

DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Faye Seibel #1-8

8-13S-21W Trego,KS

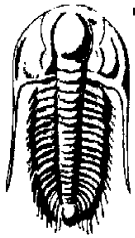
Start Date: 2018.11.21 @ 07:56:00

End Date: 2018.11.21 @ 14:17:00

Job Ticket #: 64765 DST #: 1

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

Printed: 2018.11.23 @ 11:46:19



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64765

DST#: 1

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 07:56:00

GENERAL INFORMATION:

Formation: **LKC A-C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:06:45

Time Test Ended: 14:17:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3572.00 ft (KB) To 3627.00 ft (KB) (TVD)

Reference Elevations: 2254.00 ft (KB)

Total Depth: 3627.00 ft (KB) (TVD)

2247.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 8934 Inside

Press@RunDepth: 386.04 psig @ 3576.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.11.21

End Date:

2018.11.21

Last Calib.: 2018.11.21

Start Time: 07:56:15

End Time:

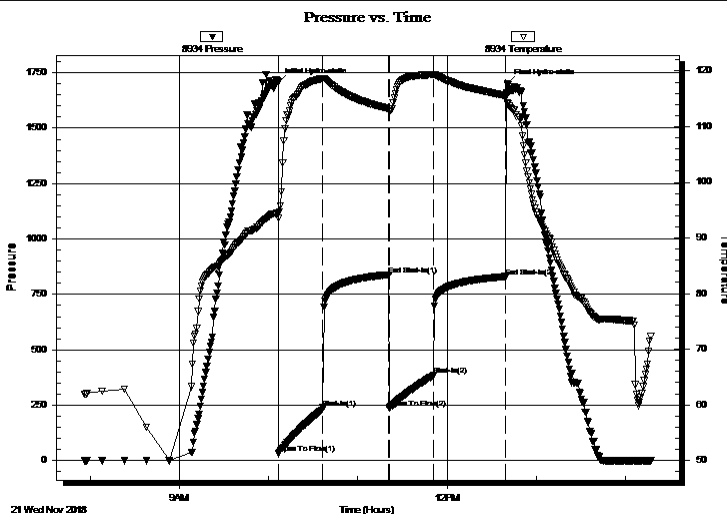
14:17:00

Time On Btm: 2018.11.21 @ 10:06:30

Time Off Btm: 2018.11.21 @ 12:40:45

TEST COMMENT: 30-IF-BOB 5 mins; Built to 55"
45-ISI-Surface built to 1/4"; Died to Surface
30-FF-BOB 6 mins; Built to 43"
45-fSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1707.38	94.43	Initial Hydro-static
1	30.99	93.49	Open To Flow (1)
30	238.52	118.61	Shut-In(1)
75	836.88	113.18	End Shut-In(1)
75	236.10	112.90	Open To Flow (2)
105	386.04	119.30	Shut-In(2)
153	830.63	115.58	End Shut-In(2)
155	1700.07	114.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
500.00	Water 100%W	6.79
300.00	MW 40%M 60%W	4.25

Gas Rates

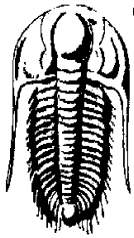
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Test Start: 2018.11.21 @ 07:56:00

KB to GR/CF: 7.00 ft

TEST COMMENT: 30-IF-BOB 5 mins; Built to 55"
45-ISI-Surface built to 1/4"; Died to Surface
30-FF-BOB 6 mins; Built to 43"
45-fSI-No Return



