

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	EICHER 1-20
Doc ID	1682910

All Electric Logs Run

Micro
Sonic
Dual Induction
Compensated Density Neutron

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	EICHER 1-20
Doc ID	1682910

Tops

Name	Top	Datum
Top Anhydrite	2916'	+302
Base Anhydrite	2950'	+268
Foraker	3593'	-375
Topeka	3883'	-665
Heebner	4049'	-831
LKC	4101'	-883
Stark	4295'	-1077
BKC	4355'	-1137
Pawnee	4470'	-1252
Cherokee Shale	4548'	-1330
Mississippi	4735'	-1517

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	EICHER 1-20
Doc ID	1682910

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	424	H-325	315	-



Customer:	Downing-Nelson	Well:	Eicher 1-20	Ticket:	WP3819
City, State:		County:	Rawlins, KS	Date:	1/10/2023
Field Rep:		S-T-R:	16-5S-36W	Service:	Surface

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	12 1/4 in	Blend:	H-325	Blend:	
Hole Depth:	440 ft	Weight:	14.8 ppg	Weight:	ppg
Casing Size:	8 3/8 in	Water / Sx:	6.9 gal / sx	Water / Sx:	gal / sx
Casing Depth:	436 ft	Yield:	1.41 ft ³ / sx	Yield:	ft ³ / sx
Tubing / Liner:	in	Annular Bbls / Ft.:	0.0735 bbs / ft.	Annular Bbls / Ft.:	bbs / ft.
Depth:	ft	Depth:	ft	Depth:	ft
Tool / Packer:		Annular Volume:	0.0 bbls	Annular Volume:	0 bbls
Tool Depth:	ft	Excess:		Excess:	
Displacement:	26.5 bbls	Total Slurry:	79.1 bbls	Total Slurry:	0.0 bbls
STAGE	TOTAL	Total Sacks:	315 sx	Total Sacks:	0 sx

[illegible]

CREW			UNIT		SUMMARY		
Cementer:	Spencer	943		Average Rate	Average Pressure	Total Fluid	
Pump Operator:	Micheal	230		4.4 bpm	275 psi	111 bbls	
Bulk #1:	Adrian	205					
Bulk #2:							



CEMENT TREATMENT REPORT

Customer:	Downing-Nelson	Well:	Eicher 1-20	Ticket:	WP3858
City, State:		County:	Rawlins,KS	Date:	1/19/2023
Field Rep:		S-T-R:	16-5S-36W	Service:	PTA

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	7 7/8 in	Blend:	H-Plug	Blend:	
Hole Depth:	2950 ft	Weight:	13.8 ppg	Weight:	ppg
Casing Size:	in	Water / Sx:	6.9 gal / sx	Water / Sx:	gal / sx
Casing Depth:	ft	Yield:	1.42 ft ³ / sx	Yield:	ft ³ / sx
Tubing / Liner:	in	Annular Bbls / Ft.:	bbs / ft.	Annular Bbls / Ft.:	bbs / ft.
Depth:	ft	Depth:	ft	Depth:	ft
Tool / Packer:		Annular Volume:	0.0 bbls	Annular Volume:	0 bbls
Tool Depth:	ft	Excess:		Excess:	
Displacement:	bbls	Total Slurry:	64.5 bbls	Total Slurry:	0.0 bbls
		Total Sacks:	255 sx	Total Sacks:	0 sx

TIME	RATE	PSI	BBLs	TOTAL BBLs	REMARKS
300pm			-	-	Arrive On Location
315pm				-	Safety Meeting
330pm				-	Rig Up
				-	Pipe Set at 2950'
350pm	4.3	400.0	5.0	5.0	H2O Ahead
354pm	4.3	400.0	12.6	17.6	Slurry H-Plug @ 13.8ppg 50 sacks
357pm		200.0	38.6	56.2	Displace with Rig Mud Pump
					Pipe Set at 1900'
504pm	4.7	360.0	5.0	5.0	H2O Ahead
506pm	4.0	420.0	25.3	30.3	Slurry H-Plug @ 13.8ppg 100 sacks
512pm	4.2	170.0	20.4	50.7	Displace
					Pipe Set at 475'
643pm	4.5	350.0	5.0		H2O Ahead
645pm	4.4	330.0	12.6		Slurry H-Plug @ 13.8ppg 50 sacks
648pm	2.6	150.0	3.5		Displace
					Push Plug to 40'
723pm	2.5	150.0	2.5		Slurry H-Plug @ 13.8ppg 10 Sacks
730pm	2.5	150.0	3.8		Slurry H-Plug @ 13.8ppg 15 Sacks Mouse Hole
734pm	2.5	150.0	7.6		Slurry H-Plug @ 13.8ppg 30 Sacks Rate Hole
740pm					Wash Up
750pm					Rig Down
800pm					Leave Location

