

TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning & Nelson Oil Co.

PO Box 1019
Hays, KS. 67601

ATTN: Marc Dow ning

Keller Trust #1-20

22-22s-22w-Pawnee

Job Ticket: 43530

DST#: 1

Test Start: 2011.06.28 @ 22:00:58

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:54:13

Time Test Ended: 04:55:43

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 54

Interval: **4308.00 ft (KB) To 4344.00 ft (KB) (TVD)**

Total Depth: 4344.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Good

Reference Elevations: 2203.00 ft (KB)

2195.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755 **Inside**

Press@RunDepth: 59.30 psig @ 4311.00 ft (KB)

Start Date: 2011.06.28

End Date:

2011.06.29

Start Time: 22:01:00

End Time:

04:55:43

Capacity: 8000.00 psig

Last Calib.: 2011.06.29

Time On Btm: 2011.06.28 @ 23:53:43

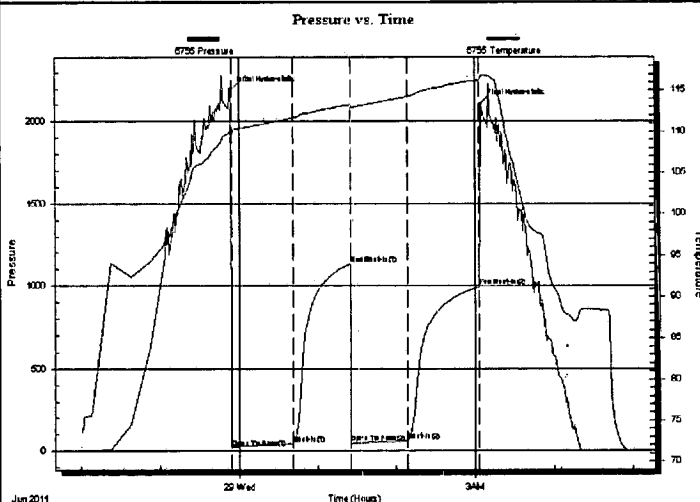
Time Off Btm: 2011.06.29 @ 03:04:13

TEST COMMENT: IFP-Good Blow , Built to 6-1/2"

ISI-Dead

FFP-Good Blow , Built to 6"

FSI-Dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2192.18	110.21	Initial Hydro-static
1	19.74	109.50	Open To Flow (1)
48	45.02	111.67	Shut-In(1)
92	1133.05	113.24	End Shut-In(1)
92	46.46	112.83	Open To Flow (2)
135	59.30	114.26	Shut-In(2)
190	994.66	116.21	End Shut-In(2)
191	2107.62	116.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
95.00	HMCO-75%O-25%M	1.05
10.00	Free Oil	0.14

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing & Nelson Oil Co.

Keller Trust #1-20

PO Box 1019
Hays, KS. 67601

22-22s-22w-Pawnee

Job Ticket: 43530

DST#: 1

ATTN: Marc Downing

Test Start: 2011.06.28 @ 22:00:58

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
95.00	HMCO-75%O-25%M	1.050
10.00	Free Oil	0.140