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64765

DST#: 1

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 07:56:00

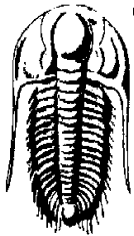
Tool Information

Drill Pipe:	Length:	3551.00 ft	Diameter:	3.82 inches	Volume:	50.34 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	ft	Diameter:	2.75 inches	Volume:	- bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	32.00 ft	Diameter:	2.25 inches	Volume:	0.16 bbl	Weight to Pull Loose:	78000.00 lb
					Total Volume:	- bbl	Tool Chased	ft
Drill Pipe Above KB:		32.00 ft					String Weight: Initial	55000.00 lb
Depth to Top Packer:		3572.00 ft					Final	58000.00 lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		55.00 ft						
Tool Length:		76.00 ft						
Number of Packers:		1	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3552.00	
Shut In Tool	5.00			3557.00	
Hydraulic tool	5.00			3562.00	
Packer	5.00			3567.00	21.00 Bottom Of Top Packer
Packer	5.00			3572.00	
Stubb	1.00			3573.00	
Perforations	2.00			3575.00	
Change Over Sub	1.00			3576.00	
Recorder	0.00	8934	Inside	3576.00	
Recorder	0.00	8368	Inside	3576.00	
Drill Pipe	32.00			3608.00	
Change Over Sub	1.00			3609.00	
Perforations	15.00			3624.00	
Bullnose	3.00			3627.00	55.00 Bottom Packers & Anchor

Total Tool Length: 76.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64765

DST#: 1

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 07:56:00

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: 100000 ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
500.00	Water 100%W	6.791
300.00	MW 40%M 60%W	4.253

Total Length: 800.00 ft

Total Volume: 11.044 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.092@60F

