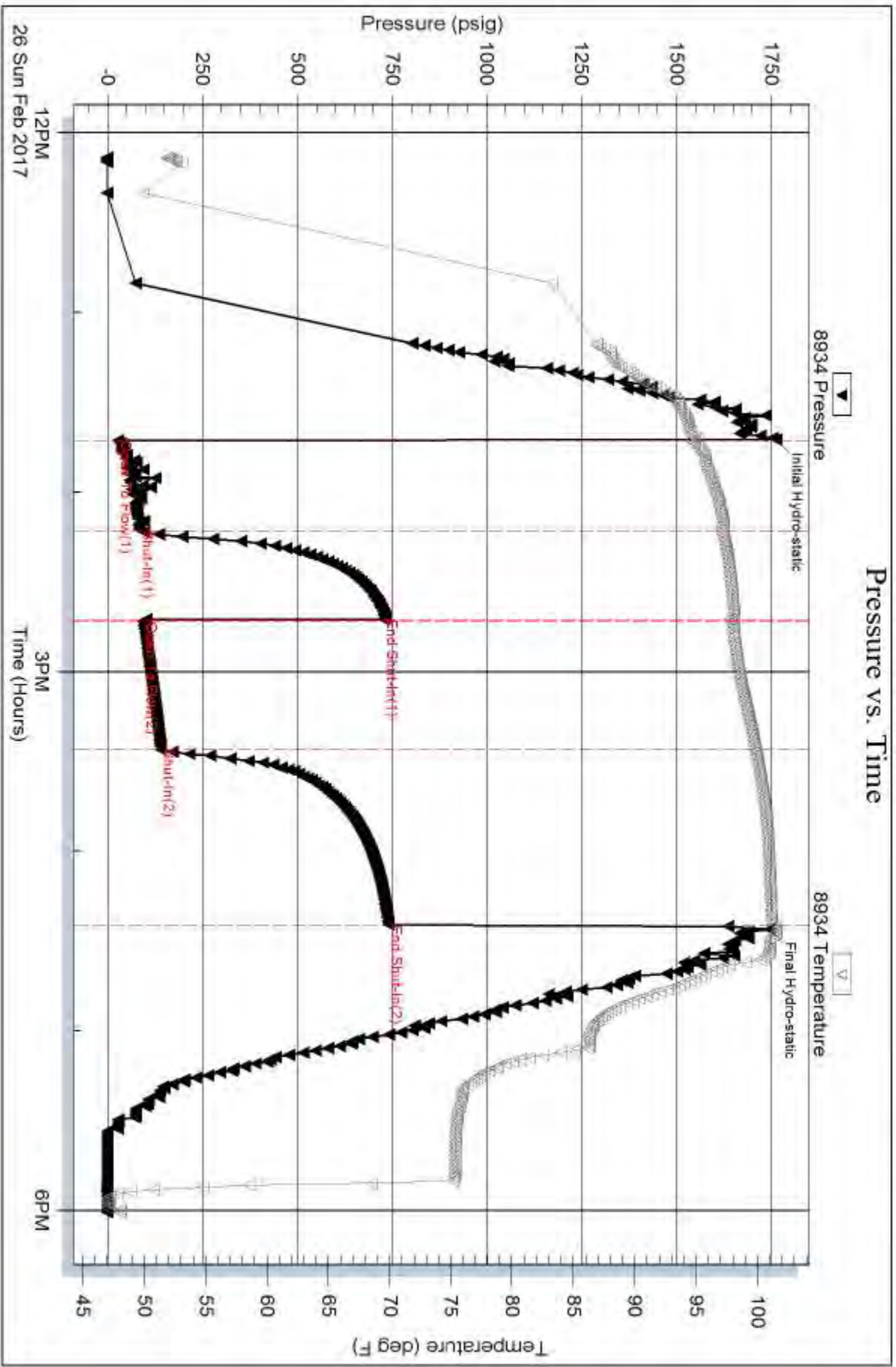
Serial #: 8934

Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 3



Tribble Testing, Inc

Ref. No: 63508

Printed: 2017.02.27 @ 13:14:39

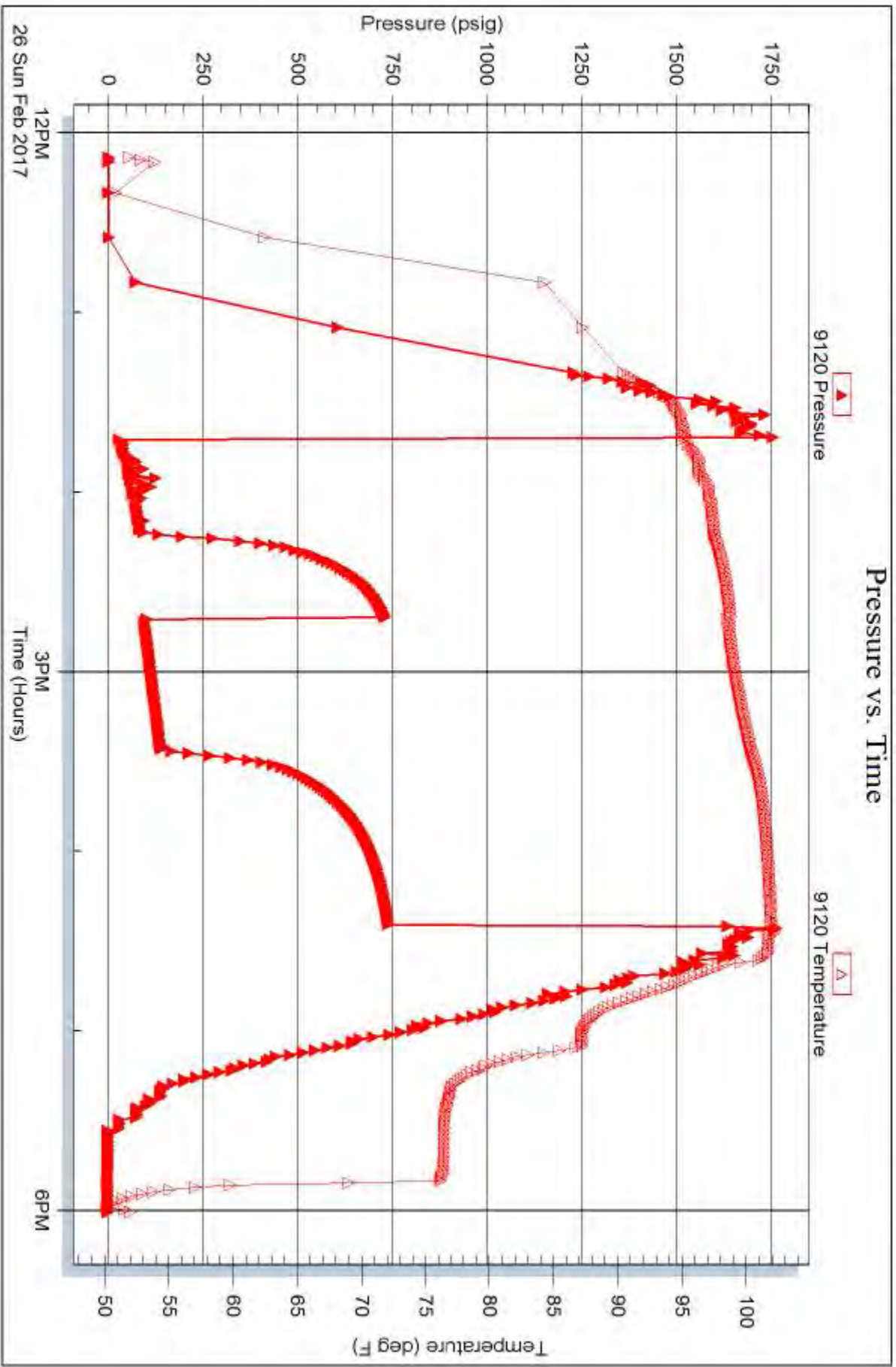
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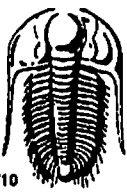
Inside

Grady Bolding Corp.

Mauler #3

DST Test Number: 3





TRIOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63506

Well Name & No. Mauler # 3 Test No. 1 Date 2/24/2017
 Company Grady Bolding Corporation Elevation 1898 KB 1898 GL
 Address 114 North Main, P.O. BOX 486 Ellinwood Ks 67526-0486
 Co. Rep / Geo. Jim C. Musgrave / Lyle L. Gunn Rig Royal Drilling Corp Rig #1
 Location: Sec. 20 Twp. 19S Rge. 14W Co. Barton State KS

Interval Tested 3210' - 3240' Zone Tested LKC 'a' zone
 Anchor Length 30' Drill Pipe Run 3200' Mud Wt. 8.95
 Top Packer Depth 3205' Drill Collars Run - Vis 58
 Bottom Packer Depth 3210' Wt. Pipe Run - WL 8.0
 Total Depth 3240' Chlorides 5,500 ppm System LCM 1/2#

Blow Description 17- Very Weak Blow; Built from 1 inch to 2 inches
1SD- No Blow Back
77- Very Weak Surface Blow
7SD- No Blow Back

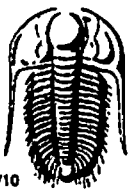
Rec	Feet of	%gas	%oil	%water	%mud
<u>15'</u>	<u>Mud w/oil specks</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15' BHT 98° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1591</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>17:45</u>
(B) First Initial Flow <u>15</u>	<input type="checkbox"/> Jars	T-Started <u>18:57</u>
(C) First Final Flow <u>17</u>	<input type="checkbox"/> Safety Joint	T-Open <u>20:11</u>
(D) Initial Shut-In <u>93</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>23:45</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>00:14 2/25/2017</u>
(F) Second Final Flow <u>20</u>	<input checked="" type="checkbox"/> Mileage <u>11627</u> 12	Comments
(G) Final Shut-In <u>49</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1560</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1062</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1062</u>	

Approved By _____ Our Representative Spencer J. Jacob Thank-you!
 Triobite 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.

