



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

B & D Vap #1-10

10-1s-33w Rawlins,KS

Start Date: 2015.02.20 @ 06:21:00

End Date: 2015.02.20 @ 15:00:30

Job Ticket #: 61073 DST #: 1

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

Printed: 2015.02.24 @ 09:29:31



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61073

DST#: 1

ATTN: Marc Dow ning

Test Start: 2015.02.20 @ 06:21:00

GENERAL INFORMATION:

Formation: **LKC "B"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:54:30
 Time Test Ended: 15:00:30
 Interval: **3874.00 ft (KB) To 3930.00 ft (KB) (TVD)**
 Total Depth: 3930.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2901.00 ft (KB)
 2893.00 ft (CF)
 KB to GR/CF: 8.00 ft

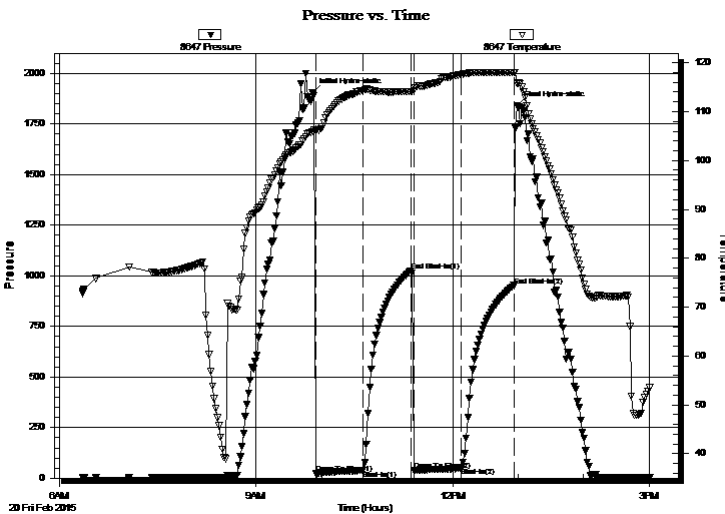
Serial #: 8647

Inside

Press@RunDepth: 53.49 psig @ 3875.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.02.20 End Date: 2015.02.20 Last Calib.: 2015.02.20
 Start Time: 06:21:01 End Time: 15:00:30 Time On Btm: 2015.02.20 @ 09:51:30
 Time Off Btm: 2015.02.20 @ 12:59:00

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"
 45 - ISI - No Return
 45 - FF - Blow built to 2"
 45 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1904.39	105.85	Initial Hydro-static
3	21.52	106.06	Open To Flow (1)
47	38.79	114.35	Shut-In(1)
90	1025.02	114.14	End Shut-In(1)
93	39.22	114.37	Open To Flow (2)
137	53.49	117.61	Shut-In(2)
185	951.87	118.02	End Shut-In(2)
188	1839.44	115.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
61.00	MW 60%w ,40%m	0.59
0.50	100%oil	0.01

Gas Rates

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



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TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61073 **DST#: 1**

ATTN: Marc Dow ning

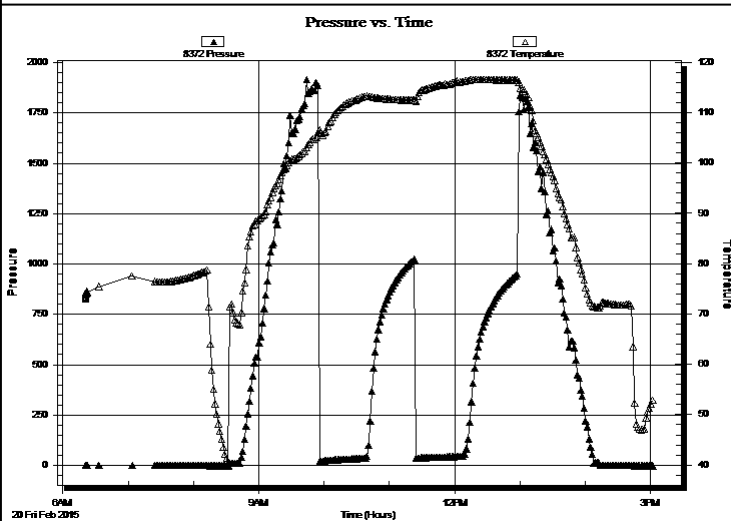
Test Start: 2015.02.20 @ 06:21:00

GENERAL INFORMATION:

