

ALT ☐ I ☐ II ☐ III Approved by: _____ Date: _____

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	HFI 2-27
Doc ID	1772110

All Electric Logs Run

Micro
Sonic
Compensated Density Neutro
Dual Induction

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	HFI 2-27
Doc ID	1772110

Tops

Name	Top	Datum
Top Anhydrite	3098'	+271
Base Anhydrite	3137'	+232
Foraker	3766'	-397
Topeka	4046'	-677
Heebner	4211'	-842
LKC	4258'	-889
Stark	4454'	-1085
BKC	4506'	-1137
Pawnee	4629'	-1260
Cherokee Shale	4704'	-1335
Morrow	4855'	-1486
Mississippi	4911'	-1542

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
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Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	478	Class H	325	-
Production	7.875	5.5	14	4955	H-Long	200	-



DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

HFI #2-27

27-4s-36w Rawlins KS

Start Date: 2024.03.31 @ 11:21:00

End Date: 2024.03.31 @ 20:27:50

Job Ticket #: 71605 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2024.04.02 @ 13:38:28



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning - Nelson Oil Co., Inc

27-4s-36w Rawlins KS

PO Box 1019
Hays, KS 67601

HFI #2-27

Job Ticket: 71605

DST#: 1

ATTN: Marc Dow ning

Test Start: 2024.03.31 @ 11:21:00

GENERAL INFORMATION:

Formation: **Cherokee Lime**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:46:21

Time Test Ended: 20:27:50

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 73

Interval: **4700.00 ft (KB) To 4744.00 ft (KB) (TVD)**

Total Depth: 4744.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3369.00 ft (KB)

3358.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: **6771** Inside

Press@RunDepth: 539.19 psig @ 4701.00 ft (KB)

Start Date: 2024.03.31

End Date:

2024.03.31

Start Time: 11:21:01

End Time:

20:27:50

Capacity: 8000.00 psig

Last Calib.: 2024.03.31

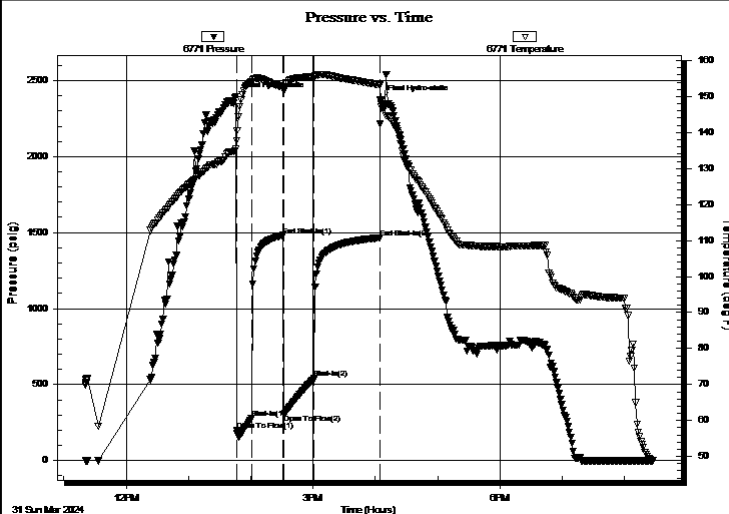
Time On Btm: 2024.03.31 @ 13:45:36

Time Off Btm: 2024.03.31 @ 16:04:51

TEST COMMENT: 15 - IF: Blow built to BOB (11") at 1 1/4 min., built to 69"
30 - IS: Blow back built to BOB at 21 1/2 min.
30 - FF: Blow built to BOB at 3 1/4 min., built to 78 3/4"
60 - FS: Blow back built to BOB at 36 3/4 min., built to 16 3/4"

