



DRILL STEM TEST REPORT

Prepared For: **H & C Oil Operating, Inc.**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Butterfly Farms 1-13

13-4s-22w Norton,KS

Start Date: 2019.11.08 @ 11:09:00

End Date: 2019.11.08 @ 17:54:30

Job Ticket #: 65598 DST #: 1

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

Printed: 2019.11.11 @ 16:03:34



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

ATTN: Marc Downing

Job Ticket: 65598

DST#: 1

Test Start: 2019.11.08 @ 11:09:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:09:30

Time Test Ended: 17:54:30

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Interval: 3437.00 ft (KB) To 3501.00 ft (KB) (TVD)

Reference Elevations: 2233.00 ft (KB)

Total Depth: 3501.00 ft (KB) (TVD)

2225.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8652 Outside

Press@RunDepth: 68.63 psig @ 3438.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.08 End Date: 2019.11.08

Last Calib.: 2019.11.08

Start Time: 11:09:05 End Time: 17:54:29

Time On Btm: 2019.11.08 @ 13:09:15

Time Off Btm: 2019.11.08 @ 16:13:15

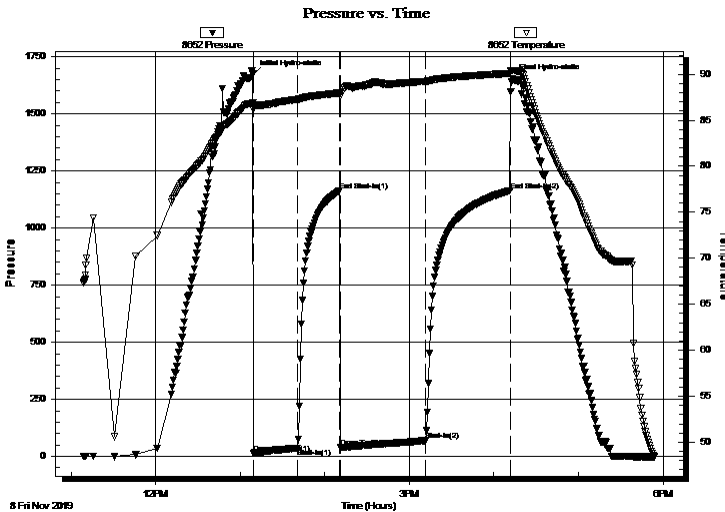
TEST COMMENT: 30 - IF: Blow built to 3 1/2"

30 - IS: No blow back

60 - FF: Blow built to 5"

60 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1672.75	86.96	Initial Hydro-static
1	15.17	86.15	Open To Flow (1)
32	36.58	87.28	Shut-In(1)
62	1164.29	87.97	End Shut-In(1)
62	39.02	87.59	Open To Flow (2)
122	68.63	89.23	Shut-In(2)
183	1163.55	90.10	End Shut-In(2)
184	1654.65	90.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	HWCM w /trace oil 56%w, 44%w	0.44
60.00	Mud w /Oil spots 99%w, 1%o	0.44

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65598 **DST#: 1**

ATTN: Marc Downing

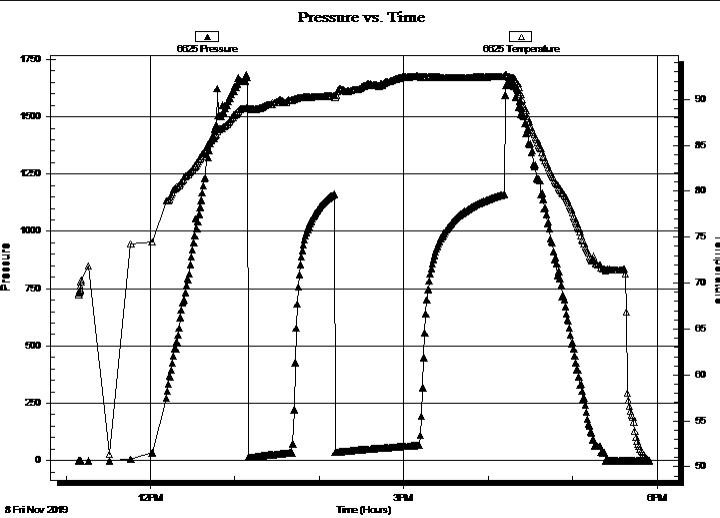
Test Start: 2019.11.08 @ 11:09:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:09:30
 Time Test Ended: 17:54:30
 Interval: **3437.00 ft (KB) To 3501.00 ft (KB) (TVD)**
 Total Depth: 3501.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2233.00 ft (KB)
 2225.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6625 Inside
 Press@RunDepth: psig @ 3438.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.08 End Date: 2019.11.08 Last Calib.: 2019.11.08
 Start Time: 11:09:05 End Time: 17:54:59 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 3 1/2"
 30 - IS: No blow back
 60 - FF: Blow built to 5"
 60 - FS: No blow back



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

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	HWCM w /trace oil 56% <i>m</i> , 44% <i>w</i>	0.44
60.00	Mud w /Oil spots 99% <i>m</i> , 1% <i>o</i>	0.44

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65598

DST#: 1

ATTN: Marc Downing

Test Start: 2019.11.08 @ 11:09:00

Tool Information

Drill Pipe:	Length: 3160.00 ft	Diameter: 3.80 inches	Volume: 44.33 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.75 inches	Volume: 2.01 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: 64000.00 lb
			<u>Total Volume: 46.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	3437.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3417.00	
Shut In Tool	5.00			3422.00	
Hydraulic tool	5.00			3427.00	
Packer	5.00			3432.00	21.00 Bottom Of Top Packer
Packer	5.00			3437.00	
Stubb	1.00			3438.00	
Recorder	0.00	6625	Inside	3438.00	
Recorder	0.00	8652	Outside	3438.00	
Perforations	25.00			3463.00	
Blank Spacing	34.00			3497.00	
Perforations	1.00			3498.00	
Bullnose	3.00			3501.00	64.00 Bottom Packers & Anchor