Formation:	LKC "B"				
Deviated:	No Whipstock:	ft (KB)		Test Type:	Conventional Bottom Hole (Initial)
Time Tool Opened:	09:54:30			Tester:	Brandon Quintana
Time Test Ended:	15:00:30			Unit No:	57
Interval:	3874.00 ft (KB) To 3930.00 ft (KB) (TVD)			Reference Elevations:	2901.00 ft (KB)
Total Depth:	3930.00 ft (KB) (TVD)				2893.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Fair	KB to GR/CF:	8.00 ft

Serial #: 8372	Outside				
Press@RunDepth:	psig @	3875.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2015.02.20	End Date:	2015.02.20	Last Calib.:	2015.02.20
Start Time:	06:21:01	End Time:	15:02:00	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"
 45 - ISI - No Return
 45 - FF - Blow built to 2"
 45 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
61.00	MW 60%w ,40%m	0.59
0.50	100%oil	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61073

DST#: 1

ATTN: Marc Dow ning

Test Start: 2015.02.20 @ 06:21:00

Tool Information

Drill Pipe:	Length: 3822.00 ft	Diameter: 3.80 inches	Volume: 53.61 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.22 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.22 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3874.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	56.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3851.00	
Hydraulic tool	5.00			3856.00	
Jars	5.00			3861.00	
Safety Joint	3.00			3864.00	
Packer	5.00			3869.00	28.00 Bottom Of Top Packer
Packer	5.00			3874.00	
Stubb	1.00			3875.00	
Recorder	0.00	8647	Inside	3875.00	
Recorder	0.00	8372	Outside	3875.00	
Perforations	18.00			3893.00	
Change Over Sub	1.00			3894.00	
Drill Pipe	32.00			3926.00	
Change Over Sub	1.00			3927.00	
Bullnose	3.00			3930.00	56.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61073

DST#: 1

ATTN: Marc Dow ning

Test Start: 2015.02.20 @ 06:21:00

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: 67.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 750.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
61.00	MW 60%w ,40%m	0.589
0.50	100%oil	0.007