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2393.03	135.35	Initial Hydro-static
1	196.49	137.82	Open To Flow (1)
15	276.71	154.12	Shut-In(1)
46	1480.66	152.62	End Shut-In(1)
46	304.12	151.63	Open To Flow (2)
76	539.19	155.41	Shut-In(2)
139	1464.97	153.30	End Shut-In(2)
140	2372.32	148.76	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
118.00	GOCM 58% m, 25% g, 17% o	0.58
1378.00	Rev Out Samples every 5 min.	18.80
0.00	5 - 15 min. CGO 64% o, 36% g	0.00
0.00	15 - 30 min CGO 79% o, 21% g	0.00
118.00	GOCM 58% m, 25% g, 17% o	1.66
0.00	GIP = 1070'	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Dow ning - Nelson Oil Co., Inc

27-4s-36w Rawlins KS

PO Box 1019
Hays, KS 67601

HFI #2-27

Job Ticket: 71605

DST#: 1

ATTN: Marc Dow ning

Test Start: 2024.03.31 @ 11:21:00

GENERAL INFORMATION:

Formation: **Cherokee Lime**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:46:21

Time Test Ended: 20:27:50

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 73

Interval: **4700.00 ft (KB) To 4744.00 ft (KB) (TVD)**

Total Depth: 4744.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3369.00 ft (KB)

3358.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: **8367** Outside

Press@RunDepth: psig @ 4701.00 ft (KB)

Start Date: 2024.03.31

End Date:

2024.03.31

Start Time: 11:21:01

End Time:

20:27:50

Capacity: 8000.00 psig

Last Calib.:

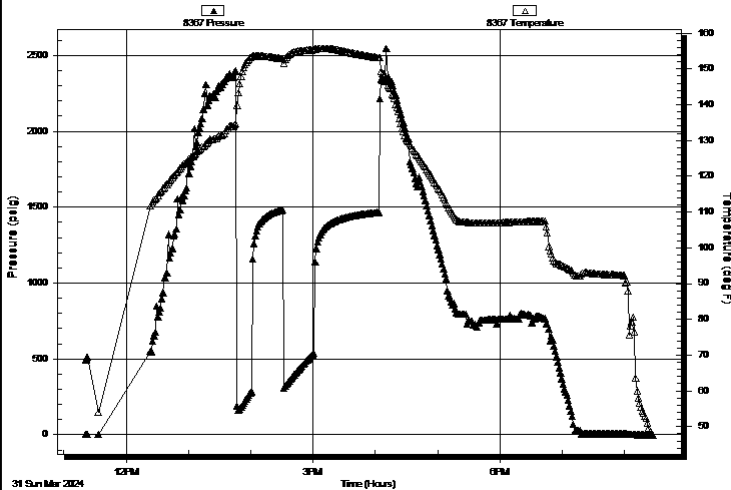
2024.03.31

Time On Btm:

Time Off Btm:

TEST COMMENT: 15 - IF: Blow built to BOB (11") at 1 1/4 min., built to 69"
30 - IS: Blow back built to BOB at 21 1/2 min.
30 - FF: Blow built to BOB at 3 1/4 min., built to 78 3/4"
60 - FS: Blow back built to BOB at 36 3/4 min., built to 16 3/4"

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
118.00	GOCM 58% m, 25% g, 17% o	0.58
1378.00	Rev Out Samples every 5 min.	18.80
0.00	5 - 15 min. CGO 64% o, 36% g	0.00
0.00	15 - 30 min CGO 79% o, 21% g	0.00
118.00	GOCM 58% m, 25% g, 17% o	1.66
0.00	GIP = 1070'	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning - Nelson Oil Co., Inc

