



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&D Exploration LLC

S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63214

DST#: 3

ATTN: Jim C. Musgrove

Test Start: 2017.05.13 @ 06:37:00

GENERAL INFORMATION:

Formation: **Arbuckle/Gorham Ss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:40:45

Time Test Ended: 13:05:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3314.00 ft (KB) To 3347.00 ft (KB) (TVD)**

Total Depth: 3347.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1922.00 ft (KB)

1913.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8934 Outside

Press@RunDepth: 806.52 psig @ 3317.00 ft (KB)

Start Date: 2017.05.13

End Date: 2017.05.13

Start Time: 06:37:15

End Time: 13:05:00

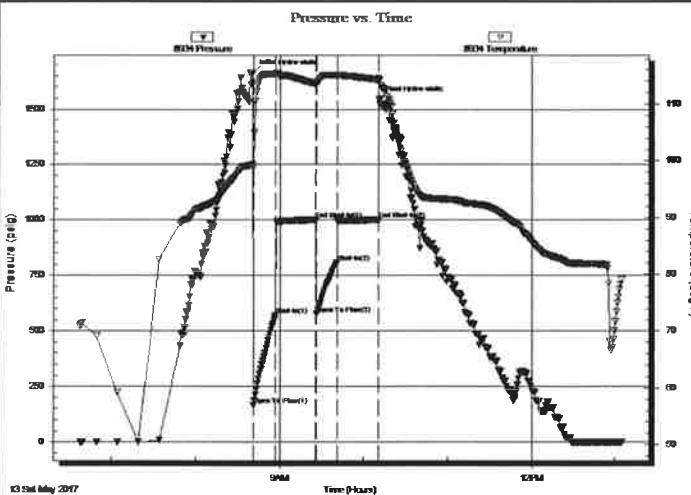
Capacity: 8000.00 psig

Last Calib.: 2017.05.13

Time On Btm: 2017.05.13 @ 08:40:30

Time Off Btm: 2017.05.13 @ 10:10:45

TEST COMMENT: 15-IF-BOB in 30 seconds
30-ISI-Fair Blow ; Built from surface to 4&1/2"
15-FF-BOB in 25 seconds
30-FSI-Fair Blow ; Built from surface to 2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.75	99.43	Initial Hydro-static
1	163.92	98.84	Open To Flow (1)
17	569.58	115.28	Shut-In(1)
46	1000.58	113.58	End Shut-In(1)
46	574.69	113.52	Open To Flow (2)
61	806.52	115.05	Shut-In(2)
90	1000.05	114.22	End Shut-In(2)
91	1543.07	114.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GMCWO 5%G 5%M 40%W 50%O	0.84
1030.00	WMCWO 20%W 10%M 30%G 40%O	14.45
315.00	OMCW 10%O 10%M 80%W	4.42
315.00	GOCM 10%G 30%O 60%W	4.42
180.00	Water 100%W	2.52

* Recovery from multiple tests

Gas Rates

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



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Job Ticket: 63214 **DST#: 3**

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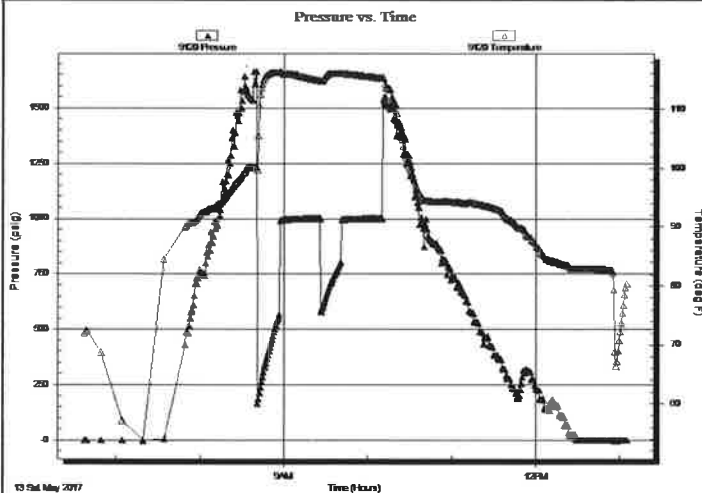
Test Start: 2017.05.13 @ 06:37:00

GENERAL INFORMATION:

Formation: **Arbuckle/Gorham Ss**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:40:45
Time Test Ended: 13:05:00
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J. Staab
Unit No: 84
Interval: **3314.00 ft (KB) To 3347.00 ft (KB) (TVD)**
Reference Elevations: 1922.00 ft (KB)
Total Depth: 3347.00 ft (KB) (TVD) 1913.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 9.00 ft