Total Length: 61.50 ft Total Volume: 0.596 bbf

Num Fluid Samples: 0

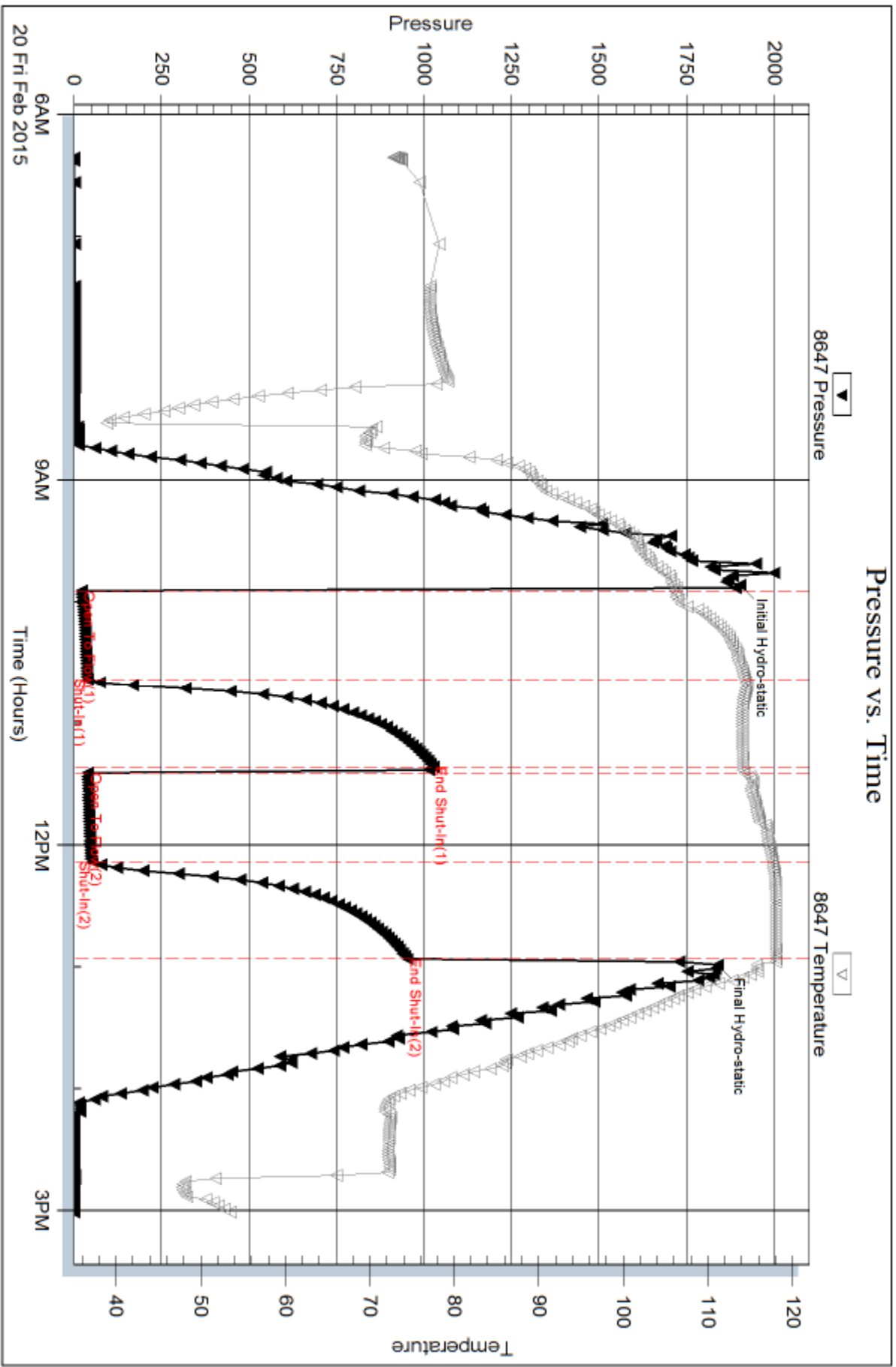
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