27-4s-36w Rawlins KS

PO Box 1019
Hays, KS 67601

HFI #2-27

Job Ticket: 71605

DST#: 1

ATTN: Marc Dow ning

Test Start: 2024.03.31 @ 11:21:00

Tool Information

Drill Pipe:	Length:	4511.00 ft	Diameter:	3.80 inches	Volume:	63.28 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:	176.00 ft	Diameter:	2.25 inches	Volume:	0.87 bbl	Weight to Pull Loose:	72000.00 lb
					Total Volume:	64.15 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		20.00 ft					String Weight: Initial	66000.00 lb
Depth to Top Packer:		4700.00 ft					Final	71000.00 lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		44.00 ft						
Tool Length:		77.00 ft						
Number of Packers:		2	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		4668.00	
Shut In Tool	5.00		4673.00	
Hydraulic tool	5.00		4678.00	
Jars	5.00		4683.00	
EM Tool	4.00		4687.00	
Safety Joint	3.00		4690.00	
Packer	5.00		4695.00	33.00 Bottom Of Top Packer
Packer	5.00		4700.00	
Stubb	1.00		4701.00	
Recorder	0.00	6771 Inside	4701.00	
Recorder	0.00	8367 Outside	4701.00	
Perforations	5.00		4706.00	
Blank Spacing	33.00		4739.00	
Perforations	2.00		4741.00	
Bullnose	3.00		4744.00	44.00 Bottom Packers & Anchor

Total Tool Length: 77.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning - Nelson Oil Co., Inc

27-4s-36w Rawlins KS

PO Box 1019
Hays, KS 67601

HFI #2-27

Job Ticket: 71605

DST#: 1

ATTN: Marc Dow ning

Test Start: 2024.03.31 @ 11:21:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 10.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 9.59 in³

Resistivity: ohm.m

Salinity: 1000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

25.4 deg API

Water Salinity:

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	GOCM 58%m, 25%g, 17%o	0.580
1378.00	Rev Out Samples every 5 min.	18.801
0.00	5 - 15 min. CGO 64%o, 36%g	0.000
0.00	15 - 30 min CGO 79%o, 21%g	0.000
118.00	GOCM 58%m, 25%g, 17%o	1.655
0.00	GIP = 1070'	0.000

Total Length: 1614.00 ft

Total Volume: 21.036 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 25 api @ 56 deg F Corrected Gravity = 25.4 api