Total Length: 105.00 ft

Total Volume: 1.190 bbl

Num Fluid Samples: 0

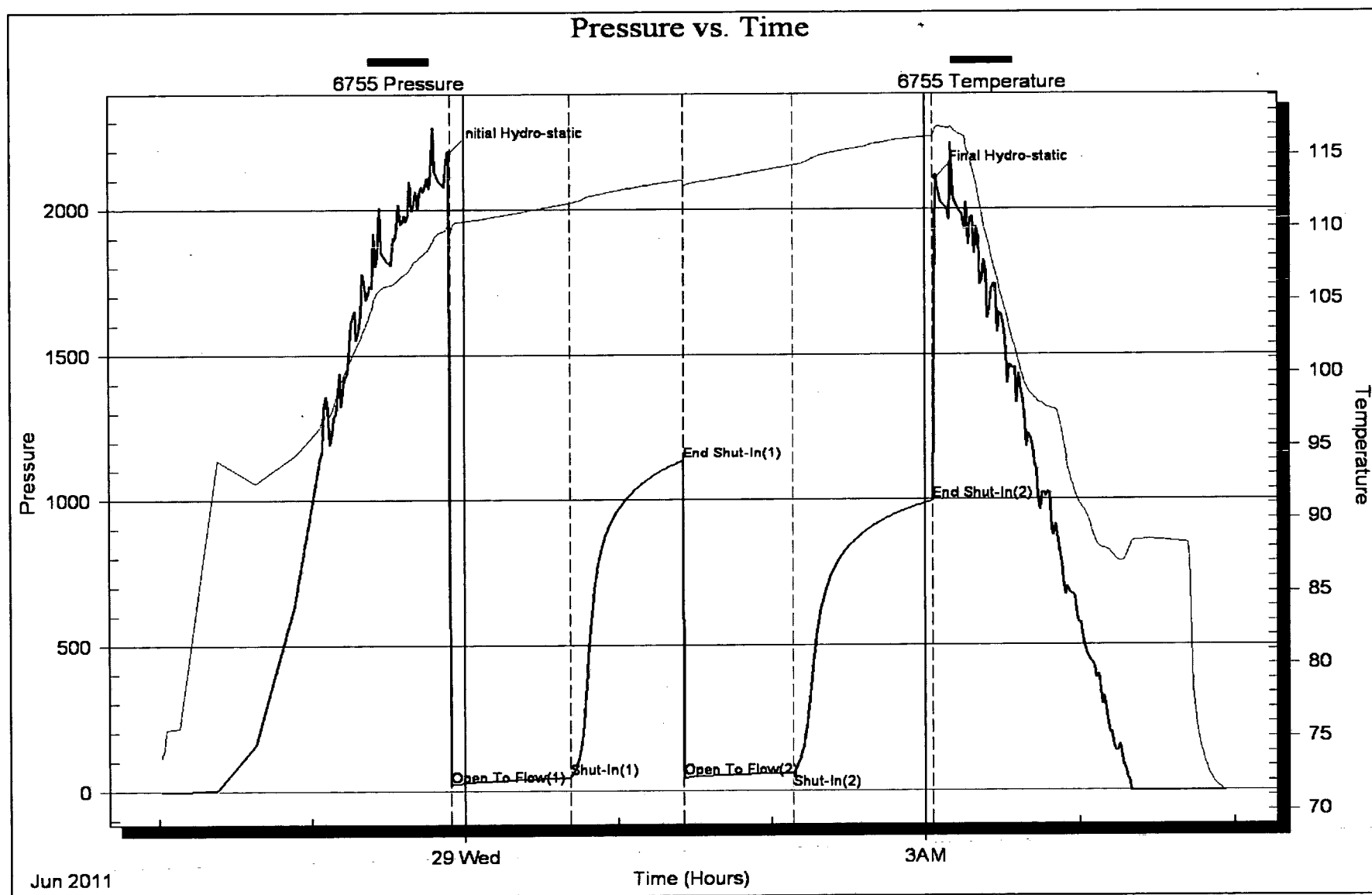
Num Gas Bombs: 0

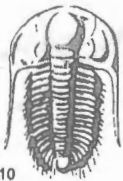
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 43530 15960

Well Name & No. Keller Trust #1-20 Test No. 1 Date 6-28-11
 Company Downing & Nelson Oil Company Elevation 2213 KB 2195 GL
 Address PO Box 1619, Hays, KS. 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #4
 Location: Sec. 20 Twp. 20S Rge. 20W Co. Pawnee State KS

Interval Tested 4308-4344 Zone Tested Mississippi
 Anchor Length 36' Drill Pipe Run 4255 Mud Wt. 9
 Top Packer Depth 4303 Drill Collars Run 31 Vis 54
 Bottom Packer Depth 4308 Wt. Pipe Run 0 WL 9.6
 Total Depth 4344 Chlorides 5800 ppm System LCM 1#
 Blow Description IFP-Weak Blow, Built to 6 1/2"
ISI-Dead
FFP-Good Blow, Built to 6"
FBI-Dead