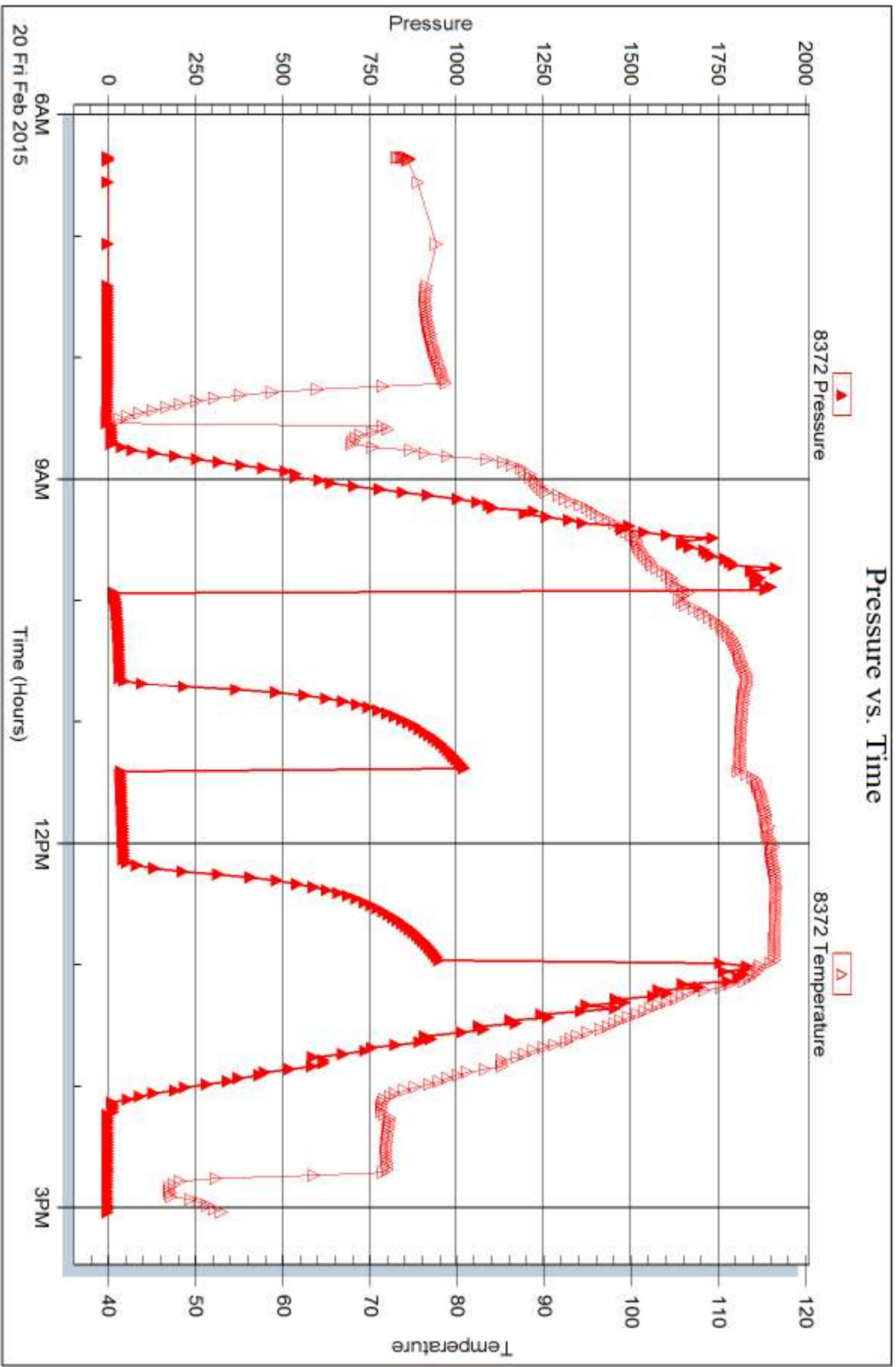


Serial #: 8372

Outside Dow nng-Nelson Oil Co., Inc.

B & D Vap #1-10

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61073

Printed: 2015.02.24 @ 09:29:33



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

B & D Vap #1-10

10-1s-33w Rawlins,KS

Start Date: 2015.02.21 @ 02:01:00

End Date: 2015.02.21 @ 07:50:30

Job Ticket #: 61074 DST #: 2

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

Printed: 2015.02.24 @ 09:29:07

Downing-Nelson Oil Co., Inc.
10-1s-33w Rawlins,KS
B & D Vap #1-10
DST # 2
LKC "D"
2015.02.21



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61074

DST#: 2

ATTN: Marc Dow ning

Test Start: 2015.02.21 @ 02:01:00

GENERAL INFORMATION:

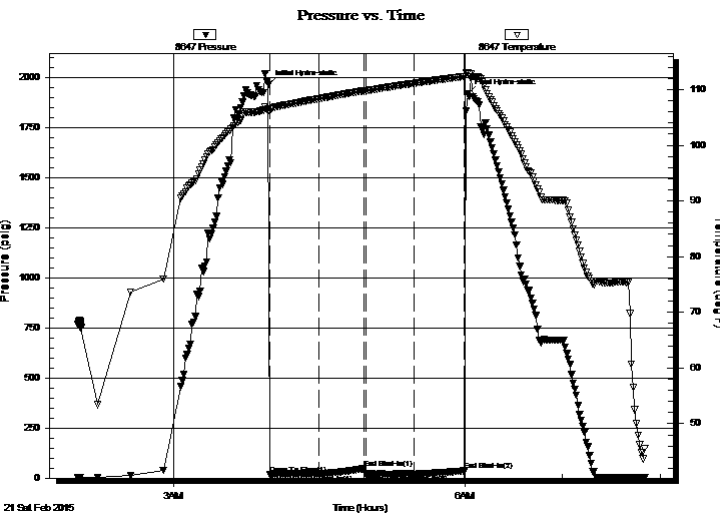
Formation: **LKC "D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:59:30
 Time Test Ended: 07:50:30
 Interval: **3969.00 ft (KB) To 4022.00 ft (KB) (TVD)**
 Total Depth: 4022.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2901.00 ft (KB)
 2893.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8647