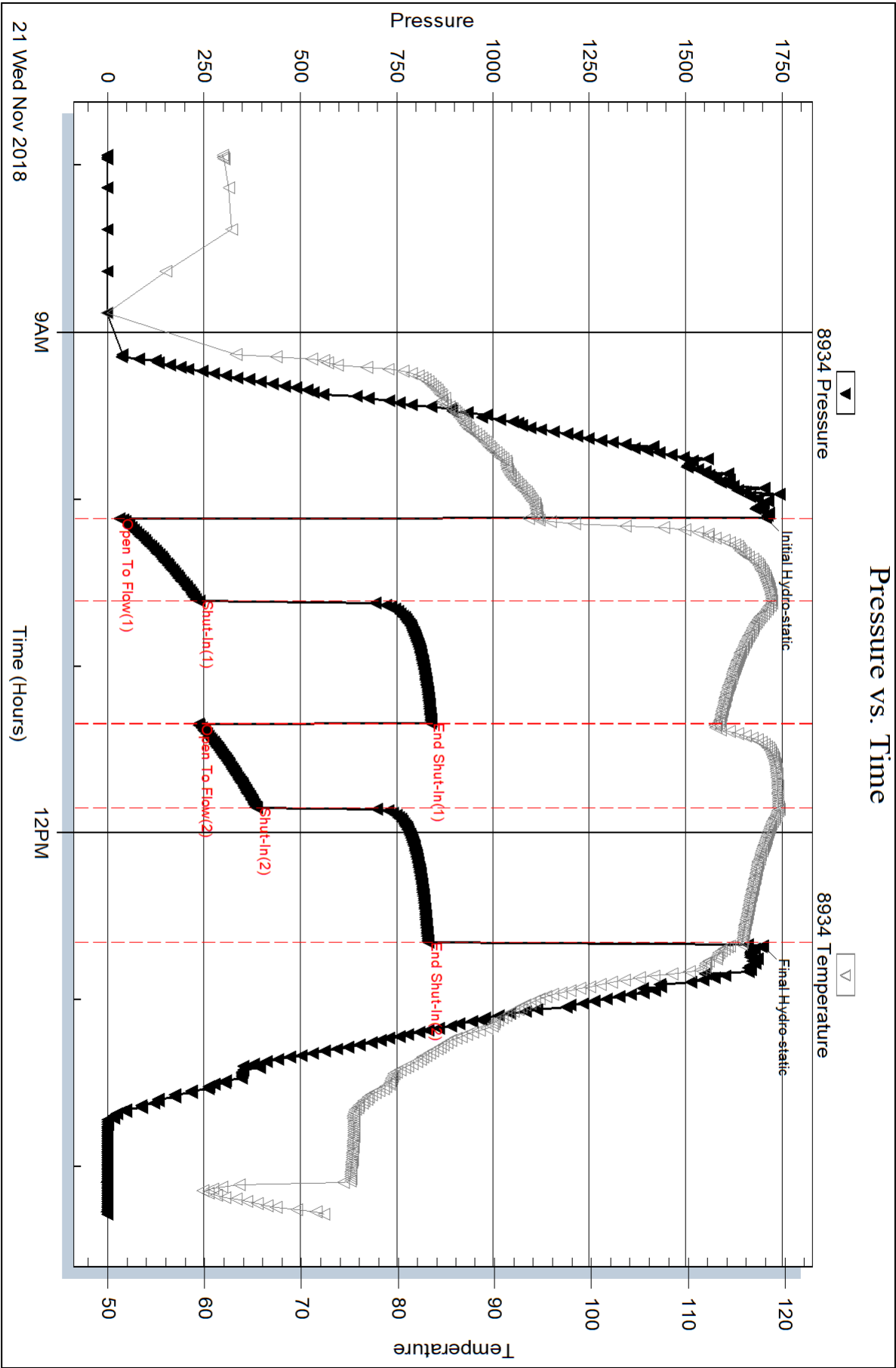
Serial #: 8934

Inside

Dow nung Nelson Oil Co

Faye Seibel #1-8

DST Test Number: 1