Total Tool Length: 85.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65598

DST#: 1

ATTN: Marc Downing

Test Start: 2019.11.08 @ 11:09:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
60.00	HWCM w /trace oil 56%m, 44%w	0.441
60.00	Mud w /Oil spots 99%m, 1%o	0.441

Total Length: 120.00 ft Total Volume: 0.882 bbl

Num Fluid Samples: 0

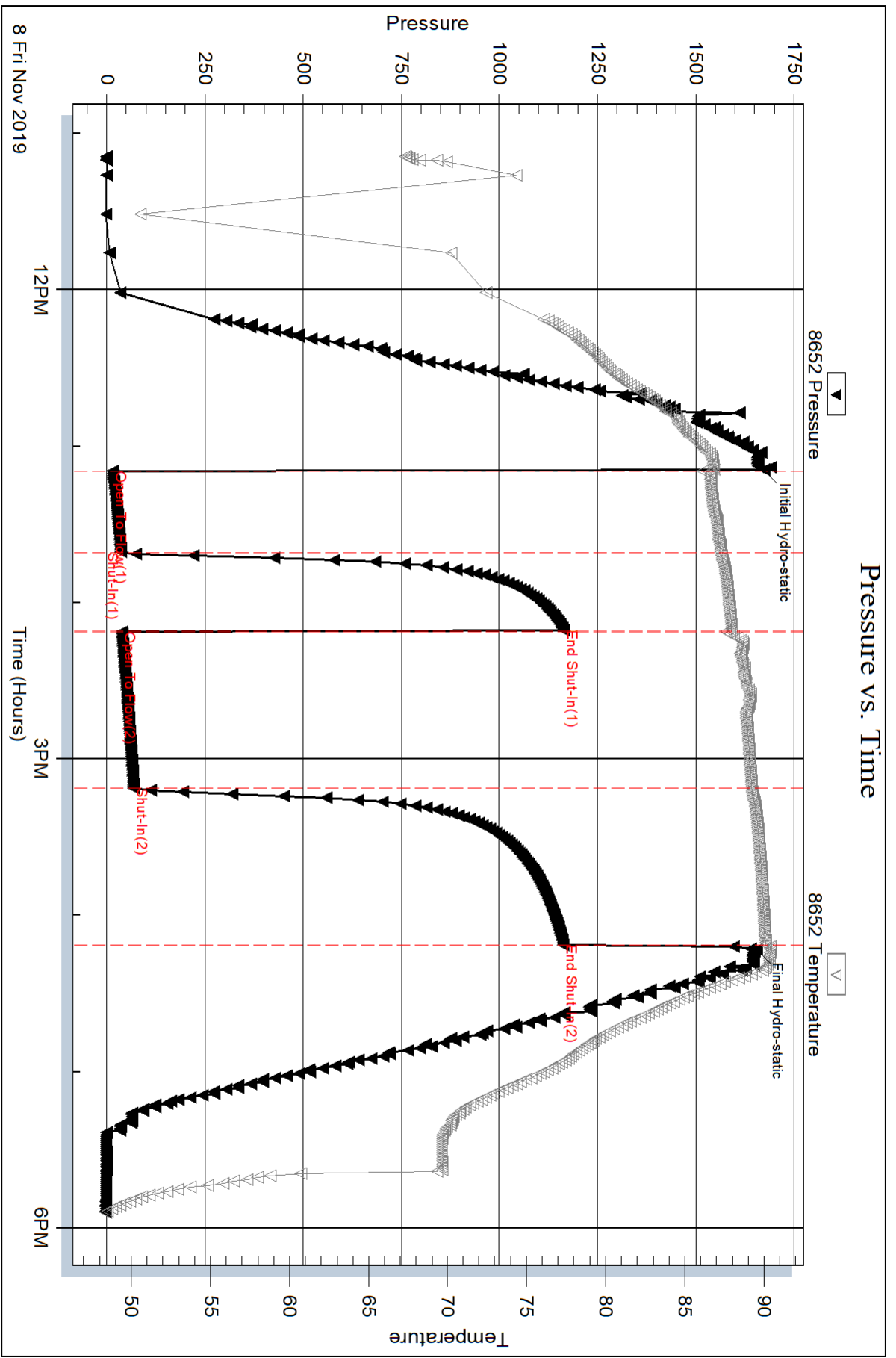
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .421 ohms @ 59.3 deg F Chlorides = 18,500 ppm