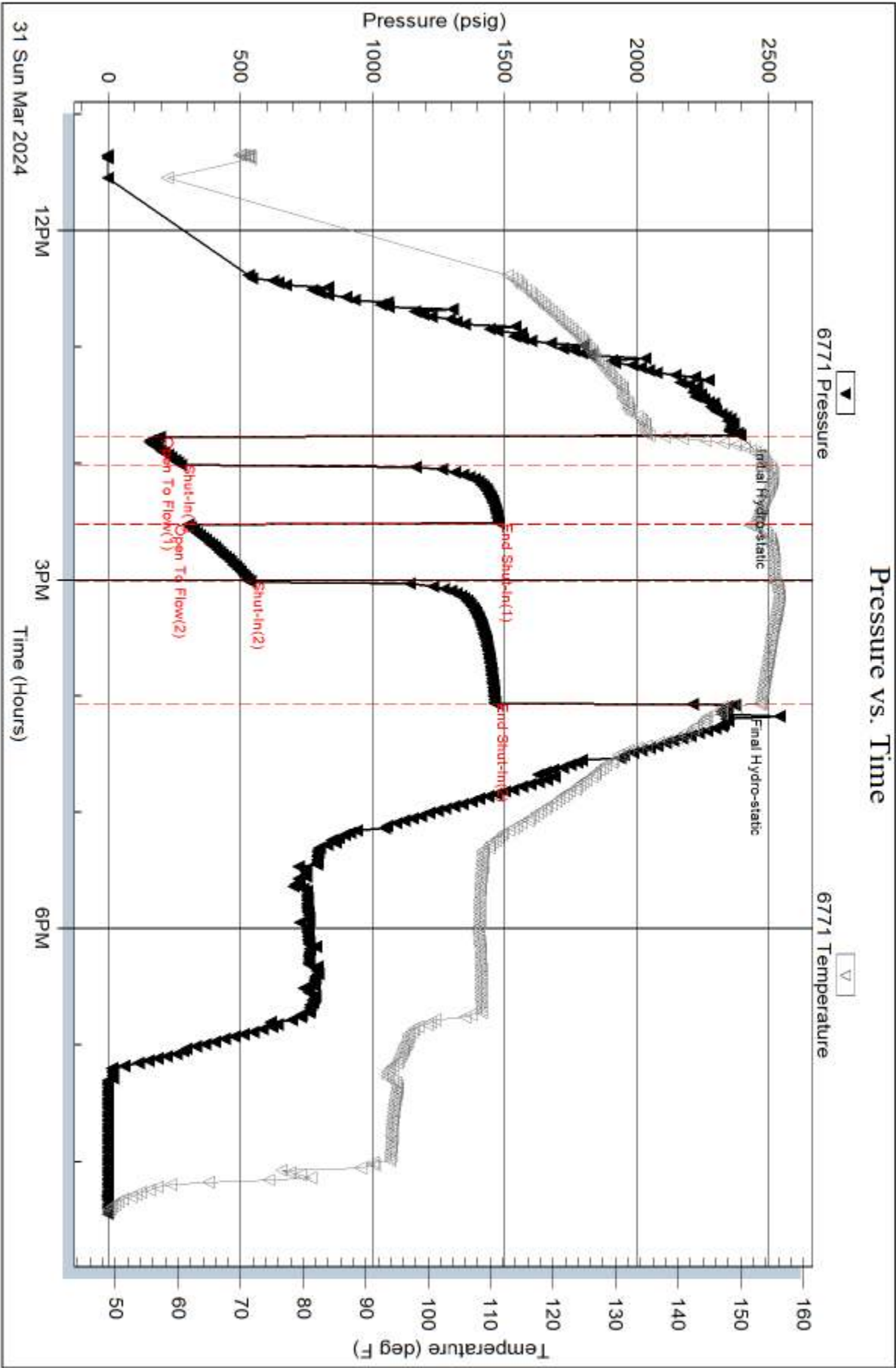
Serial #: 6771

Inside

Downing - Nelson Oil Co., Inc

HFI #2-27

DST Test Number: 1

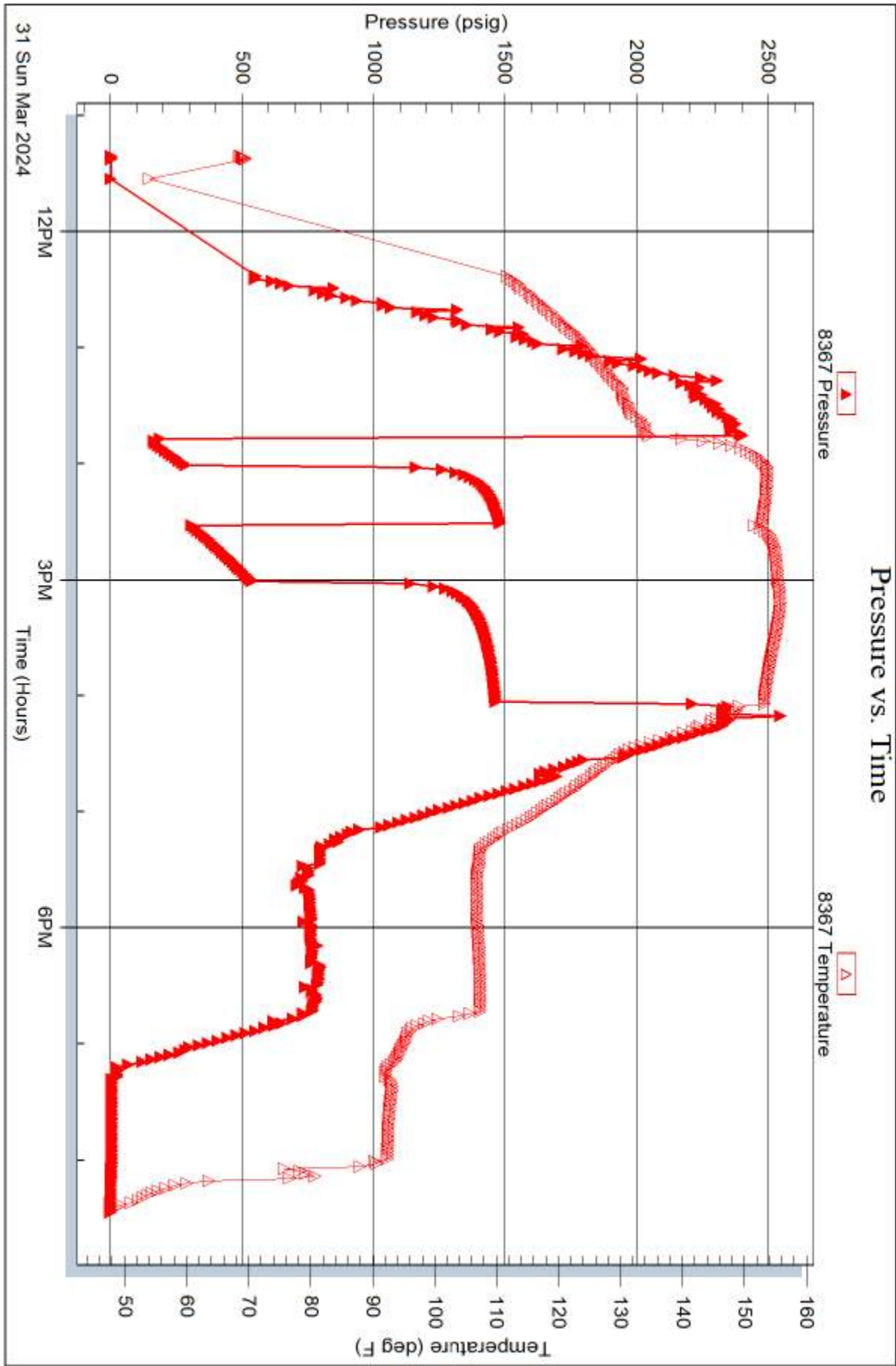


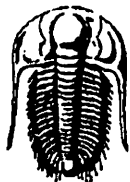
Serial #: 8367

Outside Dow n i n g - Nelson Oil Co., Inc

HFI #2-27

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 71605

Well Name & No. HFI # 2-27 Test No. 1 Date 3-31-24
 Company Downing-Nelson Oil Co. Inc Elevation 3369 KB 3358 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo Marc Downing Rig Duke #5
 Location: Sec. 27 Twp 4s Rge. 36w Co. Rawlins State Ks

Interval Tested 4700-4744 Zone Tested Cherokee Lime
 Anchor Length 44 Drill Pipe Run 4511 Mud Wt. 9.5
 Top Packer Depth 4695 Drill Collars Run 176 Vis 54
 Bottom Packer Depth 4700 Wt. Pipe Run - WL 9.6
 Total Depth 4744 Chlorides 1000 ppm System LCM 4

Blow Description IF: Blow built to BOB(11") at 1 1/4 min., built to 69"
ISI: Blowback built to BOB at 2 1/2 min.
FF: Blow built to BOB at 3 1/4 min., built to 78 3/4"
FSI: Blowback built to BOB at 36 3/4 min., built to 16 3/4"

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>64</u>	Feet of <u>C60</u>	<u>40</u>	<u>60</u>		
Rev <u>Out 1378</u>	Feet of <u>5min-15min C60</u>	<u>36</u>	<u>64</u>		
Rec <u>5min</u>	Feet of <u>20min-30min C60</u>	<u>21</u>	<u>79</u>		
Rec <u>Sub 118</u>	Feet of <u>GOCM</u>	<u>25</u>	<u>17</u>		<u>58</u>
Rec	Feet of <u>GIP=1070'</u>				
Rec	Feet of				
Rec	Feet of				