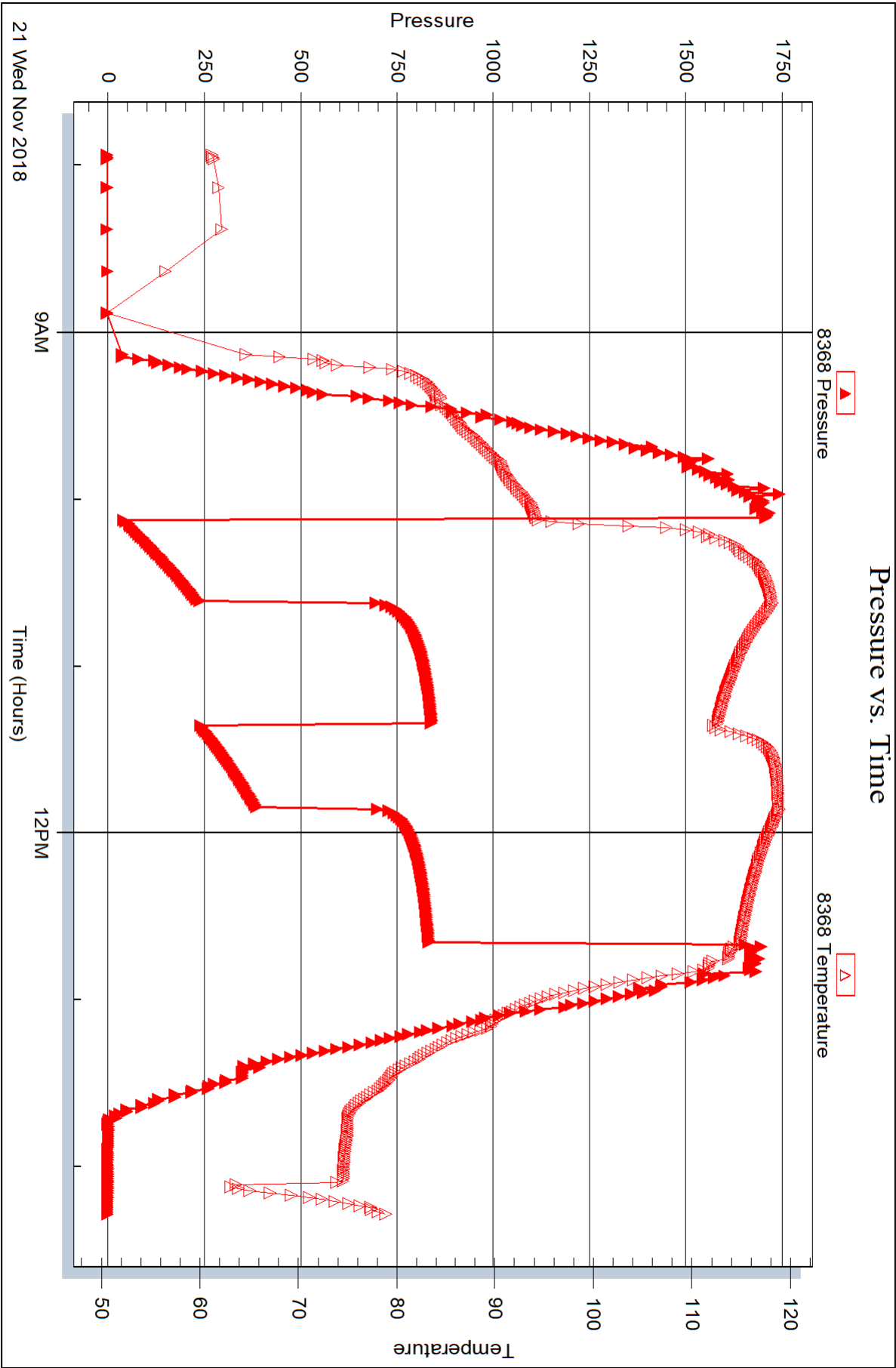
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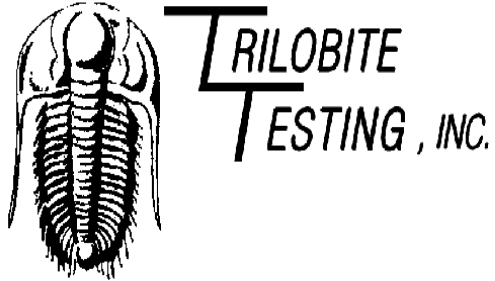
Inside