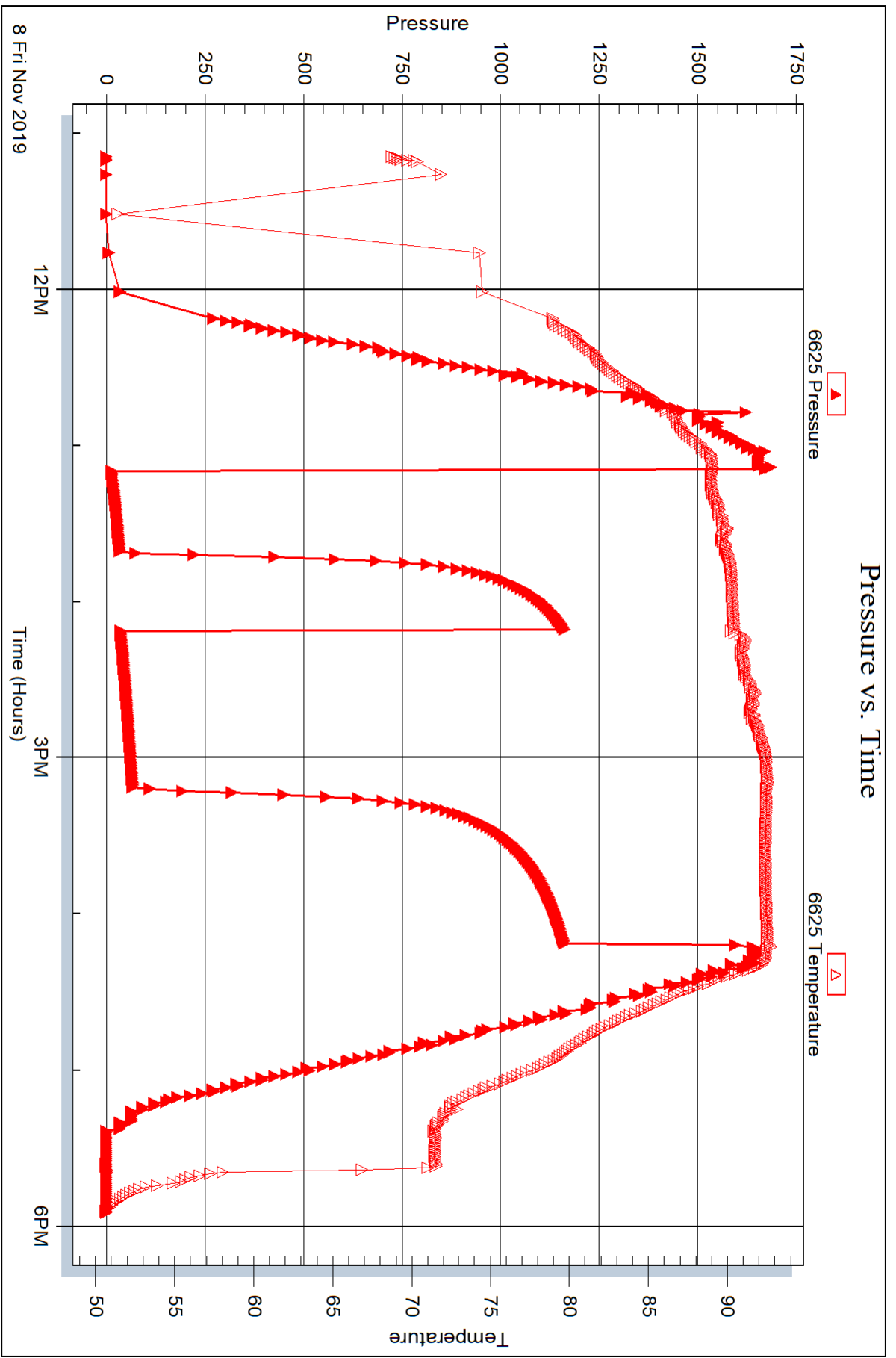
Serial #: 6625

Inside

H & C Oil Operating, Inc.

Butterfly Farms 1-13

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **H & C Oil Operating, Inc.**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Butterfly Farms 1-13

13-4s-22w Norton,KS

Start Date: 2019.11.09 @ 15:34:00

End Date: 2019.11.09 @ 21:24:45

Job Ticket #: 65599 DST #: 2

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

Printed: 2019.11.11 @ 16:03:09



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

ATTN: Marc Downing

Job Ticket: 65599

DST#: 2

Test Start: 2019.11.09 @ 15:34:00

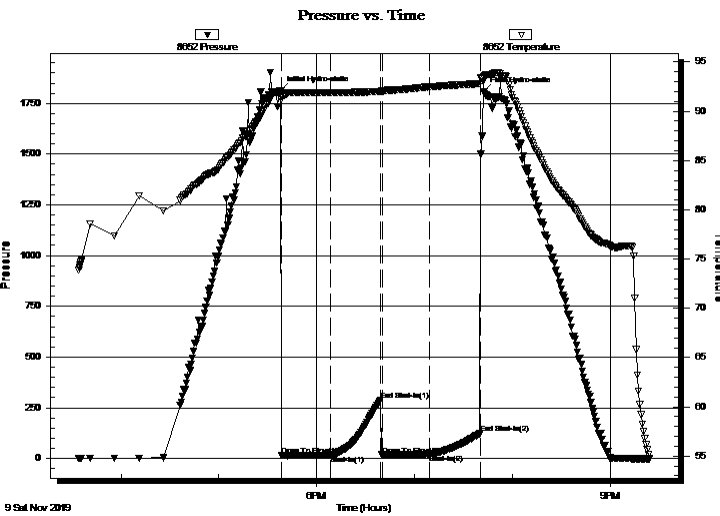
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:38:15
 Time Test Ended: 21:24:45
 Interval: **3674.00 ft (KB) To 3699.00 ft (KB) (TVD)**
 Total Depth: 3699.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2233.00 ft (KB)
 2225.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8652 Outside

Press@RunDepth: 19.13 psig @ 3675.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.11.09 End Date: 2019.11.09 Last Calib.: 2019.11.09
 Start Time: 15:34:05 End Time: 21:24:44 Time On Btm: 2019.11.09 @ 17:38:00
 Time Off Btm: 2019.11.09 @ 19:42:30

TEST COMMENT: 30 - IF: 1/4" Blow at open, built to 1"
 30 - IS: No blow back
 30 - FF: Blow built to 1/4"
 30 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1811.83	92.00	Initial Hydro-static
1	14.21	91.17	Open To Flow (1)
31	15.70	91.92	Shut-In(1)
61	286.07	92.02	End Shut-In(1)
63	18.36	92.05	Open To Flow (2)
91	19.13	92.48	Shut-In(2)
123	123.70	92.80	End Shut-In(2)
125	1807.14	93.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 75% m, 23% o, 2% g	0.07
2.00	Free Oil (no sample)	0.01

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65599

DST#: 2

ATTN: Marc Downing

Test Start: 2019.11.09 @ 15:34:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:38:15

Time Test Ended: 21:24:45

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 3674.00 ft (KB) To 3699.00 ft (KB) (TVD)

Reference Elevations: 2233.00 ft (KB)

Total Depth: 3699.00 ft (KB) (TVD)

2225.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 3675.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.09 End Date: 2019.11.09