Inside

Press@RunDepth: 19.16 psig @ 3970.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.02.21 End Date: 2015.02.21 Last Calib.: 2015.02.21
 Start Time: 02:01:01 End Time: 07:50:30 Time On Btm: 2015.02.21 @ 03:58:30
 Time Off Btm: 2015.02.21 @ 06:01:30

TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 1/4"
 30 - ISI - No Return
 30 - FF - No Blow
 30 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.23	106.53	Initial Hydro-static
1	19.94	106.06	Open To Flow (1)
31	20.39	108.35	Shut-In(1)
59	48.61	109.78	End Shut-In(1)
60	20.45	109.80	Open To Flow (2)
90	19.16	111.13	Shut-In(2)
121	36.88	112.36	End Shut-In(2)
123	1921.72	113.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	100% mud w / layer of oil in tool	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61074

DST#: 2

ATTN: Marc Dow ning

Test Start: 2015.02.21 @ 02:01:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:59:30

Time Test Ended: 07:50:30

Interval: 3969.00 ft (KB) To 4022.00 ft (KB) (TVD)

Total Depth: 4022.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Reference Elevations: 2901.00 ft (KB)

2893.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3970.00 ft (KB)

Start Date: 2015.02.21

End Date:

2015.02.21

Start Time: 02:01:01

End Time:

07:51:30

Capacity: 8000.00 psig

Last Calib.: 2015.02.21

Time On Btm:

Time Off Btm:

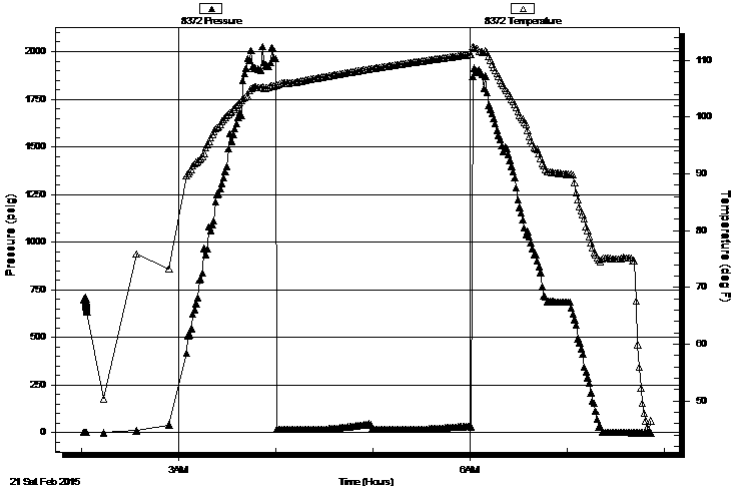
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 1/4"

30 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
1.00	100% mud w / layer of oil in tool	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61074

DST#: 2

ATTN: Marc Dow ning

Test Start: 2015.02.21 @ 02:01:00

Tool Information

Drill Pipe:	Length: 3917.00 ft	Diameter: 3.80 inches	Volume: 54.95 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 29.22 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume:</u> - bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.22 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3969.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	53.00 ft				
Tool Length:	81.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3946.00	
Hydraulic tool	5.00			3951.00	
Jars	5.00			3956.00	
Safety Joint	3.00			3959.00	
Packer	5.00			3964.00	28.00 Bottom Of Top Packer
Packer	5.00			3969.00	
Stubb	1.00			3970.00	
Recorder	0.00	8647	Inside	3970.00	
Recorder	0.00	8372	Outside	3970.00	
Perforations	15.00			3985.00	
Change Over Sub	1.00			3986.00	
Drill Pipe	32.00			4018.00	
Change Over Sub	1.00			4019.00	
Bullnose	3.00			4022.00	53.00 Bottom Packers & Anchor

