



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating**

PO Box 86
Plainville KS 67663-0086

ATTN: Charles Ramsay, Anth

Delbert Walt #19-1

19-10s-25w Graham,KS

Start Date: 2014.08.04 @ 21:55:32

End Date: 2014.08.05 @ 03:38:56

Job Ticket #: 58837 DST #: 1

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

Printed: 2014.08.07 @ 10:22:29

H&C Oil Operating
19-10s-25w Graham,KS
Delbert Walt #19-1
DST # 1
LKC E-F
2014.08.04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

ATTN: Charles Ramsay, Anth

Job Ticket: 58837

DST#: 1

Test Start: 2014.08.04 @ 21:55:32

GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:07:27

Time Test Ended: 03:38:56

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 70

Interval: 3848.00 ft (KB) To 3870.00 ft (KB) (TVD)

Reference Elevations: 2543.00 ft (KB)

Total Depth: 3870.00 ft (KB) (TVD)

2536.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press@RunDepth: 31.54 psig @ 3849.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.04

End Date:

2014.08.05

Last Calib.: 2014.08.05

Start Time: 21:55:32

End Time:

03:38:56

Time On Btm: 2014.08.05 @ 00:03:57

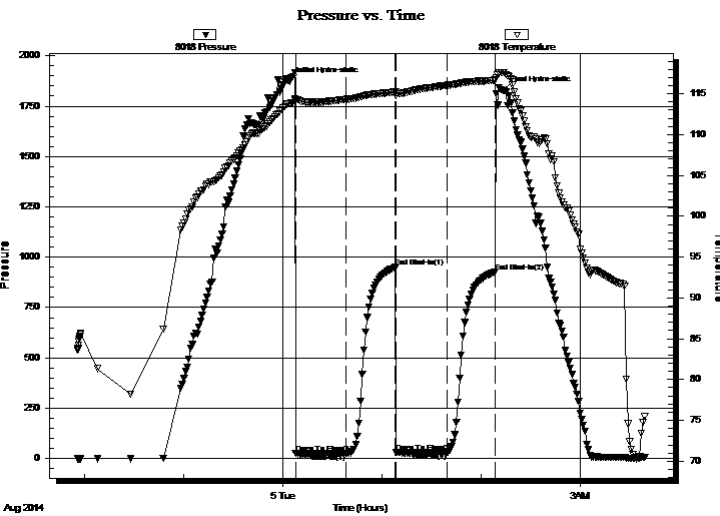
Time Off Btm: 2014.08.05 @ 02:12:56

TEST COMMENT: 30-IFP-weak surface bl thru-out

30-ISIP-no bl

30-FFP-no bl

30-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1872.22	113.82	Initial Hydro-static
4	26.63	114.20	Open To Flow (1)
34	25.63	114.31	Shut-In(1)
64	949.32	115.21	End Shut-In(1)
65	32.50	114.78	Open To Flow (2)
96	31.54	116.04	Shut-In(2)
125	927.40	116.66	End Shut-In(2)
129	1827.71	117.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/show of oil	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

Job Ticket: 58837

DST#: 1

ATTN: Charles Ramsay, Anth

Test Start: 2014.08.04 @ 21:55:32

Tool Information

Drill Pipe:	Length: 3801.00 ft	Diameter: 3.80 inches	Volume: 53.32 bbl	Tool Weight: 2200.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 53.47 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3848.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	51.00 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			3820.00	
Shut In Tool	5.00			3825.00	
Hydraulic tool	5.00			3830.00	
Jars	5.00			3835.00	
Safety Joint	3.00			3838.00	
Packer	5.00			3843.00	29.00 Bottom Of Top Packer
Packer	5.00			3848.00	
Stubb	1.00			3849.00	
Recorder	0.00	8018	Inside	3849.00	
Recorder	0.00	8700	Outside	3849.00	
Perforations	18.00			3867.00	
Bullnose	3.00			3870.00	22.00 Bottom Packers & Anchor

Total Tool Length: 51.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

Job Ticket: 58837

DST#: 1

ATTN: Charles Ramsay, Anth

Test Start: 2014.08.04 @ 21:55:32

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 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 bbl
5.00	Mud w/show of oil	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