CREW		UNIT	SUMMARY		
Cementer:	Spencer	943	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Micheal	230	3.7 bpm	269 psi	142 bbls
Bulk #1:	Kale	242			
Bulk #2:					



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Company Inc**

111 W. 10th
Hays, KS 67601

ATTN: Marc Downing

Eicher #1-20

20-5s-36w Rawlins,KS

Start Date: 2023.01.16 @ 04:25:00

End Date: 2023.01.16 @ 12:40:15

Job Ticket #: 69740 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.01.19 @ 16:52:16



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Company Inc

20-5s-36w Rawlins,KS

111 W. 10th
Hays, KS 67601

Eicher #1-20

Job Ticket: 69740

DST#: 1

ATTN: Marc Dow ning

Test Start: 2023.01.16 @ 04:25:00

GENERAL INFORMATION:

Formation: **Altamont B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:03:45

Time Test Ended: 12:40:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Nathan Aneas

Unit No: 71

Interval: 4395.00 ft (KB) To 4430.00 ft (KB) (TVD)

Total Depth: 4430.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 3218.00 ft (KB)

3207.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8353 Outside

Press@RunDepth: 215.86 psig @ 4396.00 ft (KB)

Start Date: 2023.01.16

End Date:

2023.01.16

Start Time: 04:25:01

End Time:

12:40:15

Capacity: 8000.00 psig

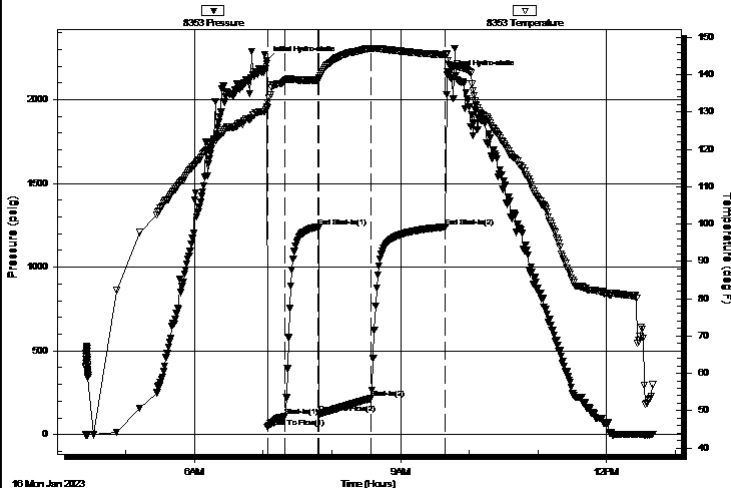
Last Calib.: 2023.01.16

Time On Btm: 2023.01.16 @ 07:03:00

Time Off Btm: 2023.01.16 @ 09:40:30

TEST COMMENT: 15:IF- Fair surface blow , built to 7 1/2" in 10 min, final is BOB in 15 min (10 1/2")
30:IS- Weak surface blow in 10 min, final stayed weak surface blow
45:FF- Fair surface blow , built to 6 1/4" in 10 min, BOB in 19 min, final is 19 3/4"
60:FS- Weak surface blow , built to 1/4" in 20 min, final died to weak surface

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2232.93	131.11	Initial Hydro-static
1	43.75	131.15	Open To Flow (1)
16	107.94	138.30	Shut-In(1)
45	1241.83	138.48	End Shut-In(1)
46	124.44	138.86	Open To Flow (2)
92	215.86	146.95	Shut-In(2)
157	1239.82	145.29	End Shut-In(2)
158	2150.19	145.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
177.00	SOMCW 70%W 25%M 5%O	0.87
252.00	SGOMCW 50%W 30%M 15%O 5%G	3.53
5.00	CO 100%O	0.07

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 Company Inc

20-5s-36w Rawlins,KS

111 W. 10th
Hays, KS 67601

Eicher #1-20

Job Ticket: 69740

DST#: 1

ATTN: Marc Dow ning

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Reference Elevations: 3218.00 ft (KB)

3207.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8676 Inside

Press@RunDepth: psig @ 4396.00 ft (KB)

Start Date: 2023.01.16

End Date:

2023.01.16

Start Time: 04:25:01

End Time:

12:40:30

Capacity: 8000.00 psig

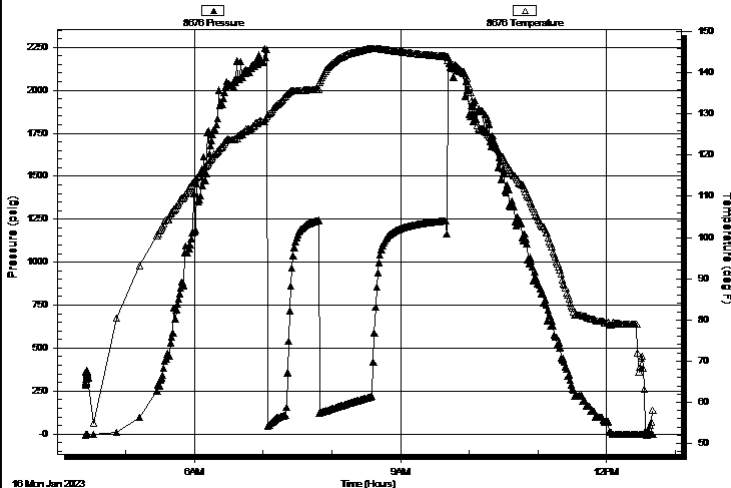
Last Calib.: 2023.01.16

Time On Btm:

Time Off Btm:

TEST COMMENT: 15:IF- Fair surface blow , built to 7 1/2" in 10 min, final is BOB in 15 min (10 1/2")
30:IS- Weak surface blow in 10 min, final stayed weak surface blow
45:FF- Fair surface blow , built to 6 1/4" in 10 min, BOB in 19 min, final is 19 3/4"
60:FS- Weak surface blow , built to 1/4" in 20 min, final died to weak surface

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
177.00	SOMCW 70%W 25%M 5%O	0.87
252.00	SGOMCW 50%W 30%M 15%O 5%G	3.53
5.00	CO 100%O	0.07

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 Company Inc

20-5s-36w Rawlins,KS

111 W. 10th
Hays, KS 67601

Eicher #1-20

Job Ticket: 69740

DST#: 1

ATTN: Marc Dow ning

Test Start: 2023.01.16 @ 04:25:00

Tool Information

Drill Pipe:	Length:	4197.00 ft	Diameter:	3.80 inches	Volume:	58.87 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length:	177.00 ft	Diameter:	2.25 inches	Volume:	0.87 bbl	Weight to Pull Loose:	62000.00 lb
					Total Volume:	59.74 bbl	Tool Chased	ft
Drill Pipe Above KB:		11.00 ft					String Weight: Initial	58000.00 lb
Depth to Top Packer:		4395.00 ft					Final	60000.00 lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		35.00 ft						
Tool Length:		67.00 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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Shut In Tool	5.00		4368.00	
Hydraulic tool	5.00		4373.00	
Jars	5.00		4378.00	
EM Tool	4.00		4382.00	
Safety Joint	3.00		4385.00	
Packer	5.00		4390.00	32.00 Bottom Of Top Packer
Packer	5.00		4395.00	
Stubb	1.00		4396.00	
Recorder	0.00	8353 Outside	4396.00	
Recorder	0.00	8676 Inside	4396.00	
Perforations	31.00		4427.00	
Bullnose	3.00		4430.00	35.00 Bottom Packers & Anchor

Total Tool Length: 67.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Company Inc

20-5s-36w Rawlins,KS

111 W. 10th
Hays, KS 67601

Eicher #1-20

Job Ticket: 69740

DST#: 1

ATTN: Marc Dow ning

Test Start: 2023.01.16 @ 04:25:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 9.59 in³

Resistivity: 0.23 ohm.m

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

25.6 deg API

Water Salinity:

46000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
177.00	SOMCW 70%W 25%M 5%O	0.870
252.00	SGOMCW 50%W 30%M 15%O 5%G	3.535
5.00	CO 100%O	0.070

Total Length: 434.00 ft

Total Volume: 4.475 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 25 Oil API @ 60 Deg API