Serial #: 9120 Inside
Press@RunDepth: psig @ 3317.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.05.13 End Date: 2017.05.13 Last Calib.: 2017.05.13
Start Time: 06:37:15 End Time: 13:05:00 Time On Btm:
Time Off Btm:

TEST COMMENT: 15-IF-BOB in 30 seconds
30-ISI-Fair Blow ; Built from surface to 4&1/2"
15-FF-BOB in 25 seconds
30-FSI-Fair Blow ; Built from surface to 2"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GMCWO 5%G 5%M 40%W 50%O	0.84
1030.00	WMCGO 20%W 10%M 30%G 40%O	14.45
315.00	OMCW 10%O 10%M 80%W	4.42
315.00	GOCM 10%G 30%O 60%W	4.42
180.00	Water 100%W	2.52

* Recovery from multiple tests

Gas Rates

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



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FLUID SUMMARY

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S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63214

DST#: 3

ATTN: Jim C. Musgrove

Test Start: 2017.05.13 @ 06:37:00

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:

18500 ppm

Viscosity: 41.00 sec/qt

Cushion Volume:

bbf

Water Loss: 13.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 11000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	GMCWO 5%G 5%M 40%W 50%O	0.842
1030.00	WMCGO 20%W 10%M 30%G 40%O	14.448
315.00	OMCW 10%O 10%M 80%W	4.419
315.00	GOCM 10%G 30%O 60%W	4.419
180.00	Water 100%W	2.525