Rec Total 1560 BHT 153 Gravity 25.44 API RW @ °F Chlorides ppm
 Initial Hydrostatic 2393 ☒ Test 1950 ☐ Ruined Shale Packer
 Initial Flow 196 to 277 ☒ Jars 300 ☐ Ruined Packer
 Initial Shut-In 1481 ☒ Circ Sub DB 50 ☐ Hotel
 Final Flow 304 to 539 ☐ Hourly Standby ☐ EM Tool Successful -350
 Final Shut-In 1465 ☒ Mileage 110 RT 192.50 + 192.50 Accessibility
 Final Hydrostatic 2372 ☐ Sampler ☐ Gas Sample
 T-On Location 9:20 ☐ Straddle ☐ Oversized Hole
 Initial Flow 15 T-Started 11:21 ☐ Shale Packer ☐ Sub Total -350
 Initial Shut-In 30 T-Open 13:46 ☐ Extra Packer ☐ Total 2335
 Final Flow 30 T-Pulled 16:03 ☐ Extra Recorder ☐ Tool Loaded 4/1 @ 11:25
 Final Shut-In 60 T-Out 20:25 ☐ Day Standby ☐ MP/DST Disc't
 Comments

Approved By _____ Our Representative James Winters

Trilobite Testing Inc. shall not be liable for damage of any kind of 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.

Marc A. Downing
Consulting Petroleum
Geologist

Geological Report

Drilling Time and Sample Log

Operator
Lease
API #
Field
Location

Downing-Nelson Oil Co., Inc.
HFI #2-27
15-153-21328-0000
Wilcat
1549' FSL & 1459' FWL

Elevation
KB 3369
DF 3367
GL 3358

Sec. 27
County
Electrical Surveys

Twp. Rawlins
4s
CNDL, DIL, MEL, Sonic

Rge. 36w
State Kansas

Surf. 8 5/8" @ 478'
Prod. 5 1/2" @ 495.5'

Formation

Sample Tops

Log Tops

Datum

Struct Comp

Top Anhydrite

3100

3098

271

+8

Base Anhydrite

3137

3137

232

+7

Foraker

3766

3766

-397

+4

Topeka

4046

4046

-677

+1

Heebner

4211

4211

-842

-1

LKC

4258

4258

-889

-2

Stark

4454

4454

-1085

+1

BKC

4507

4506

-1137

-1

Pawnee

4630

4629

-1260

-1

Cherokee Sh

4704

4704

-1335

FL

Morrow

4854

4855

-1486

+5

Mississippi

4910

4911

-1542

+13

Total Depth

4960

4962

-1593

Reference Well for Structural Comparison:

DNOCI - HFI #1-27

2000' FNL & 1699' FWL

Sec. 27-4s-36w

Drilling Contractor
Commenced
Completed

Duke Drilling, Rig #5
3/22/2024
4/1/2024

Samples Saved From
Drilling Time Kept From
Samples Examined From
Geological Supervision From

4050 To
3650 To
4050 To
4050 To

RTD
RTD
RTD
RTD

Summary and Recommendations

Due to structural position, DST recovery, and log evaluation, it was decided to set 5 1/2" production casing for completion. Perforate the Pawnee before abandonment.

Respectfully Submitted

Marc A. Downing

ROCK TYPES

Carbon Sh
shale, red
Sh
shale, gray
Ss

ACCESSORIES

Unsat fw7+
shale, gray
Ss

OTHER SYMBOLS

DST
DST int
Core
Tail Pipe

MISC

Daily Report
Digital Photo
Document
Folder
Vertical Log File
Horizontal Log File
Core Log File
DRI Cullings Rpt

OIL SHOWS

Spotted Sn 50 - 75 %
Spotted Sn 25 - 50 %
Questionable Sn
Dead Oil Sn
Fluorescence

STRINGER

Shale
Shale
Shale
red shale

MINERAL

n Glauconite
P Pyrite
Chert White