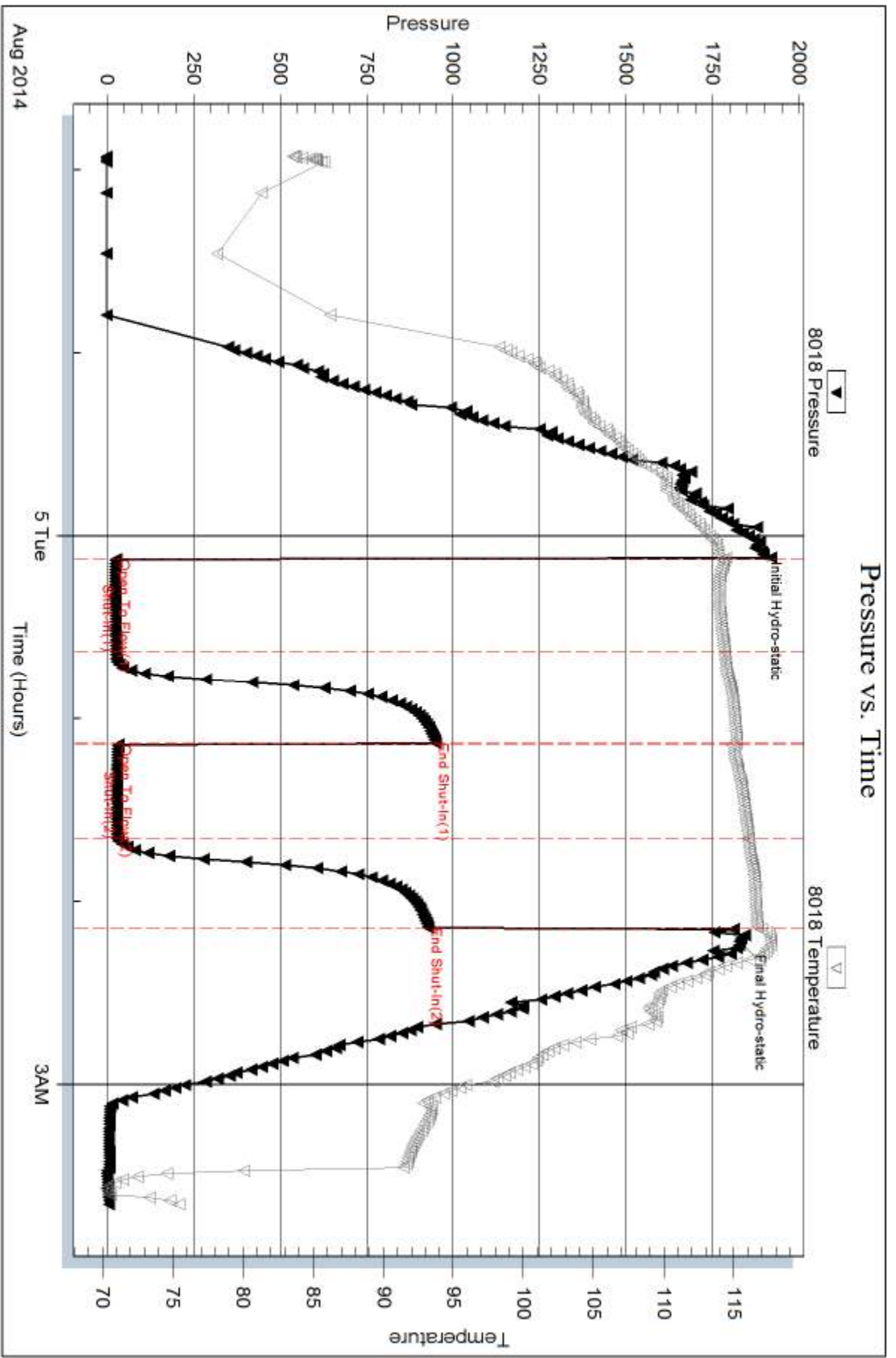
Serial #: 8018

Inside

H&C Oil Operating

Delbert Well #19-1

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 58837

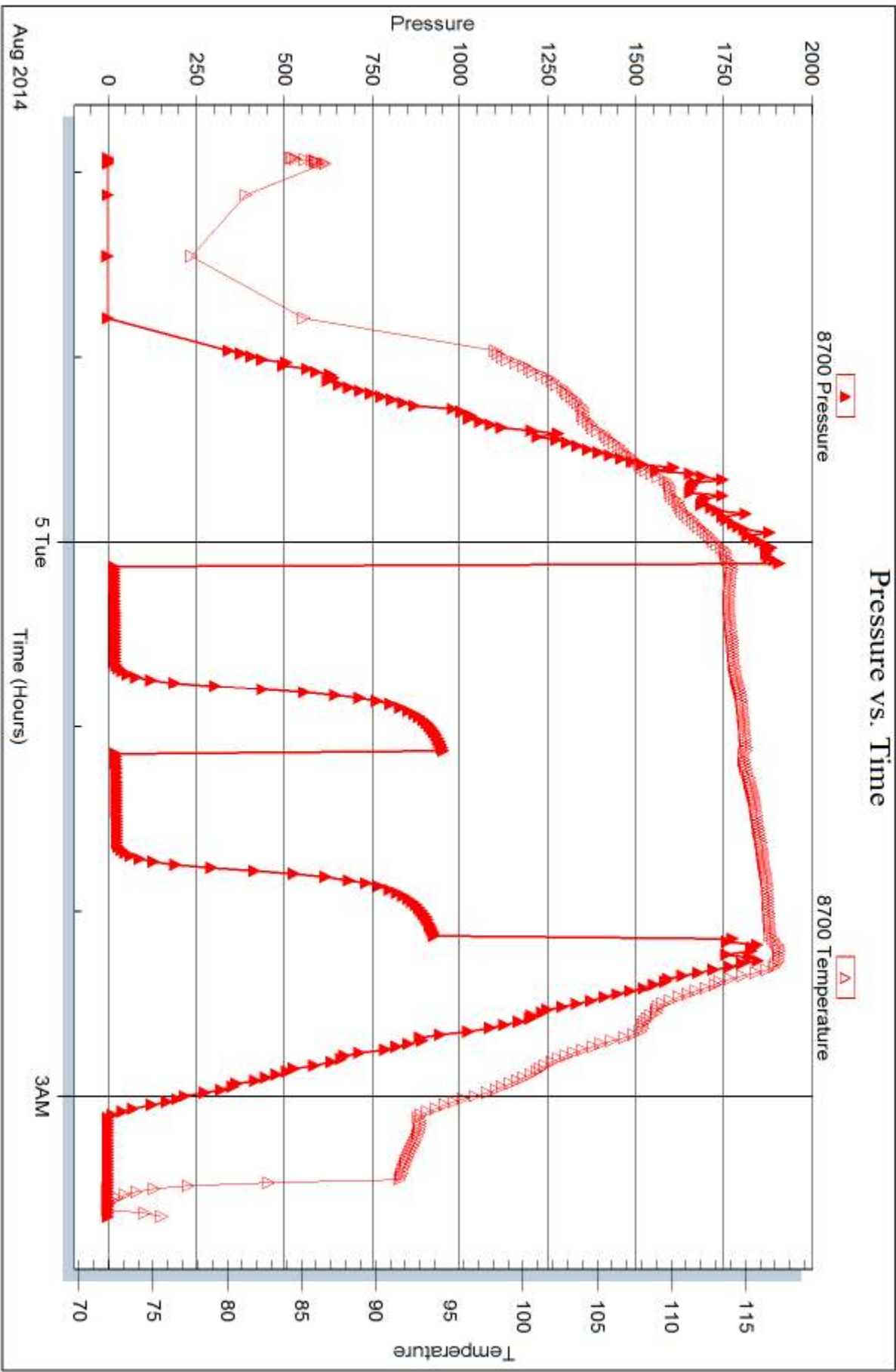
Printed: 2014.08.07 @ 10:22:30

Serial #: 8700

Outside H&C Oil Operating

Delbert Well #19-1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating**

PO Box 86
Plainville KS 67663-0086

ATTN: Charles Ramsay, Anth

Delbert Walt #19-1

19-10s-25w Graham,KS

Start Date: 2014.08.05 @ 21:25:52

End Date: 2014.08.06 @ 04:15:16

Job Ticket #: 58838 DST #: 2

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

Printed: 2014.08.07 @ 10:21:38



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

Job Ticket: 58838

DST#: 2

ATTN: Charles Ramsay, Anth

Test Start: 2014.08.05 @ 21:25:52

GENERAL INFORMATION:

Formation: **LKC H-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:30:47

Time Test Ended: 04:15:16

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