Dow nting Nelson Oil Co

Faye Seibel #1-8

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Co**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Faye Seibel #1-8

8-13S-21W Trego,KS

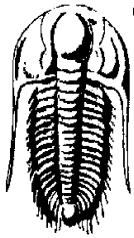
Start Date: 2018.11.21 @ 23:25:00

End Date: 2018.11.22 @ 06:18:15

Job Ticket #: 64766 DST #: 2

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

Printed: 2018.11.23 @ 14:01:37



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64766

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 23:25:00

GENERAL INFORMATION:

Formation: **LKC 'E-F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:19:00

Time Test Ended: 06:18:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3645.00 ft (KB) To 3672.00 ft (KB) (TVD)

Total Depth: 3672.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2254.00 ft (KB)

2247.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8934 Inside

Press@RunDepth: 172.09 psig @ 3648.00 ft (KB)

Start Date: 2018.11.21

End Date:

2018.11.22

Start Time: 23:25:15

End Time:

06:18:15

Capacity: 8000.00 psig

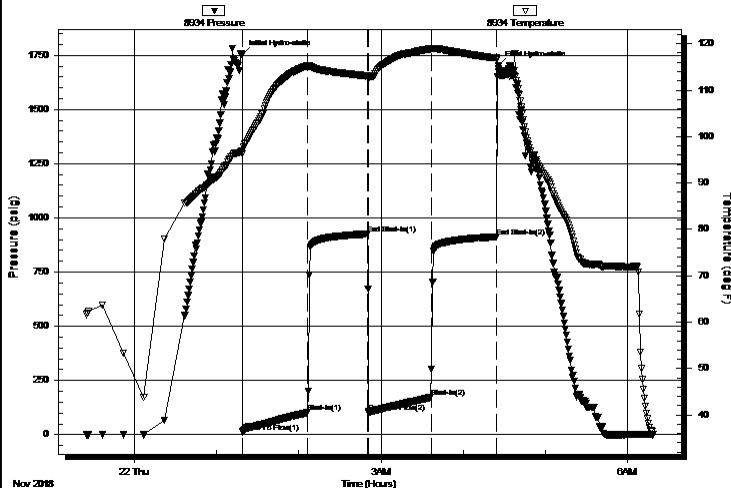
Last Calib.: 2018.11.22

Time On Btm: 2018.11.22 @ 01:18:45

Time Off Btm: 2018.11.22 @ 04:25:30

TEST COMMENT: 45-IF-BOB in 22 mins; Built to 19"
45-ISI-Very Weak Surface
45-FF-BOB in 30 mins; Built to 14"
45-FSI-No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1754.77	96.91	Initial Hydro-static
1	13.24	96.35	Open To Flow (1)
48	102.21	115.14	Shut-In(1)
92	925.73	113.05	End Shut-In(1)
92	104.47	112.78	Open To Flow (2)
138	172.09	118.91	Shut-In(2)
186	912.49	116.94	End Shut-In(2)
187	1700.69	114.59	Final Hydro-static

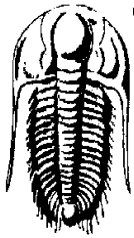
Recovery

Length (ft)	Description	Volume (bbl)
315.00	MCW 10%M 90%W	4.17

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



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DRILL STEM TEST REPORT

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64766

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 23:25:00

GENERAL INFORMATION:

Formation: **LKC 'E-F'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:19:00

Time Test Ended: 06:18:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3645.00 ft (KB) To 3672.00 ft (KB) (TVD)

Total Depth: 3672.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2254.00 ft (KB)

2247.00 ft (CF)

KB to GR/CF: 7.00 ft

Serial #: 8368 Outside

Press@RunDepth: psig @ 3648.00 ft (KB)

Start Date: 2018.11.21

End Date:

2018.11.22

Start Time: 23:25:15

End Time:

06:18:15

Capacity: 8000.00 psig

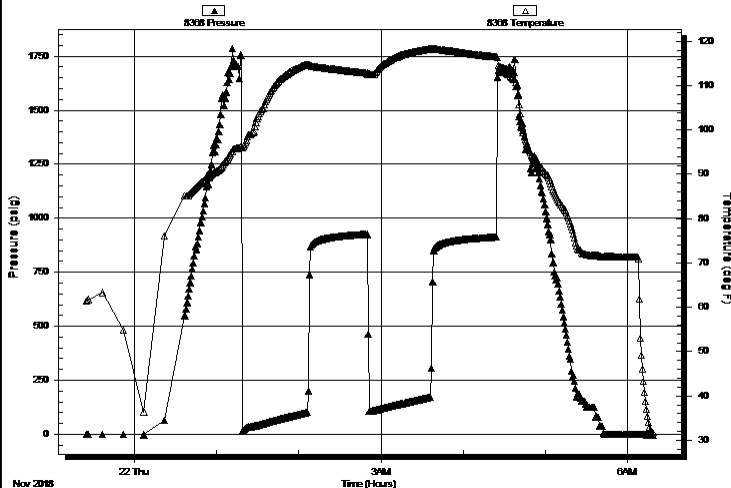
Last Calib.: 2018.11.22

Time On Btm:

Time Off Btm:

TEST COMMENT: 45-IF-BOB in 22 mins; Built to 19"
45-ISI-Very Weak Surface
45-FF-BOB in 30 mins; Built to 14"
45-FSI-No Return

Pressure vs. Time



PRESSURE SUMMARY

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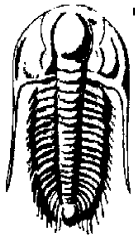
Recovery

Length (ft)	Description	Volume (bbl)
315.00	MCW 10%M 90%W	4.17

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64766

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 23:25:00

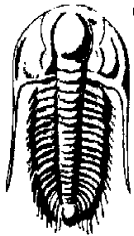
Tool Information

Drill Pipe:	Length:	3612.00 ft	Diameter:	3.82 inches	Volume:	51.20 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	ft	Diameter:	2.75 inches	Volume:	- bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	32.00 ft	Diameter:	2.25 inches	Volume:	0.16 bbl	Weight to Pull Loose:	76000.00 lb
					Total Volume:	- bbl	Tool Chased	ft
Drill Pipe Above KB:		20.00 ft					String Weight: Initial	55000.00 lb
Depth to Top Packer:		3645.00 ft					Final	55000.00 lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		27.00 ft						
Tool Length:		48.00 ft						
Number of Packers:		1	Diameter:	6.75 inches				
Tool Comments:								

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3625.00	
Shut In Tool	5.00			3630.00	
Hydraulic tool	5.00			3635.00	
Packer	5.00			3640.00	21.00 Bottom Of Top Packer
Packer	5.00			3645.00	
Stubb	1.00			3646.00	
Perforations	2.00			3648.00	
Recorder	0.00	8934	Inside	3648.00	
Recorder	0.00	8368	Outside	3648.00	
Perforations	21.00			3669.00	
Bullnose	3.00			3672.00	27.00 Bottom Packers & Anchor

Total Tool Length: 48.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning Nelson Oil Co

8-13S-21W Trego,KS

PO Box 1019
Hays KS 67601

Faye Seibel #1-8

Job Ticket: 64766

DST#: 2

ATTN: Marc Dow ning

Test Start: 2018.11.21 @ 23:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 66.00 sec/qt

Water Loss: 8.78 in³

Resistivity: ohm.m

Salinity: 3000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

deg API

Water Salinity: 77000 ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
315.00	MCW 10%M 90%W	4.169

Total Length: 315.00 ft Total Volume: 4.169 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