Rec	Feet of	%gas	%oil	%water	%mud
10	Free Oil				
95	HOCM	75		25	
	135' GIP				

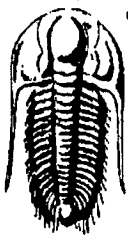
Rec Total _____ BHT 116° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic	<u>2192</u>	Test	<u>1225</u>	T-On Location	<u>19:30</u>
(B) First Initial Flow	<u>20</u>	Jars	<u>250</u>	T-Started	<u>22:00</u>
(C) First Final Flow	<u>45</u>	Safety Joint	<u>70</u>	T-Open	<u>23:55</u>
(D) Initial Shut-In	<u>1133</u>	☐ Circ Sub		T-Pulled	<u>2:55</u>
(E) Second Initial Flow	<u>46</u>	☐ Hourly Standby		T-Out	<u>4:55</u>
(F) Second Final Flow	<u>59</u>	Mileage	<u>140R 1960</u>	Comments	
(G) Final Shut-In	<u>995</u>	☐ Sampler			
(H) Final Hydrostatic	<u>2108</u>	☐ Straddle		☐ Ruined Shale Packer	

Initial Open	<u>45</u>	☐ Shale Packer		☐ Ruined Packer	
Initial Shut-In	<u>45</u>	☐ Extra Packer		☐ Extra Copies	
Final Flow	<u>45</u>	☐ Extra Recorder		Sub Total	<u>0</u>
Final Shut-In	<u>45</u>	☐ Day Standby		Total	<u>1746</u>
		☐ Accessibility		MP/DST Disc't	
		Sub Total	<u>1746</u>		

Approved By _____ Our Representative Jana McLeon

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
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DRILL STEM TEST REPORT

Dow ning & Nelson Oil Co.

PO Box 1019
Hays, KS. 67601

ATTN: Marc Dow ning

Keller Trust #1-20

22-22s-22w-Pawnee

Job Ticket: 43531

DST#: 2

Test Start: 2011.06.29 @ 11:55:40

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:01:10

Time Test Ended: 17:56:40

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 54

Interval: **4344.00 ft (KB) To 4354.00 ft (KB) (TVD)**

Total Depth: 4354.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Good

Reference Elevations: 2203.00 ft (KB)

2195.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755 Inside

Press@RunDepth: 39.07 psig @ 4347.00 ft (KB)

Start Date: 2011.06.29

End Date:

2011.06.29

Start Time: 11:55:42

End Time:

17:56:40

Capacity: 8000.00 psig

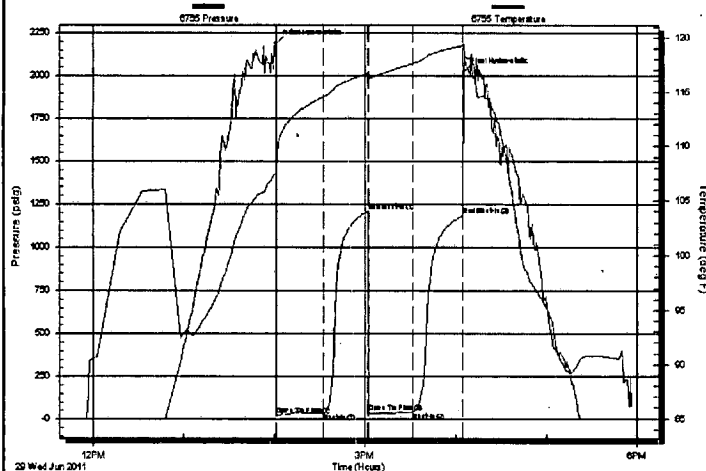
Last Calib.: 2011.06.29

Time On Btm: 2011.06.29 @ 14:00:55

Time Off Btm: 2011.06.29 @ 16:05:25

TEST COMMENT: IFF-Weak,Built to 1-3/4"
ISI-Dead
FFP-Weak,Built to 1-1/2"
FSI-Dead

Pressure vs. Time



PRESSURE SUMMARY

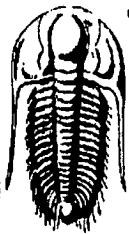
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2188.95	107.60	Initial Hydro-static
1	22.28	107.93	Open To Flow (1)
32	33.80	114.59	Shut-In(1)
61	1211.11	116.70	End Shut-In(1)
62	38.64	116.26	Open To Flow (2)
91	39.07	117.61	Shut-In(2)
124	1186.19	119.26	End Shut-In(2)
125	2023.97	119.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	OCM-15%O-85%M	0.10
5.00	Free Oil	0.02

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing & Nelson Oil Co.