Interval: 3896.00 ft (KB) To 4002.00 ft (KB) (TVD)

Reference Elevations: 2543.00 ft (KB)

Total Depth: 4002.00 ft (KB) (TVD)

2536.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8018

Inside

Press@RunDepth: 134.70 psig @ 3905.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.05

End Date:

2014.08.06

Last Calib.:

2014.08.06

Start Time:

21:25:52

End Time:

04:15:16

Time On Btm:

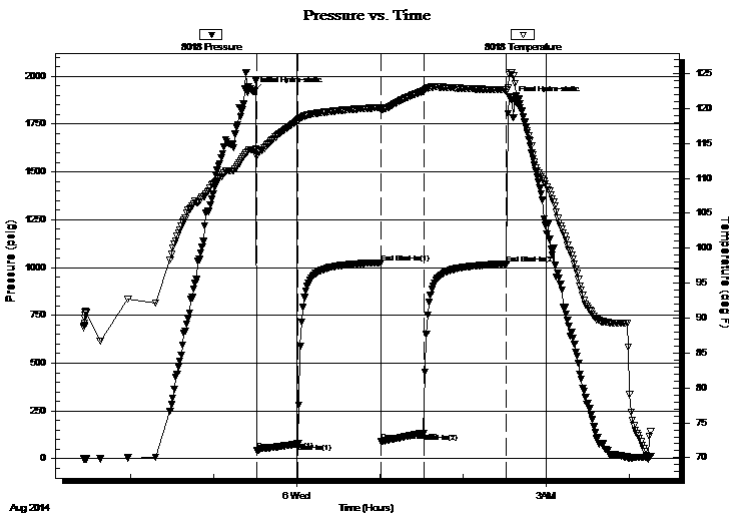
2014.08.05 @ 23:28:47

Time Off Btm:

2014.08.06 @ 02:35:16

TEST COMMENT: 30-IFP-w k to a gd bl 1/2" to 7" bl
60-ISIP-no bl
30-FFP-w k to a fr bl , surface to 5" bl
60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1921.66	114.08	Initial Hydro-static
2	44.12	113.13	Open To Flow (1)
32	79.14	118.30	Shut-In(1)
92	1025.86	120.12	End Shut-In(1)
92	92.87	119.86	Open To Flow (2)
123	134.70	122.48	Shut-In(2)
183	1020.05	122.63	End Shut-In(2)
187	1873.60	125.16	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
210.00	MW 15%M85%W	2.67

	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

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

Job Ticket: 58838

DST#: 2

ATTN: Charles Ramsay, Anth

Test Start: 2014.08.05 @ 21:25:52

Tool Information

Drill Pipe:	Length: 3865.00 ft	Diameter: 3.80 inches	Volume: 54.22 bbl	Tool Weight:	2200.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 54.37 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3896.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	106.00 ft				
Tool Length:	135.00 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			3868.00	
Shut In Tool	5.00			3873.00	
Hydraulic tool	5.00			3878.00	
Jars	5.00			3883.00	
Safety Joint	3.00			3886.00	
Packer	5.00			3891.00	29.00 Bottom Of Top Packer
Packer	5.00			3896.00	
Stubb	1.00			3897.00	
Perforations	8.00			3905.00	
Recorder	0.00	8018	Inside	3905.00	
Recorder	0.00	8700	Outside	3905.00	
Blank Spacing	94.00			3999.00	
Bullnose	3.00			4002.00	106.00 Bottom Packers & Anchor