RW=.239@30F

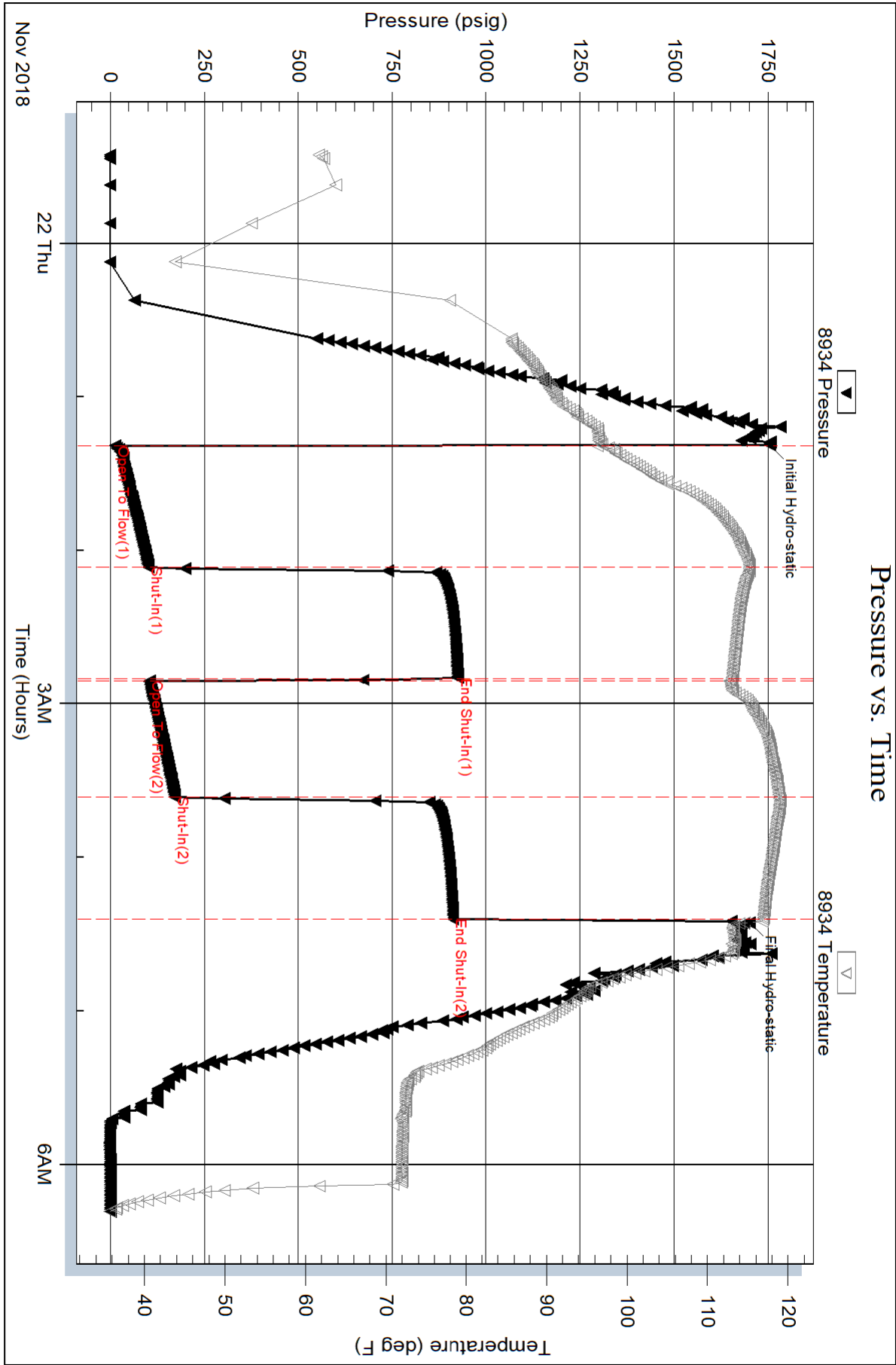
Serial #: 8934

Inside

Dow n ing Nelson Oil Co

Faye Seibel #1-8

DST Test Number: 2



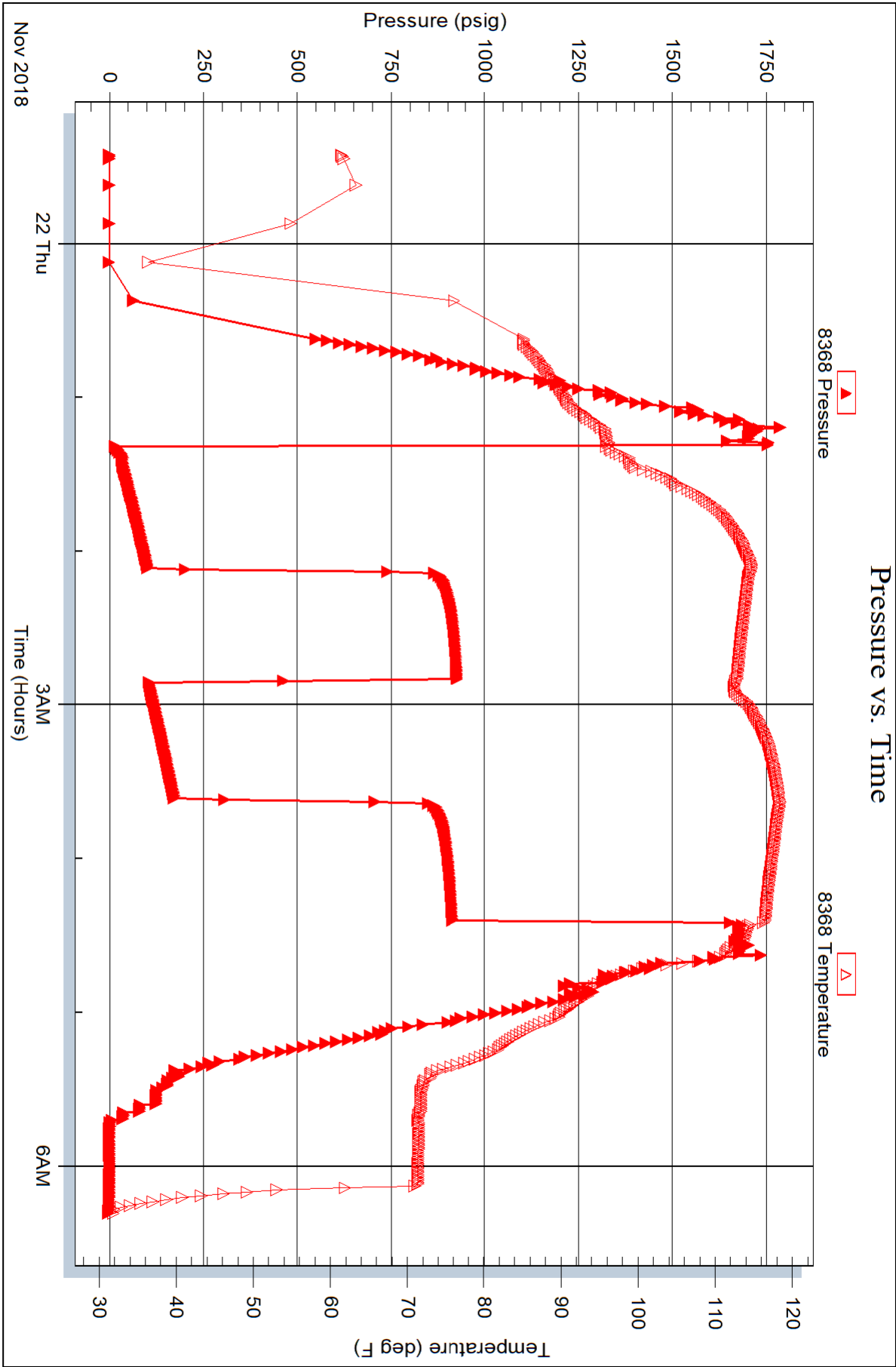
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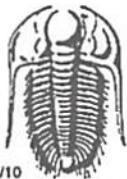
Outside

Dow n ing Nelson Oil Co

Faye Seibel #1-8

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64765

Well Name & No. Faye Seibel #1-8 Test No. 1 Date 11/21/2018
 Company BNOCD Elevation 2254 KB 2247 GL
 Address PO Box 019 Hays KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #4
 Location: Sec. 8 Twp 13s Rge. 21w Co. Trego State KS

