



DRILL STEM TEST REPORT

Prepared For: **Raymond Oil Co**

PO Box 48788
Wichita, KS 67201

ATTN: Kim Shoemaker

17-4-37W Cheyenne,KS

Sowers-Downing-Haack Unit #1

Start Date: 2017.10.31 @ 18:02:00

End Date: 2017.11.01 @ 02:05:20

Job Ticket #: 63165 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Raymond Oil Co

PO Box 48788
Wichita, KS 67201

ATTN: Kim Shoemaker

Sowers-Downing-Haack Unit #1

17-4-37W Cheyenne, KS

Job Ticket: 63165

DST#: 1

Test Start: 2017.10.31 @ 18:02:00

GENERAL INFORMATION:

Formation: **L/KC 140-180**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:31:40

Time Test Ended: 02:05:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Martine Salinas

Unit No: 82

Interval: 4467.00 ft (KB) To 4555.00 ft (KB) (TVD)

Reference Elevations: 3462.00 ft (KB)

Total Depth: 4555.00 ft (KB) (TVD)

3457.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8959

Inside

Press@RunDepth: 20.66 psig @ 4468.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.10.31

End Date:

2017.11.01

Last Calib.: 2017.11.01

Start Time: 18:02:01

End Time:

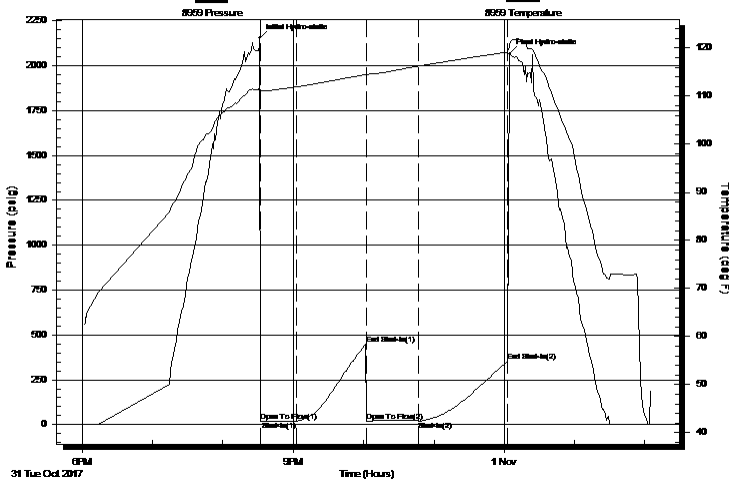
02:05:20

Time On Btm: 2017.10.31 @ 20:31:20

Time Off Btm: 2017.11.01 @ 00:04:39

TEST COMMENT: 30-IF-Surface blow built to 1 1/4"
60-ISI-Blow back built to 1 "
45-FF-Surface blow built to 1/4"
75-FSI-Blow back built to 1"

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2152.77	112.07	Initial Hydro-static
1	19.47	111.21	Open To Flow (1)
32	19.23	111.96	Shut-In(1)
91	448.28	114.51	End Shut-In(1)
92	20.05	114.30	Open To Flow (2)
136	20.66	116.27	Shut-In(2)
212	353.28	119.19	End Shut-In(2)
214	2066.32	120.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% Mud	0.14

Gas Rates

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



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TOOL DIAGRAM

Raymond Oil Co

Sowers-Downing-Haack Unit #1

PO Box 48788
Wichita, KS 67201

17-4-37W Cheyenne, KS

Job Ticket: 63165

DST#: 1

ATTN: Kim Shoemaker

Test Start: 2017.10.31 @ 18:02:00

Tool Information

Drill Pipe:	Length: 4467.00 ft	Diameter: 3.80 inches	Volume: 62.66 bbl	Tool Weight: 2500.00 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: 60000.00 lb
			<u>Total Volume: 62.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	4467.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	116.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4444.00	
Hydraulic tool	5.00			4449.00	
Jars	5.00			4454.00	
Safety Joint	3.00			4457.00	
Packer	5.00			4462.00	28.00 Bottom Of Top Packer
Packer	5.00			4467.00	
Stubb	1.00			4468.00	
Recorder	0.00	8959	Inside	4468.00	
Recorder	0.00	8734	Outside	4468.00	
Perforations	18.00			4486.00	
Change Over Sub	1.00			4487.00	
Drill Pipe	62.00			4549.00	
Change Over Sub	1.00			4550.00	
Bullnose	5.00			4555.00	88.00 Bottom Packers & Anchor

Total Tool Length: 116.00



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FLUID SUMMARY

Raymond Oil Co

Sowers-Downing-Haack Unit #1

PO Box 48788
Wichita, KS 67201

17-4-37W Cheyenne,KS

Job Ticket: 63165 **DST#: 1**

ATTN: Kim Shoemaker

Test Start: 2017.10.31 @ 18:02:00

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: 71.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.40 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2200.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% Mud	0.140

Total Length: 10.00 ft Total Volume: 0.140 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Serial #: 8959