Last Calib.: 2019.11.09

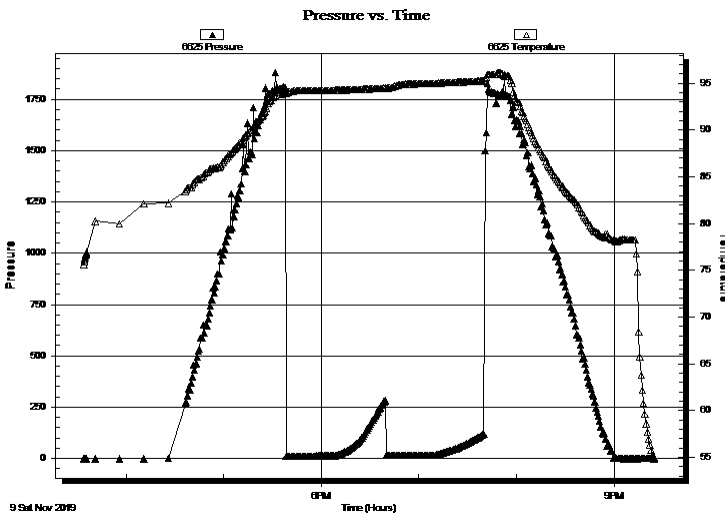
Start Time: 15:34:05 End Time: 21:25:14

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: 1/4" Blow at open, built to 1"
30 - IS: No blow back
30 - FF: Blow built to 1/4"
30 - FS: No blow back

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 75% m, 23% o, 2% g	0.07
2.00	Free Oil (no sample)	0.01

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65599

DST#: 2

ATTN: Marc Downing

Test Start: 2019.11.09 @ 15:34:00

Tool Information

Drill Pipe:	Length: 3413.00 ft	Diameter: 3.80 inches	Volume: 47.88 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.75 inches	Volume: 2.01 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: 68000.00 lb
			<u>Total Volume: 49.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3674.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	46.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3654.00	
Shut In Tool	5.00			3659.00	
Hydraulic tool	5.00			3664.00	
Packer	5.00			3669.00	21.00 Bottom Of Top Packer
Packer	5.00			3674.00	
Stubb	1.00			3675.00	
Recorder	0.00	6625	Inside	3675.00	
Recorder	0.00	8652	Outside	3675.00	
Perforations	21.00			3696.00	
Bullnose	3.00			3699.00	25.00 Bottom Packers & Anchor
Total Tool Length:	46.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65599

DST#: 2

ATTN: Marc Downing

Test Start: 2019.11.09 @ 15:34:00

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: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
10.00	OCM 75% _m , 23% _o , 2% _g	0.073
2.00	Free Oil (no sample)	0.015

Total Length: 12.00 ft Total Volume: 0.088 bbl

Num Fluid Samples: 0

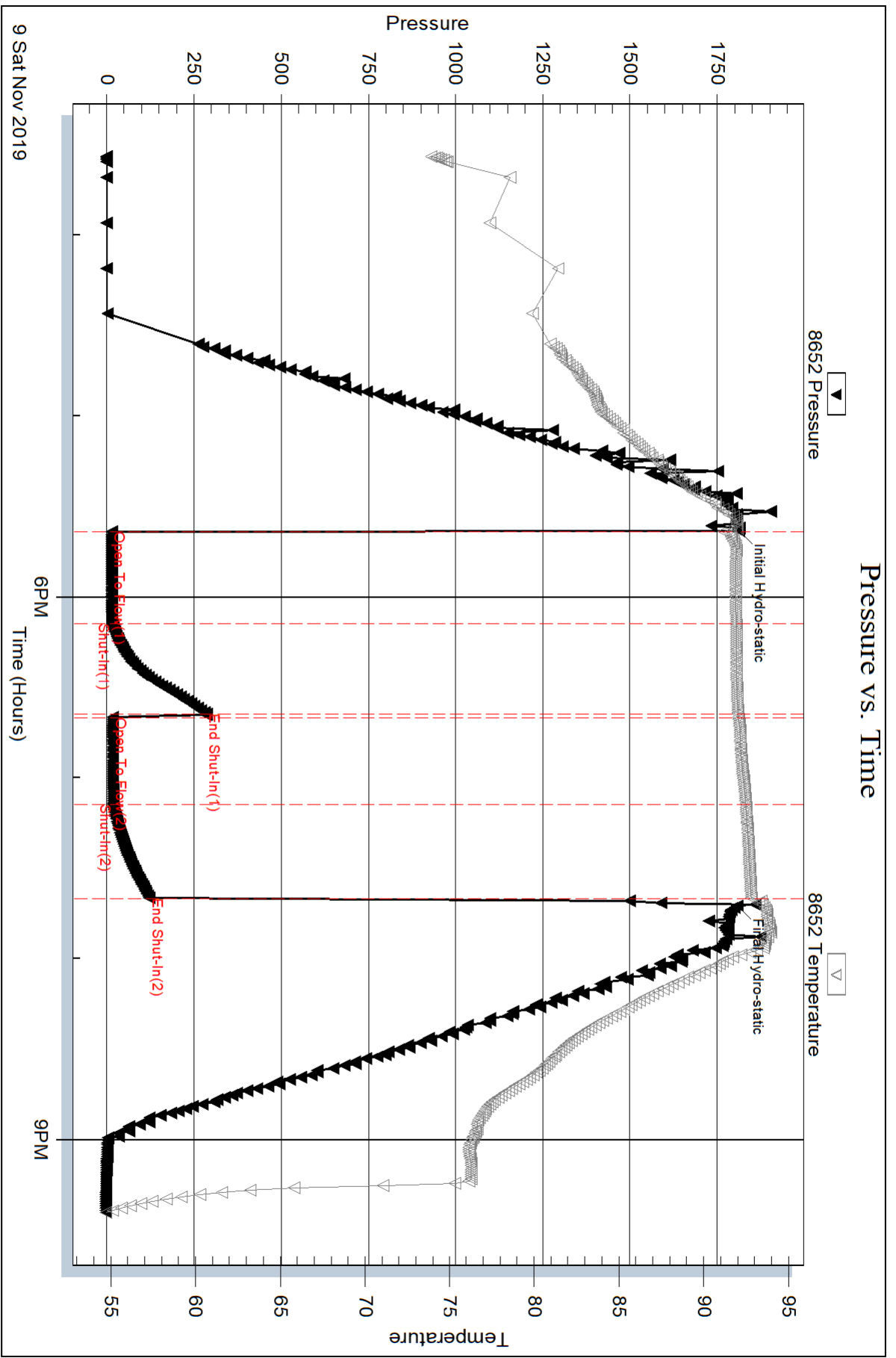
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil looked to be very low gravity