Total Length: 1900.00 ft

Total Volume: 26.653 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2# LCM

RW=.314@80degrees

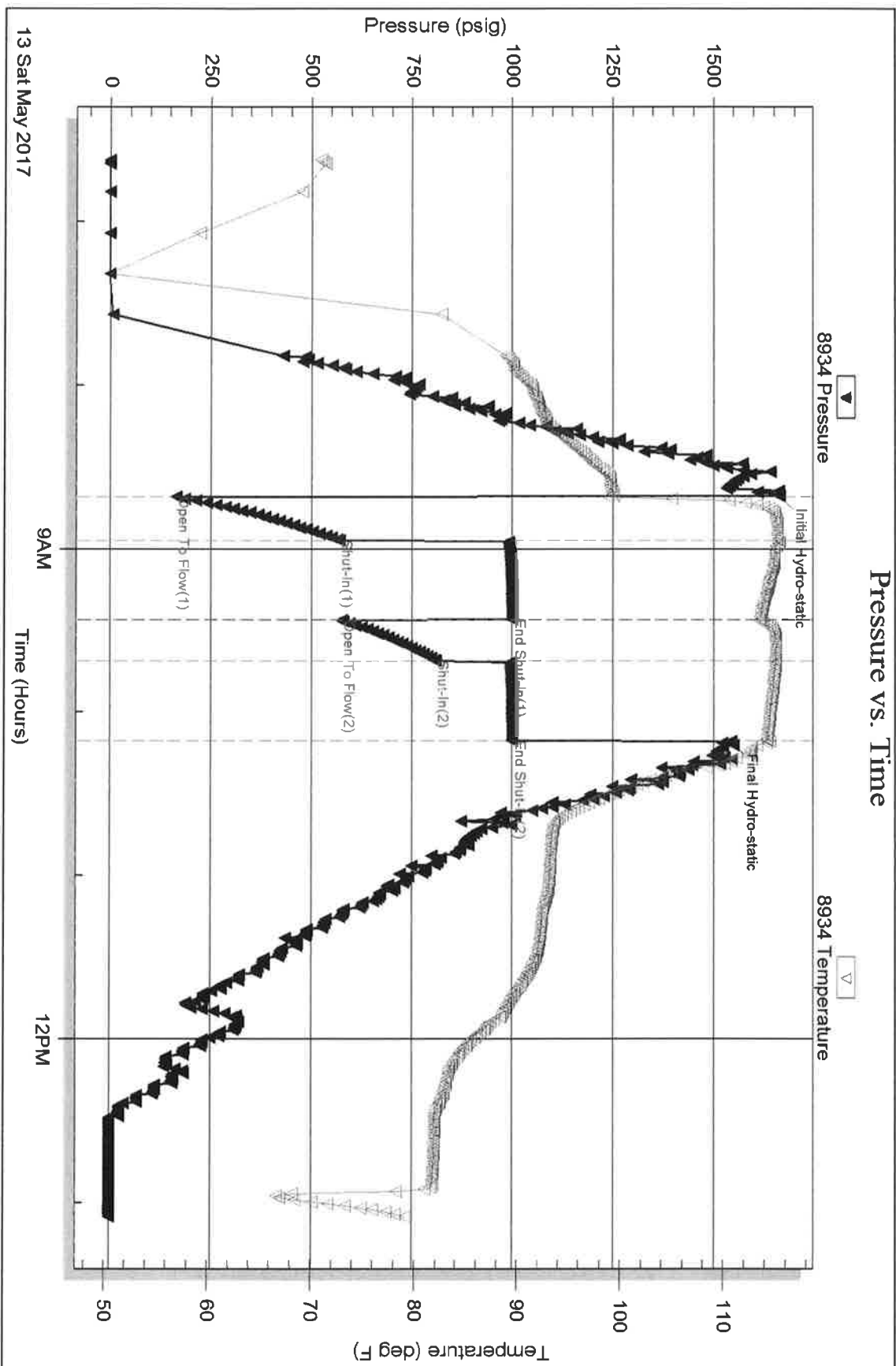
Serial #: 8934

Outside H&D Exploration LLC

Bieberle #3

DST Test Number: 3

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 63214

Printed: 2017.05.13 @ 13:54:03

Serial #: 9120

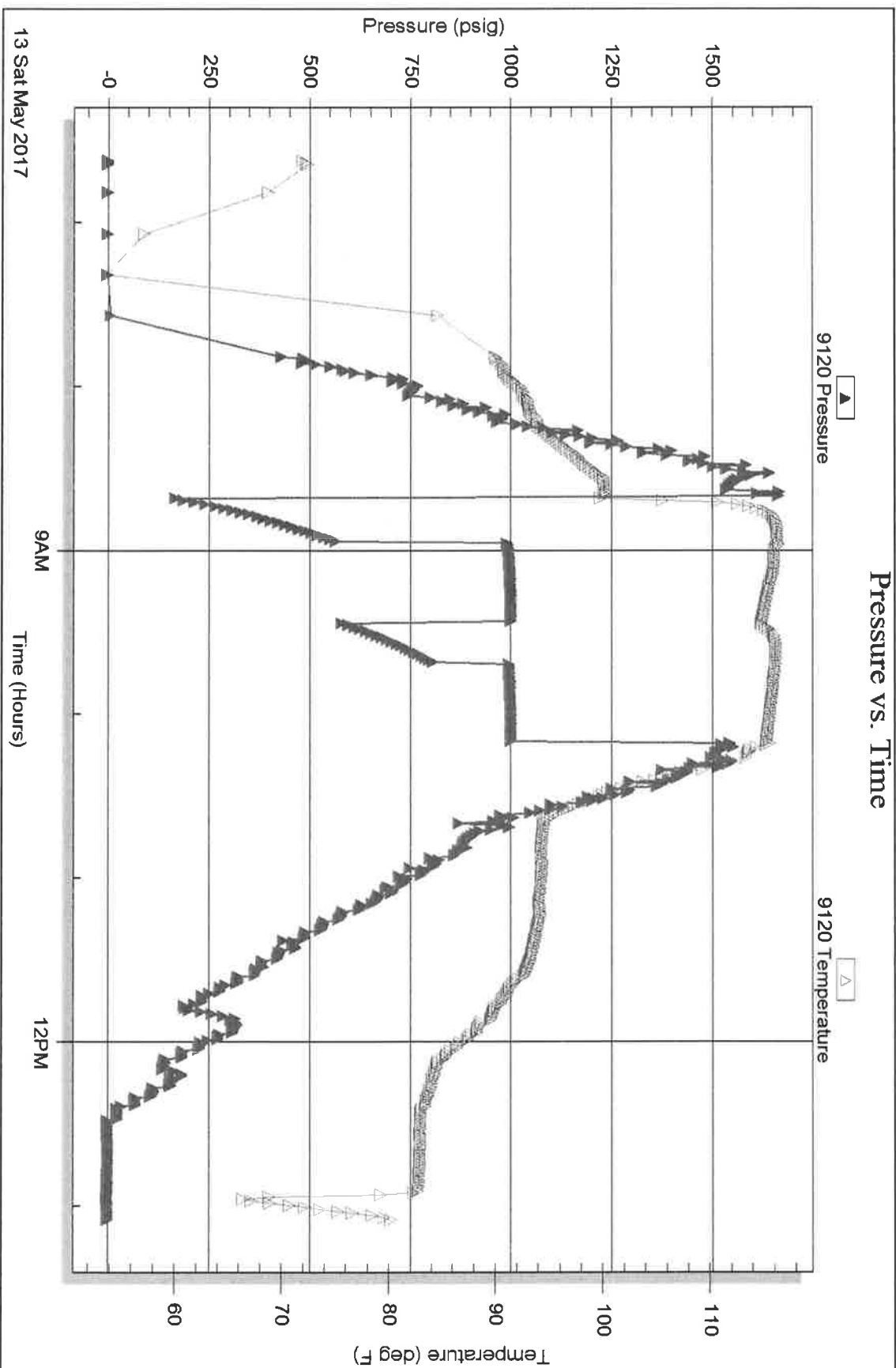
Inside

H&D Exploration LLC

Bieberle #3

DST Test Number: 3

Pressure vs. Time



13 Sat May 2017

Traffike Testing, Inc

Ref. No: 63214

Printed: 2017.05.13 @ 13:54:04



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&D Exploration LLC

S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63213

DST#: 2

ATTN: Jim C. Musgrove

Test Start: 2017.05.12 @ 15:13:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:22:30

Time Test Ended: 20:33:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3198.00 ft (KB) To 3270.00 ft (KB) (TVD)

Total Depth: 3270.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1922.00 ft (KB)

1913.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8934 Inside

Press@RunDepth: 15.72 psig @ 3202.00 ft (KB)

Start Date: 2017.05.12

End Date: 2017.05.12