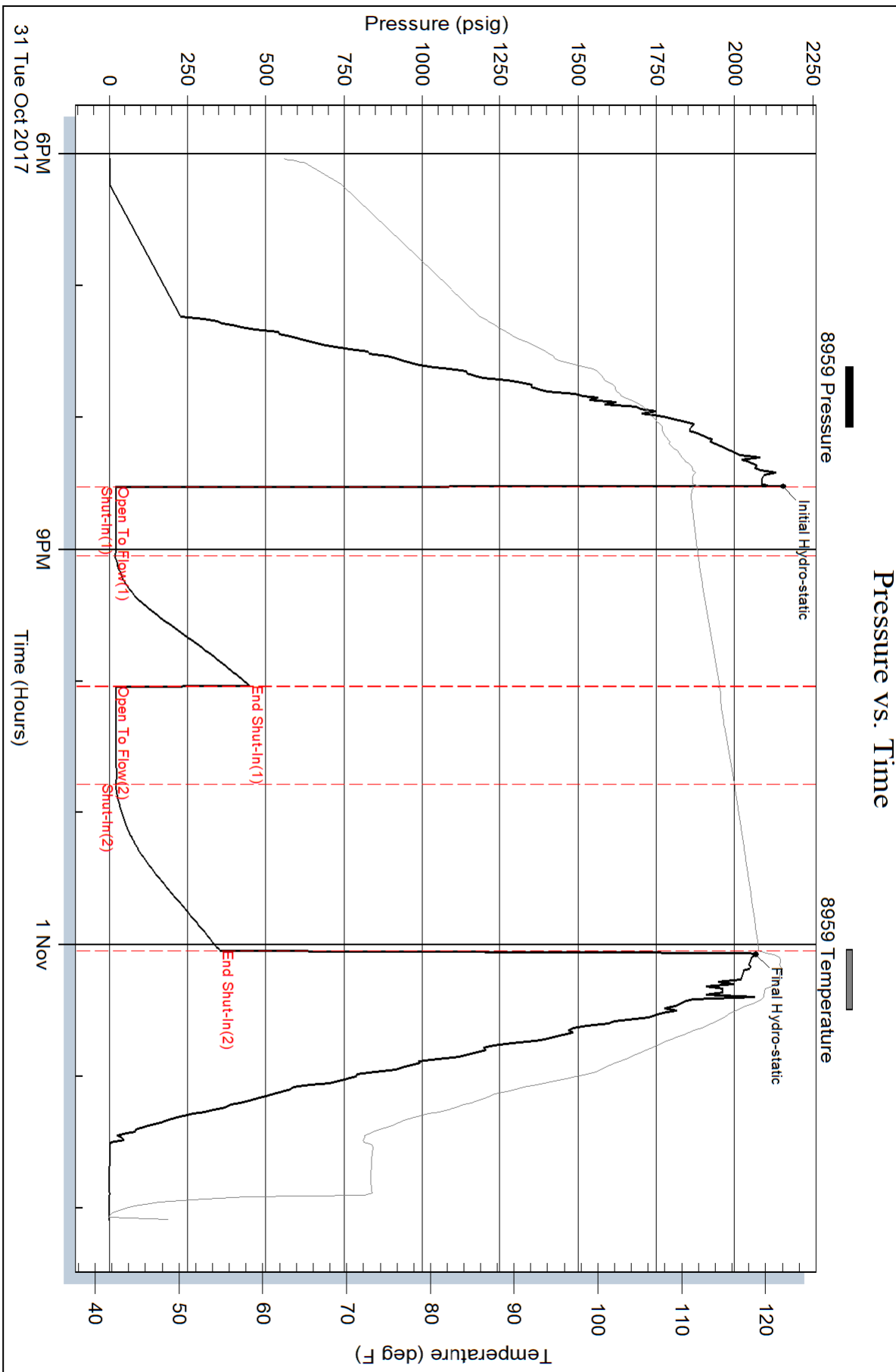
Inside

Raymond Oil Co

17-4-37W Cheyenne, KS

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 63165

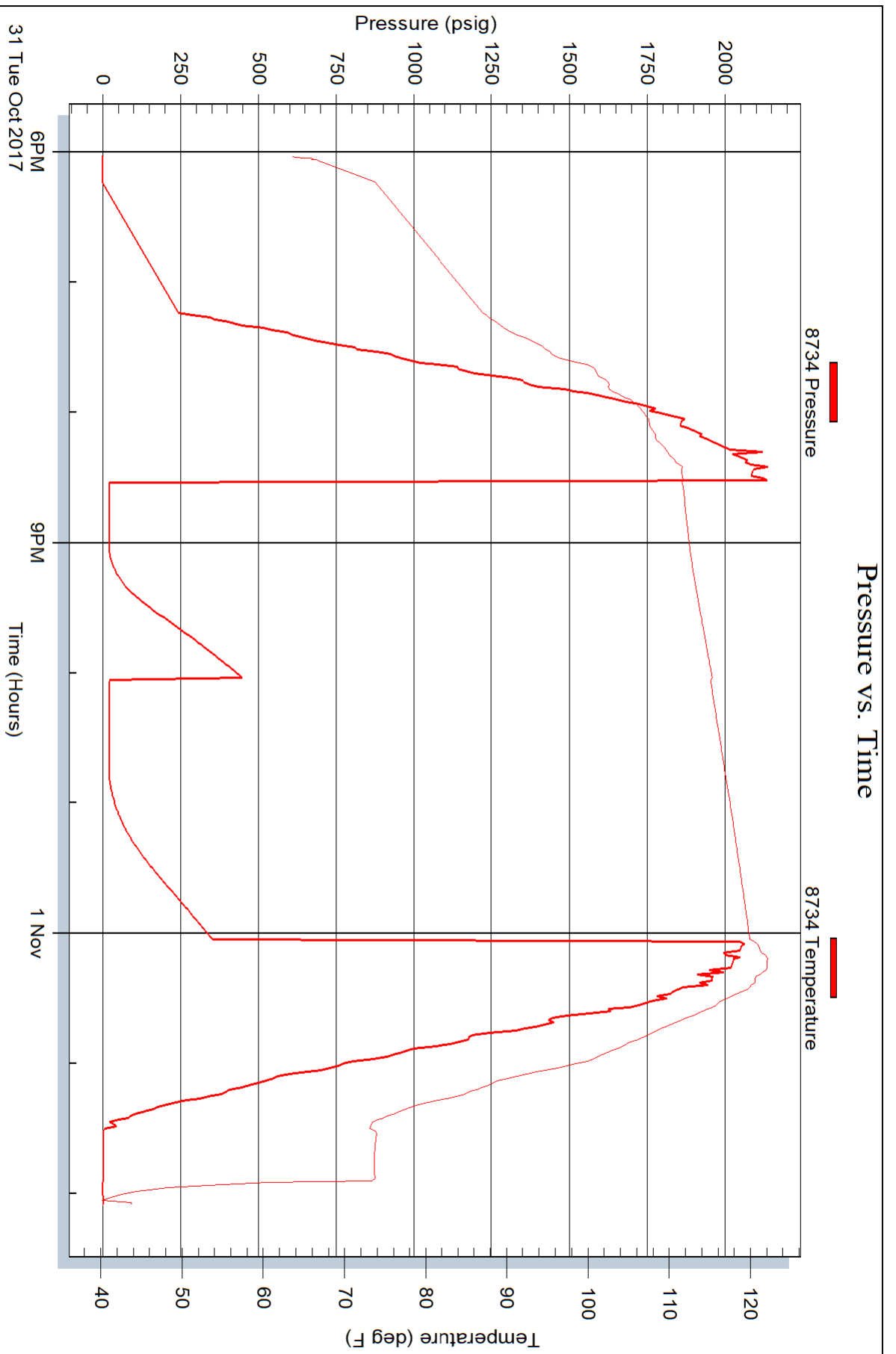
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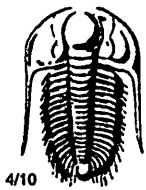
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Outside Raymond Oil Co

17-4-37W Cheyenne, KS

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63165

Well Name & No. 1 Sowers Downing Unit Test No. 1 Date 10-31-17
 Company Raymond Oil Company Inc. Elevation 3462 KB 3457 GL
 Address P.O. Box 48788 Wichita, KS 67201
 Co. Rep / Geo. Kim Shuckmaker Rig LD #1
 Location: Sec. 17 Twp. 4S. Rge. 37W. Co. Cheyenne State KS.

Interval Tested 4467-4555 Zone Tested L/KC 140-180 zones
 Anchor Length 88' Drill Pipe Run 4467 Mud Wt. 8.8
 Top Packer Depth 4462 Drill Collars Run — Vis 71
 Bottom Packer Depth 4467 Wt. Pipe Run — WL 6.4
 Total Depth 4555 Chlorides 2200 ppm System LCM 9#
 Blow Description IF - S. blow built to 1 1/4"
ISI - Blow back built to 1"
FF - S. blow @ 12 mins. built to 1/4"
FSI - Blow back built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 121 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2153 Test 1150 T-On Location 15:50 10-31-17
 (B) First Initial Flow 19 Jars 250 T-Started 18:02
 (C) First Final Flow 19 Safety Joint 75 T-Open 20:32
 (D) Initial Shut-In 448 Circ Sub _____ T-Pulled 00:02
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 02:06 11-1-17
 (F) Second Final Flow 21 Mileage 115 RT & Z 172.50 Comments Tools loaded @
 (G) Final Shut-In 353 Sampler _____ 14:05 11-3-17
 (H) Final Hydrostatic 2066 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 800
 Day Standby 2.5d Total 2447.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1647.50

Approved By _____ Our Representative [Signature]
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