.229@50 Degrees= 46,000 ppm

Serial #: 8353

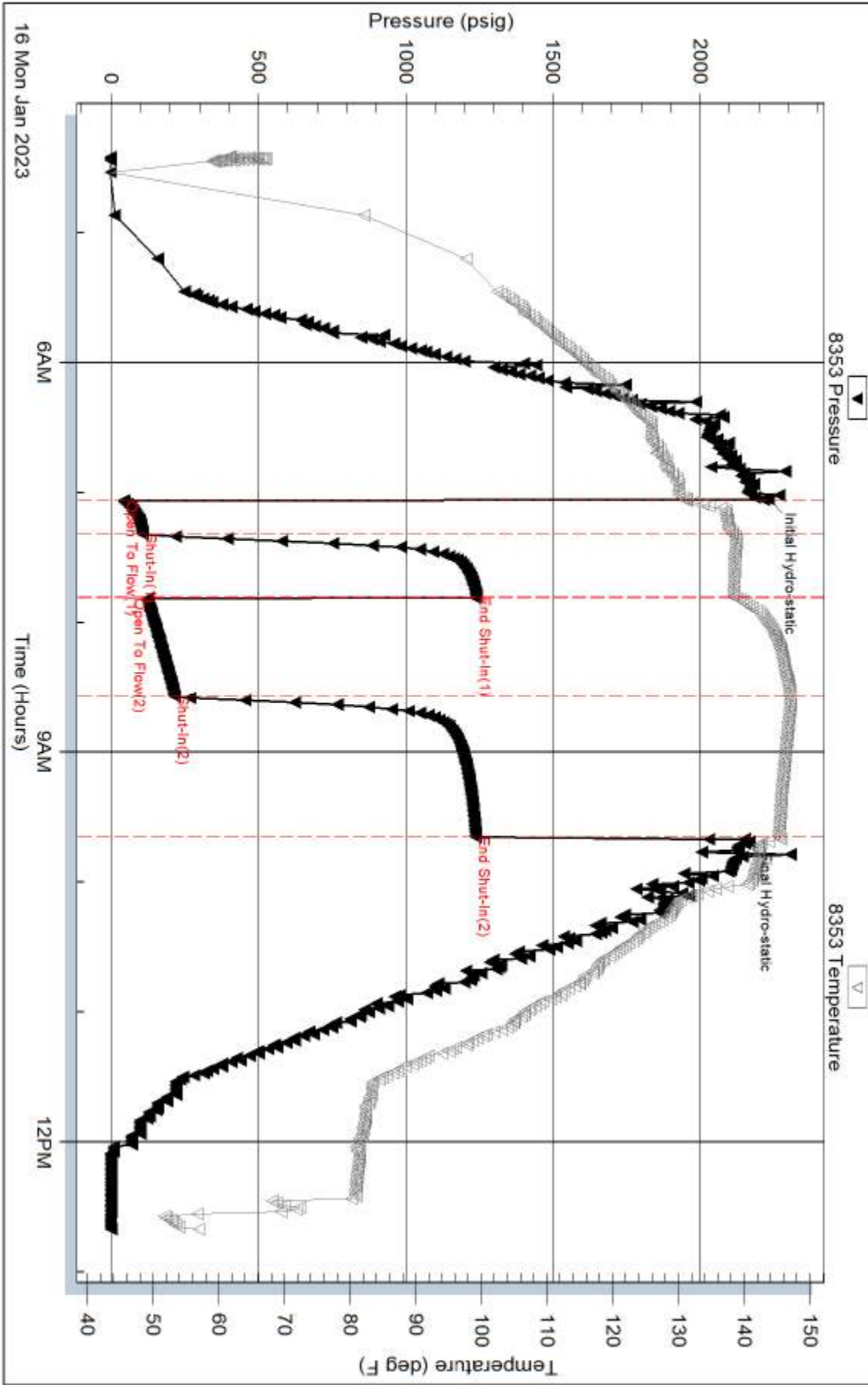
Outside

Dow n/g-nelson Oil Company Inc

Echer #1-20

DST Test Number: 1

Pressure vs. Time



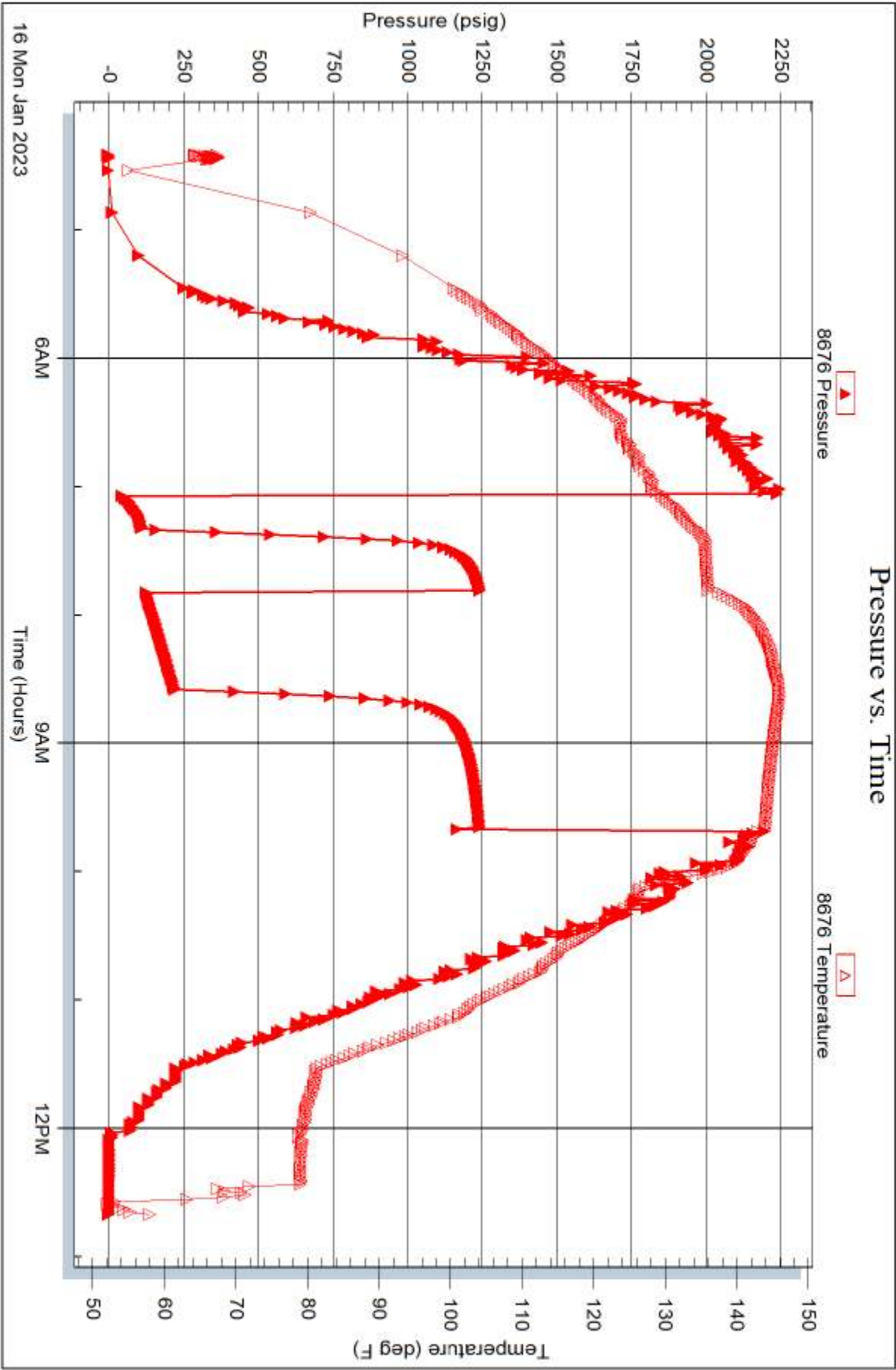
Serial #: 8676

Inside

Dow nign-Nelson Oil Company Inc

Echcr #1-20

DST Test Number: 1





Test Ticket

NO. 69740

Interval Tested <u>4395-4430</u>	Zone Tested <u>Altamont B</u>	
Anchor Length <u>35'</u>	Drill Pipe Run <u>419.7</u>	Mud Wt. <u>9.4</u>
Top Packer Depth <u>4390</u>	Drill Collars Run <u>17.7</u>	Vis <u>48</u>
Bottom Packer Depth <u>4395</u>	Wt. Pipe Run _____	WL <u>9.6</u>
Total Depth <u>4430</u>	Chlorides <u>900</u> ppm System	LCM <u>3#</u>
Blow Description <u>IF - Fair surface blow, built to 7 1/2" in 10 min, Final is BOB in 15 min</u>		
<u>ISI - Weak surface blow in 10 min, Final stayed weak surface. (10 1/2")</u>		
<u>FF - Fair surface blow, built to 6 1/4" in 10 min, BOB in 19 min, Final is 19 3/4"</u>		
<u>PSI - Weak surface blow in 10 min, built to 1/4" in 20 min, Final died to weak surface</u>		

Rec	177	Feet of	SOMCW	%gas	5	%oil	70	%water	25	%mud
Rec	252	Feet of	SGOMCW	%gas	5	%oil	15	%water	50	%mud
Rec	5'	Feet of	CO	%gas	100	%oil		%water		%mud
Rec		Feet of		%gas		%oil		%water		%mud
Rec		Feet of		%gas		%oil		%water		%mud