Keller Trust #1-20

PO Box 1019
Hays, KS. 67601

22-22s-22w-Pawnee

Job Ticket: 43531

DST#: 2

ATTN: Marc Downing

Test Start: 2011.06.29 @ 11:55:40

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 9.58 in³

Resistivity: ohm.m

Salinity: 5800.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

36 deg API

Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	OCM-15%O-85%M	0.098
5.00	Free Oil	0.025

Total Length: 25.00 ft Total Volume: 0.123 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

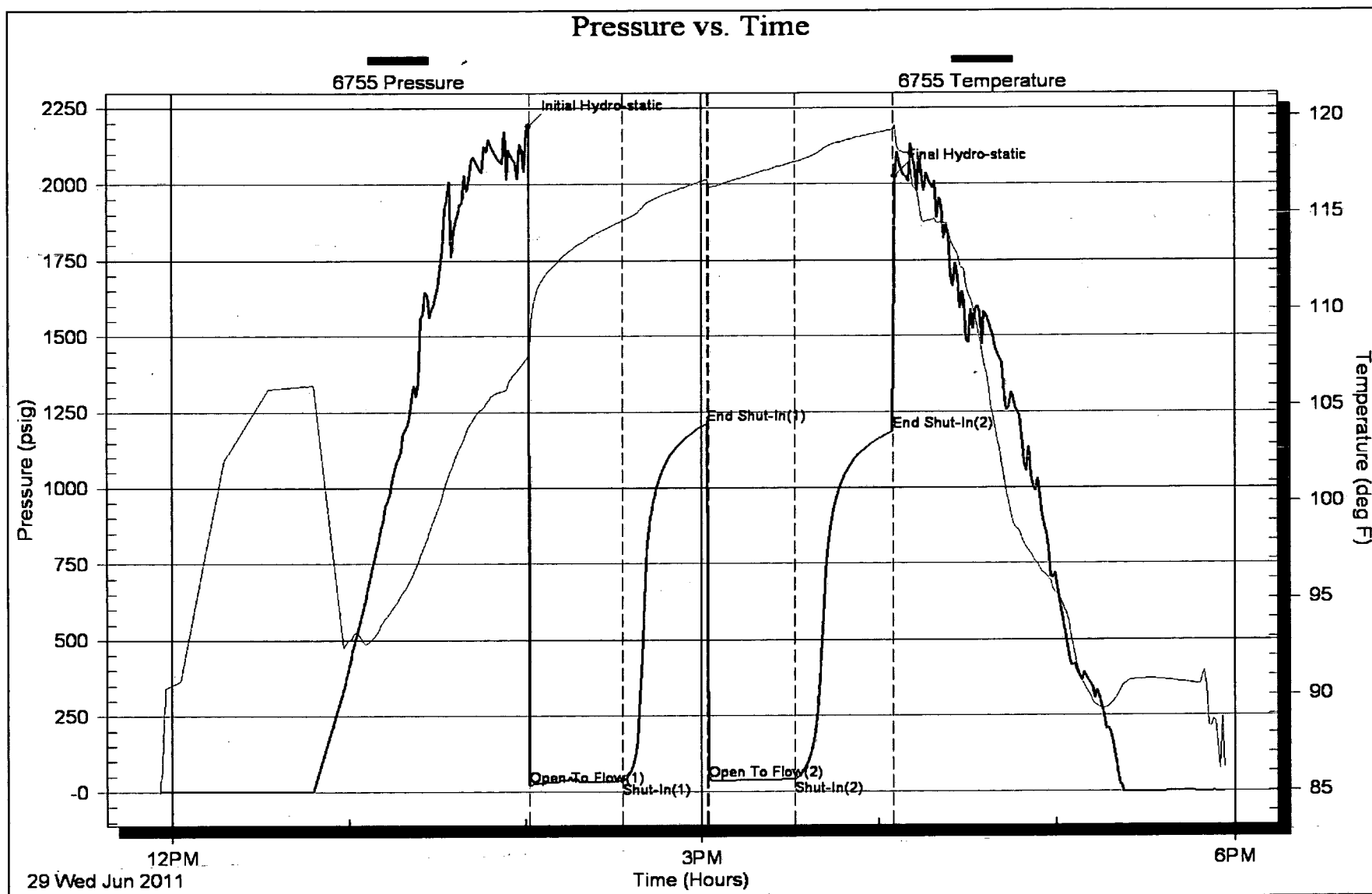
Recovery Comments:

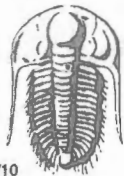
Serial #: 6755

Inside Downing & Nelson Oil Co.