Total Tool Length: 135.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating

19-10s-25w Graham,KS

PO Box 86
Plainville KS 67663-0086

Delbert Walt #19-1

Job Ticket: 58838 **DST#: 2**

ATTN: Charles Ramsay, Anth

Test Start: 2014.08.05 @ 21:25:52

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:	58000 ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.78 in ³	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 bbl
210.00	MW 15%M85%W	2.672

Total Length: 210.00 ft Total Volume: 2.672 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW .16@60F

Serial #: 8018

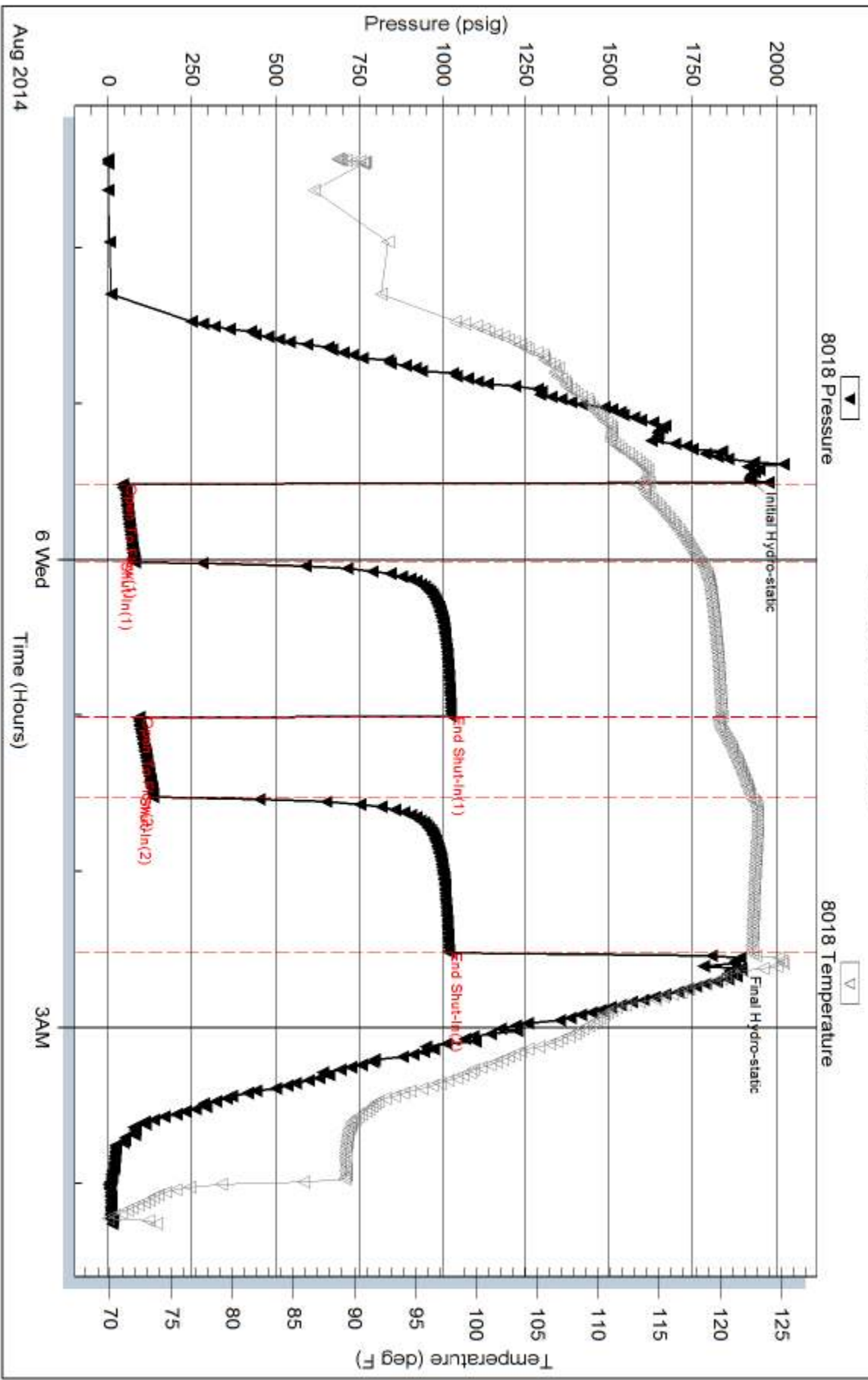
Inside

H&C Oil Operating

Delbert Well #19-1

DST Test Number: 2

Pressure vs. Time

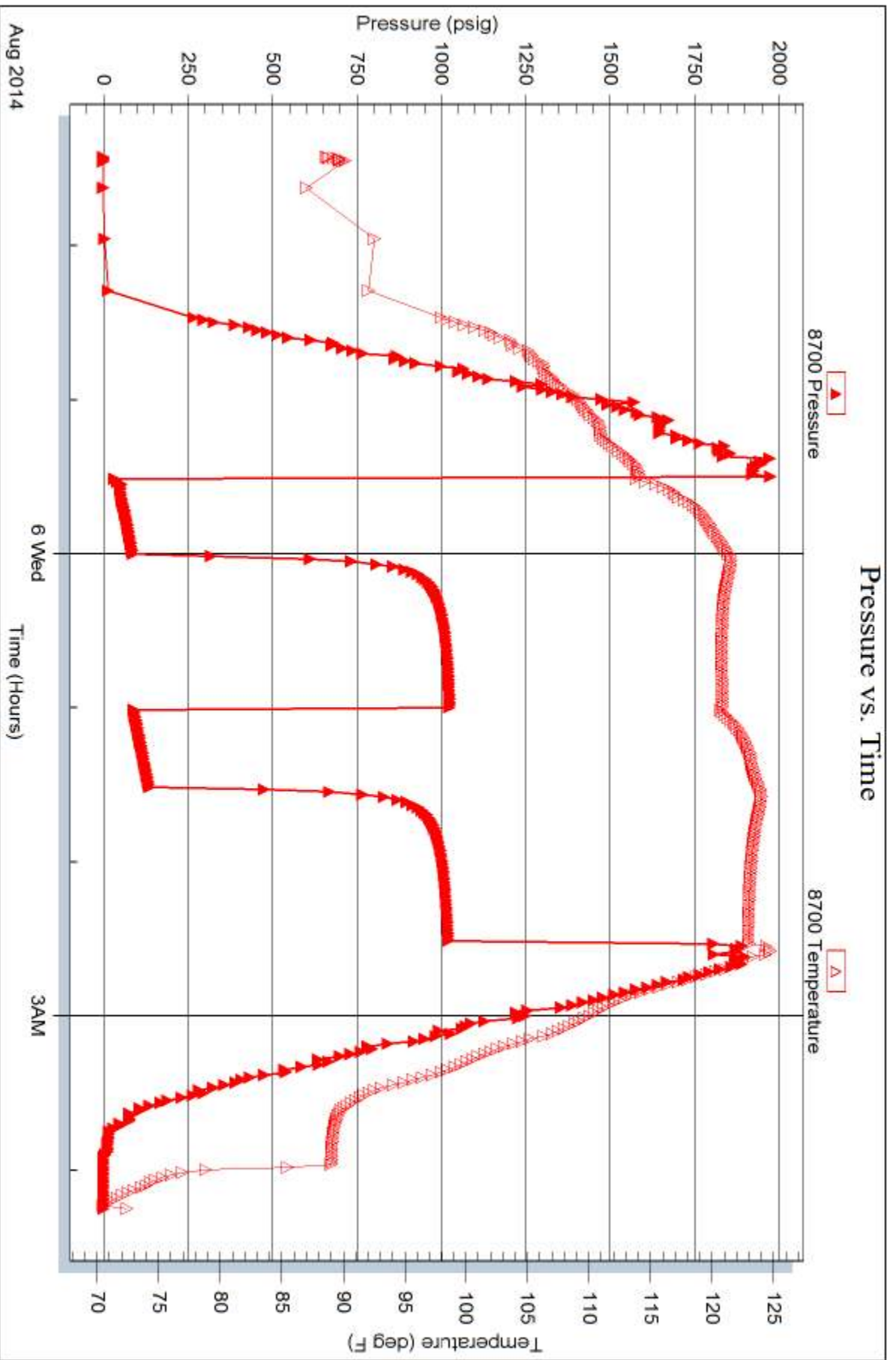


Serial #: 8700

Outside H&C Oil Operating

Delbert Well #19-1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58838

Printed: 2014.08.07 @ 10:21:39



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58837

Well Name & No. Delbert WALT #19-1 Test No. 1 Date 8-4-14
 Company H+C OIL OPERATING Elevation 2543 KB 2536 GL
 Address PO Box 86 Plainville, Ks 67663-0086
 Co. Rep / Geo. Anthony Luna Rig AM Eagle rig 2
 Location: Sec. 19 Twp. 10^s Rge. 25^w Co. GRAHAM State Ks

Interval Tested 3848-3870 Zone Tested LKC E-F
 Anchor Length 22 Drill Pipe Run 3801 Mud Wt. 9.4
 Top Packer Depth 3843 Drill Collars Run 30 Vis 60