Start Time: 15:13:15

End Time: 20:33:45

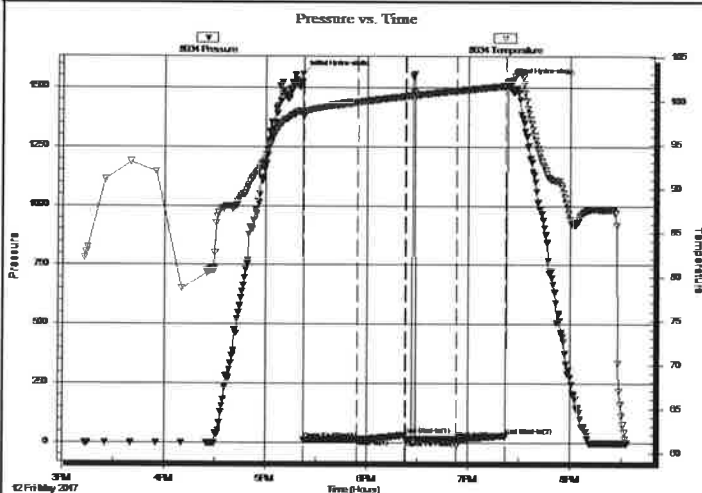
Capacity: 8000.00 psig

Last Calib.: 2017.05.12

Time On Btm: 2017.05.12 @ 17:22:15

Time Off Btm: 2017.05.12 @ 19:23:30

TEST COMMENT: 30-IF-Weak Blow ; Built from surface to 1/4"
30-ISI-No Blow Back
30-FF-No Blow ; Flushed tool; Didn't help
30-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1556.14	98.93	Initial Hydro-static
1	12.46	98.14	Open To Flow (1)
32	13.99	99.84	Shut-In(1)
61	32.87	100.52	End Shut-In(1)
61	13.76	100.54	Open To Flow (2)
91	15.72	101.17	Shut-In(2)
120	30.17	101.69	End Shut-In(2)
122	1518.62	102.03	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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Bieberle #3

Job Ticket: 63213

DST#: 2

ATTN: Jim C. Musgrove

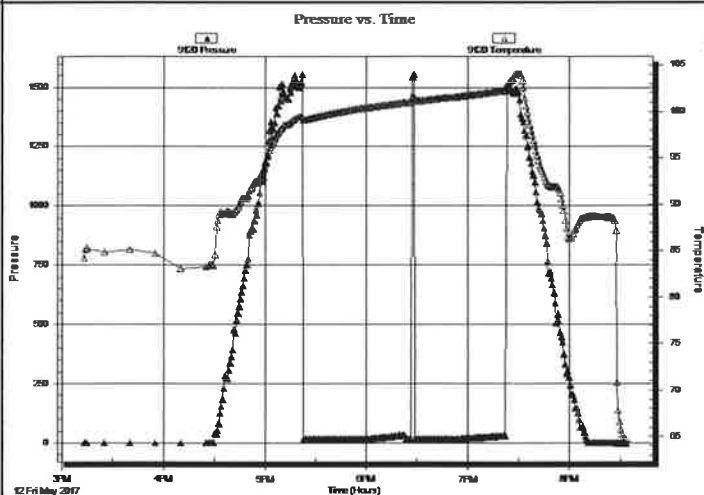
Test Start: 2017.05.12 @ 15:13:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:22:30 Tester: Spencer J. Staab
 Time Test Ended: 20:33:45 Unit No: 84
 Interval: **3198.00 ft (KB) To 3270.00 ft (KB) (TVD)** Reference Elevations: 1922.00 ft (KB)
 Total Depth: 3270.00 ft (KB) (TVD) 1913.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 9.00 ft