785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63507

Well Name & No. Mauler # 3 Test No. 2 Date 2/25/2017
 Company Grady Bolding Corporation Elevation 1895 KB 1883 GL
 Address 114 North Main P.O. BOX 486 Ellinwood Mo 67526+0486
 Co. Rep / Geo. Jim C Musgrove / Lyle L. Gunn Rig Royal Drilling Corp. Rig # 1
 Location: Sec. 20 Twp. 19s Rge. 14w Co. Barton State Mo

Interval Tested 3343' - 3452' Zone Tested Lower LHC zones
 Anchor Length 309' Drill Pipe Run 3327' Mud Wt. 9.2
 Top Packer Depth 3338' Drill Collars Run - Vis 50
 Bottom Packer Depth 3343' Wt. Pipe Run - WL 9.2
 Total Depth 3452' Chlorides 7,000 ppm System LCM Trace

Blow Description 17- Weak Blow; Built from a surface blow to 2 inches
150- No Blow Back
77- Very Weak Surface Blow
750- No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud w/ oil specks</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 5' BHT 98° Gravity - API RW - @ - °F Chlorides - ppm

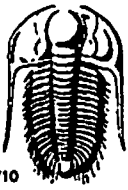
(A) Initial Hydrostatic 1671 Test 1050 T-On Location 19:25
 (B) First Initial Flow 18 Jars _____ T-Started 19:59
 (C) First Final Flow 18 Safety Joint _____ T-Open 21:20
 (D) Initial Shut-In 33 Circ Sub _____ T-Pulled 23:35
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 01:03 2/26/2017
 (F) Second Final Flow 20 Mileage 116 R7 12 _____
 (G) Final Shut-In 32 Sampler _____
 (H) Final Hydrostatic 1635 Straddle _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 30 Ruined Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 45 Extra Recorder _____
 Sub Total 0
 Total 1062
 MP/DST Disc't _____
 Sub Total 1062

Approved By _____ Our Representative Spencer J. Stahl Thanks

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 tests are made.

785-259-0056



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63508

Well Name & No. Mauler #3 Test No. 3 Date 2/26/2017
 Company Grady Bolding Corporation Elevation 1891 KB 1883 GL
 Address 114 North Main P.O. BOX 486 Ellinwood KS 67526-0486
 Co. Rep / Geo. Jim C. Musgrove / Lyle L. Gunn Rig Royal Drilling Corp. Rig #1
 Location: Sec. 20 Twp. 19s Rge. 14w Co. Barton State KS

Interval Tested 3440'-3551' Zone Tested Conglomerate
 Anchor Length 111' Drill Pipe Run 3423' Mud Wt. 9.4
 Top Packer Depth 3435' Drill Collars Run — Vis 58
 Bottom Packer Depth 3440' Wt. Pipe Run — WL 9.6
 Total Depth 3551' Chlorides 7,000 ppm System LCM Trace

Blow Description 17- BOB in 23 minutes
1SD- Very Weak surface blow back; few bubbles
77- BOB in 31 minutes
7SD- No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>SOCM</u>	<u>2</u>		<u>98</u>	
<u>120'</u>	<u>SWGCM</u>	<u>2</u>		<u>97</u>	
<u>120'</u>	<u>SGWCM</u>	<u>5</u>		<u>87</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 260' BHT 101° Gravity — API RW 365 @ 51° F Chlorides 26,000 ppm

(A) Initial Hydrostatic 1762 Test 1050 T-On Location 11:15
 (B) First Initial Flow 27 Jars _____ T-Started 12:08
 (C) First Final Flow 84 Safety Joint _____ T-Open 13:41
 (D) Initial Shut-In 727 Circ Sub _____ T-Pulled 16:25
 (E) Second Initial Flow 94 Hourly Standby _____ T-Out 17:58
 (F) Second Final Flow 140 Mileage 416 RT 12 Comments _____
 (G) Final Shut-In 739 Sampler _____
 (H) Final Hydrostatic 1745 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 60

Sub Total 1062

MP/DST Disc't _____

Approved By _____ Our Representative James J. Quast Thank-you!!
 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.

785-259-0056