Total Tool Length: 81.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

10-1s-33w Rawlins,KS

PO Box 1019
Hays, KS 67601

B & D Vap #1-10

Job Ticket: 61074

DST#: 2

ATTN: Marc Dow ning

Test Start: 2015.02.21 @ 02:01:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 750.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	100% mud w / layer of oil in tool	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8647

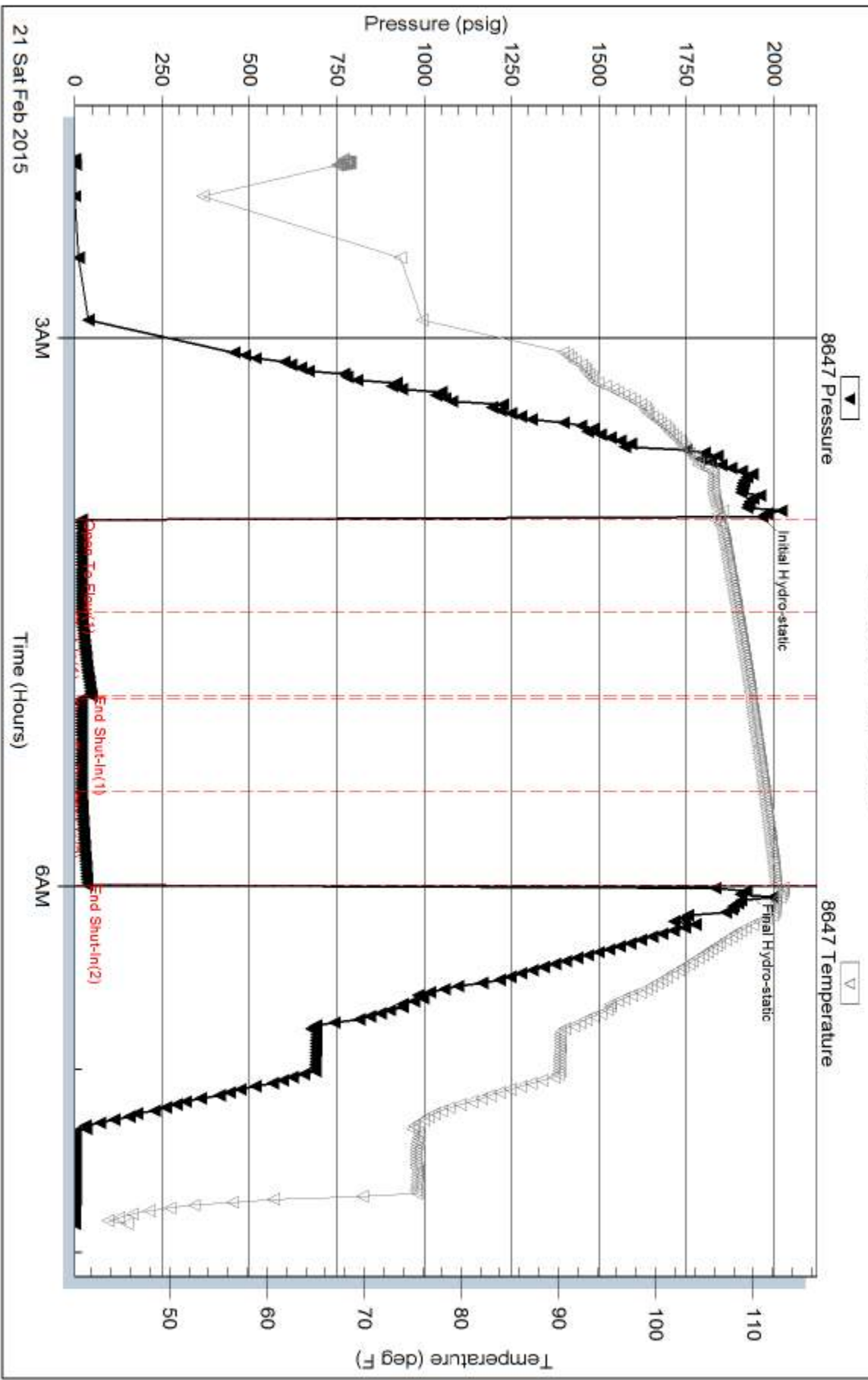
Inside

Downing-Nelson Oil Co., Inc.