Serial #: 9120 Inside
 Press@RunDepth: psig @ 3202.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.05.12 End Date: 2017.05.12 Last Calib.: 2017.05.12
 Start Time: 15:13:15 End Time: 20:33:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built from surface to 1/4"
 30-ISI-No Blow Back
 30-FF-No Blow ; Flushed tool; Didn't help
 30-FSI-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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FLUID SUMMARY

H&D Exploration LLC

S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63213

DST#: 2

ATTN: Jim C. Musgrove

Test Start: 2017.05.12 @ 15:13:00

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: 42.00 sec/qt

Cushion Volume:

bbf

Water Loss: 11.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

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

Total Length: 5.00 ft Total Volume: 0.070 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1&1/2# LCM

Serial #: 8934

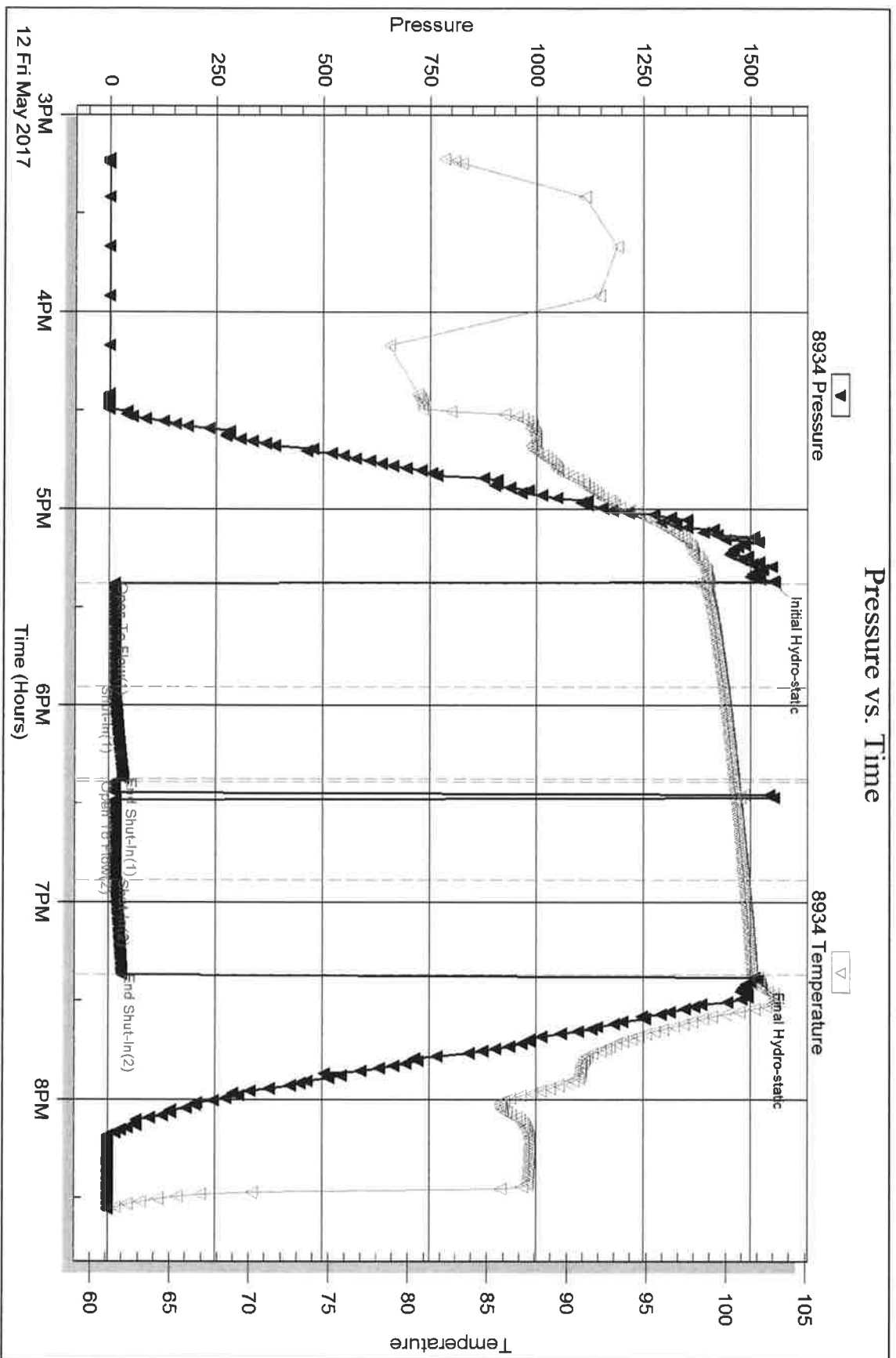
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H&D Exploration LLC