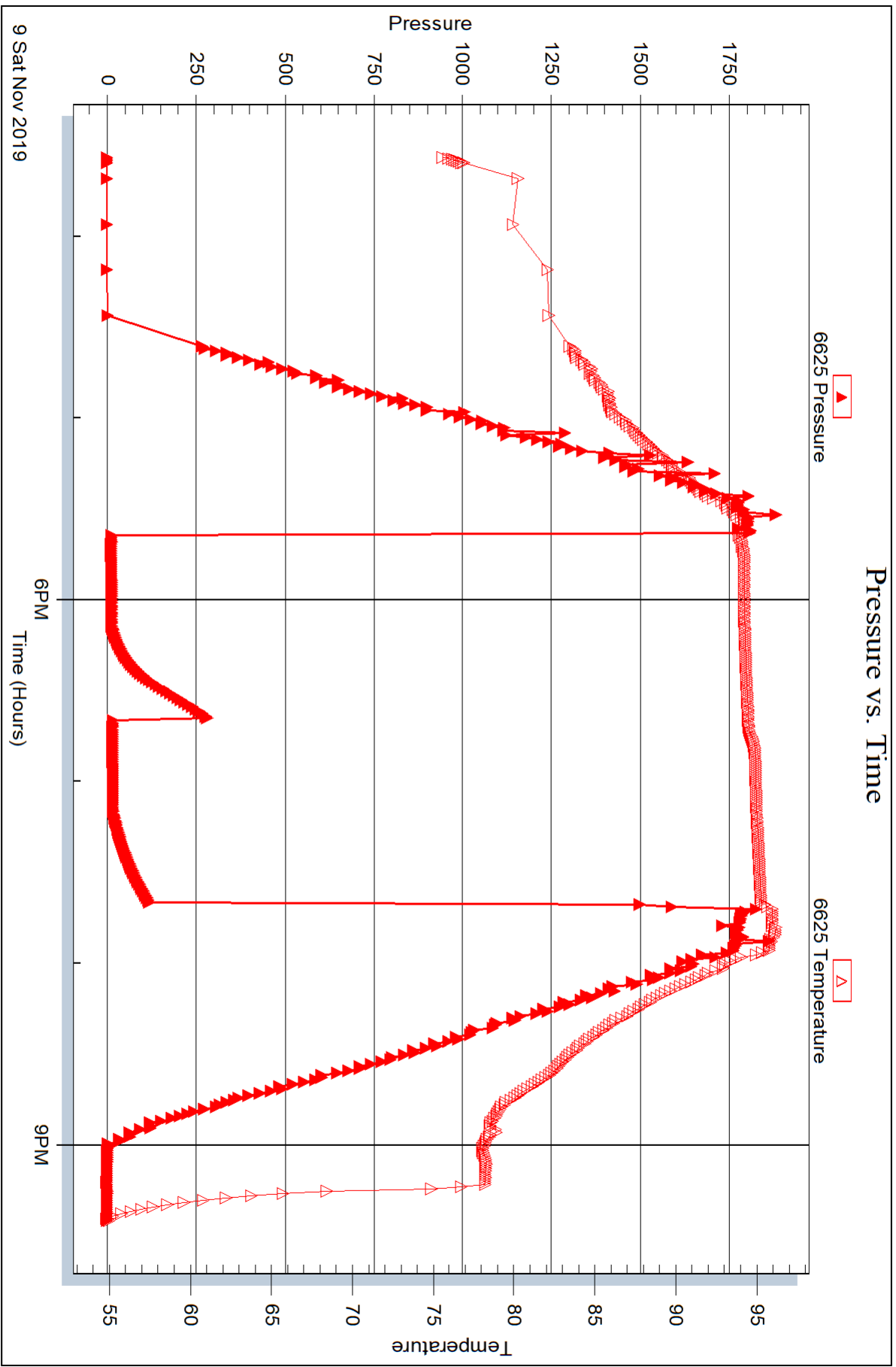
Serial #: 6625

Inside

H & C Oil Operating, Inc.

Butterfly Farms 1-13

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 65599

Printed: 2019.11.11 @ 16:03:10



DRILL STEM TEST REPORT

Prepared For: **H & C Oil Operating, Inc.**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Butterfly Farms 1-13

13-4s-22w Norton,KS

Start Date: 2019.11.10 @ 03:39:00

End Date: 2019.11.10 @ 10:02:00

Job Ticket #: 65600 DST #: 3

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

Printed: 2019.11.11 @ 16:00:49



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

ATTN: Marc Downing

Job Ticket: 65600

DST#: 3

Test Start: 2019.11.10 @ 03:39:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:11:45

Time Test Ended: 10:02:00

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 3674.00 ft (KB) To 3710.00 ft (KB) (TVD)

Reference Elevations: 2233.00 ft (KB)

Total Depth: 3710.00 ft (KB) (TVD)

2225.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8652 Outside

Press@RunDepth: 142.88 psig @ 3675.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.10 End Date: 2019.11.10