22-22s-22w - Pawnee

DST Test Number: 2





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 43531

JUN 30 2011

Well Name & No. Keller Trust #1-20 Test No. 2 Date 6-29-11
 Company Downing Nelson Oil Company Elevation 2203 KB 2195 GL
 Address PO Box 1019, Hays, KS. 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #4
 Location: Sec. 20 Twp. 20S Rge. 20W Co. Pawnee State KS

Interval Tested 4344-4354 Zone Tested Mississippi
 Anchor Length 10' Drill Pipe Run 4315 Mud Wt. _____
 Top Packer Depth 4339 Drill Collars Run 31 Vis _____
 Bottom Packer Depth 4344 Wt. Pipe Run 0 WL _____
 Total Depth 4354 Chlorides _____ ppm System LCM _____
 Blow Description IFP - Weak Blow, Built to 1 3/4"
ISI - Dead
FFP - Weak Blow, Built to 1 1/2"
FSI - Dead.

Rec <u>5</u>	Feet of <u>Free Oil</u>	%gas	%oil	%water	%mud
Rec <u>20</u>	Feet of <u>OCM</u>	%gas	<u>15</u> %oil	%water	<u>85</u> %mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total _____ BHT 119° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2189
 (B) First Initial Flow 22
 (C) First Final Flow 34
 (D) Initial Shut-In 1214
 (E) Second Initial Flow 39
 (F) Second Final Flow 39
 (G) Final Shut-In 1184
 (H) Final Hydrostatic 2024

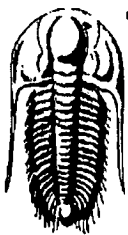
☒ Test 1225
☒ Jars 250
☒ Safety Joint 75
☐ Circ Sub _____
☐ Hourly Standby _____
☒ Mileage 140 RT 196
☐ Sampler _____
☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1746

T-On Location 11:40
 T-Started 11:55
 T-Open 14:01
 T-Pulled 16:01
 T-Out 17:57
 Comments _____
☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1746
 MP/DST Disc't _____

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

Approved By _____ Our Representative _____

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**TRILOBITE
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DRILL STEM TEST REPORT

Downing & Nelson Oil Co.

PO Box 1019
Hays, KS. 67601

ATTN: Marc Downing

Keller Trust #1-20

22-22s-22w-Pawnee

Job Ticket: 43532

DST#: 3

Test Start: 2011.06.30 @ 00:46:55

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:35:55

Time Test Ended: 07:26:10

Test Type: Conventional Bottom Hole

Tester: Jason McLemore

Unit No: 54

Interval: **4350.00 ft (KB) To 4360.00 ft (KB) (TVD)**

Total Depth: 4360.00 ft (KB) (TVD)

Hole Diameter: 7.80 inches Hole Condition: Good

Reference Elevations: 2203.00 ft (KB)

2195.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 95.30 psig @ 4353.00 ft (KB)

Start Date: 2011.06.30

End Date:

2011.06.30

Start Time: 00:46:57

End Time:

07:26:10

Capacity: 8000.00 psig

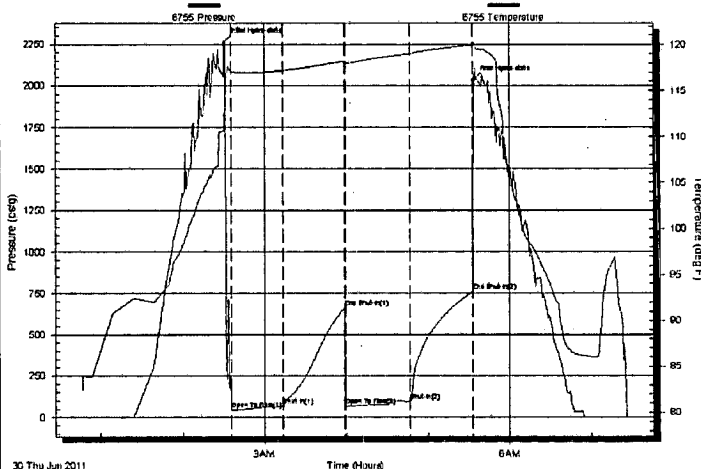
Last Calib.: 2011.06.30

Time On Btm: 2011.06.30 @ 02:30:55

Time Off Btm: 2011.06.30 @ 05:33:10

TEST COMMENT: IFP-Good Blow, BOB in 22 Min.
ISI-Dead
FFP-Weak Blow, Built to 4"
FSI-Dead

Pressure vs. Time



30 Thu Jun 2011

Time (Hours)

PRESSURE SUMMARY

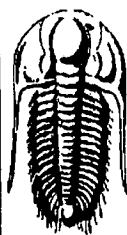
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2261.52	112.15	Initial Hydro-static
5	42.99	117.10	Open To Flow(1)
43	65.28	117.17	Shut-In(1)
88	661.24	118.20	End Shut-In(1)
88	67.35	117.94	Open To Flow(2)
136	95.30	118.97	Shut-In(2)
182	758.15	119.97	End Shut-In(2)
183	2031.61	120.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	HOCMW-50%O-25%W-25%M	1.40
50.00	Free Oil	0.70

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing & Nelson Oil Co.

Keller Trust #1-20

PO Box 1019
Hays, KS. 67601

22-22s-22w-Pawnee

Job Ticket: 43532

DST#: 3

ATTN: Marc Downing

Test Start: 2011.06.30 @ 00:46:55

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

20000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	HOCMW-50%O-25%W-25%M	1.401
50.00	Free Oil	0.701

Total Length: 170.00 ft

Total Volume: 2.102 bbl

Num Fluid Samples: 0

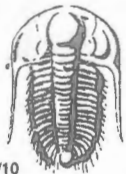
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 43532

JUN 30 2011

Well Name & No. Keller Trust #1-20 Test No. 3 Date 6-30-11
 Company Downing Nelson Oil Company Elevation 2203 KB 2195 GL
 Address PO Box 1019, Hays, Ks, 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #4
 Location: Sec. 20 Twp. 20S Rge. 20W Co. Pawnee State KS

Interval Tested 4350-4360 Zone Tested Mississippi
 Anchor Length 10' Drill Pipe Run 4315 Mud Wt. _____
 Top Packer Depth 4345 Drill Collars Run 31 Vis _____
 Bottom Packer Depth 4350 Wt. Pipe Run 0 WL _____
 Total Depth 4360 Chlorides _____ ppm System LCM _____

Blow Description IFP- Good Blow, BOB in 22 min.
ISI- Dead
FFP- Weak Blow, Built to 4"
FSI- Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>Free Oil</u>				
<u>120</u>	<u>HOCMW</u>	<u>50</u>	<u>25</u>	<u>25</u>	
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total _____ BHT 120° Gravity 36 API RW 290 @ 78 °F Chlorides 20,000 ppm

(A) Initial Hydrostatic 2262
 (B) First Initial Flow 43
 (C) First Final Flow 65
 (D) Initial Shut-In 661
 (E) Second Initial Flow 67
 (F) Second Final Flow 95
 (G) Final Shut-In 758
 (H) Final Hydrostatic 2032

☒ Test 1225'
☒ Jars 2505
☒ Safety Joint 75'
☐ Circ Sub _____
☐ Hourly Standby _____
☒ Mileage 140 to 196'

T-On Location 00:34
 T-Started 00:46
 T-Open 2:32
 T-Pulled 5:32
 T-Out 7:26
 Comments _____

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

☐ Sampler _____
☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☐ Day Standby _____
☐ Accessibility _____
 Sub Total 1746'

☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____
 Sub Total 0
 Total 1746'
 MP/DST Disc't _____

Approved By _____

Our Representative _____

Jason Mc Leman

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Thank you