Rec Total 434' BHT 145° Gravity 25@60 API RW 229 @ 50 °F Chlorides 46,000 ppm

(A) Initial Hydrostatic 2233

(B) First Initial Flow 44

(C) First Final Flow 108

(D) Initial Shut-In 1242

(E) Second Initial Flow 124

(F) Second Final Flow 216

(G) Final Shut-In 1240

(H) Final Hydrostatic 2150

Initial Open 15
Initial Shut-In 30
Final Flow ~~30~~ 45
Final Shut-In 60

☒ Test 1950
☒ Jars 300
☒ Safety Joint _____
☐ Circ Sub _____
☐ Hourly Standby _____
☒ Mileage 116 RT 203+203
☐ Sampler _____
☐ Straddle _____
☐ Shale Packer _____
☐ Extra Packer _____
☐ Extra Recorder _____
☒ Day Standby 1d 15.5h
☐ Accessibility _____
 Sub Total 2656

T-On Location 02:00
T-Started 04:25
T-Open 07:03
T-Pulled 09:40
T-Out 12:30
Comments Picked up tools
@ 03:53 on 01/18/23

☒ EM Tool -350
☐ Ruined Shale Packer _____
☐ Ruined Packer _____
☐ Extra Copies _____

Sub Total 800 - 350
Total 2306

MP/DST Disc't

Approved By _____

Our Representative

Tribolite 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.

Marc A. Downing		Geologic Report		
Consulting Petroleum Geologist		Drilling Time and Sample Log		
Operator Downing-Nelson Oil Co., Inc.		Elevation KB 3218		
Lease Eicher		DF 3216		
No. 1-20		GL 3207		
API # 15-153-21305-0000		Casing Record Surface 8 5/8" @ 440'		
Field Wildcat		Production None		
Location 1610' FNL & 1040' FEL		Electrical Surveys CNDL, DIL		
Sec. 20	Twp. 5s	Rge. 36w	MEL, Sonic	
County Rawlins		State Kansas		
Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	2921	2916	+302	-2
Base Anhydrite	2960	2950	+268	+16
Foraker	3596	3593	-375	+5
Topeka	3889	3883	-665	+7
Heebner	4052	4049	-831	+9
LKC	4105	4101	-883	+9
Stark	4300	4295	-1077	+15
BKC	4359	4355	-1137	+11
Pawnee	4473	4470	-1252	+20
Cherokee Sh	4550	4548	-1330	+22
Mississippi	4737	4735	-1517	Not Reached
Total Depth	4794	4796	-1578	
Reference Well For Structural Comparison Nielson Enterprises - McKee A-1				
C SE NW Sec. 21-5S-36W				

Duke Drilling, Rig #5				
Instructor	Completed			
1-9-23		1-18-23		
From	3850	To	RTD	
Kept From	3500	To	RTD	
Examined From	3850	To	RTD	
Supervision From	3850	To	RTD	

Summary and Recommendations

structural position, DST recovery, and log evaluation, it was decided to abandon the well.

ES
red

TYPE	ale, r
	col
	;
SSOFF	

CK	sh	SH	Ss

RO	
ACCO	

[illegible][illegible]

In

e, gr e, gr e, gr bon S

sha	sha	Car
a	le	

ENGINEERING
Sand
Shale
green
red s

STR

[illegible]

Respectfully Submitted,

.....

Mark ☒ **White** ☐

Marc A. Downing

IIIINE . Chee . Chee . Gla . Pyr . Chee

Printed by GEOStrip VPC Striplog version 4.0.8.15 (www.gp...

DST

- DST Int
- DST alt
- Core
- tan pipe

MISC

- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

Curve Track #1

ROP (mm)

Time (min)

150

100

3510

3520

Depth | Intervals

DST Interval

Lithology

Comment

Geological Descriptions

Total Gas (units)

C1 (units)

C2 (units)

C3 (units)

C4 (units)

C5 (units)

1-241 Interval

Total Gas (units)

C1 (units)

C2 (units)

C3 (units)

C4 (units)

C5 (units)

NOTE: GR has been shifted to fit IROP

Foraker 3596 (-378)

3330 3340 3350 3360 3370 3380 3390 3400 3410 3420 3430 3440

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

The graph displays three data series over a range of x-values from 36560 to 37600. The y-axis has a major grid line at 36880. The magenta line is nearly horizontal at the top. The green line shows significant fluctuations, peaking near 36900. The black line shows smaller fluctuations at the bottom.