B & D Vap #1-10

DST Test Number: 2

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 61074

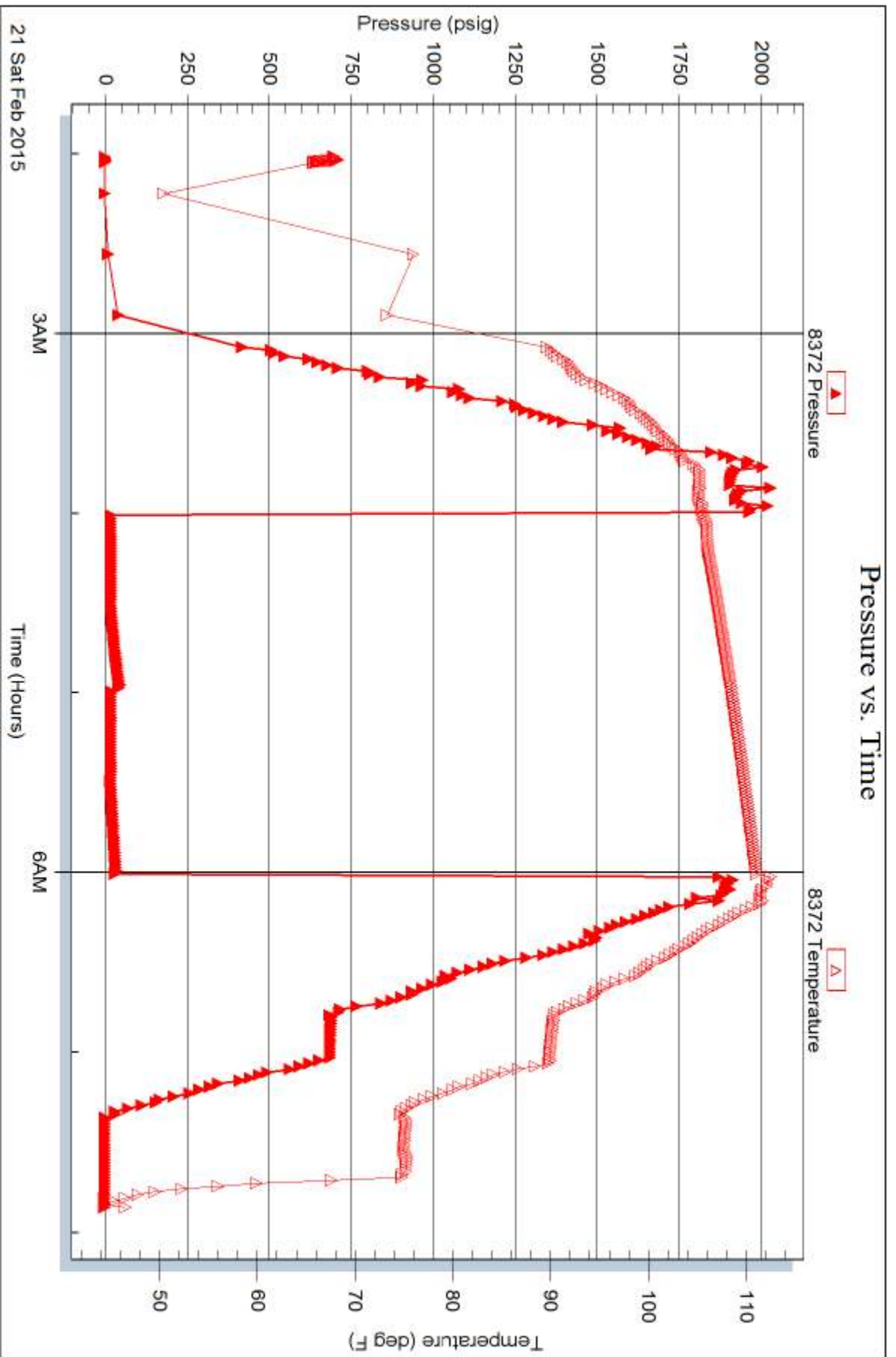
Printed: 2015.02.24 @ 09:29:08

Serial #: 8372

Outside Dow nting-Nelson Oil Co., Inc.