Bieberle #3

DST Test Number: 2

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 63213

Printed: 2017.05.13 @ 10:37:32

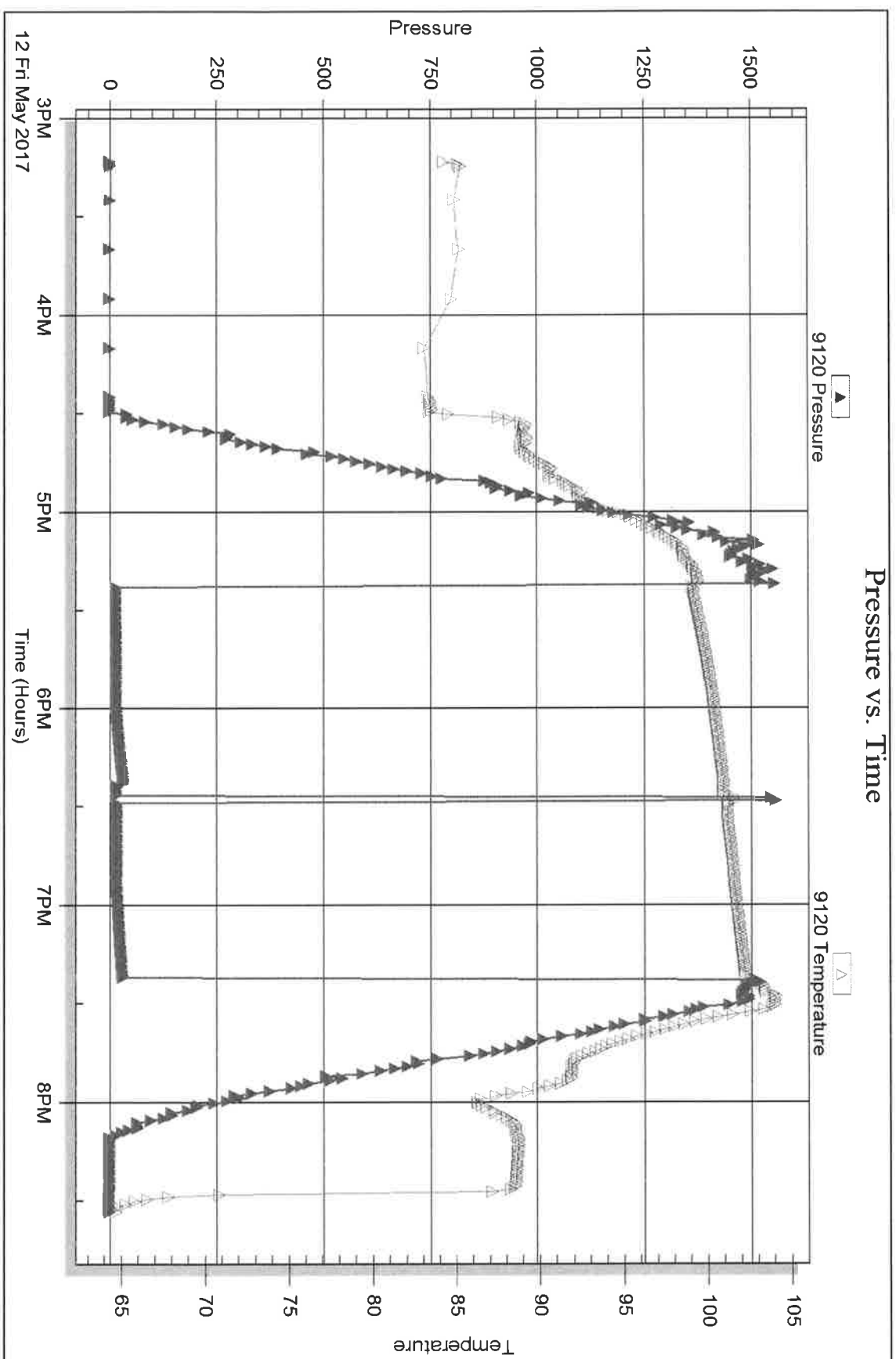
Serial #: 9120

Inside

H&D Exploration LLC

Bieberle #3

DST Test Number: 2





**TRILOBITE
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DRILL STEM TEST REPORT

H&D Exploration LLC

S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63212

DST#: 1

ATTN: Jim C. Musgrove

Test Start: 2017.05.11 @ 05:59:00

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:43:30

Time Test Ended: 12:57:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 2880.00 ft (KB) To 2940.00 ft (KB) (TVD)