 Bottom Packer Depth 3848 Wt. Pipe Run - WL 6.8
 Total Depth 3870 Chlorides 900 ppm System LCM -

Blow Description IFP-WEAK SURFACE Blow thru-out
ISIP- NO BLOW
FFP- NO BLOW
FSIP- NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>				
	<u>w/show of oil</u>				

Rec Total 5 BHT 116 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>1872</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2020</u>
(B) First Initial Flow <u>26</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2155</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0010</u>
(D) Initial Shut-In <u>949</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0210</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0338</u>
(F) Second Final Flow <u>31</u>	<input checked="" type="checkbox"/> Mileage <u>125 RT</u> 193.75	Comments
(G) Final Shut-In <u>927</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1827</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

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

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1668.75
 Total 1668.75
 MP/DST Disc't

Approved By _____ Our Representative Ray Schwager *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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58838

4/10

Well Name & No. Delbert WALT #19-1 Test No. 2 Date 8-5-14
 Company H+C O&L OPERATING Elevation 2543 KB 2536 GL
 Address PO Box 86 PLAINVILLE, Ks 67663-0086
 Co. Rep / Geo. Anthony Luna Rig Am Eagle rig 2
 Location: Sec. 19 Twp. 10^s Rge. 25^w Co. GRAHAM State Ks

Interval Tested 3896-4002 Zone Tested LKC H-K
 Anchor Length 106 Drill Pipe Run 3865 Mud Wt. 9.4
 Top Packer Depth 3891 Drill Collars Run 30 Vis 60
 Bottom Packer Depth 3896 Wt. Pipe Run — WL 6.8
 Total Depth 4002 Chlorides 900 ppm System LCM —

Blow Description IFP - WEAK TO A GOOD BLOW 1/2" TO 7" BLOW
ISIP - NO BLOW
FFP - WEAK TO A FAIR BLOW, SURFACE TO 5" BLOW
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>210</u>	<u>mw</u>		<u>85</u>	<u>15</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 210 BHT 122 Gravity — API RW .16 @ 60 °F Chlorides 58000 ppm
 (A) Initial Hydrostatic 1921 Test 1250 T-On Location 1820
 (B) First Initial Flow 44 Jars 250 T-Started 2125
 (C) First Final Flow 79 Safety Joint 75 T-Open 2330
 (D) Initial Shut-In 1025 Circ Sub _____ T-Pulled 0230
 (E) Second Initial Flow 92 Hourly Standby _____ T-Out 0415
 (F) Second Final Flow 134 Mileage 193.75 Comments _____
 (G) Final Shut-In 1020 Sampler _____
 (H) Final Hydrostatic 1873 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____
 Initial Shut-In 60 Day Standby _____
 Final Flow 30 Accessibility _____
 Final Shut-In 60 Sub Total 0
 Sub Total 1768.75 Total 1768.75 MP/DST Disc't _____

Approved By _____ Our Representative Ray Schwager *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.