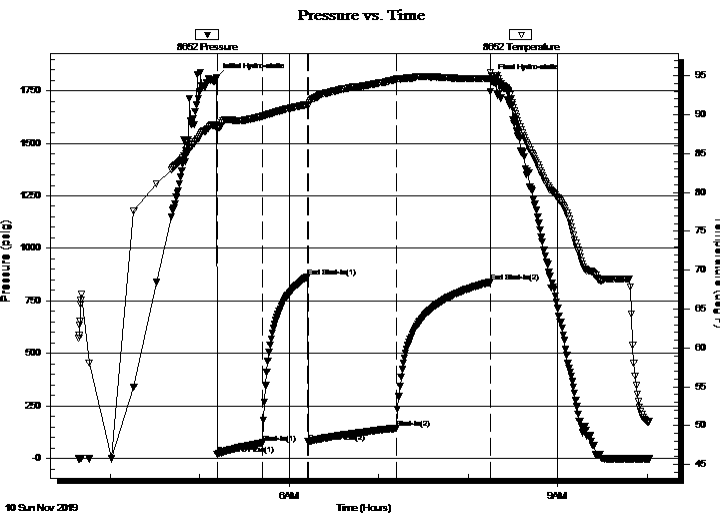
Last Calib.: 2019.11.10

Start Time: 03:39:05 End Time: 10:01:59

Time On Btm: 2019.11.10 @ 05:11:15

Time Off Btm: 2019.11.10 @ 08:15:30

TEST COMMENT: 30 - IF: Blow built to 9"
30 - IS: No blow back
60 - FF: Blow built to 10"
60 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1810.56	88.66	Initial Hydro-static
1	20.09	88.13	Open To Flow (1)
31	73.88	89.78	Shut-In(1)
61	864.51	91.30	End Shut-In(1)
62	79.13	91.15	Open To Flow (2)
121	142.88	94.56	Shut-In(2)
184	838.94	94.61	End Shut-In(2)
185	1806.20	95.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW w/trace oil 68%w, 32%m	1.32
110.00	WCM w/oil spots 65%m, 34%w, 1%o	0.92

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65600

DST#: 3

ATTN: Marc Downing

Test Start: 2019.11.10 @ 03:39:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 05:11:45 Tester: James Winder

Time Test Ended: 10:02:00 Unit No: 83

Interval: 3674.00 ft (KB) To 3710.00 ft (KB) (TVD) Reference Elevations: 2233.00 ft (KB)

Total Depth: 3710.00 ft (KB) (TVD) 2225.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 6625

Inside

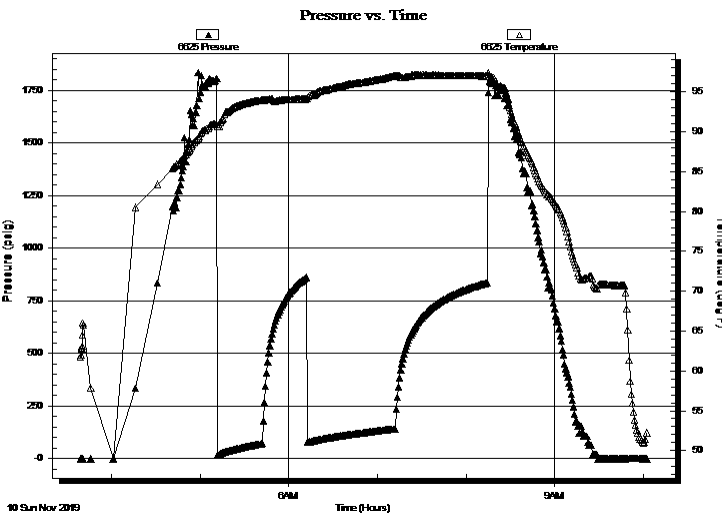
Press@RunDepth: psig @ 3675.00 ft (KB) Capacity: 8000.00 psig

Start Date: 2019.11.10 End Date: 2019.11.10 Last Calib.: 2019.11.10

Start Time: 03:39:05 End Time: 10:02:29 Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 9"
30 - IS: No blow back
60 - FF: Blow built to 10"
60 - FS: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW w/trace oil 68%w, 32%m	1.32
110.00	WCM w/oil spots 65%m, 34%w, 1%o	0.92

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65600

DST#: 3

ATTN: Marc Downing

Test Start: 2019.11.10 @ 03:39:00

Tool Information

Drill Pipe:	Length: 3413.00 ft	Diameter: 3.80 inches	Volume: 47.88 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 273.00 ft	Diameter: 2.75 inches	Volume: 2.01 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:	66000.00 lb
			<u>Total Volume: 49.89 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	3674.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	57.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3654.00	
Shut In Tool	5.00			3659.00	
Hydraulic tool	5.00			3664.00	
Packer	5.00			3669.00	21.00 Bottom Of Top Packer
Packer	5.00			3674.00	
Stubb	1.00			3675.00	
Recorder	0.00	6625	Inside	3675.00	
Recorder	0.00	8652	Outside	3675.00	
Perforations	32.00			3707.00	
Bullnose	3.00			3710.00	36.00 Bottom Packers & Anchor
Total Tool Length:	57.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

H & C Oil Operating, Inc.

13-4s-22w Norton, KS

PO Box 86
Plainville, KS 67663

Butterfly Farms 1-13

Job Ticket: 65600

DST#: 3

ATTN: Marc Downing

Test Start: 2019.11.10 @ 03:39:00

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:

19000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	MCW w/trace oil 68%w , 32%m	1.322
110.00	WCM w/oil spots 65%m, 34%w , 1%o	0.922