Topeka 3899 (671)

Sh: brn-red

LS: wht, md xln, sm1 frag foss. Gd inb1n por w/ fr amt ch1ky rx. Scat dead blk str, NSFO, no od.

Sh: brn-red

LS: wht, fr-md xln, foss in prt. Scat vug por w/ fr amt sub1n-ch1ky rx. Scat dead blk str, rest barren. NSFO, no od.

LS: wht, md xln, foss in prt. Many ch1ky rx, all NS.

Sh: Black carb

Sh: red w/ some brn, washes red

LS: wht, fr-md xln, few foss w/ scat sm1 vug por. Many ch1ky rx, mostly barren. Scat dead blk str, NSFO, no od.

LS: mostly ala.

LS: wht, fr-md xln, trmg pr or dns. Scat brn sh inbds, all NS.

L5: trng tan-brn, vfn xin, no vis por.
 Sh: Black Carb
 Sh: ft gry
Read 4031 (-813)
 L5: wht, fn-mid xin, foss. Scat gd vug por, many subin-chiky rx. Mostly barre, few rx w/ dead blk stn. NSFO, no od.
Heabner 4052 (-834)
 Sh: Black Carb
 Sh: ft gry, silty
 Sh: red-brn, silty in prt.
Toronto 4088 (-870)
 L5: wht, fn-mid xin, few smf foss. Gd mbxn por w/ abnt chiky rx. Fr amt larry-dead blk stn, NSFO, no od.
LKC 4105 (-887)
 L5: wht, mid xin, foss w/ scat od. Fr-gd vug por w/ fr amt subin rx. Rare dead blk stn, rest totallly barren. Few near o w/ depth.

Sh: bn-red

LS: wht, md xln, foss, dolomitic in prt. Fr vug por w/ fr sat and hvy-lvy blk SFO in por. Many subin-chiky rx w/ same show. 1-4r, od

Sh: bn-red

LS: wht, fr-mid xln. Scat inlbn por w/ dead blk strn, mostly subin-chiky and barren. Fr ant wht and tan-org dht, some shp. Tring pr por and drns, tan-brn in prt. No od.

Sh: Black Carb

LS: tan-brn, md xln, foss w/ lrg blk and brn inclusions. Fr ant hvy blk SFO, tite, no od.

Sh: gry w/ brn, scat-fr ant wht LS.

LS: wht, fr-md xln, ool in prt. Scat gd inlbn por, mostly chiky. Few pos w/ dead blk strn, Sh: grry w/ brn and lt gm

LS: wht, fr-md xln, few foss. Scat vug por, mostly subin-chiky. Rare dead blk strn, mostly barre, no od.

Sh: Black Carb

o LS: wht, fn-md xln, dolomitic in prt w/ few foss. Pr-fr intxn pg, scat snl (silty uneven), w/ fr spat SFO, no od.

o Sh: drk gry

Sh: gry w/ brn

LS: wht, fn-md xln, few foss. Mostly pr por and dns, NS.

o LS: wht, fn xln, mostly subxin-chiky and barren, 1-2 rx w/ pr spat SFO in pp por, 1-2 w/ dead blk stn. No od.

Sh: Black Carb

Sh: brnred

LS: wht, fn-md xln, scat snl foss. Subxin-chiky, trng pr por and dns. Totally barren, no od.

Sh: gry and brn

LS: wht, fn xln, chiky. Trng tan-brn w/ sml

4240

4250

4260

4270

4280

4290

4300

4310

4320

4330

4340

4350

CFS 4332

CFS 4302

The figure displays genomic data for a region on chromosome 6, specifically around the 4390-4460 kb interval. At the top, several gene models are shown as horizontal bars with exons represented by boxes and introns by lines. The genes include *BKC*, *Marmaton*, *Alamont A*, *Alamont B*, *LST*, *Tan*, *Xin*, *Ooi*, *Pr*, *Por*, *Dns*, *Totally*, *Much*, *Gry*, *Sh*, *S*, *Wht*, *Xin*, *Calkate*, *Vag*, *Fnto*, *Dull*, *Floor*, *Pcs*, *Nrd*, *Mat*, *Barren*, *Sh*, *Gry*, *Wj*, *Bm*, and *Gm*. Below the gene tracks, a red line graph shows the recombination rate across the region. To the right of the recombination rate, a vertical color scale indicates the level of linkage disequilibrium (r^2) between SNPs, ranging from blue (low) to red (high). Further right, a heatmap shows the pairwise LD between SNPs, with colors corresponding to the r^2 values.