Interval Tested 3572' - 3627' Zone Tested LHC A-C
 Anchor Length 55' Drill Pipe Run 3551' Mud Wt. 89
 Top Packer Depth 3567' Drill Collars Run 32' Vis 66
 Bottom Packer Depth 3572' Wt. Pipe Run - WL 88
 Total Depth 3627' Chlorides 3000 ppm System LCM 2H

Blow Description 17-BOB 5 min; Built to 55"
1st - Built from surface to 4"; Dred back to surface
77-BOB 6 min; Built to 43"
75- No Return

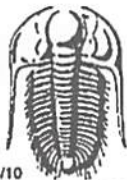
Rec	Feet of	%gas	%oil	%water	%mud
<u>500'</u>	<u>90</u>		<u>100</u>		
<u>300'</u>	<u>MW</u>		<u>60</u>	<u>40</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 800' BHT 115° Gravity - API RW 092 @ 60 °F Chlorides 100,000 ppm
 (A) Initial Hydrostatic 1707 ☒ Test 1050 T-On Location 07:35
 (B) First Initial Flow 30 ☐ Jars - T-Started 07:56
 (C) First Final Flow 238 ☐ Safety Joint - T-Open 10:05
 (D) Initial Shut-In 836 ☐ Circ Sub - T-Pulled 12:35
 (E) Second Initial Flow 236 ☐ Hourly Standby - T-Out 14:16
 (F) Second Final Flow 386 ☒ Mileage 52.7 52 Comments -
 (G) Final Shut-In 830 ☐ Sampler -
 (H) Final Hydrostatic 1700 ☐ Straddle -
☐ Shale Packer -
☐ Extra Packer -
☐ Extra Recorder -
☐ Day Standby -
☐ Accessibility -

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45
 Sub Total 1102
 MP/DST Disc't -

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 test is made.

785-259-0036



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64766

Well Name & No. Faye Seibel #1-8 Test No. 2 Date 11/21/2018
 Company DMOC Elevation 2254 KB 2247 GL
 Address PO BOX 1019 Hays KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #4
 Location: Sec. 8 Twp 13S Rge. 21W Co. Trego State KS

Interval Tested 3645' - 3672' Zone Tested LHC E+7'
 Anchor Length 27' Drill Pipe Run 3612' Mud Wt. 8.9
 Top Packer Depth 3640' Drill Collars Run 32' Vis 66
 Bottom Packer Depth 3645' Wt. Pipe Run - WL 8.8
 Total Depth 3672' Chlorides 3000 ppm System LCM 2#

Blow Description 77-BOB 22 min; Built to 19"
77-BOB 30 min; Built to 14"
78- No Return

Rec	Feet of	%gas	%oil	%water	%mud
315	MCW		90	10	

Rec Total 315' BHT 116° Gravity - API RW 239 @ 30 °F Chlorides 77,000 ppm

(A) Initial Hydrostatic	<u>1754</u>	☒ Test	<u>1050</u>	T-On Location	<u>23:05</u>
(B) First Initial Flow	<u>13</u>	☐ Jars		T-Started	<u>23:25</u>
(C) First Final Flow	<u>102</u>	☐ Safety Joint		T-Open	<u>01:19 11/22/2018</u>
(D) Initial Shut-In	<u>925</u>	☐ Circ Sub		T-Pulled	<u>04:20</u>
(E) Second Initial Flow	<u>104</u>	☐ Hourly Standby		T-Out	<u>06:17</u>
(F) Second Final Flow	<u>172</u>	☒ Mileage	<u>52 R7x2 52+52</u>	Comments	<u>Loaded 11/23/2018</u>
(G) Final Shut-In	<u>912</u>	☐ Sampler			<u>12:00</u>
(H) Final Hydrostatic	<u>1700</u>	☐ Straddle			

Initial Open	<u>45</u>	☐ EM Tool	
Initial Shut-In	<u>45</u>	☐ Ruined Shale Packer	
Final Flow	<u>45</u>	☐ Ruined Packer	
Final Shut-In	<u>45</u>	☐ Extra Copies	
		Sub Total	<u>0</u>
		Total	<u>1154</u>
		Sub Total	<u>1154</u>
		MP/DST Disc't	

Approved By _____ Our Representative Spencer J. Stral Thanks!
 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