Total Length: 290.00 ft Total Volume: 2.244 bbl

Num Fluid Samples: 0

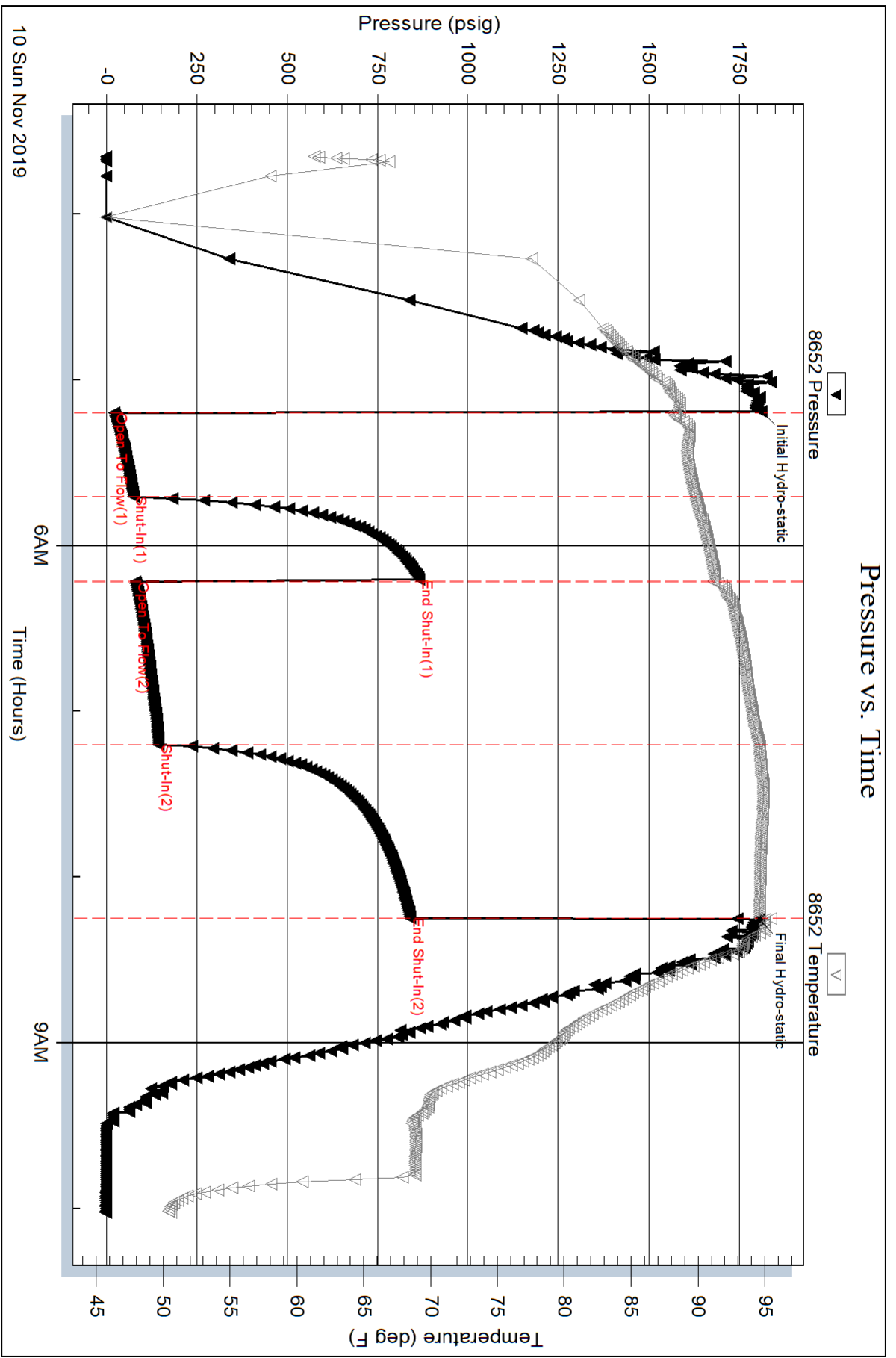
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .466 ohms @ 53.2 deg F Chlorides = 19,000 ppm



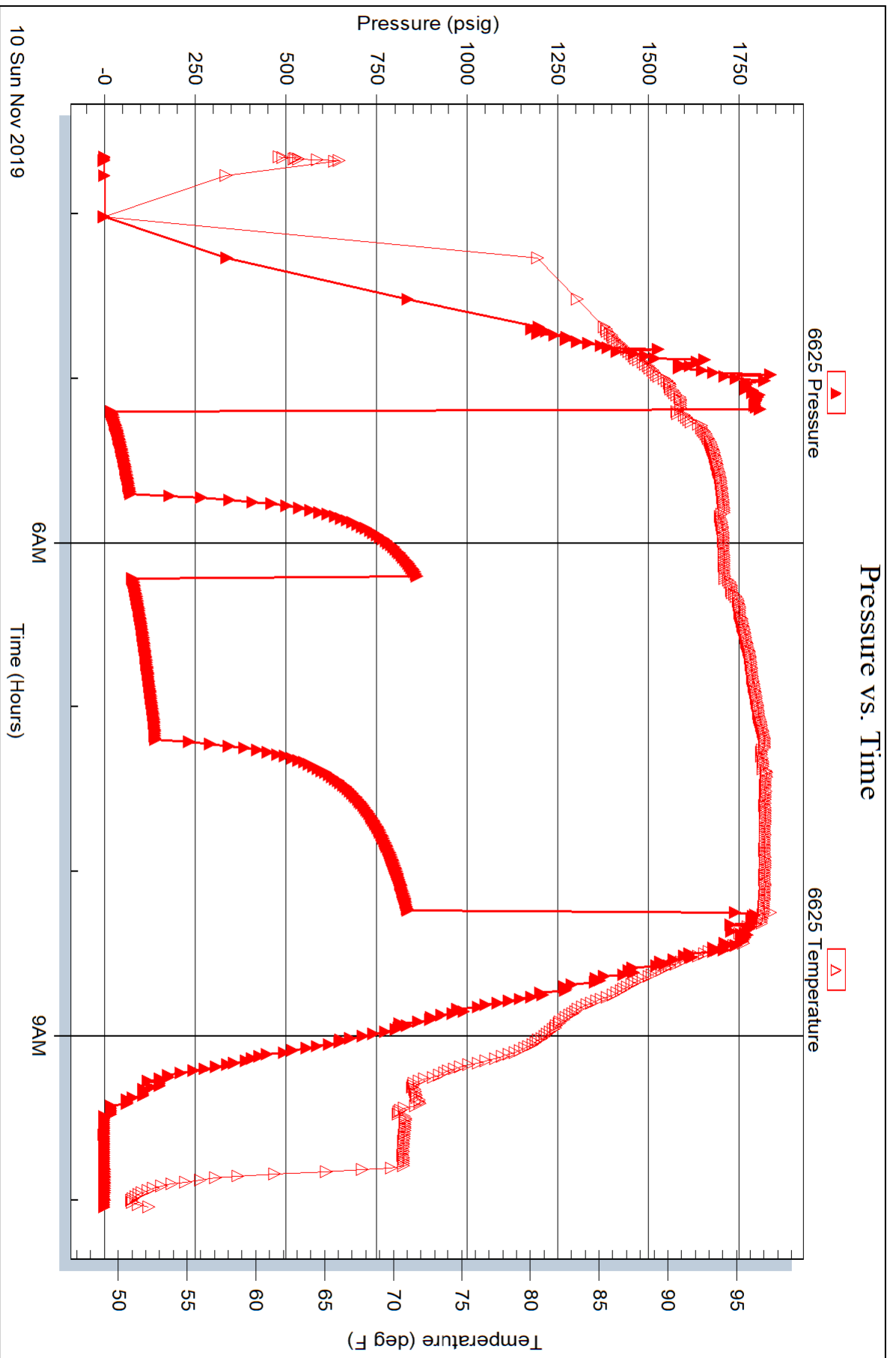
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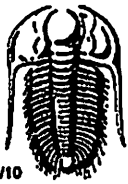
Inside

H & C Oil Operating, Inc.