Gene	Transcript Orientation	Approximate Coordinates (kb)
<i>BKC</i>	Left	4385 - 4395
<i>Marmaton</i>	Right	4390 - 4400
<i>Alamont A</i>	Right	4400 - 4410
<i>Alamont B</i>	Right	4410 - 4420
<i>LST</i>	Right	4420 - 4430
<i>Tan</i>	Right	4430 - 4440
<i>Xin</i>	Right	4440 - 4450
<i>Ooi</i>	Right	4450 - 4460
<i>Pr</i>	Right	4460 - 4470
<i>Por</i>	Right	4470 - 4480
<i>Dns</i>	Right	4480 - 4490
<i>Totally</i>	Right	4490 - 4500
<i>Much</i>	Right	4500 - 4510
<i>Gry</i>	Right	4510 - 4520
<i>Sh</i>	Right	4520 - 4530
<i>S</i>	Right	4530 - 4540
<i>Wht</i>	Right	4540 - 4550
<i>Xin</i>	Right	4550 - 4560
<i>Calkate</i>	Right	4560 - 4570
<i>Vag</i>	Right	4570 - 4580
<i>Fnto</i>	Right	4580 - 4590
<i>Dull</i>	Right	4590 - 4600
<i>Floor</i>	Right	4600 - 4610
<i>Pcs</i>	Right	4610 - 4620
<i>Nrd</i>	Right	4620 - 4630
<i>Mat</i>	Right	4630 - 4640
<i>Barren</i>	Right	4640 - 4650
<i>Sh</i>	Right	4650 - 4660
<i>Gry</i>	Right	4660 - 4670
<i>Wj</i>	Right	4670 - 4680
<i>Bm</i>	Right	4680 - 4690
<i>Gm</i>	Right	4690 - 4700

07-06-1972 (-1325Z)

LS: wht, md xln, rare snl ood. 4-5 rx w/ fr
inoin and pp por w/ fr sat sn and fr SFO.
Many subxin-chiky rx, barren. Vint-no od, fr
gr floor.

LS: some ala w/ fr ant reef material. All NS,
no od.

Sh: Black Carb

Sh: gray

LS: wht, fn xln, subxin-chiky in prt. 1 pc w/
pr strn on edge, NSFO, no od. Fr ant wht-gry
shp chit.

Fort Scott 4529 (-1311)

Sh: Black Carb

LS: tan w/ some brn. Scat subxin wht rx,
mostly pr por and dns. Scat blk shp chit,
totally barren, no od.

Cherokee Sh 4550 (-1332)

Sh: Black Carb

LS: wht, fr-md xln, mostly pr por and dns.
Scat ant subxin rx, totally barren w/ no od.
1-2 rx in 60' ds w/ pr spltd SFO in pr por.

07-06-1972 (-1325Z)

4480 4490 4500 4510 4520 4530 4540 4550 4560 4570 4580

ROP (min) 10 150

Sediment (J/P)

CFS 4570

Total Gas (units) 100
G₁ (units) 100
G₂ (units) 100
G₃ (units) 100
G₄ (units) 100

SS: di-tan clust w/ gry mtx, dirty in prt. Md-crs grain, sub ang-ang, pr-fr sort. Pr-fr lg por trng fr lg por. Fr sat w/ larry SFO-dead sn. No od. Fr amt. pyt.

SS: much ala, dirty mtx, md-crs grain. Gd lg por w/ larry SFO, much dead. No od, fr amt pyt.

Sh: brn-red arg. Washes red.

SS: grm-tourq, fr-md grain, fr sort, fr md. Tourq mtx, NS.

About red-brn sh ala, arg, scat yel. Scat lg ind qtz grains, wht, some cl-smoke. Weath, all NS, no od.

SS: wht-lt grm, some tan-brn clust, md grain, ang, fr-well sort. Scat glauw, all NS. Still scat lg ind qtz grains.

Fr amt SS ala w/ abnt brn-red sh. Not arg, firm.

SS: wht-clr, some smoke. Trng md-crs grain clust, pr sort, sub ang-ang. Inc amt lg ind qtz grains, siltly weath on edge. Scat glauw, totally barren. No od. Scat chiky LS.

Morrow 4715 (-1492)

Sh: gry w/ gm and brn

Mississippi 4737 (-1519)

Dolo: tan-brn, md yln, foss. Scat vug por w/ few chiky rx, totally barren, no od.

Dolo: tan-brn, md yln foss. Frq'd vug por, inc ant chiky rx. Totally barren, no od.

Dolo: much ala, inc ant chiky rx w/ scat dms rx. Some tng tan-wit, All NS.

RTD 4794 (-1576)