Total Depth: 2940.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1922.00 ft (KB)

1913.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8934 Inside

Press@RunDepth: 20.14 psig @ 2887.00 ft (KB)

Start Date: 2017.05.11

End Date: 2017.05.11

Start Time: 05:59:15

End Time: 12:57:45

Capacity: 8000.00 psig

Last Calib.: 2017.05.11

Time On Btm: 2017.05.11 @ 07:43:15

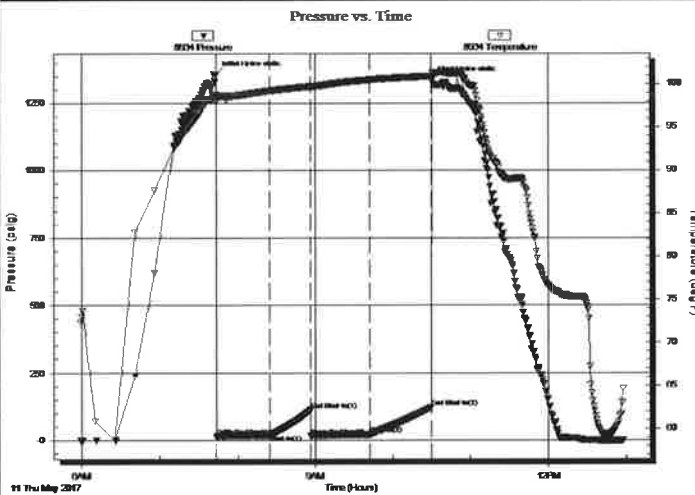
Time Off Btm: 2017.05.11 @ 10:30:30

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface to 1&1/2"

30-ISI-No Blow Back

45-FF-Weak Blow ; Built from 1" to 4&1/4"

45-FSI-No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1355.40	98.69	Initial Hydro-static
1	14.20	97.94	Open To Flow (1)
42	19.96	99.21	Shut-In(1)
74	111.75	99.69	End Shut-In(1)
74	15.84	99.64	Open To Flow (2)
119	20.14	100.47	Shut-In(2)
167	121.21	100.90	End Shut-In(2)
168	1333.32	101.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	Mud w /scum oil 1%O 99%M	0.35

Gas Rates

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



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DRILL STEM TEST REPORT

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S11-16S-12W Barton KS

PO BOX 387
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Bieberle #3

Job Ticket: 63212

DST#: 1

ATTN: Jim C. Musgrove

Test Start: 2017.05.11 @ 05:59:00

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:43:30

Time Test Ended: 12:57:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 2880.00 ft (KB) To 2940.00 ft (KB) (TVD)

Reference Elevations: 1922.00 ft (KB)

Total Depth: 2940.00 ft (KB) (TVD)

1913.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 9120

Inside

Press@RunDepth: psig @ 2887.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.05.11 End Date: 2017.05.11

Last Calib.: 2017.05.11

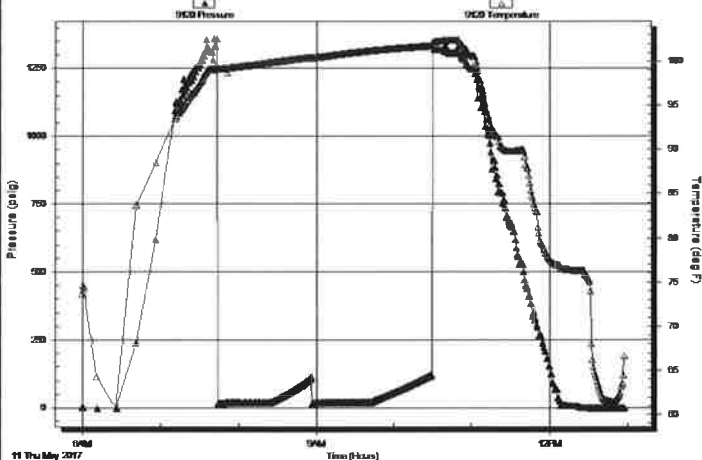
Start Time: 05:59:15 End Time: 12:57:45

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-Weak Blow ; Built from a surface to 1&1/2"
30-ISI-No Blow Back
45-FF-Weak Blow ; Built from 1" to 4&1/4"
45-FSI-No Blow Back

Pressure vs. Time



PRESSURE SUMMARY

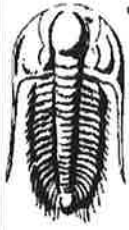
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
25.00	Mud w /scum oil 1%O 99%M	0.35