Butterfly Farms 1-13

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65598 25557

Well Name & No. Butterfly Farms #1-13 Test No. 1 Date 11-8-19
 Company H+C Oil Operating Inc Elevation 2233 KB 2225 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #2
 Location: Sec. 13 Twp 4s Rge. 22w Co. Norton State KS

Interval Tested 3437-3501 Zone Tested LKC "A-D"
 Anchor Length 64 Drill Pipe Run 3160 Mud Wt. 9.0
 Top Packer Depth 3432 Drill Collars Run - Vls 58
 Bottom Packer Depth 3437 Wt. Pipe Run 273 WL 6.4
 Total Depth 3501 Chlorides 900 ppm System LCM 2

Blow Description IF: Blow built to 3 1/2"
ISI: No blowback
FF: Blow built to 5"
FST: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Mud w/oil spots</u>		<u>1</u>		<u>99</u>
<u>60</u>	<u>HWCM w/trace oil</u>		<u>44</u>	<u>56</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

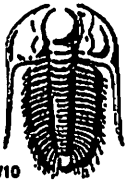
Rec Total 120 BHT 90 Gravity _____ API RW 421 @ 59.3 °F Chlorides 18,500 ppm

(A) Initial Hydrostatic 1673 Test 1200 T-On Location 9:20
 (B) First Initial Flow 15 Jars _____ T-Started 11:09
 (C) First Final Flow 37 Safety Joint _____ T-Open 13:09
 (D) Initial Shut-In 1164 Circ Sub _____ T-Pulled 16:11
 (E) Second Initial Flow 39 Hourly Standby _____ T-Out 17:50
 (F) Second Final Flow 69 Mileage 120 RT 120 Comments _____
 (G) Final Shut-In 1164 Sampler _____
 (H) Final Hydrostatic 1655 Straddle _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 30 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 60 Day Standby _____
 Sub Total 1320 Accessibility _____
 Total 1320 EM Tool _____
 MP/DST Disc't _____ Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1320

Approved By _____ Our Representative James Nicks

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. 65599

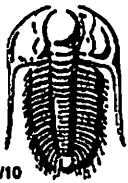
Well Name & No. Butterfly Farms #1-13 Test No. 2 Date 11-9-19
 Company H+C Oil Operating Inc. Elevation 2233 KB 2225 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #2
 Location: Sec. 13 Twp 4s Rge. 22w Co. Norton State KS

Interval Tested 3674 - 3699 Zone Tested Arbuckle
 Anchor Length 25 Drill Pipe Run 3413 Mud Wt. 9.1
 Top Packer Depth 3669 Drill Collars Run - Vis 58
 Bottom Packer Depth 3674 Wt. Pipe Run 273 WL 7.2
 Total Depth 3699 Chlorides 800 ppm System LCM 1
 Blow Description IF: 1/4" Blow at open, built to 1"
ISI: No blowback
FF: Blow built to 1/4"
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>0cm</u>	<u>2</u>	<u>23</u>	<u>75</u>	<u></u>
<u>2</u>	<u>Free Oil (No sample)</u>				

Rec Total 12 BHT 93 Gravity API RW @ ° F Chlorides ppm
 (A) Initial Hydrostatic 1812 Test 1200 T-On Location 14:20
 (B) First Initial Flow 14 Jars T-Started 15:34
 (C) First Final Flow 16 Safety Joint T-Open 17:38
 (D) Initial Shut-In 286 Circ Sub T-Pulled 19:40
 (E) Second Initial Flow 18 Hourly Standby T-Out 21:25
 (F) Second Final Flow 19 Mileage 120 RT 120 Comments
 (G) Final Shut-In 124 Sampler
 (H) Final Hydrostatic 1807 Straddle
 Shale Packer EM Tool
 Extra Packer Ruined Shale Packer
 Extra Recorder Ruined Packer
 Day Standby Sub Total 0
 Accessibility Total 1320
 Sub Total 1320 MP/DST Disc't

Approved By _____ Our Representative James Winder
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65600

Well Name & No. Butterfly Farms #1-13 Test No. 3 Date 11-10-19
 Company H+C Oil Operating Inc Elevation 2233 KB 2225 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #2
 Location: Sec. 13 Twp 4S Rge. 22W Co. Norton State KS

Interval Tested 3674 - 3710 Zone Tested Arbuckle
 Anchor Length 36 Drill Pipe Run 3413 Mud Wt. 9.1
 Top Packer Depth 3669 Drill Collars Run - Vis 56
 Bottom Packer Depth 3674 Wt. Pipe Run 273 WL 7.2
 Total Depth 3710 Chlorides 1000 ppm System LCM 2

Blow Description IF: Blow built to 9"
ISI: No blowback
FF: Blow built to 10"
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>110</u>	<u>wcm w/oil spots</u>	<u>1</u>	<u>34</u>	<u>65</u>	
<u>180</u>	<u>mcw w/trace oil</u>	<u>trace</u>	<u>68</u>	<u>32</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 290 BHT 95 Gravity API RW 466 @ 53.2 °F Chlorides 19,000 ppm

- (A) Initial Hydrostatic 1811
- (B) First Initial Flow 20
- (C) First Final Flow 74
- (D) Initial Shut-In 865
- (E) Second Initial Flow 79
- (F) Second Final Flow 143
- (G) Final Shut-In 839
- (H) Final Hydrostatic 1806

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

- Test 1300
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 120 RT 120+120
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1440

T-On Location 3:15
 T-Started 3:39
 T-Open 5:11
 T-Pulled 8:14
 T-Out 10:00

Comments Loaded tools 22:00 11/10
 EM Tool
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1440
 MP/DST Disc't

Approved By _____ Our Representative Jane Wicker

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