B & D Vap #1-10

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 61074

Printed: 2015.02.24 @ 09:29:09



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

61073

NO.

4/10

Well Name & No. B+D Vap #1-10 Test No. 1 Date 2-20-15
 Company Downing-Nelson Oil Co., Inc. Elevation 2901 KB 2893 GL
 Address P.O. Box 1019 Hays, KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 10 Twp. 15 Rge. 33W Co. Rawlins State KS

Interval Tested 3874-3930 Zone Tested UKB"
 Anchor Length 56' Drill Pipe Run 3822 Mud Wt. 8.8
 Top Packer Depth 3869 Drill Collars Run 29.22 Vis 67
 Bottom Packer Depth 3874 Wt. Pipe Run — WL 8
 Total Depth 3930 Chlorides 750 ppm System LCM 7 1/2

Blow Description IF- Opened w/ surface blow, built to 3 1/2"
ISI- No Return
FF- Blow built to 2"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>.5</u>	<u>Oil</u>		<u>100</u>		
<u>61</u>	<u>MW</u>			<u>60</u>	<u>40</u>

Rec Total 61.5 BHT 118 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1904 Test 1050 T-On Location 5:51 AM
 (B) First Initial Flow 21 Jars 250 T-Started 6:21 AM
 (C) First Final Flow 38 Safety Joint 75 T-Open 9:54 AM
 (D) Initial Shut-In 1025 Circ Sub _____ T-Pulled 12:54 PM
 (E) Second Initial Flow 39 Hourly Standby _____ T-Out 3:02 PM
 (F) Second Final Flow 53 Mileage 81 R.T. 81 Comments _____
 (G) Final Shut-In 951 Sampler _____
 (H) Final Hydrostatic 1839 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 45 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 45 Day Standby _____ Total 1456
 Final Shut-In 45 Accessibility _____ MP/DST Disc't _____
 Sub Total 1456

Approved By _____ Our Representative Burd Q. T.

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. 61074

4/10

Well Name & No. <u>B+D Vap #1-10</u>	Test No. <u>2</u>	Date <u>2-21-15</u>
Company <u>Downing-Nelson Oil Co., Inc.</u>	Elevation <u>2901</u>	KB <u>2893</u> GL
Address <u>P.O. Box 1019 Hays, KS 67601</u>		
Co. Rep / Geo. <u>Marc Downing</u>	Rig <u>Discovery #1</u>	
Location: Sec. <u>10</u> Twp. <u>15</u> Rge. <u>33W</u> Co. <u>Rawlins</u> State <u>KS</u>		

Interval Tested <u>3969 - 4022</u>	Zone Tested <u>LKC "D"</u>
Anchor Length <u>53'</u>	Drill Pipe Run <u>3917</u> Mud Wt. <u>9.3</u>
Top Packer Depth <u>3964</u>	Drill Collars Run <u>29.22</u> Vis <u>52</u>
Bottom Packer Depth <u>3969</u>	Wt. Pipe Run <u>—</u> WL <u>7.2</u>
Total Depth <u>4022</u>	Chlorides <u>750</u> ppm System LCM <u>6</u>

Blow Description IF - Opened w/ surface blow, built to 1/4"
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Mud w/ layer of oil in tool</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 1 BHT 112 Gravity 1150 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>1967</u>	<input checked="" type="checkbox"/> Test	<u>1150</u>	T-On Location <u>1:27 AM</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started <u>2:01 AM</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open <u>4:00 AM</u>
(D) Initial Shut-In <u>48</u>	<input type="checkbox"/> Circ Sub		T-Pulled <u>6:00 AM</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby		T-Out <u>7:52 AM</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>81 R.T.</u>	<u>162</u>	Comments <u>loaded tools 2/22 3:00</u>
(G) Final Shut-In <u>36</u>	<input type="checkbox"/> Sampler		
(H) Final Hydrostatic <u>1921</u>	<input type="checkbox"/> Straddle		

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1637</u>
Sub Total <u>1637</u>		MP/DST Disc't

Approved By _____ Our Representative Bud Oltz

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.