Gas Rates

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



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DRILL STEM TEST REPORT

FLUID SUMMARY

H&D Exploration LLC

S11-16S-12W Barton KS

PO BOX 387
Hoisington KS 67544

Bieberle #3

Job Ticket: 63212

DST#: 1

ATTN: Jim C. Musgrove

Test Start: 2017.05.11 @ 05:59:00

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: 40.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
25.00	Mud w /scum oil 1%O 99%M	0.351

Total Length: 25.00 ft Total Volume: 0.351 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2&1/2# LCM

Serial #: 8934

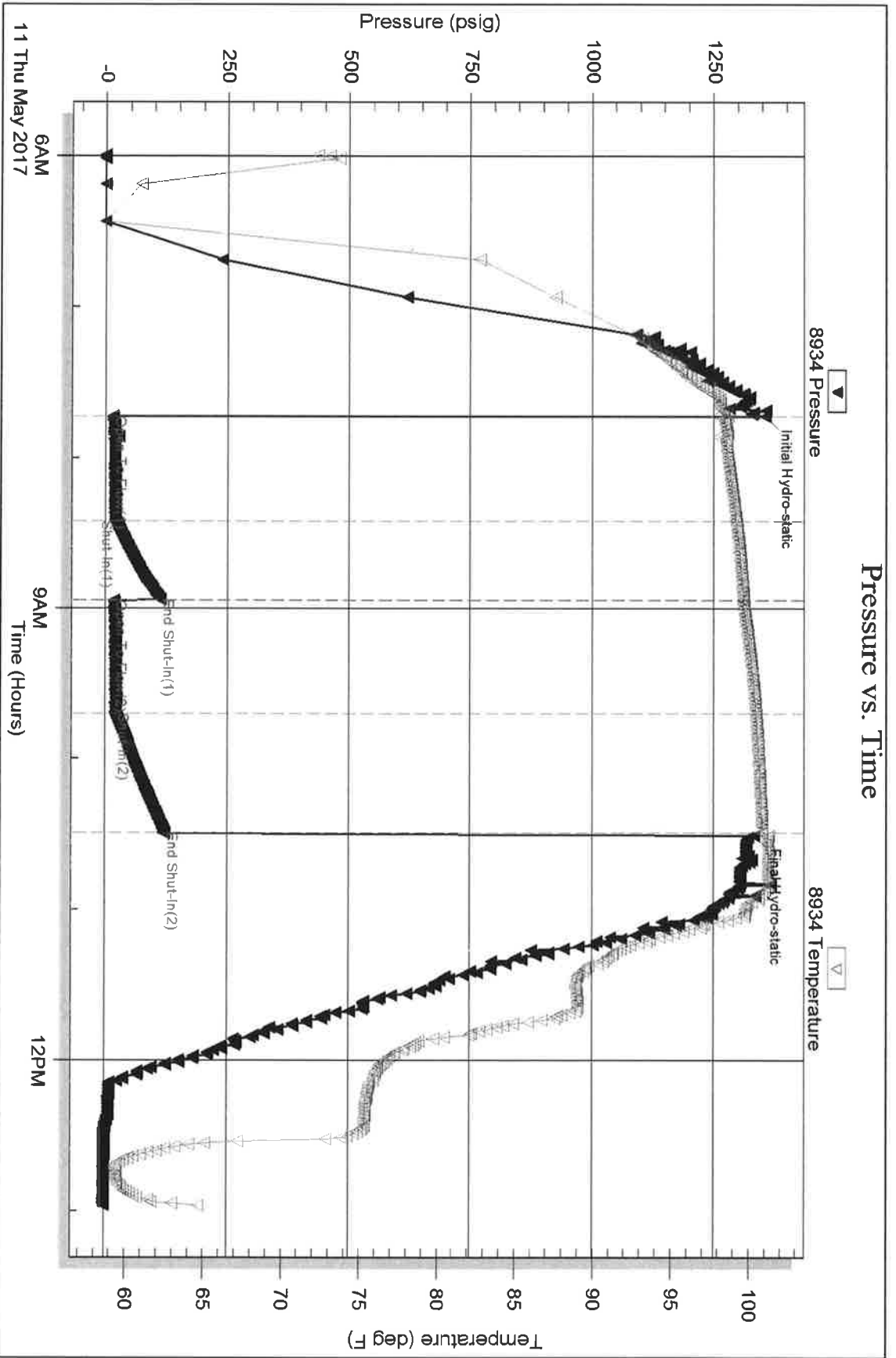
Inside

H&D Exploration LLC

Bieberle #3

DST Test Number: 1

Pressure vs. Time



Tribble Testing, Inc

Ref. No: 63212

Printed: 2017.05.11 @ 15:50:39

Serial #: 9120

Inside

H&D Exploration LLC

Bieberle #3

DST Test Number: 1

Pressure vs. Time

